



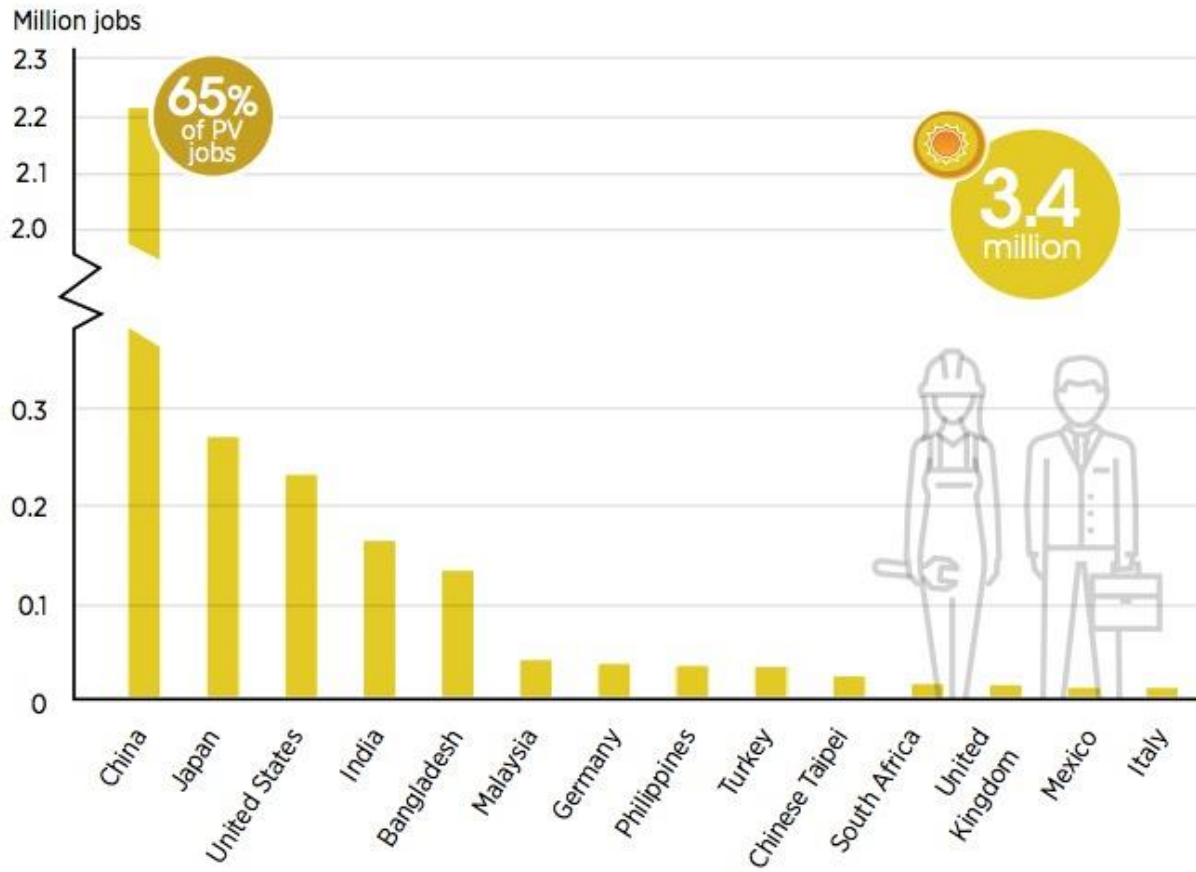
Job Creation Opportunities in the Solar Energy Industry in Ghana

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Job creation in Solar PV

- Globally, the solar PV industry had another banner year, with record installations of 94 gigawatts (GW) during 2017, up from 73 GW in 2016, and significant new job creation
- Global renewable energy employment reached 10.3 million jobs in 2017, an increase of 5.3% compared with the number reported in the previous year.
- The PV industry was the largest employer (almost 3.4 million jobs, up 9% from 2016). Expansion took place in China and India, while the United States, Japan and the European Union lost jobs.
- An increasing number of countries derive socio-economic benefits from renewable energy, but employment remains highly concentrated in a handful of countries, with China, Brazil, the United States, India, Germany and Japan in the lead.





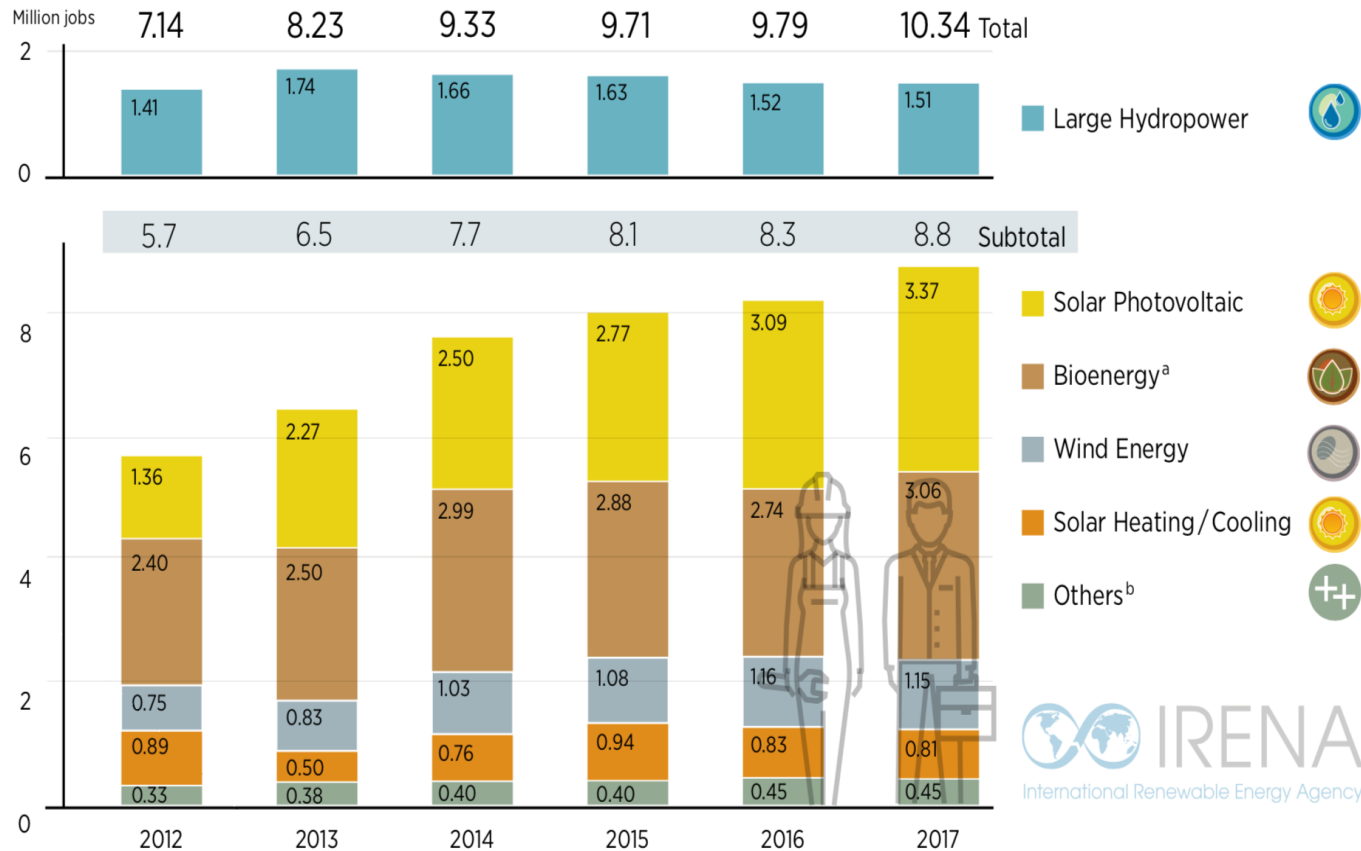
Source: IRENA jobs database.

Note: The threshold for inclusion in the figure is 10 000 jobs.



Experience Life
Living green with
Renewables

Global RE Employment by Technology - 2017



Source: IRENA

Factors for Solar PV Job trends

- Falling costs of solar panels and related components
- Geographic shifts in the production and installation of renewable energy equipment.
- Corporate strategies and industry realignments are important factors in this context, as portions of the supply chain become more globalized and geographically differentiated.
- The degree of Gov't commitment to transforming the energy sector, is also a key factor.
 - Including mandates, regulations and market design in support of deployment
 - Industrial policies to create and strengthen domestic value creation



Challenges in PV job growth in Ghana

Two major segments of the solar PV value chain are manufacturing and installation segments for utility scale as well as roof top and mini-grids.

- Manufacturing of solar cells and modules
 - Job opportunities exist for cell design and process engineers. University graduates with disciplines in Electrical and Chemical engineering as well as material science will be needed
 - Lack of investment in solar PV technology
- Installation of utility scale and Rooftop solar PV systems
 - Major job growth segment in the PV value chain for Ghana
 - Need a major push to work to train and certify local electricians and transition them to Solar PV installation, repair and maintenance
 - Local Solar PV firms to work with academic institutions on PV curriculum and provide attachment/internship opportunities for students

Summary - Areas of opportunity

- The role of renewables in the global energy system keeps expanding. This process is key to stabilizing the global climate, avoiding environmental degradation, and improving human health.
- IRENA's analysis suggests that jobs in the sector could rise from 10.3 million in 2017 to 23.6 million in 2030 and 28.8 million in 2050
- A better understanding of employment along the value chain will help decision makers formulate appropriate policies to support the expansion of the Solar PV and renewable energy sector as a whole.
 - Continue to create solar PV awareness to expand the market and increase adoption
 - Local financing institutions need to provide low interest financing
 - Implementation of net-metering will improve solar PV demand
 - Education and training of new workers as well as efforts to retain skilled and experienced workers
 - Create a center of excellence for Solar PV technology research and development

Thank You

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