

How Energy Productive is the US?

By ROMAN KILISEK on February 19, 2015 at 12:00 PM



Steel plant. Photo credit: [Shutterstock](#)

A new global index commissioned by [Philips](#) ranks countries by their energy productivity performance and finds the US in 38th position trailing the likes of Japan (24th) and Germany (17th). The “[2015 Energy Productivity and Economic Prosperity Index](#) – How Efficiency Will Drive Growth, Create Jobs and Spread Wellbeing Throughout Society” report – authored by [Ecofys](#), the Lisbon Council, and Quintel Intelligence – sheds light on the tremendous potential of improved energy productivity for “raising economic performance and extending significant environmental and social benefits” to societies.

Table 1: The Energy Productivity Index (Top 50)
in billions of euros of GDP per exojoule of energy consumed

Rank	Country	Productivity	Rank	Country	Productivity
1	Hong Kong SAR, China	456	27	France	186
2	Colombia	330	28	Saudi Arabia	181
3	Singapore	329	29	Pakistan	174
4	Switzerland	310	30	Malaysia	172
5	Peru	287		<i>OECD members</i>	171
6	Philippines	256	31	Poland	165
7	Italy	246	32	Thailand	163
8	Portugal	242	33	Belgium	162
9	Spain	236	34	India	159
10	Turkey	234	35	Sweden	158
11	United Kingdom	231	36	Australia	150
12	Bangladesh	228	37	United Arab Emirates	148
13	Algeria	225	38	United States	143
14	Egypt, Arab Rep.	224		<i>World</i>	143
15	Norway	224	39	Nigeria	138
16	Greece	220	40	Venezuela, RB	137
17	Germany	220	41	Vietnam	135
18	Austria	217	42	Korea, Rep.	134
19	Netherlands	215	43	Czech Republic	131
20	Brazil	210	44	Canada	118
21	Iraq	207	45	Iran, Islamic Rep.	117
	<i>European Union</i>	206	46	China	98
22	Mexico	201	47	Russian Federation	92
23	Chile	201	48	South Africa	85
24	Japan	196	49	Kazakhstan	85
25	Indonesia	195	50	Ukraine	60
26	Romania	192			

The 50 countries chosen are the world's 50 largest based on purchasing power parity adjusted GDP. The euros are taken at their 2012 rate, purchasing power parity adjusted.

Source: [Philips](#)

According to the [report](#), a staggering 98 per cent of energy is wasted and only “a modest rise in energy productivity will boost the economy, create jobs and contribute to saving the environment.” Various [country-specific energy productivity scenarios](#) show, for example, that “overall energy consumption in the EU could [simply] be cut by 35% by doubling the region’s rate of energy productivity improvement from currently roughly 1.6% to 4% per year by 2030.”

However, the [report](#) also warns that the current rate of energy productivity improvement is not fast enough to keep up with the projected demographic trends and long-term economic growth patterns, which inevitably will lead to rising energy demand and further resource extraction as well as depletion. In

this respect, the problem is not a lack of critical technology, rather “vastly more efficient machinery and energy sources” at mankind’s fingertips are deployed too slowly for a myriad of reasons.

Here are some other interesting findings from the [study](#):

1. A doubling of energy productivity could reduce the global fossil fuel bill by more than €2 trillion – at the same time potentially creating more than six million jobs globally by 2020.
2. 98 per cent of all energy used during production/manufacturing is not being converted into ‘useful’ services and products but is instead wasted.
3. Since size matters with respect to energy consumption, improving further on the already existing levels of energy efficiency in the world’s largest economies will yield significant reductions in energy consumption on a global scale. Interestingly, the [report](#) says that the “world’s largest economies were able to produce on average 18% more GDP in the last 10 years thanks to the energy savings they have already made” while during the same period in the EU, “improving energy efficiency helped facilitate an additional 17% of economic growth at the same level of energy consumption.”
4. Developing countries in particular have “an inbuilt advantage” because they can benefit from developed countries’ historical experiences, in addition to the availability of new technology that can allow developing nations to “leapfrog’ the developed world and move speedily towards cost-saving energy-productivity levels.”

The Energy Productivity Challenge

The 2015 Energy Productivity and Economic Prosperity Index reveals how energy productivity will boost the economy, create jobs and contribute to saving the environment

Making better use of global energy



98%

of all energy produced globally is wasted through inefficiency



The same as when you boil an egg - only 2% of the energy used goes into cooking it

by **2030**

Europe could double its energy productivity by better use of existing energy-efficient technology



... and cut its energy consumption by **35%**

LED Lighting

can help households improve their energy productivity by

500%



If Europe's energy productivity doubles...

1.2

million jobs created



by 2020



Household energy bills cut by a third by 2030

The world's six largest economies



can achieve the highest energy productivity gains as they account for

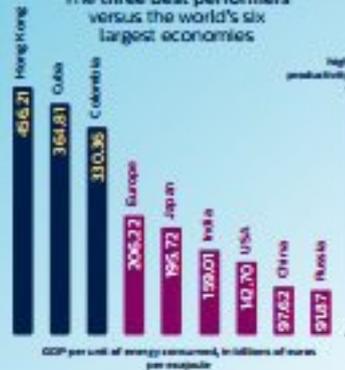
60%
of global GDP

&

65%
of global energy demand

Global Energy Productivity

The three best performers versus the world's six largest economies



Source: The 2015 Energy Productivity and Economic Prosperity Index
The research, commissioned by Royal Philips, ranks countries by their energy productivity – the amount of GDP they produce for every unit of energy they consume. This differs from energy efficiency, which means using less energy to deliver the same service.

Source: [Philips](#)

Remember, energy productivity – i.e. amount of GDP produced for every unit of energy consumed – must be distinguished from energy efficiency, which is simply using less energy to perform the same functions.

Read the [entire report](#) for sub-indicators and country-focused scenarios.