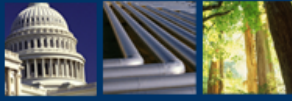




TELL THE EPA TO REDUCE ETHANOL MANDATES AT [SMARTERFUELFUTURE.ORG](http://SMARTERFUELFUTURE.ORG)

[E&E Home](#) | [About](#) | [Contact](#) | [Start a Trial](#) | [Subscribe](#) | [EnergyWire](#) | [ClimateWire](#) | [E&E Daily](#) | [Greenwire](#) | [E&ENews PM](#) | [E&ETV](#) | [Reports](#)

**E&E** PUBLISHING, LLC



SEARCH:

[<< Back to E&E Publishing index page.](#)

## SCIENCE:

### A plan to de-carbonize the world by 2050 -- doable, though chances are slim

Lisa Friedman, E&E reporter  
*ClimateWire: Wednesday, July 9, 2014*

Holding back catastrophic climate change is still possible -- but just barely, and doing so will require a tremendous technological effort, according to a sweeping new report that analyzes what it would take to de-carbonize the world's top economies.

Led by Columbia University's Earth Institute Director Jeffrey Sachs, the study builds on research showing the world is badly off-track to meet its international pledge of limiting the mean global temperature rise to below 2 degrees Celsius by 2050. In fact, it found that few governments have even studied how to achieve that goal.

The good news: It can be done. But, researchers from 15 countries warned, doing so will mean achieving worldwide carbon neutrality by the second half of this century. And that, they said, will require a "profound transformation" of energy systems as well as a heavy dependence on technologies like carbon capture and storage (CCS) that are still a long way off from large-scale deployment.

Time, meanwhile, is running short.

"We have just about exhausted the carbon budget," Sachs said. "The world is unfortunately engaged in an unrecognized massive gamble with the future of the planet."

The Deep Decarbonization Pathway Project [report](#), presented to U.N. Secretary-General Ban Ki-moon yesterday, is part of a massive effort among business leaders, economists and academics to build the technical and economic case for addressing climate change as governments hash out a new global agreement. That deal is expected to be signed in Paris in 2015 and is shaping up to be a set of voluntary emissions pledges offered by all big climate polluters -- including the United States and China. The pledges will go into effect after 2020 and may or may not add up to averting the world from passing the 2-degree limit, beyond which scientists predict catastrophic and irreversible impacts.

"The philosophy is these days that every country will do what it can, what it wants. You realize this will not work," said France's climate change ambassador, Laurence Tubiana. "You need cooperation."

Sachs said there is little hope that contributions will be consistent with the 2-degree target. But, he said, nations must commit to drastic new policies and provide funding for heaps of research and development into clean technologies in order to make sure they get on track. Specifically, the report found that nations must home in on developing low-carbon electricity, greening the transportation and building sectors and making massive gains in energy efficiency.



The Boundary Dam Power Station near Estevan, Saskatchewan, is one of more than 20 fossil fuel power plants worldwide that are being fitted with carbon capture and sequestration equipment as planners

## Carbon capture and storage may be essential

anticipate tighter future greenhouse gas emission controls. Photo courtesy of SaskPower.

"The 2-degree-Celsius limit is absolutely essential to hold onto and to try to achieve," Sachs said. "We are just at the end of the tether in our capacity to do so. In order to do so, we need deep transformations of our energy systems in all the major emitting countries. In order to accomplish that, countries need long-term strategies of the types that they don't have right now."

In the United States, that will mean a complete overhaul of the way energy is produced, delivered and used, according to the report. America is the world's second-largest emitter after China but uses far more energy per person than any other nation.

The Obama administration has proposed emissions limits on new coal-fired power plants, a move the report praised along with state efforts to put a price on carbon in California and the Northeast. But in order to do its share to reach the 2-degree-Celsius target -- and the researchers studiously avoided dictating what each country's "share" should be -- the United States must go much further, the study said. And it can.

"This study's most important finding is that it is technically feasible for the U.S. to reduce CO2 emissions from fossil fuel combustion to less than 750 MtCO2 [metric tons of CO2] in 2050, which is 85 percent below 1990 levels and an order of magnitude decrease in per capita emissions compared to 2010," the report noted.

That's based on modeling four different scenarios that assume either a heavy emphasis on renewable energy, CCS or nuclear power generation. But it noted that a key limitation is the current availability of carbon storage capacity and said "public support must be unwavering to impel policymakers to implement transformational changes." In addition to research and development investment, the report called for near-term policies to improve end-use energy efficiency in buildings, appliances, equipment and vehicles.

Jim Williams, chief scientist at the San Francisco-based Energy and Environmental Economics consulting group, who led the U.S. research, said low-carbon policies in the United States need to be staged over time, and the proposed U.S. EPA rules help cement the trend in the right direction.

"The crucial issue is to delay or not to delay," he said. "If we take climate seriously, then we have enough time to do the transformation over the next 35 years without premature retirement of a lot of infrastructure."

### A need for 'moral energy'

The report also found that serious de-carbonization is possible even in the most climate-obstinate countries, like the Russian Federation. The world's fourth-largest emitter has not identified any long-term targets for carbon emissions nor has it developed a de-carbonization strategy.

But Oleg Lugovoy of the Russian Presidential Academy of National Economy and Public Administration said his research team found reason for optimism.

"Technically, it is possible, and there are several options to de-carbonize, not only one way," Lugovoy said. "Russia is concerned about economic growth because it is slowing down dramatically. But actually, this is an opportunity for Russia to support its economic growth."

Total greenhouse gas emissions in Russia fell by 31 percent between 1990 and 2011 -- mostly due to the breakdown of energy-intensive industries after the collapse of the Soviet Union. The report noted that even under business-as-usual levels, emissions won't rise -- but cutting carbon will mean pursuing aggressive efficiency measures, using gas where possible to electrify regions and ramping up renewable energy.

Even then, though, Lugovoy called CCS Russia's best option to de-carbonize the electricity power sector.

Sachs said the report will be updated to include economic analyses and presented Sept. 23 to the United Nations, where Secretary-General Ban will host a summit of world leaders on climate change. He said he hopes the summit will bring "moral energy" to the debate.

"We are going to call on world leaders to respect the 2-degree limit," he said. "We must not lose this most important negotiation in the world."

---

Twitter: @LFFriedman | Email: [lfriedman@eenews.net](mailto:lfriedman@eenews.net)



TELL THE EPA TO REDUCE ETHANOL  
MANDATES AT [SMARTERFUELUTURE.ORG](http://SMARTERFUELUTURE.ORG)

[E&E Home](#) | [About](#) | [Start a Trial](#) | [Get Email Alerts](#) | [Advertise](#) | [Staff Directory](#) | [Reports](#)



**ENERGYWIRE**

**ClimateWire**

**ENVIRONMENT  
& ENERGY DAILY**

**Greenwire**

**E&ENEWS PM**



*The Premier Information Source for Professionals Who Track Environmental and Energy Policy.*

© 1996-2014 E&E Publishing, LLC [Privacy Policy](#) [Site Map](#)