



U.S. Solar Industry Added \$84 Billion to U.S. GDP in 2016

The *National Solar Jobs Census 2016* is The Solar Foundation's seventh annual report on the U.S. solar industry's labor impact. The *Census* includes a detailed analysis of solar employment at the national level, including a breakdown of solar jobs by industry sector and information on workforce demographics, available at SolarJobsCensus.org. The *Census* also includes solar jobs data by state, county, metro area, and congressional district, available on an interactive map at SolarStates.org. Based on the employment data in the 2016 *Census*, The Solar Foundation analyzed the economic impact of the solar industry at the national level and in five states. The results of this analysis are contained herein.

The solar industry is experiencing rapid growth. Solar employment grew 20 percent annually from 2012 to 2015 and another 25 percent in 2016. By November 2016, there were 260,000 solar workers delivering clean energy, clean air, and energy independence to our nation. Moreover, the solar industry and its workers stimulate the economy. The industry added \$84 billion to the nation's gross domestic product (GDP) in 2016. Furthermore, the analysis found that one solar-related job supports 2.03 jobs elsewhere in the U.S. economy, while every \$1 spent on solar generates an additional \$1.47 in spending economy-wide.

The solar industry generates direct, indirect, and induced jobs and related economic impacts. *Direct* impacts include the spending directly associated with the solar industry. The 260,000 jobs identified in the *National Solar Jobs Census* are primarily direct employment impacts. Based on these jobs, the solar industry supported \$62.5 billion in sales in 2016.

With the addition of indirect and induced employment, the solar industry supported almost 789,000 jobs - paying more than \$50 billion in salaries, wages, and benefits. *Indirect* impacts capture the economic value of activities of the vendors supporting solar industry activities. For example, the manufacturers of photovoltaic cells purchase raw materials, assembly equipment, and business services such as trucking and accounting. The *induced* impacts consider the economic effects of spending by the workers and employees of all the directly and indirectly impacted firms (e.g., money spent on goods and services such as groceries and travel).

The Solar Foundation worked with George Mason University's Center for Regional Analysis (CRA) to quantify these broader economic impacts as shown on the following page.

Economic Impacts of the U.S. Solar Industry, 2016¹

Description	Impact
Value Added (gross domestic product)	\$83,119,607,000
Labor Income (salaries, wages, benefits)	\$50,301,520,000
Jobs (headcount)	788,605
Federal Taxes/Fees ²	\$11,550,863,000
State and Local Taxes/Fees ³	\$6,547,084,000

Sources: George Mason University Center for Regional Analysis, The Solar Foundation's 2016 & 2015 *National Solar Jobs Census*, IMPLAN

This analysis utilizes the IMPLAN economic input-output model developed by MIG, Incorporated. The IMPLAN model is widely used in academic and professional research. State results for California, Florida, New York, Ohio, and Texas follow below:

California

With 100,050 solar workers, the solar industry in California produced \$24.7 billion in direct sales in 2016. When direct, indirect, and induced jobs are included, the solar industry's impact in California of 236,000 jobs. These jobs paid more than \$16 billion in salaries, wages, and benefits and added \$26.6 billion to GDP for California in 2016. One solar-related job supports 1.36 jobs elsewhere in the California economy, while every \$1 spent on solar generates an additional \$0.94 in spending throughout the state.

Florida

With 8,260 solar workers, the solar industry in Florida produced \$1.69 billion in direct sales in 2016. When direct, indirect, and induced jobs are included, the solar industry's impact in Florida exceeded 19,000 jobs. These jobs paid more than \$1.03 billion in salaries, wages, and benefits and added \$1.7 billion to GDP for Florida in 2016. One solar-related job supports 1.34 jobs elsewhere in the Florida economy, while every \$1 spent on solar generates an additional \$0.90 in spending throughout the state.

¹ Another measure, total output, shows that the solar industry had a \$154 billion impact. This measure includes both intermediate and final sales of goods and services. In contrast, GDP measures the final value of goods and services sold so excludes intermediate sales.

² Excludes offsets from incentives such as federal solar investment tax credit.

³ Excludes offsets from incentives.

New York

With 8,135 solar workers, the solar industry in New York produced \$1.77 billion in direct sales in 2016. When direct, indirect, and induced jobs are included, the solar industry's impact in New York nearly 16,000 jobs. These jobs paid more than \$1.1 billion in salaries, wages, and benefits and added \$1.8 billion to GDP for New York in 2016. One solar-related job supports 0.96 jobs elsewhere in the New York State economy, while every \$1 spent on solar generates an additional \$0.70 in spending throughout the state.

Ohio

With 5,831 solar workers, the solar industry in Ohio produced \$1.3 billion in direct sales in 2016. When direct, indirect, and induced jobs are included, the solar industry's impact in Ohio exceeded 13,000 jobs. These jobs paid more than \$810 million in salaries, wages, and benefits and added \$1.2 billion to GDP for Ohio in 2016. One solar-related job supports 1.31 jobs elsewhere in the Ohio economy, while every \$1 spent on solar generates an additional \$0.87 in spending throughout the state.

Texas

With 9,396 solar workers, the solar industry in Texas produced \$2.5 billion in direct sales in 2016. When direct, indirect, and induced jobs are included, the solar industry's impact in Texas was about 22,600 jobs. These jobs paid nearly \$1.6 billion in salaries, wages, and benefits and added \$2.5 billion to GDP for Texas in 2016. One solar-related job supports 1.40 jobs elsewhere in the Texas economy, while every \$1 spent on solar generates an additional \$0.87 in spending throughout the state.

About The Solar Foundation

The Solar Foundation® is an independent 501(c)(3) nonprofit organization whose mission is to accelerate adoption of the world's most abundant energy source. Through its leadership, research, and capacity building, The Solar Foundation creates transformative solutions to achieve a prosperous future in which solar technology is integrated into all aspects of our lives. The Solar Foundation is considered the premier research organization on the solar labor workforce, employer trends, and the economic impacts of solar. It has provided expert advice to leading organizations such as the National Academies, the Inter-American Development Bank, the U.S. Department of Energy, and others during a time of dynamic industry growth and policy and economic uncertainty. Visit us at TheSolarFoundation.org.

When referring to this analysis, please cite: "*Solar Jobs Census – 2016 Economic Impact Analysis*, The Solar Foundation." For questions, please contact Ed Gilliland, Senior Director of Programs at The Solar Foundation, at 202-866-0918 / egilliland@solarfound.org.