

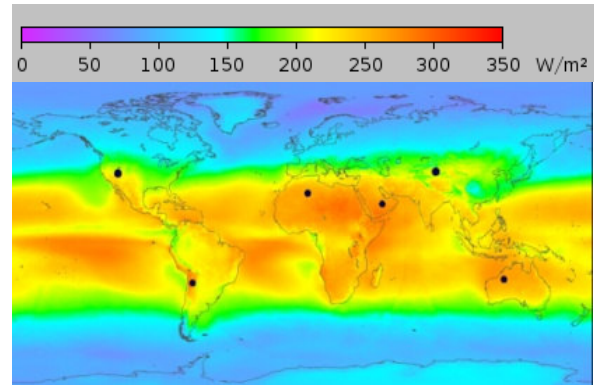
Executive Summary:

Potential of On-Grid Photovoltaic Solar Energy in Sunbelt Countries

This document outlines the key findings of a study entitled “Potential of On-Grid Photovoltaic Solar Energy in Sunbelt Countries” that was commissioned to management consultancy A.T. Kearney by EPIA (the European Photovoltaic Industry Association), ASIF (the Spanish Photovoltaic Industry Association) and ARE (the Alliance for Rural Electrification).

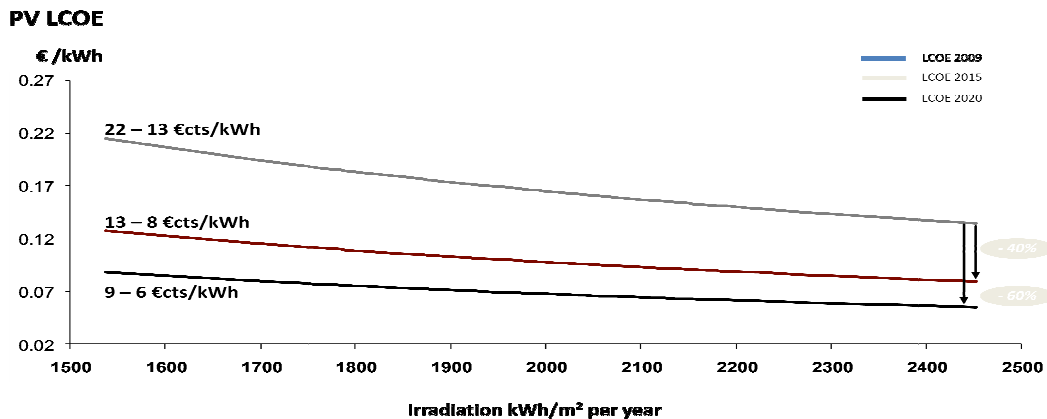
Background

Most sunbelt countries (located between 35° North and 35° South) have a strong irradiation and sharply increasing electricity demand (based on economic growth and population growth). However, on-grid PV installations are still very limited, with current focus on small off-grid systems. The objectives of this study are to assess PV potential for those countries and derive key implications for them and the PV industry.



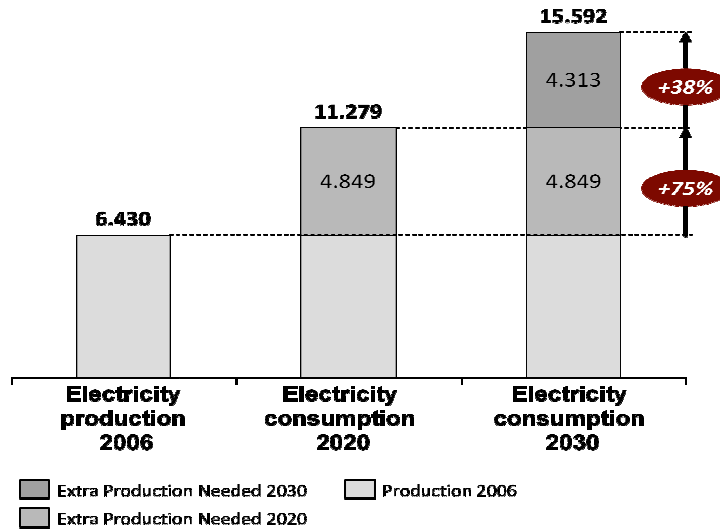
Key findings

- The study assumes that the system price level in Europe and the U.S. can be reached in sunbelt countries, too. Accordingly, the current levelized cost of energy (LCOE) for grid connected PV plants between 1 MWp and 10 MWp in sunbelt countries could be in the range of 13-22 ct/kWh.
- In this study the most sensitive LCOE parameters are solar irradiation and cost of capital. The study assumes that sunbelt countries can realize favourable public financing conditions through development banks and international funds. Revenues which can be generated through the Clean Development Mechanism (CO2 emissions) are not factored in.
- The forecasted industry learning curve would reduce Photovoltaic LCOE by 40% in 2015 and almost 60% in 2020 if the full growth potential of these countries was captured. As a result, the LCOE could fall to 8-13 ct/kWh by 2015 and 6-9 ct/kWh by 2020.



(1) Field system >1 MW_p; 85% performance ratio; 25 years system lifetime; O&M costs 1.5% of Capex; Debt financing with WACC: 8.4 %;
System Price 2009: 3000 €/kWp
Sources: National Renewable Energy Laboratory; Set for 2020; A.T. Kearney analysis

- Consequently, PV would become a real alternative for peak energy sources in most developing countries by 2015 and by 2020, PV would even be competitive with some medium to base load technologies in many countries.
- Given projected costs evolution and their huge electricity needs to be fulfilled until 2020 (+4800TWh), these countries could represent a huge potential of development for PV.
- The full potential of PV by 2020 in the assessed countries is between 270 and 580 GWp. This potential could continue to increase until 2030 with an additional growth of electricity consumption of 38% compared to 2020 (+ 4300TWh).



- China could be by far the biggest market of all sunbelt countries. The other significant markets could be India, Brazil, South Africa, Mexico and Marocco. Together they could represent more than 75 % of the market of all sunbelt countries.

Your opinion

How do you see the potential for grid connected PV in sunbelt countries?

What does the market potential in sunbelt countries mean for the PV industry in Europe and the other stakeholders involved?

We invite you to share with us your views, comments and suggestions on our forum: at <http://www.epia.org/pv-in-developing-countries.html> or through the EPIA website www.epia.org

About the organizations that commissioned the study

With over 200 members active along the whole value chain, the European Photovoltaic Industry Association (EPIA) is the world's largest industry association devoted to the solar photovoltaic (PV) electricity market. www.epia.org

The Spanish Photovoltaic Industry Association (ASIF) is an open, democratic and independent association of more than 450 companies working in the Photovoltaic (PV) Sector in Spain. www.asif.org

The Alliance for Rural Electrification (ARE) is the only international renewable energy industry association working with developing countries and proposing sustainable solutions to the problem of energy access worldwide. www.ruralelec.org