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03/22/2002 11:59:53 PM

Record Type: Record

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Subject: Comments Regarding Federal Regulations Including Federal Regulations Affecting S

The following comments are intended to highlight the frustration and complexities a small business must deal with in working with the federal government. The three following paragraphs will provide information on 1) what our business does; 2) how we are trying to work with the government on this project; 3) the problems posed to our business as a result of regulations.

Quantum Energy Solutions (QES) is a small business located in Everett, **WA** dedicated to energy research and development. One of the projects being developed by QES focuses on extracting electrical energy from the ocean in a cost effective manner. This unique hydropower method consists of two main devices: a concrete capture chamber into which water flows and exits in sympathy with ocean swells; and a pneumatic powered turbine. The proven operating principle is that water compresses the air in the chamber when waves pour into the capture chamber. The air pocket in the chamber is forced through the turbine. This method of generation is known as the oscillating water column method of generation (the attachment provides a graphic representation of this technology). Currently, a 500 kilowatt system is in place in Scotland. This cliffside mounted unit was heavily financed by the European Union's "Joule" program.

QES is making modification to the technology that would allow these devices to be placed into seawalls and jetties. Because these devices also provide for calm waters in their lee, they can be utilized in a coastal protection role; just as a jetty or seawall. In order to avoid direct federal subsidies to make this technology economically viable, QES is trying to capitalize on the added benefit of coastal protection that the devices would provide. Since the federal government spends several million dollars each year for jetty/seawall repairs throughout the US, these devices would provide the added benefit of energy generation as well. By working with the United States Army Corps of Engineers, the Department of Energy, several agencies within the Department of the Interior, as well as local and state level agencies and governments, **QES** is developing a plan to place these devices into seawall and jetty repair projects.

The frustration associated with this development can be traced back to the multitude of agencies involved either through jurisdictional interests or oversight interests. The following are brief summaries of issues raised as a result of federal regulations and the impact on our business:

- The US Army Corps of Engineers is referencing federal law applicable to dam construction and utilization as justification for QES to pay for installation of the proposed technology. This in sense adds the financial burden of providing coastal protection onto QES. This would destroy QES's efforts to cost effectively generate electricity through the proposed technology.
- Several agencies are inquiring about the affect the system would have on fish and wildlife. The technology is constructed of concrete and no wildlife can come in contact with the turbine by design. To highlight this issue, the US Army Corps of Engineers already uses concrete in jetty and seawall design. This evaluation would place an added financial burden onto QES and would produce results that are redundant with previous studies. In short, the federal government is already conducting business in this manner (utilization of concrete in ocean structures) and is asking QES to reproduce already conducted studies.

-Because of the number of agencies involved and the uniqueness of this project, it has been nearly impossible to identify a federal agency or point of contact that can provide guidance in how to proceed. QES has spent over a year working with several offices within the US Army Corps of Engineers in developing the proper procedures need to advance this project. Because of the multitude of offices within the Corps of Engineers, it has been nearly impossible to advance this project. Time and time again, offices with the Corps of Engineers refers QES to other offices. There does not exist an office with the Corp of Engineers that can consolidate the Corps' interests and concerns related to this project. The onus of contacting all applicable offices with the Corps of Engineers is placed on QES. This requires extensive time, research, and financial commitments from our end in order to make sure all parties with the Corps of Engineers are contacted.

The list of examples could go on for several more pages, but in the interest of your time, the above examples should provide a quick glimps into the ever growing frustration that QES is experiencing as a result of federal regulations.

In short, QES *is* trying to propose an idea to the federal government that would provide more value and return on taxpayers dollars spent on federal projects. Although some within the agencies we have dealt with are helpful, the overall response has been mired in oversight, regulations, and acceptance or denial of responsibility in certain aspects of this project. I can say without hesitation that this protracted process will ultimately consume QES's financial resources and prevent this program from coming to fruition.

Thank you for your time and consideration in this matter. If you need more information, I can be contacted at this e-mail address (thegeodus@msn.com) or by phone at (425) 210-6335.

Sincerely,
Tibor Hegedus, CEO
Quantum Energy Solutions



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