

# Solar Power

## S U M M A R Y

By Ryan M Yonk

In the 1980's Arnold Goldman set out to fulfill his dream of constructing the world's largest solar power generating plant. Two decades later, that dream is becoming a reality in California's Mojave Desert. Recent growth has been slower than expected, with average annual rates as low as 3 percent between 1990 and 2007. The story of Luz International Ltd. and its Ivanpah plant illuminates key factors that have limited growth in the industry. These include varying levels of political support and public opinion over time, increasingly restrictive regulatory requirements, and conflict between environmental groups themselves.

Luz International Ltd. began construction of the world's largest solar power plant in the 1980's. In the wake of the oil crisis of 1973, government support and public opinion both favored alternative energy sources like solar. Tax credits helped make the company's undertaking economically feasible, however, when these credits expired in the 1980s, Luz International was forced to declare bankruptcy. Two decades later, BrightSource Energy is set to complete the Ivanpah Solar Electricity Generating Station (SEGS), in California's Mojave Desert. The project is "currently the largest solar plant under construction in the world," and will produce enough power to serve over 140,000 California homes during peak hours. In contrast to earlier attempts, however, Brightsource now faces opposition from organized conservationists. These activist groups seek to halt development of the area, which they view as valuable wilderness and habitat for the desert tortoise, listed as threatened under the Endangered Species Act. For such environmental groups, the fate of the desert tortoise is more important than the production of clean energy that would help meet the country's growing demand.

In order to produce solar power from its Ivanpah plant, BrightSource must overcome diverse obstacles including grassroots opposition, and both state and federal regulations. In attempts to comply with the California Environmental Quality Act and the federal regulatory process, the company completed mitigation plans including the installation of 50 miles of tortoise fencing at a cost of \$50,000 per mile. High costs also resulted from the company moving 38 adult tortoises off site, and made the employment of full-time biologists necessary. As of June 2012, Brightsource estimated it had spent \$22 million caring for desert tortoises on or near the site and predicted it will spend an additional \$34 million to meet regulatory requirements.

Despite Brightsource's costly attempts to comply, construction was halted after early estimates of the number of tortoises living on the site were found to be incorrectly low. To prevent negative impacts on the large number of tortoises living in the area, construction plans have been frozen until BrightSource Energy completes a new Environmental Assessment and can find a solution that satisfies green advocacy groups and regulatory requirements. Until that happens, high costs are being incurred on behalf of taxpayers who are funding this project through subsidies, and potential solar power is being lost.

In the Mojave Desert, and across the country where attempts to develop solar power are being made, meeting the nation's energy demand is being neglected in favor of conservationism. The hurdles faced by Brightsource demonstrate the problem of green vs. green; when environmental goals and groups come into conflict with one another resulting in poor outcomes. Although Brightsource's Ivanpah plant could produce clean, renewable energy for thousands of homes, some environmental groups believe protection of the desert tortoise should not be sacrificed for any reason. Over the years, such groups have successfully lobbied for restrictive regulatory requirements that make it difficult for companies to develop green energy sites, even on federal lands. As a result, potentially valuable green energy sources like solar power are being left undeveloped while millions of dollars are spent caring for tortoises.

### **Policy Recommendations:**

- Limit ability of environmental groups to file frivolous lawsuits to reduce costs.
- Streamline compliance process for ESA and other environmental litigation.

### **References:**

Ivanpah Solar Project Named CSP Project of the year. (n.d.). BrightSource. Retrieved March 2, 2012, from [www.brightsourceenergy.com/images/uploads/press\\_releases/Ivanpah\\_CSP\\_Project\\_of\\_the\\_Year\\_A](http://www.brightsourceenergy.com/images/uploads/press_releases/Ivanpah_CSP_Project_of_the_Year_A)

Moselle, B., Padilla, J., Schmalensee, R. (2010). "Nonhydro Renewables in the United States". *Harnessing Renewable Energy in Electric Power Systems: Theory, Practice, Policy* (11). Retrieved from [http://books.google.com/books?id=KHJIC6JdZXIC&pg=PA209&ots=INmeNiFa\\_Y&dq=solar%20power%20the%20United%20States&lr&pg=PA209#v=onepage&q=solar%20power%20in%20the%20United%20States&f=false](http://books.google.com/books?id=KHJIC6JdZXIC&pg=PA209&ots=INmeNiFa_Y&dq=solar%20power%20the%20United%20States&lr&pg=PA209#v=onepage&q=solar%20power%20in%20the%20United%20States&f=false)

BrightSource Energy. (n.d.). BrightSource Energy. Retrieved February 18, 2013, from <http://www.brightsourceenergy.com/ivanpah-solar-project>

Species Profile. (2013). U.S. Fish & Wildlife Service. Retrieved February 18, 2013 from <http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=C04L>

Cart, Julie (2012). Saving desert tortoises is a costly hurdle for solar projects. *Los Angeles Times*. Retrieved February 18, 2013 from <http://articles.latimes.com/2012/mar/04/local/la-me-solar-tortoise-20120304>

FAQs (2012). BrightSource Energy. Retrieved February 18, 2013 from [http://www.brightsourceenergy.com/stuff/contentmgr/files/0/044130f70ec2977f6389387b679dd815/files/ivanpah\\_tortoise\\_care\\_\\_\\_june\\_2012\\_final.pdf](http://www.brightsourceenergy.com/stuff/contentmgr/files/0/044130f70ec2977f6389387b679dd815/files/ivanpah_tortoise_care___june_2012_final.pdf)