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Top Solar Power States vs Top Solar Power Countries (CleanTechnica Exclusive)

January 29th, 2013 by **Zachary Shahan**

I think you all are going to love this one. But before getting into the numbers and charts, here's one quick caveat on the ranking below: my solar power installation data for the countries was for the end of 2011, whereas my solar power installation data for the states (courtesy of **GTM Research**, via **Scott Burger**) was for the end of Q3 2012. So, basically, the states had a 9-month advantage (which can be rather significant when it comes to solar — the fastest growing energy industry).

With that out of the way, let's take a look out how the **top solar power countries in the world (per capita)** compare to the **top solar power states (per capita)**:

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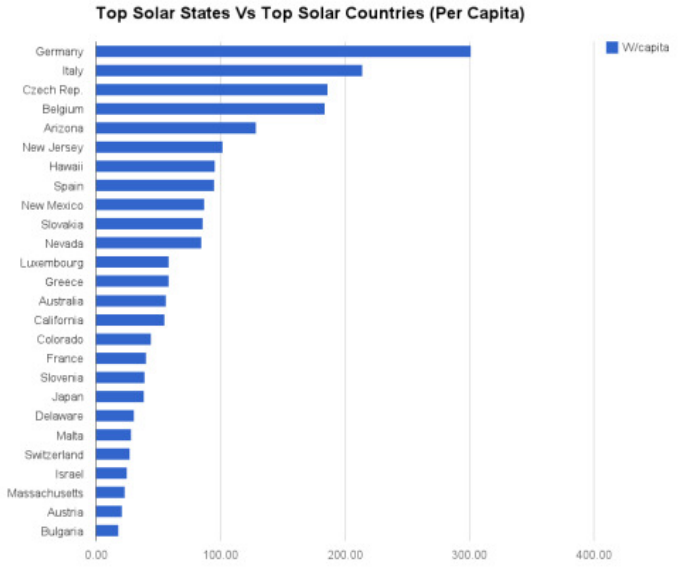
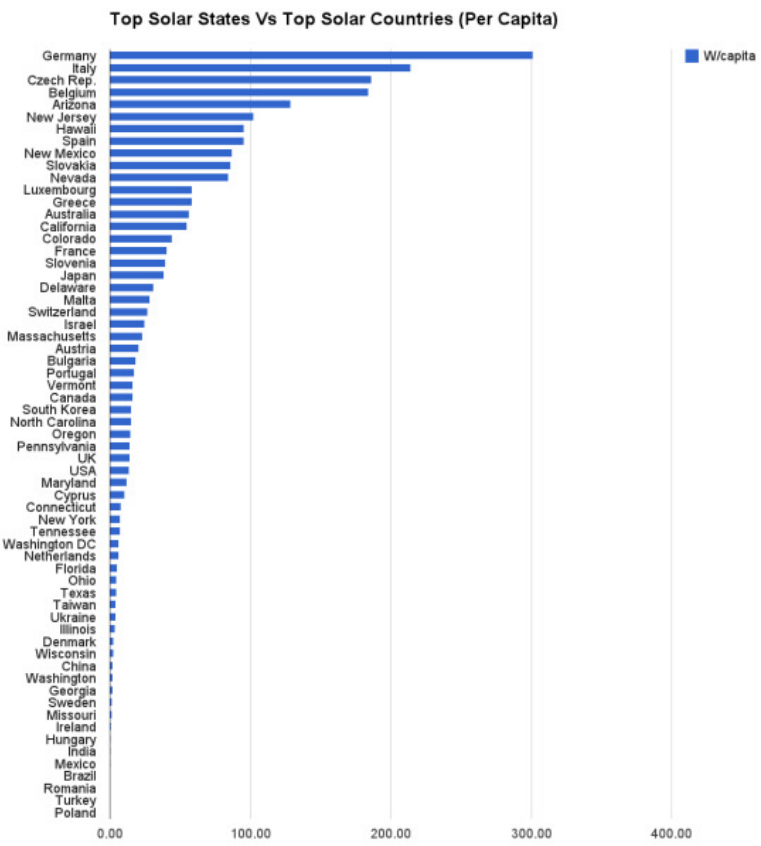


Click here to see a larger version. (Credit: Zachary Shahan / CleanTechnica)

Below's a longer list. But it's a bit more difficult to read in this post, so **click here view the image in full size**:



Solar Energy

Click there to enlarge. (Credit: Zachary Shahan / CleanTechnica)

Here are the actual numbers:

State	W/capita	Total MW
Germany	301.47	24678
Italy	214.48	12754
Czech Rep.	186.50	1959
Belgium	184.27	2018
Arizona	128.67	834.1
New Jersey	102.23	901.8
Hawaii	95.61	131.4
Spain	95.27	4400
New Mexico	87.03	181.2
Slovakia	85.95	468
Nevada	84.68	230.6
Luxembourg	58.62	30
Greece	58.49	631
Australia	56.62	1298
California	55.02	2,073.7
Colorado	44.21	226.2
France	40.69	2659
Slovenia	39.37	81
Japan	38.51	4914
Delaware	30.93	28.1
Malta	28.73	12
Switzerland	27.16	216
Israel	24.87	196
Massachusetts	23.36	153.9
Austria	20.82	176
Bulgaria	18.33	135
Portugal	17.42	184
Vermont	16.40	10.3

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Wind Energy

About Wind Energy

Top Wind Power Countries Per Capita

Top Wind Power Countries Per GDP

Wind Power Is #1 Source of New Power in US

Wind Generation Is #1 in Spain

Wind = Over 30% of Electricity in Denmark

Wind Energy Facts

Clean Energy

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100% Renewable Energy Possible?

How Much Renewable Energy Will Be Installed In 2030? 2040? 2050?

Renewable Energy Big Pic

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Canada	16.17	563
South Korea	15.52	754
North Carolina	15.45	149.2
Oregon	14.91	57.7
Pennsylvania	14.12	179.9
UK	14.05	875
USA	13.97	4383
Maryland	12.37	72.1
Cyprus	10.73	9
Connecticut	7.98	28.6
New York	7.42	144.5
Tennessee	7.29	46.7
Washington DC	6.56	4.1
Netherlands	6.15	103
Florida	5.25	100.1
Ohio	4.87	56.2
Texas	4.72	121.2
Taiwan	4.39	102
Ukraine	4.16	190
Illinois	3.44	44.2
Denmark	2.86	16
Wisconsin	2.42	13.8
China	2.30	3093
Washington	2.16	14.9
Georgia	2.05	20.1
Sweden	1.58	15
Missouri	1.21	7.3
Ireland	0.65	3
Hungary	0.40	4
India	0.38	461
Mexico	0.36	40
Brazil	0.17	32
Romania	0.16	3
Turkey	0.08	6
Poland	0.08	3

There are many factors that go into making a state or country a solar power leader — policy, solar insolation, electricity rates, etc. — but I think the list above shows that the strongest factor today is policy. With strong feed-in tariff policies, **Germany**, **Italy**, the **Czech Republic**, and **Belgium** have a strong lead (even with a 9-month disadvantage compared to the American states). An **EU-wide cap and trade system** that puts a price on fossil fuel pollution is also a help.

In the US, **Arizona** and **New Jersey** have had strong net metering policies as well as **Renewable Portfolio Standards (RPS)** that have encouraged solar adoption. New Jersey's RPS includes a specific requirement for solar, which it has aimed to achieve through the use of **Solar Renewable Energy Certificates (SRECs)**. **Arizona dropped its solar requirement in its RPS** years ago, but it has a distributed generation requirement, which has led it to encourage **home solar power** through **net metering (mentioned above), tax credits, and rebates**. Meanwhile, **Hawaii**, with very high electricity prices (the highest in the US) and good solar insolation, has become the first state in the US to hit solar grid parity. **Hawaii has also**

implemented solar tax credits, a feed-in tariff, and net metering. However, as SEIA notes, "interconnection continues to be an issue as Hawaiian utilities have imposed restrictions to avoid solar generators exceeding 15% of load on their systems." So, you can see that, even in leading solar power states, there are big hurdles to overcome.

Of course, there are other ways to calculate relative leadership in solar power. Instead of comparing solar power capacity to population, we could compare it to GDP, electricity production, or other factors. If you want to help me create more solar power rankings, drop a comment below!

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About the Author

Zachary Shahan is the director of CleanTechnica, the most popular cleantech-focused website in the world, and Planetsave, a world-leading green and science news site. He has been covering green news of various sorts since 2008, and he has been especially focused on solar energy, electric vehicles, and wind energy since 2009. Aside from his work on CleanTechnica and Planetsave, he's the founder and director of Solar Love, EV Obsession, and Bikocity. To connect with Zach on some of your favorite social networks, go to ZacharyShahan.com and click on the relevant buttons.

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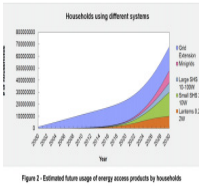

Off-Grid, Clean Energy Access Market Valued At $12 Billion ⟶

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Shiggity • a year ago
Awesome data Zachary. I hate to ask for more, but could you also break down these numbers into residential / commercial / utility?
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jimmy ➚ Shiggity • a year ago
What about the data of off grid stand alone to on grid?
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Shiggity ➚ jimmy • a year ago
Unless you're connecting to the grid, you don't have to report that number to any official body. Off grid solar is much harder to quantify, but still relatively low because batteries are still pretty expensive.

India, Africa, Malaysia, Indonesia, and the Philippines are markets to watch for off-grid development. These areas have high populations but very little grid access for many people.
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Zachary Shahan Top Commenter ➚ Shiggity • a year ago
yeah, quite frankly, i don't think we'll ever have good off-grid numbers for such analysis. but i'm sure the market will expand significantly as batteries get cheaper and entrepreneurs find new ways to break into developing markets. currently, solar beats other options in most of the places, but financing and social barriers are keeping it from booming.
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Warren ➚ jimmy • a year ago
Jimmy, really good question, most of the data here is based on main grid connections solar power; I too would like to see what percentage of the world has converted to off grid solar power systems, I was made aware today that electric power company traded on the market on 29/1/2013 over $585.63 AUD MW & $879.87AUD MW in Queensland Australia compare to US $10-25 MW USD, if that price continue, the population without solar power would have to go to an off grid system, they couldn't afford electricity at that price. The was a report that 800,000 homes in Germany & Australia couldn't afford electricity.

Just what would happen to the USA economy if they traded at those prices like that in Australia.
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