

**Testimony of Jack Crawford, Jr.  
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Folsom, California**

**Before the**

**Subcommittee on Commerce, Trade and Consumer Protection  
United State House of Representatives**

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**Introduction**

Thank you Chairman Rush, Ranking Member Whitfield, and members of the Committee on Energy and Commerce for inviting me to speak here today about ways to increase the competitiveness of small and medium sized clean technology companies in today's competitive international marketplace. The clean energy technology industry represents a tremendous opportunity for entrepreneurs and investors, and the battle for global leadership is raging. The U.S. is in a fierce competition to develop companies that enable us to generate and utilize energy more efficiently and to do this cheaper and cleaner than our competitors. Nothing less than our global leadership is at stake here. The country that succeeds in innovating and exporting clean technology products and services will be the global economic leader and job creator in the future.

I am Jack Crawford, Jr., the CEO of Jadoo Power, which is a small alternative energy technology company based in Folsom, California. Having had the experience of starting up, investing in, and growing several companies in my career, I bring some amount of understanding to the challenges facing a clean energy technology startup company, and recognize the particular set of problems faced by my own company in this economy in its effort to market our clean tech products internationally.

**Company Overview**

Jadoo Power is an industry leader in advanced power and energy storage solutions. Our systems provide hybrid fuel cell power for government, military and commercial applications. The industry is evolving and Jadoo Power is at the forefront--moving toward the next evolution of superior power solutions that will greatly surpass current technologies and contribute to a healthier world environment. Jadoo Power continues to enhance fuel cell performance, advance fuel developments, hybridize with other clean energy technologies, improve manufacturing processes, and reduce costs.

We are taking fuel cell advancements into the future delivering portable commercial applications including complementary solar and LED technology that will continue to out-perform existing capabilities and provide better overall solutions.

With the emissions of green house gasses from conventional motors, generators and engines, and the limited power capabilities and toxic chemicals of conventional batteries, advanced fuel cell technology offers the promise of portable, clean, zero emissions power. Photovoltaic solar panels and wind turbines can provide utility scale power, but there continues to be a need for clean, efficient power sources that are small, portable and mobile so that some pollution-producing engines can be eliminated. Jadoo's fuel cell technology and alternative energy research and development programs provide the potential for ubiquitous clean energy storage and production.

Jadoo Power is solving some of today's energy challenges as well as working toward the next generation of power demands that will deliver better energy solutions, greatly surpassing current technologies and contributing to a healthier environment through reduced pollutants. Fuel cells, such as those manufactured by Jadoo, advance the integration of renewables, such as solar and wind power, into the electricity grid by enhancing their stability. Whatever the source, fuel cells save energy and reduce emissions.

To that end, Jadoo is working to realize several objectives. These objectives include:

- Enhancing fuel cell performance
- Hybridizing fuel cells with solar and LED technology
- Reducing production costs and improving manufacturing and integration processes
- Continuing to build key customer and partner relationships in military, government, and commercial markets

Through these efforts, Jadoo will continue to take fuel cell advancements into the future and deliver commercial applications that out-perform existing capabilities and provide better power solutions. As a leader in fuel cell technology and next generation power systems, Jadoo Power's products are providing hybrid fuel cell power in military, government and commercial applications.

Jadoo has used its technology to develop and deliver prototypes to the military, government, and the commercial sectors, in the following application areas:

- Portable and Mobile Power for portable rapid response medical devices supporting wounded soldiers in war zones
- Zero emissions back-up power for both indoor and outdoor operation
- Key communication applications for Emergency and First Responder Solutions
- Unmanned aerial vehicles, robotic, and surveillance applications in the military, government and homeland security applications

## **Need for Clean Technology Manufacturing and Export Assistance**

I commend Representative Doris Matsui of Sacramento, along with Representatives Bobby Rush, John Dingell, and Anna Eshoo for introducing H.R. 5156, the Clean Energy Technology Manufacturing and Export Assistance Act of 2010. This bill sets out a national strategy to assist U.S. clean energy technology companies with export assistance to find new markets for their products and services to better compete in the international marketplace. The bill also provides domestic manufacturing assistance to find new ways to reduce production costs, and promote innovation, investment and greater productivity in the clean technology sector.

Jadoo Power, as a clean energy technology company, is a member of a very promising new category of business that is enjoying particularly strong growth in terms of number of companies and employee count in the U.S., and in particular in California, and in the Sacramento area where Jadoo itself is headquartered. The Sacramento region has more than 100 clean technology companies, and is well-positioned to be a national leader in producing clean energy technology. Since 1995, the Sacramento area has seen tremendous job growth in “green jobs” increasing by more than 87%. The entire state of California showed an increase in green jobs of 36%, or 42,000 in this same period, as compared to an overall job growth in this period of 13% in California. Nationwide, clean energy technology has been adding employees at the average rate 9% per year, as of 2008, for a total of approximately 770,000 jobs in this field (1). As recently stated by industry trade journals, the U.S. has the potential to capture 250,000 jobs in the next 10 years making, installing and servicing fuel cells (2). Clearly, the clean energy technology sector represents many promising employment growth opportunities in the future, and with the proper support from state and federal governments, this future growth potential can be fully realized, along with corresponding product revenues and increases in supporting businesses such as sub-contractors and services companies.

Jadoo has recognized that it has superior technology that is unsurpassed domestically, as well as internationally, and is now beginning to investigate how to scale the company’s sales and manufacturing capabilities in order to supply both the domestic and international markets. Jadoo hopes to become competitive in the international market. However, many small clean energy companies, like Jadoo Power, do not have the knowledge of foreign markets or a full understanding how the export process works. That being said, Jadoo recognizes some of the challenges of competing in international markets. In many cases foreign suppliers that may have technically inferior products but have subsidies and support for exports from their own governments which creates a non-level playing field. Similar challenges await other domestic clean tech companies including some in the Sacramento region like WINDensity, a distributed wind power and fuel efficiency product company. With extraordinary opportunities in international markets, the key for this company is also to scale manufacturing and identify efficient access to international markets.

In addition to foreign competitors that have subsidies and support from their own governments, the lack of enforcement of international intellectual property rights further inhibits the entrance of U.S. companies into foreign markets.

## **Financing and Manufacturing Challenges**

Growing a clean tech company is a challenge. We are breaking into a heavily regulated industry with well established players who can sometimes be threatened by innovators upsetting the status quo. But those challenges are minor in comparison to the financing challenges we face when we seek to advance our technology, grow our company, and build a demonstration plant or a first commercial plant. The funding gap that exists at this phase is sometimes referred to as a “valley of death.”

The U.S. is the unequivocal leader in energy innovation, just as we have been in such sectors as semiconductors, biotechnology, and the Internet. As we strive to become a global leader in clean technology, one area of innovation where our advantage is most threatened is in manufacturing. Whereas breakthrough technology occurs here in the U.S., we are losing out to countries like China, Germany and Malaysia, when it comes to clean energy manufacturing, in part because those countries are providing a host of tax incentives and other recruitment advantages to lure companies away. First-of-a-kind capital intensive manufacturing facilities are often not able to secure traditional bank loans, due to the risky nature of those loans and the lack of hard assets in the company.

As Jadoo and other companies begin to scale up their manufacturing capabilities, in order to reduce product costs and address foreign markets, these companies need assistance in developing and scaling manufacturing facilities that will allow them to compete internationally, not just domestically. The emerging U.S. market for clean energy products is growing and it is now time we look to sell our U.S. made clean energy products to foreign markets. A greater level of support from the federal government – in addition to – local and state governments will level the playing field and accelerate the ability of US clean technology companies to build and operate compliant and cost effective manufacturing.

It has been the case for many years that American science and engineering has been pre-eminent in the world. As a result of our pioneering technologies, we made entire new industries possible and we need to be vigilant in our appreciation and adoption of new and innovative technologies. The President has established a goal to double U.S. exports over the next five years. H.R. 5156 will place clean energy technology products at the forefront of our national clean tech export strategy.

Unfortunately, many times the U.S. has not been able to reap the benefits of this new technology with global sales of American made products, leaving other countries to benefit from our technology lead. We hope that this time, with the clear opportunity of clean energy technology, the United States will lead the world with our technology, and also be able to benefit from the distribution of American manufactured clean energy products because of the support for a U.S. clean energy technology

manufacturing base. Along with providing greater energy security and environmental security, our country's focus on clean technology manufacturing companies will provide greater economic security by creating and sustaining millions of new American jobs.

With proper support and assistance, Jadoo is an example of a company that could be well positioned to expand its manufacturing facilities and grow "green collar" jobs, thereby maintaining these jobs in the U.S. With H.R. 5156 and other such policies, Jadoo is likely to increase its employee base many fold as it scales its manufacturing capability to address both domestic and international sales opportunities. It is Jadoo's belief that, like many other American clean energy technology companies, it is a domestic leader in clean energy, and it can become a global leader in manufacturing, selling clean energy products with the appropriate set of government policies and support.

We believe that the Department of Commerce's International Trade Administration (ITA) can play an important role for U.S. companies that are selling products to foreign buyers. ITA has a wealth of experience in export promotion, helping small and medium sized companies find and navigate foreign markets.

Large, established domestic manufacturers are likely to have the track record, critical mass and ability to raise capital from commercial banks for new efficient manufacturing capabilities required for successful international sales, but small businesses do not have that ability. Presently, the government does not have an appropriate program for small manufacturers such as Jadoo Power to provide critical export and manufacturing assistance.

In summary, we strongly support the goals of H.R. 5156 and support the creation of targeted policies that will enable American companies that have leading clean energy technologies to translate those leads into robust international product shipment through the support of the creation of globally competitive manufacturing capabilities. With capital to grow manufacturing capabilities as well as access to international markets of customers, many US-based small and medium sized clean technology manufacturing companies will become large companies that are global leaders in their industry.

Thank you for inviting me to today's legislative hearing, and allowing me to present my perspective.

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## References

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