

# Facilitating trade in solar energy products

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Solar energy is booming at the moment. Generating capacity from solar panels has increased by 50 percent per year since 2005. More recently, a wide variety of solar lights, lighting sets and solar home systems have been developed that provide affordable, off-grid electricity access for millions of people.

The value of international trade in solar products is about USD 25 billion per year, but the codes used to classify trade (the Harmonized System or HS) have not kept pace with these recent developments.

To improve this situation, the International Renewable Energy Agency (IRENA) is proposing changes to the HS codes used for solar products and is seeking support for these changes from countries represented at the World Customs Organization (WCO). These changes are expected to facilitate trade and support the expansion of renewable energy, as well as provide more reliable trade data for monitoring purposes.

## Solar products and the Harmonized System

Over the last decade, the production and use of renewable energy has increased substantially and solar energy has been at the forefront of this energy revolution. The benefits of renewable energy are now recognised in the 140 countries that have national renewable energy targets and, at the international level, in the Sustainable Development Goal (SDG) for energy. However, with the rapid increase in the use of solar energy, especially in off-grid applications, it is becoming increasingly difficult to measure progress towards meeting these targets.

The **Harmonized Commodity Description and Coding System (HS)** is an internationally standardised system of 6-digit codes and product descriptions used to classify traded products. It is used as a basis for setting tariffs and other trade-related measures and as a framework for the collection of international trade statistics. At present, most solar technologies are included as part of broader product groups within the HS and the descriptions do not reflect the variety of different solar products that are now available.

Solar cells account for most international trade in solar products, with total imports of at least USD 25 billion in 2015. Solar cells may be traded as panels or modules or as cells that will be assembled into panels in

countries. Because very few countries manufacture solar cells, most countries import the cells or panels that they need. This trade is currently recorded as imports of photosensitive semiconductor devices (HS Code 854140), which also includes trade in light-emitting diodes (LEDs) and other photovoltaic devices.

Imports of solar water heaters amounted to at least USD 163 million in 2015. This trade is recorded as part of a broader group of water heating products (HS Code 841919), where it accounts for at least 10 percent of all trade in the group and possibly much more.

Solar lights, lighting sets and solar home systems cover a range of solar-powered products that provide basic energy services. These products are becoming increasingly popular in countries where few people have access to on-grid electricity.

Imports of these products are not easily measured, because they can be imported under many different codes. However, the information that is available suggests that imports were at least USD 50 million in 2015. These figures are confirmed by market research from the Global Off-Grid Lighting Association, which shows that annual sales have increased from almost nothing five years ago to about 7 million units in 2015.

## Proposed changes to the Harmonized System

To clarify trade in solar products, IRENA has proposed three main changes to the structure of HS codes.

The first is to separate solar cells and solar water heaters from the broader product groups where they are currently placed. This should be relatively easy, as many countries already identify these products at a more detailed level of their national trade codes.

The second is to create two specific codes for solar lights and lighting sets, to reduce uncertainty about how these products should be classified.

The third is to create three codes for photovoltaic generators, to separate trade in these products from trade in other generators and create a place in the classification for solar home systems.

Changes to the product descriptions in the HS Explanatory Notes have also been proposed to describe more clearly the differences between solar

panels and generators and the different types of solar lights, lighting sets and solar home systems.

## The benefits of clearer product codes

Changes to the HS codes are expected to lead to two major benefits.

The first is to facilitate trade by clarifying the codes that should be used when shipping products. This is particularly important for the more complex products, such as solar lights, lighting sets and home solar systems.







For example, IRENA surveyed 90 solar lighting manufacturers in 2016 to identify the codes used for recording trade and calculating tariffs on these products. Manufacturers indicated that 11 different codes may be used by customs authorities in different countries importing these products, leading to great variations in the tariffs applied and complicated paperwork for companies that export to many different countries (see figure below).

Greater clarity in the codes for these products should not only reduce the transaction costs of trade, but also help the many countries that want to promote solar energy by lowering tariffs on these products.

The second benefit will come from improved trade statistics. Many countries find it difficult to measure off-grid electricity production and are under-estimating solar energy production and electricity access.

As most of these countries import all of their solar energy products, improved trade statistics will help them to monitor their progress towards meeting renewable energy targets and the SDG for energy. IRENA statistics training courses are also supporting this by providing advice about how to estimate solar generating capacity from solar panel import data.

### Solar lights, lighting sets and home solar systems in the HS

<p><b>850239:</b> Generating sets</p>	<p><b>850131:</b> DC generators</p>	<p><b>940540:</b> Electric lights n.e.s.</p>
<p><b>850440:</b> Static converters</p>		
<p><b>854140:</b> Solar panels</p>		<p><b>85 = Electrical machinery</b> <b>94 = Furniture</b> <b>940550:</b> Non-electric lights</p>
<p><b>851310:</b> Electric torches</p>		
<p><b>850680:</b> Batteries</p>		<p><b>940510:</b> Electric ceiling and wall lights</p>
<p><b>850760:</b> Lithium-ion accumulators</p>	<p><b>854370:</b> Electrical machines n.e.s.</p>	

## Next steps

The HS is revised every 5 years and the WCO has just started the next review cycle. This proposal will be presented at the next HS review meeting on 1 June 2017 and it is expected that there will be consultation with countries about this proposal over the next 1-2 years.

If countries would support the changes outlined here, they could provide valuable assistance by contacting their delegates to the WCO and asking them to support this proposal when it is discussed. IRENA is also happy to answer any questions about the proposal and provide a copy of the full proposal to any interested countries (contact: [statistics@irena.org](mailto:statistics@irena.org))