

## The **American** Solar ITC Amendment

*Securing American Jobs and Manufacturing in the Fastest Growing Energy Economy*



The U.S. solar industry is booming, especially in the area of installation. However, newly implemented tariffs on solar panels threatens the solar industry and its workers. The proposed “American Solar Tax Investment Credit” is designed to prevent the loss of 23,000 American jobs in the solar industry and to provide more direct support for American made solar cells and modules. A combination of global market pressures, energy policy uncertainty, and newly implemented tariffs on foreign solar panels--without special incentives for the purchase and installation of American manufactured solar products--has unsettled the American solar markets.

In January 2017, President Trump signed a proclamation increasing tariffs on foreign made solar cells and modules (Proclamation No. 9693 3451). Starting February 8, 2018 the tariff of 30% was initiated for foreign made solar cells and modules, primarily affecting units imported from China (or by Chinese based business who moved production to other Asian countries) and Mexico. In order to ensure that the tariff has the intended effect of boosting solar industry growth in the U.S., we propose an extension of the Solar ITC is needed in order to combat negative effects and to promote U.S. solar industry growth.

### **Impacts of Tariffs**

The solar industry is the fastest growing economic driver for the energy workforce within the United States. The U.S. solar industry now employs over 250,000 workers. This is twice as many as the coal industry, three times that of wind energy, almost five times the employment in nuclear energy, and almost as many as the natural gas industry. Over the past 5 years, the solar industry has grown at a rate 9 times faster than the 1.76% average annual growth of the U.S. economy (National Solar Jobs Census 2017).

In 2005, the Energy Policy Act established the Solar Investment Tax Credit, or ITC, to assist consumers and utilities cover a percentage of solar panel installation costs. The credit was set to expire in 2007, but the Solar ITC has been extended through 2022 for consumers (a permanent 10% credit for commercial installations persists after 2022) (Congress Extends).

Since the Solar ITC was enacted in 2006, the solar industry has experienced an annual growth rate of 72% with a 1,600% growth in number of installations (Executive Summary Q4 2017). The tax incentives for installation of solar energy projects has established itself as a clear catalyst to significant job creation. It has lead to economic prosperity for many blue-collar American workers in installation, sales & distribution, and project development (areas that make up 78% of the solar workforce, over 195,000 jobs) (National Solar Jobs Census 2017).

In 2017, the solar industry experienced a cool-down of consumer interest and purchase of new systems. Such sentiments came in anticipation of a scale-back of support for solar energy from the U.S. government and the much anticipated outcome of the Section 201 trade case with the

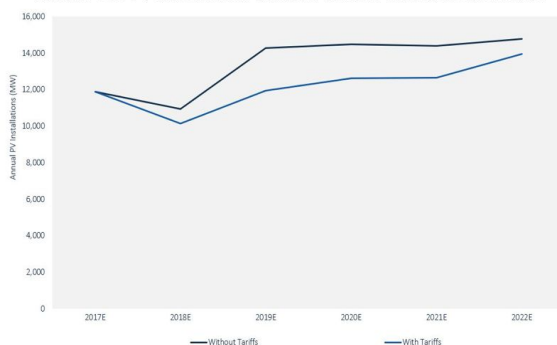
International Trade Commission brought by SolarWorld America and Suniva (solar manufactures/assembling companies). This contraction, based in speculation alone, had a negative effect on the American solar industry, which saw a net loss of about 9,800 jobs since 2016 (National Solar Jobs Census 2017).

Ultimately the Section 201 cases would lead to the implementation of tariffs on solar panels. The tariff implemented by the U.S. International Trade Commission on January 22, 2018, is set to run for 4 years from 2018 through 2022, with an annual 5% rate decrease. The first 2.5 gigawatts of imported cells each year are exempt from the tariff (Section 201 Cases, p. 4). Even though a substantial tariff has been placed on foreign solar products, the current price gap between foreign and American made solar cells is too great to spur U.S. manufacturers to increase production, and the four year length of the declared tariff is too short to affect long term benefit for U.S. manufacturers. According to the International Renewable Energy Agency, the average cost of a Chinese solar panel module is 0.43 cents per watt compared to 0.61 cents per watt in California (Brookings, 2018; IRENA 2018). In addition to these price gaps, the short duration of the tariff makes it difficult for these cell and panel manufacturing jobs to grow. The tariffs are expected lead to increased prices on panels subsequently leading to less installations. In order to support the existing installation jobs, there is a need for a higher demand of U.S. made panels.

As previously stated, the tariff on foreign solar panels is expected to have negative effects on solar panel costs and industry output in the U.S. It is estimated that the initial 30% tariff could add 10% to the cost of a large solar farm, enough to kill some projects (Roth). For homeowners (consumers), costs could translate to 3-4% increase in cost of panels, and approximately a 2% cost increase in the cost of installation (Aggarwal). Currently, according to GTM Research, the U.S.'s residential solar pricing is the highest in the world at \$2.65 per watt. This is compared to \$2.63 in Japan, \$1.82 in Australia, and \$1.57 in Germany. Creating this incentive for residential solar buyers will make it more affordable and increase manufacturing. According to GTM

Research, solar panel installations are expected to drop 10-15% through 2022 (Roth). GTM estimates this means a decrease of 7.6 gigawatts of U.S. solar installation from 2018 to 2022, with the utilities experiencing 65% of the total expected reduction, or a total of 4.94 gigawatts not going into production. The graph shows the projected number of solar panel installations through the year 2022. The top line represents projected installations without the tariff, while the bottom line shows projected

**Figure 1.** Table I  
Annual U.S. PV Installations With and Without Tariffs. 2017E-2022E



Source: Paper, Julia. "New Tariffs to Curb US Solar Installations by 11% Through 2022." *Greentechmedia.com*, Greentech Media, 23 Jan. 2018, [www.greentechmedia.com/articles/read/tariffs-to-curb-solar-installations-by-11-through-2022#gs.ndkSUwk](http://www.greentechmedia.com/articles/read/tariffs-to-curb-solar-installations-by-11-through-2022#gs.ndkSUwk). Accessed 1 Mar. 2018.

installations with the tariff (see Figure 1). With projected installations expected to be less with the tariff, the U.S. solar industry will inevitably experience the negative side-effects of the drop in solar panel installations.

### **American ITC Proposal**

The Solar Investment Tax Credit has a history of success since its inception in 2005. From the time the tax credit was created, there has been a 72% annual solar industry growth rate (Executive Summary Q4 2017). The average growth was 38% in the four years prior to the 2006 passage of the Solar ITC (GMU PV Case Study 2016). When the extension of the Solar ITC was passed in late 2015, the SEIA estimated that it would contribute to a near doubling in American solar industry jobs to 420,000 and lead to \$140 billion in economic activity by the end of 2020 (Solar Investment). The newly implemented tariff has led to decreased optimism in American industry growth and is projected to lead to job losses, instead of gains. Some of those losses have already become evident in a slight cool-down in the industry through 2017. This came as a result of the anticipated decision as to whether or not President Trump would implement solar tariffs. The U.S. solar industry is in need of an increased incentive, not only to invest into solar energy, but into U.S. manufactured solar panels.

The creation of an extended and narrowly tailored “American” solar tax credit, an AITC, to satisfy this need. The AITC system is designed to run in conjunction with the solar panel tariff and to thwart the projected negative effects of the tariff. The AITC will be structured as follows:

1. Beginning in 2019, the AITC will provide a 35% tax credit of installations of systems utilizing U.S. manufactured solar panels. This allows individuals and businesses to deduct 35% of the installation cost from their federal income taxes.
2. The AITC will lower to a 30% tax credit rate for 2020 through 2022.
3. The AITC will gradually decrease after 2022 over a three year period to a permanent rate of 10% for individuals and entities who buy U.S. manufactured solar panels. The decrease is as such: 20% in 2023, 15% in 2024, and a permanent 10% rate starting in 2025. Both residential and commercial buyers will be allowed to use the 10% tax credit rate of the AITC (2025).
4. The AITC will operate in the same way as the current ITC. Residential buyers will be able to deduct the corresponding rate for the appropriate tax filing year from their federal income taxes as 26 U.S. Code § 25D currently permits. Commercial buyers will receive tax credits in like manner to 26 U.S. Code § 48.
5. The AITC will only apply to solar panels manufactured within the United States.
6. Individuals looking to use the solar tax credits will only be able to choose from either the AITC or the ITC, they will not be able to use both. The following chart offers a breakdown of the two ITCs and the projected timeline of the tariff.

## Comparison Table

Year	2018	2019	2020	2021	2022	2023	2024	2025+
<b>AITC Rate (Proposed New)</b>	-	35%	30%	30%	30%	20%	15%	10%
Current ITC Rate	30%	30%	26%	22%	10% Commercial Only	10% Commercial Only	10% Commercial Only	10% Commercial Only
Tariff Rate*	30%	25%	20%	15%	-	-	-	-

\*First 2.5 gigawatt of imported cells are excluded from the additional tariff. Effective start date of tariff increase is February 7, 2018.

The AITC will offer increased incentive to use American made solar panels, and will support industry growth. The 5% increase from the current 30% for the 2019 year will allow an additional boost to the U.S. industry to counter the initial cooling effect of the tariff. In the following three years of the tariff timeline, from 2020-2022, the rate will remain at 30%, to promote investment into U.S. manufacturing, and to incentivize consumers to continue investment into solar energy. The current ITC should remain in place because large commercial projects rely heavily on cheaper foreign made panels and represent a majority of solar installations in the U.S.

As the tariff rate reduces over the next four years, consumers will in no doubt return to foreign made panels when such panels once again become the cheaper option. However, the extension of the 30% rate will increase demand for U.S. made solar panels and therefore allow the price gap between U.S. made and foreign made panels to be lessened. Beginning in 2023 the rate will be reduced 5% annually to an eventual 10% in 2025. This will give more time to U.S. manufacturers to capitalize upon increased production, as it often takes up to 2 years to build new manufacturing plant--that is after plans for the facility are finished (Brookings, 2018). It will also contribute to a steady growth in jobs as installation companies will continue to need sales personnel, and installation crews.

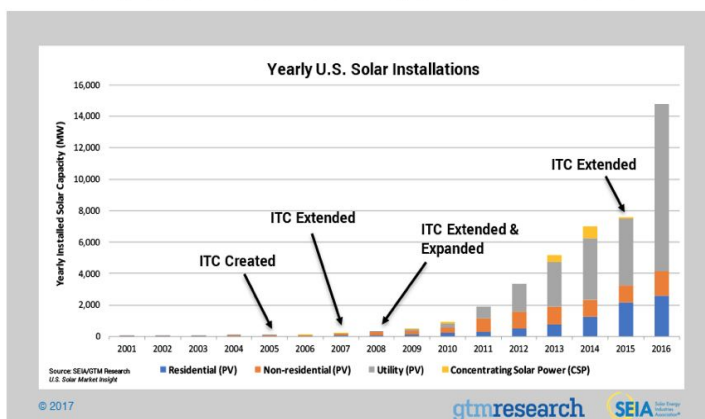
The permanent 10% rate under the AITC will apply to residential and commercial buyers alike, whereas the current ITC will eventually only apply to commercial buyers. By maintaining a permanent 10% tax credit rate and extending the permanent credit beyond commercial installations to residential buyers, there will be an increased incentive to continue to invest in solar energy, promoting U.S. industry growth and environmental protection. Residential solar panel installations do not account for the majority of solar panel installations (Solar Industry).

Therefore, extending the permanent 10% rate will not require large reapportionment of funds. Since the tax credit system for solar panels already exists the creation of a parallel credit applicable to only American made solar panels will be much easier. Money earned from the tariff could be appropriated to fund the AITC during the timeline of the tariff.

## Concerns

There are likely to be fiscal concerns with an increased tax credit, especially in light of the recent tax cuts through the Tax Cuts and Jobs Act of 2017, that will reduce the amount of tax revenue of the federal government. However, one of the main pushes for the passage of the 2017 tax cut legislation was that the tax cuts would help to create jobs for the U.S. Additionally, there has been a huge push to increase American manufacturing jobs.

Figure 2. Table II  
Yearly U.S. Solar Installations in Megawatts; ITC Data Included



Source: "Solar Industry Data." *SEIA.org*, Solar Energy Industry Association, [www.seia.org/solar-industry-data](http://www.seia.org/solar-industry-data). Accessed 28 Feb. 2018.

The graphical data showed here, (see Figure 2) provides data on the effect of the ITC. First to note is the steady growth of the solar industry. The second thing to note is the increase in solar installations after the two extensions of the ITC. Both in 2008 and in 2016, there was a significant increase in solar installations with respect to the previous year. The creation of the AITC will have this same effect if implemented. Increased industry output of course results in increased jobs and economic growth.

Additionally, there may be concerns about how this tax credit will affect other energy industries in the U.S., specifically the coal industry. However, the employment in the coal industry has been declining since 1950 due to competing energy sources and technological innovation. Innovation alone has increased output per worker hour in the U.S. five fold exacerbating the issue of reduction in jobs for coal miners. With solar jobs growing 168% since 2010 across all 50 states, the solar industry present a promising opportunity for a displaced workforce.

There may also be concern, that increased tax incentives for the U.S. solar industry combined with the tariffs may cause objections to be filed with the World Trade Organization (WTO). However, the WTO has upheld tax incentives as permissible means to supporting domestic industries. This tax incentive primarily benefits consumers of solar energy and not solar companies directly, nor does it favor one major competitor in the solar industry at the expense of

other foreign companies. The incentive also still exists for foreign modules under the current ITC, especially for commercial projects which require a larger quantities of panels. U.S. companies are also not nearly as competitive in the solar industry, in or outside the U.S., meaning that this will not put significantly cheaper panels on the market. The AITC simply allows for increased incentive to invest in solar energy and support U.S. solar industry job growth.

Added tax credits may cause worry in the face of projected increasing national deficits and debt. The American Solar ITC is expected to have a limited draw on tax revenue, and will be supplemented by the estimated \$2.3 billion tariff income on imports of solar products. This figure is calculated from the 2017 Solar Photovoltaic Cells/Module Shipments Report by the U.S. Energy Information Administration.

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