

Do We Need Subsidies for Solar and Wind Power?

(The Wall Street Journal – 8 October 2012)

At a time of intense debate over the federal budget, government subsidies for wind and solar power are more contentious than ever. The question of whether those subsidies are justified has taken on fresh urgency with the looming expiration of a major wind subsidy.

The federal tax credit for wind-power producers will expire at the end of this year unless Congress extends it. There is widespread agreement that pulling the plug on the subsidy at this point could hobble the wind-power industry. Meanwhile, the biggest federal subsidy for solar power, a tax credit for 30% of the cost of installed equipment, is set to drop to 10% at the end of 2016. A cash grant for up to 30% of solar equipment costs expired at the end of last year.

Proponents say wind and solar subsidies are needed for a few more years to allow these clean, renewable sources of energy to develop to the point where they can compete on price with electricity produced from coal and natural gas. But opponents of the subsidies say that they simply cost too much, and that the supposed benefits of wind and solar power are overstated.

Mark Muro, a senior fellow and the policy director at the Metropolitan Policy Program at the Brookings Institution, argues in favor of the subsidies. David Kreutzer, a research fellow in energy economics and climate change at the Heritage Foundation, presents the case against them.

Yes: They Are Doing Their Job

By Mark Muro

Federal subsidies for wind and solar power production are working. In fact, they're working so well that they don't need to continue much longer. But we do need to extend them for a few more years so that they can fulfill their purpose.

Let's remember the point of these temporary subsidies: to help emerging clean-energy technologies gain footholds in challenging markets and advance toward unsubsidized price-competitiveness.

The ultimate reward is cheaper, cleaner energy and greater energy diversity, which will help guard against price shocks, keep energy costs down through competition and lessen the damage our energy consumption does to the environment, among other things. The benefits are well worth the cost of temporarily extending these subsidies, which are a trivial portion of the federal budget.

Getting Close

Wind and solar need the help because the barriers for new technologies in the energy industry are tougher than those in any other industry in this country. Fossil fuels, with the help of their own government subsidies over the years, are thoroughly entrenched, with trillions of dollars' worth of infrastructure in place. At the same time, utilities tend to favor established business models and are required by regulators to provide the lowest-cost power, all of which steers them toward fossil fuels.

Against this background, providing temporary support for wind and solar technologies so they can gain the level of scale and efficiency necessary to compete is one of the few ways the nation can reasonably hope to promote energy diversity.

Is it working? The evidence is overwhelming that it is: Supported by subsidies but also by rapid technical advances, onshore wind and solar photovoltaic installations are way up, and the price of delivered renewable energy is way down.

Onshore wind power is on track to reach grid parity—the point where its cost equals the base-line price of power on the grid—starting in 2016, according to estimates from Bloomberg New Energy Finance, a research arm of Bloomberg LP. Solar photovoltaic energy will be largely cost-competitive at the residential level in California without the current subsidy by 2017 and in many other states shortly thereafter, according to Shayle Kann, a vice president at the GTM Research unit of Greentech Media Inc.

In sum, onshore wind is likely just a few years away from true subsidy independence, while several forms of solar aren't far beyond.

So Congress should finish the job it started by extending the present subsidies. But it shouldn't just extend them for a year or two and then stage yet another politicized, all-or-nothing confrontation when the next expiration dates near.

A New Kind of Extension

Instead, Congress should provide a predictable, continual prod toward innovation and cost reduction by extending the subsidies further than it usually does but at the same time establishing a cutoff date. For example, the subsidy for wind power could be renewed and then phased out over four years or so. Key members of Congress already are discussing this "extend but discipline" approach.

Meanwhile, to help wind and solar meet new subsidy-independence deadlines, more attention should be given to expanding the opportunities for private investment. Currently, solar and wind infrastructure can't be financed using master limited partnerships or real-estate investment trusts, two powerful tools. State governments also could pitch in by ratcheting up the requirements for utilities to generate a certain amount of their power from renewable sources. They could also dedicate some of the significant funds they manage through state energy offices to financing renewables, and establish clean-energy-finance banks.

It all starts, though, with a new approach to subsidies. When key wind and solar supports come up for renewal, Congress should extend them so it can then end them.

Mr. Muro is a senior fellow and the policy director at the Metropolitan Policy Program at the Brookings Institution, which is based in Washington, D.C. He can be reached at reports@wsj.com.

No: The Benefits Are a Myth

By David Kreutzer

The problem with subsidizing wind and solar power is that subsidies don't make these unaffordable energy sources affordable, they just change who pays. Taxpayers foot a large part of the bill, instead of the producers and consumers of wind and solar power. And the costs that imposes on the economy aren't justified by any of the supposed benefits of these energy sources.

The argument that wind and solar energy are on the verge of being cost-effective is an old one, dating at least to the early 1990s. And yet we are still handing out subsidies that supposedly will push them over that line in just a few more years. It's time to stop. With a phaseout or not, extending subsidies is just more of the same.

Economic Myths

Numerous studies purport to show that energy subsidies will stimulate the economy by creating jobs. But these studies consistently ignore the fact that draining taxes out of the general economy to pay for those subsidies runs the broader job-creating mechanism in reverse. The net effect is to shrink the economy, not grow it.

Another myth is that we need subsidies to stay competitive with countries whose economies will increasingly be propelled by wind and solar energy. That argument needs to be written on a dry-erase board, because the country that is supposedly outcompeting us on this front keeps changing. That's because our competitors keep bailing out of their subsidy schemes. The purported European models, such as Spain and Germany, have drastically cut their subsidies, because they were unaffordable and unworkable.

The current name on the board is China. This is an economic role model? China's per capita income ranks 92nd in the world. Yes, China's economy has grown dramatically in recent decades, but only because they moved toward freer markets—that is, toward an economy a little more like ours. In any event, China's total carbon-dioxide emissions are skyrocketing. Whatever they may be doing with wind and solar power pales in comparison with what they are doing with coal-fired electricity.

No Need

A third myth asserts that these subsidies will save the planet. Broad agreement that man-made carbon-dioxide emissions warm the Earth doesn't mean we are headed to environmental catastrophe. Even the Intergovernmental Panel on Climate Change, for instance, projects a sea-level rise of about seven to 24 inches over the next century—not 20 feet. Recent trends argue more strongly for the lower end of that range.

There is nearly universal agreement that an all-out carbon-cutting policy in the U.S.—of which wind and solar subsidies are only a small part—would do next to nothing to moderate any global warming. This is because future carbon emissions will come overwhelmingly from the developing world, which shows little appetite for squeezing economic growth to cut a few inches from sea level.

Yet another myth is that we need subsidies to move us toward the energy of the future before we run out of fossil fuels.

Once again, the Malthusians are wrong. Thanks to technological advances in recent years, the world has centuries of untapped natural gas and coal at its disposal—much of it relatively cheap and right here in the U.S. It's simple: We don't need wind and solar to keep the lights on.

Surely some alternatives to fossil fuels will be developed, but they will only work if they are affordable. Wind and solar aren't, and that isn't changed by shifting the costs from consumers and producers to the taxpayers.

Bureaucrats and politicians shouldn't be the ones deciding which technologies are the most promising or what timeline is too long or what losses are too deep. The market will do a much better job of answering the question: Are wind and solar power really viable?

Let's get rid of the subsidies and find out.

Dr. Kreutzer is a research fellow in energy economics and climate change at the Heritage Foundation, which is based in Washington, D.C. He can be reached at reports@wsj.com.

A version of this article appeared October 8, 2012, on page R2 in the U.S. edition of The Wall Street Journal, with the headline: Do We Need Subsidies for Solar and Wind Power?

(second of two papers)

Should the World Increase Its Reliance on Nuclear Energy?

(The Wall Street Journal – 8 October 2012)

The Fukushima nuclear disaster last year in Japan changed the discussion of nuclear power. Suddenly, for many people, the dangers of a nuclear accident overshadowed the promise of nuclear power as a clean, readily available source of energy. Around the world, public opinion and many government officials turned against nuclear power.

More recently, growing concerns about Iran's nuclear-energy program have fueled opposition to the spread of nuclear power around the globe.

Proponents, however, say the backlash is overblown. They argue that nuclear power is the best way to meet the world's voracious and growing demand for electricity without creating massive amounts of greenhouse gases. No other form of renewable energy is up to the task, they say, and the dangers of nuclear power can be managed.

Others aren't convinced. In addition to the safety worries highlighted by Fukushima and Iran, they point to the tremendous expense of building nuclear plants. There are other options, they say, that are far less expensive and much less dangerous.

Mark Lynas, a climate-science author and visiting researcher at Oxford University's School of Geography and the Environment, favors a much greater reliance on nuclear power. Peter A. Bradford, an adjunct professor at the Vermont Law School and former commissioner of the U.S. Nuclear Regulatory Commission, argues for the alternatives.

Yes: Climate Change Demands It

By Mark Lynas

In a world with limited need for energy and no danger of climate change, it would be fine to be antinuclear. However, this isn't the world we inhabit.

In the real world, a growing population of seven billion will reach as much as 10 billion by midcentury, most living in the emerging countries whose dramatic economic progress requires vast quantities of cheap energy. If this energy comes primarily from fossil fuels, we face a devastating degree of global warming.

Most nuclear opponents persist in the belief that all this future growth—together with continued high energy use in the industrialized world—can somehow be accommodated by wind, solar and other yet-to-be-developed renewables. Undoubtedly some can. But there is not the remotest chance that renewables plus energy efficiency alone can do the job. Currently wind and solar together add up to less than 2% of global electricity production. That proportion can and should increase, but sustainable declines in carbon emissions will require much more.

There are only two proven technologies that can deliver large-scale, predictable electricity without carbon emissions. One is hydroelectricity. It's relatively safe, but big dams impose substantial ecological and social costs, and hydro can't be scaled up much more because of geographical limitations. The second is nuclear power. Much misunderstood and long opposed by greens, it has the potential to scale up quickly and substantially enough to make a significant contribution to tackling both climate change and energy security.

Overstated Danger

Most antinuclear arguments are either overstated or complete myths. One is that radiation at any level is life-threatening. In fact, radiation is a relatively weak carcinogen and one our bodies are well-accustomed to dealing with because of natural radiation from rocks, the atmosphere and space. Routine emissions from nuclear-power stations are so infinitesimally trivial by comparison that they cannot possibly affect anyone's health.

Even when the worst happens, the effects are overstated. Not a single fatality can yet be ascribed to radiation released in last year's Fukushima disaster, and 26 years after Chernobyl, scientists tracking those exposed to the radiation from that disaster have found no greater amount of birth defects or fatal cancers than those in the general population.

Most people also seem to assume that reactor technology has stood still over the years. In fact, modern reactor designs incorporate significant safety advances, and similar progress is being made in the disposal of nuclear waste. New reactor designs even enable existing waste stockpiles to be burned to generate low-carbon power, leaving a much smaller amount of less dangerous unusable material.

Worth the Cost

There are currently 400 or so operating nuclear reactors in the world, generating about 13% of global electricity. We need many more, but there are real challenges that need to be overcome. The first is ill-considered opposition from environmentalists, which has distorted public policy for decades in many countries, notably Germany and the U.S.

The second is financing. Both nuclear and renewables share the problem of high capital costs, whereas competing fossil-fuel plants are cheap to build and relatively cheap to operate. It is important to remember, though, that while all low-carbon options will need substantial government support if they are to scale up sufficiently—and all should be pursued—nuclear holds the most promise for meeting the world's energy needs in the decades immediately ahead.

The third challenge is nuclear proliferation. Ideally the entire fuel cycle in every country would be under international supervision in order to avoid the possibility of fuel being diverted for bombs.

There is much to do and little time to do it in. Let's avoid repeating decades-old rancorous debates and instead look at solving the problems of climate change and rising energy demand using the best technologies available. Today that means nuclear power is an essential part of the mix, and its use must grow substantially.

Mr. Lynas is a climate-science author and visiting researcher at Oxford University's School of Geography and the Environment. He can be reached at reports@wsj.com.

A New Era | As some countries scale back, others proceed with reactor projects

Some of the changes in nuclear plans since Japan's Fukushima meltdowns

BELGIUM Plans to phase out its 5.9 gigawatts of nuclear capacity by 2025.

GERMANY Plans to phase out its 20.3 gigawatts of nuclear capacity by 2022.

JAPAN Has set goal of ending nuclear power by 2040, but output may rise in the near term as plants go back online.

SWITZERLAND Plans to phase out its 3.2 gigawatts of nuclear power by 2034.

Countries with more than one nuclear reactor under construction, year-end 2011

CHINA	26
RUSSIA	10
JAPAN	7
SOUTH KOREA	5
BULGARIA	2
INDIA	2
PAKISTAN	2
SLOVAKIA	2
TAIWAN	2
UKRAINE	2

Source: International Energy Agency

The Wall Street Journal



AFP/Getty Images

OPPOSITE DIRECTIONS A recent anti-nuclear protest in Japan, and a reactor under construction in China's Guangdong province.



Bloomberg News

No: It Is Costly and Dangerous

By Peter A. Bradford

If asked whether we should increase our reliance on caviar to fight world hunger, most people would laugh. Relying on an overly expensive commodity to perform an essential task spends too much money for too little benefit, while foreclosing more-promising approaches.

That is nuclear power's fundamental flaw in the search for plentiful energy without climate repercussions, though reactors are also more dangerous than caviar unless you're a sturgeon.

How dangerous? The full impact on people's health from last year's disaster at the Fukushima nuclear plant in Japan won't be known for years, if ever. But other impediments to relying on a vast nuclear expansion to fight climate change are already clear: Thousands of Japanese may not return to their contaminated hometowns for many years, if ever. The world's largest private utility is a ward of the state. The Japanese government at the time of the accident has fallen. Four reactors were destroyed live on world-wide television. All of this happened on the watch of a safety regulatory regime thought to have been a world leader.

Iran, like several other nations, has used its civilian power program to justify activities bringing it closer to assembling a nuclear bomb. Enthusiasm for spreading reactors among new nations should remind us that the Shah of Iran's nuclear-power program was featured in 1970s nuclear-industry advertisements. If the next nuclear-power-related catastrophe is a bomb going off in a city, what will happen to a climate strategy based on rapid expansion of the "peaceful atom"?

Of course, new reactor designs are safer. However, safety depends on more than design. A world more reliant on nuclear power would involve many plants in countries that have little experience with nuclear energy, no regulatory background in the field, and some questionable records on quality control, safety and corruption.

But safety isn't why the U.S. stopped ordering new reactors in the mid-1970s. Nuclear power is so much more expensive than alternative ways of providing energy that the world can only increase its nuclear reliance through massive government subsidy—like the \$8 billion loan guarantee offered by the federal government to a two-reactor project in Georgia approved by the Nuclear Regulatory Commission earlier this year. That one loan guarantee amounts to \$100 in risk exposure per U.S. family. And then there's the quasi-tax that Georgia's government has imposed on its utility customers in the form of early rate increases to help the utility avoid invoking the loan guarantee.

Many more such direct government subsidies will be needed to scale up nuclear power to any great extent.

There are better choices. John Rowe, former chief executive of [Exelon](#) Corp., an energy company that relies heavily on nuclear power, recently said, "At today's [natural] gas prices, a new nuclear power plant is out of the money by a factor of two." He added, "It's not something where you can go sharpen the pencil and play. It's economically wrong." His successor, Christopher Crane, recently said gas prices would have to increase roughly fivefold for nuclear to be competitive in the U.S.

Exelon's current low-carbon plan makes clear that many combinations of energy efficiency, renewables and gas beat new nuclear units. In these conditions, governments don't know precisely which technologies will best achieve an energy supply that threatens neither security nor the climate. They should focus on implementing policies like carbon taxes (for climate) or oil import fees (for security) and accept the market's verdict as to which energy sources fit the resulting bill.

Countries that choose power supplies through democratic, transparent and market-based methods aren't building new reactors. Only two are under construction in Europe. The U.S. "nuclear renaissance" has collapsed from 31 announced reactors in 2009 to five now likely to be built, none in states that rely on competitive power markets.

In a world in which nuclear-power policy serves an energy policy that serves the public (not the other way around), countries will steer by "right principles, not the gift of prophecy," as George Kennan wrote half a century ago. That won't be good news for new reactors.

Mr. Bradford is an adjunct professor at the Vermont Law School and former commissioner of the U.S. Nuclear Regulatory Commission. He can be reached at reports@wsj.com.

A version of this article appeared October 8, 2012, on page R6 in the U.S. edition of The Wall Street Journal, with the headline: Should the World Increase Its Reliance on Nuclear Energy?