

Bill No. 1633

Support ^{P-1} Y N

Date 3/19/09

Time 6:51

Cat AF AS AX BC

Type 1 2 WI

EPOD
TESTIMONY
BEFORE THE
HAWAII STATE HOUSE OF REPRESENTATIVES
ENERGY & ENVIRONMENTAL PROTECTION COMMITTEE

SUBMITTED TO THE HONORABLE HERMINA M MORITA CHAIR.

March 19, 2009

Good afternoon Representative Morita and members of the Committee. We appreciate the Opportunity to offer our thoughts on Senate Bill 1633.

My name is Larry Gilbert I am representing Epod Solar Inc. Epod is a vertically integrated Solar energy company, Incorporated in Hawaii (as of February 26, 2009) and Nevada, and located in Kelowna, British Columbia, Canada.

EPOD's business covers key phases of solar power business operations from panel manufacturing through to power generation. The corporation manufactures solar panels for deployment to solar power parks by way of a customized manufacturing process, and installs the solar panels through its internally developed operating expertise. The corporation is also developing and operating a portfolio of its own solar power parks.

EPOD's business model contemplates a sequential expansion by developing solar power park projects; in Hawaii utilizing long-term power purchase developments from local utilities and establishing the manufacturing capability for solar panels required to meet the requirements for those projects in the Hawaiian Islands. Senate Bill 1633 will help us achieve that goal.

In Europe, the corporation has established a presence in Germany with four operating solar power parks and one under construction (March 2009 completion) producing approximately 1.5 MWp (mega-watt-peak) of capacity (annual revenue \$1,250,000). EPOD has also identified potential solar park development sites in other European based countries. In North America, the corporation has a number of solar park projects under development in Ontario, including five projects representing an aggregate of 43 MWp of capacity which have received conditional approval for development and eight applications for projects representing approximately 71 MWp of additional capacity which have been submitted for approval.

EPOD's European manufacturing operations include a manufacturing facility in Wales and near term plans to expand the facility to 10 MWp panel production. This facility has been operating for over 18 years utilizing thin-film technology. EPOD has been focused on the production of commercial US PV (Photovoltaic) panels for solar power park use.

EPOD also has an active research and development program having to do with PV panel manufacturing techniques energy storage, and inverter technology, including joint development initiatives with two Canadian universities to innovate future manufacturing cost efficiencies and PV panel technologies.

EPOD believes its thin film production format, manufacturing process and panel installation process are market leading, and EPOD plans to use these operations as a platform to develop further improvements in PV Cell and solar panel efficiency and cost production. EPOD is pursuing a number of modifications to the panel manufacturing process panel design and the use of alternative assembly procedures in order to effect further cost reductions and increase the current panel efficiency to reduce cost per watt, all of these improvements in solar panel efficiencies directly enhance EPOD's ability to serve the Hawaiian Islands.

EPOD has two conditionally approved projects that are located in the Green Zone and thereby likely capable of installation and operation shortly following the Ontario Power Authority's ("OPA") Renewable Energy Standard Offer Program ("RESOP") review process. To the extent EPOD is able to develop these projects in the near term, it may use third party solar panels instead of waiting for the establishment of internal manufacturing capacity in North America capable of meeting this demand.

PROPOSAL TO BUILD 10 MWP PV PANEL MANUFACTURING PLANT IN HAWAII

EPOD has developed a solar manufacturing plant design that it intends to use for construction of a series of new manufacturing facilities, with a proposal to build the first one in Hawaii. The factory design is modular and fully scalable in increments of 10 MWp which allows for many different possible configurations. The type of technology EPOD specializes in is amorphous silicon thin film solar modules, with EPOD currently operating the longest running factory of this kind in the world. This type of technology gives the best value in terms of cost per kWh generated in the field, and therefore is the best fit for producing large-scale solar power generation parks. The basic parameters of the proposed factory are listed in the table below:

Capital Investment:	\$20M
Annual Production Capacity:	10MWp
Construction Duration until Start-up:	12 months
Start-up until Full Operation:	90 days
Required Space:	35,000 ft ² industrial warehouse
Building Power Requirements:	1MW
Photovoltaic Technology:	a-Si thin-film
Solar Panel Size:	4.9 ft X 2.1 ft (1500mm x 650mm)
Wattage:	Approx 60Wp per panel

The equipment and components incorporated into EPOD's manufacturing facility design are based on existing equipment and systems adapted specifically for the needs of solar panel manufacturing, including robotic arms, automated handling equipment and laser heads. In addition to this equipment EPOD has designed and collaborated with a variety of world leading suppliers to build vapor deposition equipment. EPOD's German division specializes in the integration and automation of this equipment, and EPOD has utilized this experience to accelerate and finalize its manufacturing plant design. An outline of the manufacturing facility capital costs without the land and building component (which is budgeted at \$3M) is given in the factory construction table below:

Factory Construction Cost Estimate for a 10 MWp Factory

- \$4.2M - Silicon Chambers
- \$0.9M - Gas Delivery System
- \$1.2M - Lasers
- \$2.1M - Back Contact Deposition
- \$0.8M - Edge Deletion/EVA Layup
- \$1.8M - Laminators
- \$1.0M - Test & QC Equipment
- \$2.5M - Automation/Robotics
- \$2.0M - General Plant Infrastructure
- \$0.5M - Plant Commissioning
- \$17M - Total without Land/Building

Once completed the factory will be able to produce solar panels at a globally competitive rate. This competitive production cost offers Hawaii the opportunity to be the home of a global leader in the production of cost effective PV panels.

EPOD is also dedicated to further increasing the value of its solar modules through continuous product and process refinements. This is realized through several research & development ("R&D") agreements with multiple university and industry partners to continuously improve its factories.

ECONOMIC IMPACT OF THE PROJECT TO HAWAII

- | | | |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| 1. | Direct Manufacturing Jobs:
(Production 36, Support people 6,
Management/Supervisory 6) | 48 FT Jobs |
| | Indirect Job Support/Retention:
(In logistics, transportation, Power electronics,
Packaging and Industrial Support Services for
Production operations) | 50 FT Jobs |
| 2. | Direct Solar Park Installation:
Indirect Job Support/Retention:
(In Metals fabrication, engineering design,
Civil/survey and Construction Industry) | 50 FT Jobs |
| 3. | Direct Solar park Maintenance Jobs:
(additional jobs created each year as new Solar parks are built) | 6 FT Jobs each year |

ECONOMIC IMPACT OF THE PLANT TO HAWAII (Cont.)

Annual Payroll	\$6-8 Million
(Manufacturing \$2.5 million, Solar Park installs \$2 million, Solar park maintenance \$250K and Support Services \$4 million)	
Total Annual Economic Output PV Panels:	\$23 - \$25 Million
Total Solar Park Economic Activity:	\$12 Million
Consumables and Industrial Services	\$10 Million
Total ANNUAL Economic Activity created by the plant:	\$47 - \$54 Million

This also creates a new tax base for local, state and federal governments.

The establishment of a PV panel manufacturing facility represents a new level in the goals of Hawaii as outlined in the *Go Green* initiative; by not only subsidizing the purchase of energy from renewable sources but to aid in the creation of the components intrinsic in the supply chain of these projects. This relationship will not only create a green logistics chain (with fewer components having to travel great distances to where they're to be used) but will also propel Hawaii to the forefront of the industry and a burgeoning green energy sector.

The process used in manufacturing thin film PV is both highly innovative and cost effective, which enables green projects to be highly competitive on a cost per watt basis both in manufacturing as well as installation. Hawaii's highly skilled workforces, that are currently experiencing job losses in sectors related to manufacturing and construction, could quickly be placed into jobs in the highly skilled industries of both PV manufacturing, as well as PV installation.

Due to the fact that PV manufacturing is relatively new there is still a great deal of R&D that can take place. Private capital can be used to leverage the R&D of solar power technology in Hawaii, which will in turn create a high growth sector while creating sustainable jobs in the industry of the future.

The establishment of EPOD's panel manufacturing plant will encourage other aspects of the industry to grow in Hawaii. Many of these services are unique to the industry and require a specific skill set. The required engineering, design, assembly and fabrication skills are similar to existing industries. The establishment of EPOD's panel manufacturing plant also creates possible future cross-over opportunities with local Hawaiian educational institutions for both R&D and industry specific training. These services can include:

- Specialized suppliers for the factory itself.
- Solar park design services encompassing electrical, mechanical and civil works.
- Solar park installation services.
- Fabrication services for solar park infrastructure.
- Power electronics design, installation and commissioning.
- Maintenance services.

The company has the additional leverage of 18+ years of PV manufacturing experience gained in our Wales (UK) factory and the three years of experience in solar park installations in Europe.

EXPORT POTENTIAL

This project has two-fold export potential:

1. The PV Panel manufacturing plant has the ability to export PV panels worldwide and expand the manufacturing operation in Hawaii in the future years.
2. Export potential of green power to other Hawaiian islands. All of the Hawaiian utility companies are clamoring to increase their renewable mix of power sources. This manufacturing plant will create opportunities to generate and export green power to other Hawaiian islands.

EDUCATIONAL IMPACT

This project will create and enhance the renewable power educational programs in local schools and colleges. This will also support Renewable Energy Technician education in technical colleges and apprenticeships in the region.

EPOD has been working with two Canadian universities on solar related research projects since 2007. EPOD also anticipates working with other universities for future R&D activities to support future expansion and process improvements.

Contact Information:

Mike Matviashen
Chief Executive Officer
mike@epodsolar.com
Mobile: 250.864.7534

Larry Faulk, M.P.A.
Former Washington State Senator
Director
larryfaulkforsenate@gmail.com
Mobile: 253.380.3462

**Epod
Oral Testimony
Before the
Hawaii State House of Representatives
Energy & Environmental Protection Committee**

Submitted to the Honorable Hermina M Morita chair.

March 19, 2009

Good afternoon Representative Morita. My name is Larry Gilbert I am representing Epod Solar Inc. Thank-you for scheduling this hearing today Representative Morita. We have already submitted our written testimony, which you and the other members of the committee should have before you. Therefore the purpose of my remarks is to summarize our written testimony.

Epod Solar is a vertically integrated solar energy company. Incorporated in Hawaii (as of February 26, 2009) and Nevada, and located in Kelowna, British Columbia, Canada. Epod's business covers key phases of solar power business operating from panel manufacturing through to power generation.

The corporation manufactures solar panels for deployment to solar power parks by using a customized manufacturing process, and installs the solar panels through the internally developed operating expertise. The corporation is also developing and operating a portfolio of it's own solar power parks.

In Europe the corporation has established a presence in Germany with four operating solar parks and one under construction (March 2009 completion) Producing approximately 1.5 mwp (mega – watt – peak) of capacity (annual revenue \$1,250,000.00) Epod's manufacturing operations include a facility in Wales, England. This facility has been operating for over 18 years utilizing thin film technology.

Epod has an active research and development program having to do with PV (photovoltaic) panel manufacturing technology, energy storage, and inverter technology including joint development initiatives with two Canadian universities to develop innovative future manufacturing cost efficiencies and PV panel technologies.

Now let us turn to Hawaii and the projects we propose for your state. The projects would consist of a solar panel manufacturing factory on the island of Oahu; and solar power parks on Oahu and various other Hawaiian islands.

The cost of the factory is estimated to be approximately \$17 million excluding the building and land. Once completed the factory will be able to produce solar panels at a globally competitive rate. This competitive production facility offers Hawaii the opportunity to be the home of and a global leader in the production of cost effective PV panels.

The economic impact of this project to Hawaii is substantial; there will be 48 fulltime manufacturing jobs; 50 fulltime indirect support jobs; 50 direct and indirect solar park jobs and 6 fulltime direct solar park maintenance jobs for each solar park constructed. That's a minimum of 154 fulltime jobs at family wage salaries.

The annual payroll from the manufacturing factory, solar parks maintenance and support services is estimated to be \$6 - 8 million; the total annual economic output of PV panels is \$23 - 25 Million; total solar park economic activity is \$12 million; and consumables and industrial services is estimated to be \$10 million. The total annual economic activity created by these projects will be in the neighborhood of \$50 million.

In summary we believe these projects will: put Hawaii in the forefront of developing renewable energy recourses; provide a substantial economic impact to Hawaii; enhance the renewable energy education problems in technical colleges and universities in Hawaii; and continue the effort to put Hawaii on the fast track to energy independence.

Thank-you

We will be happy to answer your questions.