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Comment Received From: Gene Nelson, Ph.D.

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The Key Technology for GHG Reduction is Nuclear Power Generation - Part 1

Groups in Germany and the Netherlands have developed a 100% nuclear power option for ratepayers. California needs a similar 100% nuclear power election program for ratepayers to help reverse climate change. As is noted in the attached file, nuclear power emits even less CO₂ than solar. Quoting from the 01 December 2014 MaxAtomStrom press release, "Even opponents of nuclear power acknowledge that it is a low carbon source of energy. For instance, Æko-Institut e.V., an environmental research institute that coined the term "Energiewende", noted in a 2007 study that one kilowatt-hour of nuclear energy generates only 31 grams of CO₂. Solar power emits three times as much, and hard coal releases even thirty times as much CO₂." (These are statistics that account for the total lifecycle emissions from extraction to power production to waste disposal.)

With the premature shutdown of San Onofre Nuclear Generating Station (SONGS) in 2012, California now imports an amount of dirty coal power into the state roughly equal to the SONGS annual production prior to shutdown, per the CEC.

Constantly-on nuclear power is much more reliable and "grid-friendly" than solar or wind as both have very low capacity factors. Neither solar nor wind can stabilize grid frequency as nuclear power can. Each kWh of nuclear power costs considerably less than a kWh of solar or wind power, even though the latter utilize no-cost power inputs. Neither solar nor wind are dispatchable unless a means of energy storage is included in the power source. The necessary energy storage means will boost the cost of the already-expensive solar or wind power. The CEC should endorse a 100% nuclear power option for GHG reduction for ratepayers with the California Public Utilities Commission.

(A portion of the attached file is in a foreign language. However, relevant information is contained in the graphics on those pages that does not require significant foreign language proficiency. Please use an online translation program for any terms that are unclear.)

Additional submitted attachment is included below.

MAXATOMSTROM Offers 100% Nuclear Power Plan Beginning 01 December 2014 in Germany

AUGSBURG, Germany, December 1, 2014 /PRNewswire/ --

<http://www.prnewswire.com/news-releases/maxatomstrom-offers-100-nuclear-power-plan-beginning-01-december-2014-in-germany-284312071.html>

- Environmentalists demand renaissance of nuclear power
- Nuclear power emits less CO2 than solar power

MAXATOMSTROM launches Germany's first nuclear power plan at the start of the UN Climate Change Conference in Lima, Peru. The plan consists solely of nuclear power which leaves a smaller carbon footprint than solar power. MAXATOMSTROM demands a nuclear renaissance in Germany. Kerry Emanuel - Professor of Atmospheric Sciences at MIT, Wade Allison - Emeritus Professor of Physics at Oxford University, Greenpeace co-founder Patrick Moore, Physics Nobel Laureate Burton Richter and several other reputable scientists and environmentalists support this demand.

According to the company's spokesperson Jan Pflug, the plan is also a way to protest against failed climate policies: "Global emissions are rising despite all UN climate conferences. Germany, which is often touted as a role model, is a case in point: Currently, there are 8 coal plants under construction or in development in Germany. Electricity generation from lignite is at its highest level since German reunification." Pflug attributes this to the nuclear phase-out in 2011: "Coal got a big boost from the nuclear phase-out. Despite all claims to the contrary, we simply cannot quit both coal and nuclear at the same time."

To halt the coal boom, production of all forms of low-carbon energy needs to be expanded. Greenpeace co-founder Patrick Moore believes that nuclear energy should play an important role in this effort. He told MAXATOMSTROM that "there can be no doubt that nuclear energy is the most effective and efficient energy source to help reduce the use of fossil fuels."

MAXATOMSTROM's move to boost nuclear energy is also supported by Stephen Tindale - former head of Greenpeace UK, Australian climatologist Barry Brook, James Lovelock - originator of the Gaia Hypothesis, Baron Smith of Finsbury - former chairman of the UK Environment Agency, Robert Stone - an Oscar-nominated documentary filmmaker and Stewart Brand - creator of the Whole Earth Catalog.

Even opponents of nuclear power acknowledge that it is a low carbon source of energy. For instance, Öko-Institut e.V., an environmental research institute that coined the term "Energiewende", noted in a 2007 study that one kilowatt-hour of nuclear energy generates only 31 grams of CO2. Solar power emits three times as much, and hard coal releases even thirty times as much CO2.

The new plan can be purchased as of 01 Dec 2014. By switching to MAXATOMSTROM, customers can reduce their CO2 footprints from nearly 2 tons down to 0.02 tons per year. More information can be obtained at <http://www.maxatomstrom.de>.



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<http://www.forbes.com/sites/jamesconca/2014/12/12/you-can-now-buy-100-nuclear-energy-in-germany/>

James Conca, Ph.D.'s Energy Blog at Forbes.com

12/12/2014 @ 11:57AM 4,639 views

You Can Now Buy 100% Nuclear Energy -- In Germany!

In Germany, you can now go to a company called **MAXATOMSTROM** to purchase electricity that was produced completely from nuclear energy.

Starting last week, **MAXATOMSTROM** offers a 100% nuclear power plan, a first for Germany. Timed to coincide with the 20th United Nations' Framework Convention on Climate Change in Lima, Peru, the new power plan consists solely of nuclear power which leaves the smallest carbon footprint of any mix of sources, including renewables which are load-followed by fossil fuel plants (**CAISO**).

According to Jan Pflug, **MAXATOMSTROM** spokesperson and a member of Germany's Green party, the plan is also a way to protest against failed climate policies as well as the increase in coal use in Germany.

"Global emissions are rising despite all UN climate conferences. Germany, which is often touted as a role model, is a case in point. Currently, there are eight coal plants under construction or in development in Germany. Electricity generation from lignite is at its highest level since German reunification."



Photo Caption: Pure water vapor rises from the cooling tower of the Leibstadt nuclear power plant in Switzerland. MAXATOMSTROM buys power from this plant as part of their 100% nuclear power purchase plan in Germany. Source: Swiss Nuclear Forum

Pflug attributes this to the nuclear phase-out in 2011. “Coal got a big boost from the nuclear phase-out. Despite all claims to the contrary, we simply cannot quit both coal and nuclear at the same time.”

Germany’s plan for the future involves replacing all nuclear power with renewables, and old coal with new coal and natural gas ([Energiewende](#); [Germany’s Mix](#)). By 2030, Germany’s plan is for coal to be less than 20% (down from 45% today), gas to be 22% (up from 10% today), renewables to be 55% (up from 24% today), and others to be about 4%. Nuclear will be zero.

These are very ambitious goals. While renewables and nuclear have switched places since 2011, coal has increased several percent since 2011, and gas has decreased the same amount.

Carbon emissions from the German power sector have risen since 2011, but were flat last year. This is because 80% of carbon emissions in Germany are from heat and transportation ([Renewables](#)) and these are not being addressed at all.

Germans pay some of the highest electricity prices in Europe – 31 cents per kWhr compared to 17 cents in France and 18 cents in the UK ([Economic Times](#)).

Enter **MAXATOMSTROM**. By switching to **MAXATOMSTROM**, electricity customers can immediately reduce their carbon footprints by 99%.

But what about the planned German nuclear phase out in 2022?

Thanks to the diversity of the European electricity market, and the abundance of nuclear energy outside of Germany, the phase out is no problem for **MAXATOMSTROM**.

presently gets their nuclear electricity from Switzerland, the same place that many green energy providers get their hydro power. The company can also buy the electricity from Sweden's nuclear industry which is actually expanding.

MAXATOMSTROM is confident of their program, pointing to a similar nuclear venture set up in the Netherlands in 2008 ([Atoomstroom](#)) that has been very successful. Large users and manufacturers like the reliability of nuclear power as well as its low-carbon out.

It certainly seems like this German venture will work as well. Since its start last week, 3,000 customers have signed up for the nuclear plan ([NuclearStreet](#); [Der Spiegel](#); [Stephen Tindale](#)).

2 minute 49 second German YouTube Video: <https://www.youtube.com/watch?v=8onZlyzhXp4>

https://nuclearstreet.com/nuclear_power_industry_news/b/nuclear_power_news/archive/2014/12/03/maxatomstrom-touts-all_2d00_nuclear-power-plan-launch-with-un-climate-conference-120301.aspx

Maxatomstrom Times All-Nuclear Power Plan Launch With UN Climate Conference

NS Nuclear Street News Team

Wed, Dec 3 2014 10:44 AM

Maxatomstrom is launching an all-nuclear power plan for Germany coordinated with the start of the 20th UN Framework Convention on Climate Change, which runs from Dec. 1 through Dec. 12 in Lima, Peru.

"The plan consists solely of nuclear power which leaves a smaller carbon footprint than solar power," Maxatomstrom said in a statement that declared a "demand for a nuclear renaissance in Germany."

Said Maxatomstrom spokesperson Jan Pflug, "Global emissions are rising despite all UN climate conferences."

"Germany, which is often touted as a role model, is a case in point," Pflug said, pointing out that the country, which is set to phase out nuclear power by 2025, is building eight coal-burning power plants.

"Coal got a big boost from the nuclear phase-out. Despite all claims to the contrary, we simply cannot quit both coal and nuclear at the same time," Pflug said.

Coal offers the antithesis of the nuclear solution to climate change. It has relatively cheap start up costs and quick construction schedules. It is also a global focal point for carbon emissions. But the allure of cheap and quick is still irresistible to some, despite the urgent need for a global response to climate change.

Slightly over 20 percent – 22.4 percent – of Germany's electricity supply was nuclear-power generated prior to 2011, when the German government

reacted to the Fukushima Daiichi power plant disaster with a plan to cut nuclear power out of the picture in Germany.

The nuclear solution has a variety of advocates, including Stephen Tindale, former head of Greenpeace UK, former chairman of the UK Environment Agency Robert Stone and counter-culture hero Stewart Brand, creator of the Whole Earth Catalog.

Greenpeace co-founder Patrick Moore is also pro-nuclear, as is Physics Nobel Laureate Burton Richter.

A study from 2007 by the environmental research group Oeko-Institut e.V. found that nuclear power generates 31 grams of CO₂ per kilowatt-hour, while solar power "emits three times as much and hard coal releases even thirty times as much," Maxatomstrom said.

Looking for a quick turn-around? "By switching to Maxatomstrom, customers can reduce their CO₂ footprints from nearly 2 tons down to 0.02 tons per year," the company said.

Der Spiegel - Online

<http://www.spiegel.de/wirtschaft/unternehmen/atomstrom-erster-tarif-nur-mit-kernenergie-a-1005913.html>

Atom-Tarif von Max Energy: *Hier bekommen Sie reine Kernkraft*

Von *Gerald Traufetter*



REUTERS

Schweizer AKW Leibstadt: Der beste Beitrag zum Klimaschutz?

Ein Augsburger Energieunternehmen will punkten, indem es einen Strom anbietet, der ausschließlich aus Kernkraft gewonnen wird. Kurios: Die Firma will nicht Nuklearfans ansprechen, sondern fortschrittliche Klimaschützer.

Die Kernkraft stirbt in Deutschland einen Tod auf Raten. Im Jahre 2022 schließen die letzten in Betrieb befindlichen [Atomkraftwerke](#) des Landes. Dann ist Schluss mit der Kraft aus der Kernspaltung, zurück bleiben Hunderttausende Tonnen radioaktiv strahlender Müll.

Doch es gibt noch Fans dieser Energiegewinnung, nicht nur in konservativen Physikerkreisen. Es existiert eine Gemeinde ökologisch motivierter Unterstützer, die die Sorge um das Weltklima zu flammenden Nuklear-Befürwortern gemacht hat. Genau auf diesen Kundenkreis zugeschnitten ist der Tarif für reinen Atomstrom, den ein Augsburger Energieunternehmen seit heute anbietet. Max Atomstrom heißt es und ist eine Tochterfirma von Max Energy, einem mittelständischen Stromanbieter.

Die Elektrizität stammt aus AKW in der Schweiz, deren Betreiber die Reinheit auch bescheinigt hätten, wie der Sprecher von Max Atomstrom, Jan Pflug, versichert. Pflug war es, der die Idee für dieses ungewöhnliche Elektrizitätsangebot hatte. Ihn störte der deutliche Anstieg der Stromproduktion aus klimaschädlicher Kohle, wie er seit den letzten Jahren zu beobachten ist. Atomstrom verursache sogar noch weniger [Kohlendioxid](#)-Ausstoß als Solarstrom, sagt Pflug und begründet das mit der energieintensiven Herstellung der Photovoltaik-Anlagen.

Max Atomstrom wird seinen Tarif nicht auf den gängigen Internetplattformen anbieten, sondern über die Website des Unternehmens. Dafür hat Pflug, der bei der Piratenpartei politisch aktiv war, prominente Werbeträger aus der Klimaschutz-Szene gewonnen. Dazu zählt das mittlerweile in der Ökoszene umstrittene [Greenpeace](#)-Gründungsmitglied Patrick Moore, der sich mit folgender Botschaft von Max Atomstrom

zitieren lässt: "Kernenergie ist ohne Zweifel der effektivste und effizienteste Weg, den Einsatz fossiler Energieträger zu verringern."

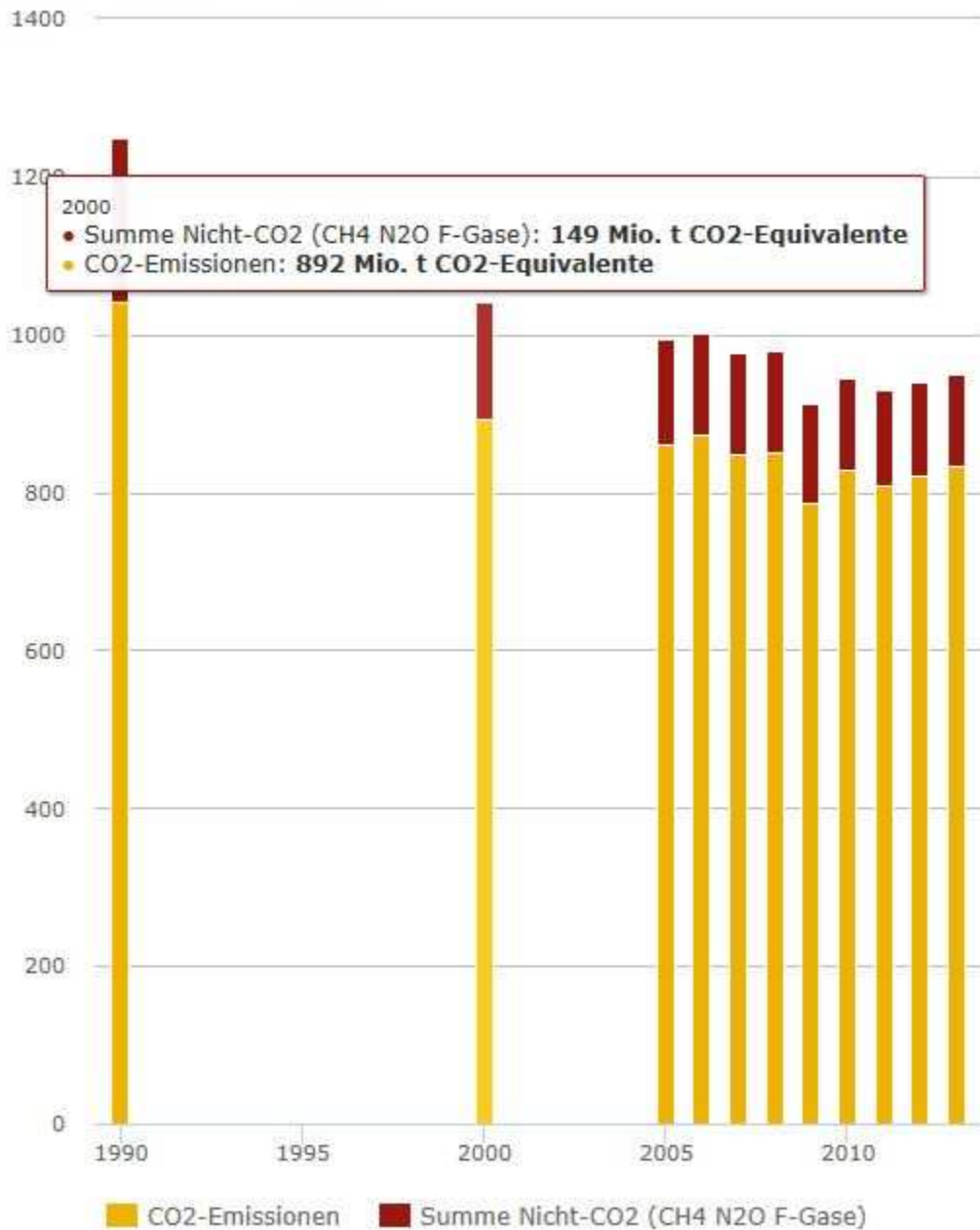
Mit dabei ist auch James Lovelock, der legendäre, über 90 Jahre alte Umweltaktivist, der mit der Gaia-Hypothese weltweit bekannt wurde. Die Hypothese besagt, dass die Erde mitsamt ihrer Biosphäre als Lebewesen betrachtet werden kann. Ebenso konnte Max Atomstrom den US-Atmosphärenforscher Kerry Emanuel vom Massachusetts Institute of Technology als Werbepartner verpflichten, der ein Experte auf dem Gebiet der Hurrikanforschung ist.

Max Atomstrom hat den Dezember ganz bewusst ausgesucht als Start für den Atomstromtarif. Seit diesem Wochenende tagen wieder mehrere Tausend Klimaforscher auf der Weltklimakonferenz in Lima, der Hauptstadt des Andenstaates Peru.

Wer allerdings einen besonders günstigen Stromvertrag erwartet, der wird enttäuscht sein: Der Atomstrom kostet in etwa so viel wie marktüblicher Ökostrom.

Treibhausgasemissionen in Deutschland 1990 bis 2013

in Millionen Tonnen CO₂-Äquivalente



Quelle: BMUB/UBA (2013: Prognose)