

Climate Changed

Climate Crisis Spurs UN Call for \$2.4 Trillion Fossil Fuel Shift

By [Reed Landberg](#), [Chisaki Watanabe](#), and [Heesu Lee](#)

October 7, 2018, 9:00 PM EDT Updated on October 8, 2018, 10:17 AM EDT

- ▶ World on track to warm 3 degrees, overshooting 2015 Paris goal
- ▶ UN panel releases report on capping warming at 1.5 degrees

LISTEN TO ARTICLE

▶ 6:11

In this article

1471027D
CLIMATE ACTION
Private Company

XW1
Generic 1st 'XW' Future
113.10 USD/MT
▲ +1.15 +1.03%

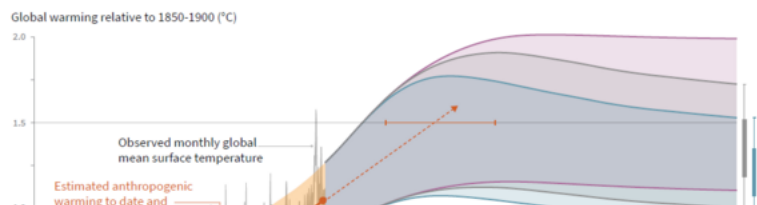
CL1
WTI Crude
68.80 USD/bbl.
▼ -0.32 -0.46%

NG1
Generic 1st 'NG' Future
3.16 USD/MMBtu
▼ -0.09 -2.89%

The world must invest \$2.4 trillion in clean energy every year through 2035 and cut the use of coal-fired power to almost nothing by 2050 to avoid catastrophic damage from climate change, according to scientists convened by the United Nations.

Their [report](#) published Monday adds pressure on policymakers and businesses to step up their response to global warming, which is boosting sea levels, making storms more violent and exacerbating poverty. The atmosphere is already almost 1 degree Celsius (1.8 Fahrenheit) hotter than it was at the start of the industrial revolution and on track to rise 3 degrees by 2100, according to the report. That's double the pace targeted under the [2015 Paris climate agreements](#) endorsed by almost 200 nations.

a) Observed global temperature change and modeled responses to stylized anthropogenic emission and forcing pathways



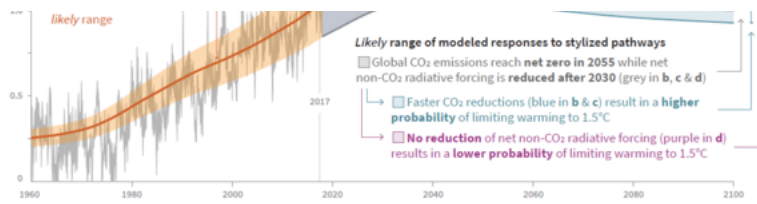


Chart from IPCC's report shows observed temperatures through 2017 and scenarios to limit further warming. Source: *Intergovernmental Panel on Climate Change*

“We are already seeing the consequences of 1 degree of global warming through more extreme weather, rising sea levels and diminishing Arctic sea ice,” said Panmao Zhai, one of the co-chairs of the UN’s Intergovernmental Panel on Climate Change, which brought together the work of hundreds of researchers and thousands of scientific papers.



To read more about the international debate about climate change, click here.

Even a rise of 1.5 degrees would have massive consequences, including a “multi-meter rise in sea levels” over hundreds to thousands of years and a mass extinction of plants and animals. With a temperature increase of that scale, of the 105,000 species studied, 6 percent of insects, 8 percent of plants and 4 percent of vertebrates lose half their habitat. Those proportions double with a 2 degree gain.

Envoys at the 2015 Paris talks asked the IPCC to study what it would take to limit warming to 1.5 degrees, a more ambitious goal than the previous 2-degree target. The scientists concluded that carbon dioxide emissions should be cut 45 percent by 2030 from 2010 levels then reduced to zero by 2050. That would require “unprecedented changes in all aspects of society,” most especially within the energy industry. The report acknowledged those changes would be difficult and costly, but not impossible.

Deployment Constraints

“These systems transitions are unprecedented in terms of scale, but not necessarily in terms of speed, and imply deep emissions reductions in all sectors,” the IPCC said in the report. “These options are technically proven at various scales, but their large-scale deployment may be limited by economic, financial, human capacity and institutional constraints.”

To limit warming to 1.5 degrees would require a roughly fivefold increase in average annual investment in low-carbon energy technologies by 2050, compared with 2015, according to the report.

The \$2.4 trillion needed annually through 2035 is also an almost sevenfold increase from the \$333.5 billion Bloomberg NEF estimated was invested in renewable energy last year. The International Energy Agency says about \$1.8 trillion was invested in energy systems in 2017, down 2 percent from the year before. About \$750 billion went to electricity and \$715 billion to oil and gas.

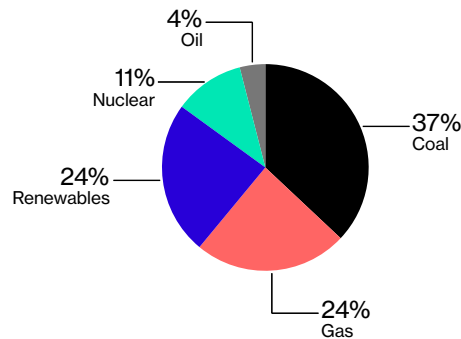
THE IPCC REPORT ALSO RECOMMENDED THAT BY 2050:

- ▶ Coal's share of electricity supply should be cut to 2 percent or less.
- ▶ Renewables should supply 70 percent to 85 percent of power generation.
- ▶ Carbon capture and storage technology should be deployed to absorb remaining fossil-fuel emissions.
- ▶ Natural gas could maintain an 8 percent share of electricity generation if CCS reduced total global net emissions to zero by 2050.

Those ambitions would mark a massive upheaval to the energy system, with coal currently accounting for about 37 percent of power and gas at 24 percent, according to the International Energy Agency.

Electricity Generation by Source

Coal dominates, but renewables including hydro are gaining share



Source: International Energy Agency's WEO 2017

The IPCC's proposals are bolder than the most-ambitious scenario set out by the IEA. The Paris-based institution envisioned coal maintaining 6 percent share of the power generation market and gas 16 percent by 2040 under one pathway that's compatible with 2 degrees of warming.

"We assess the scientific information and then provide policy-relevant messages to our member governments as well as the relevant stakeholders," Hoesung Lee, chairman of the IPCC, said in an interview. "We provide a manual of solutions. It's up to them to use this manual, considering the constraints or opportunities existing in different countries. It's their decision, but we provide the scientific information."

Organizations and investors that back green energy said the report makes it clear that the world should accelerate the shift away from coal, the most polluting fossil fuel.

“The coal industry has no role in a climate-stable world,” said Jan Erik Saugestad, chief executive officer of Norway’s Storebrand Asset Management, which oversees \$88 billion. “It’s our pressing duty to call on other investors to end meaningless engagement with coal-exposed companies.”

The report also highlights the risk to further investments in natural gas-fired power plants and suggests that more of them should be replaced by renewables, said Han Chen, who follows energy finance for the Natural Resources Defense Council.

“Large quantities of current gas plants will need to be retired early, while those under construction or in planning stages must be reconsidered immediately as they are not compatible with the 1.5-degree future,” Chen said.

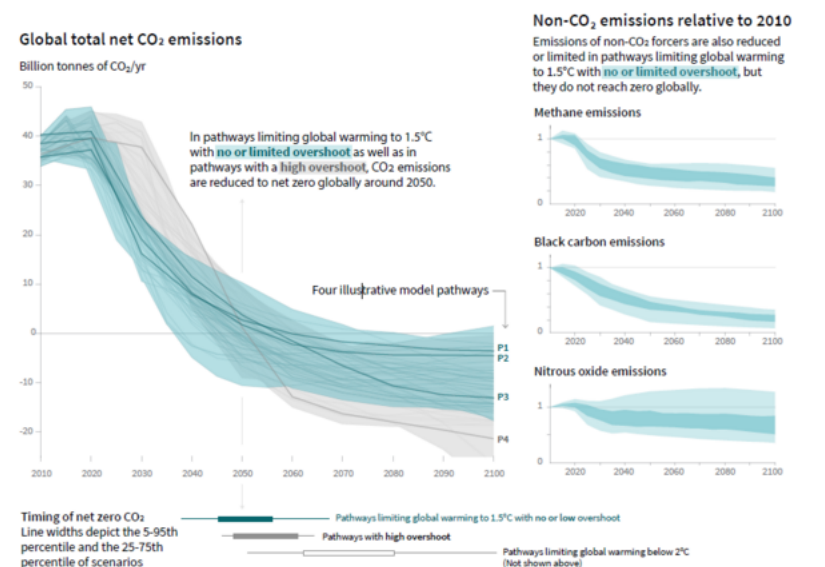


Chart from IPCC’s report shows CO2 emissions for various scenarios to keep global warming to 1.5 degrees Celsius. Source: Intergovernmental Panel on Climate Change

The World Coal Association noted the IEA and other forecasters expect the fuel to remain an important part of the energy system for the foreseeable future. That would make it crucial to expand carbon capture projects, which siphon the gas off from smokestacks and store it permanently underground.

“Any credible pathway to meeting the 1.5 degree scenario must focus on emissions rather than fuel,” Katie Warrick, interim chief executive officer of the WCA, said after reviewing a draft of the report.

Michael Bloomberg, founder and majority owner of Bloomberg News and its parent company Bloomberg LP, is a UN Special Envoy for Climate Action.

The IPCC report was meant to ring alarm bells about global warming, noting

that temperatures are likely to be 1.5 degrees higher by 2030 to 2052 based on current commitments to reduce emissions made under the Paris deal. While an increase of that magnitude would boost sea levels by as much as 77 centimeters by the end of the century, that would be about 10 centimeters lower than at 2 degrees, the report said.

Have a confidential tip
for our reporters?

[GET IN TOUCH](#)

– *With assistance by Jeremy Hodges*

(Updates with disclaimer in 18th paragraph.)

Before it's here, it's on the
Bloomberg Terminal.

[LEARN MORE](#)

Terms of Service
Trademarks Privacy Policy
©2018 Bloomberg L.P. All Rights Reserved
Careers Made in NYC Advertise Ad Choices Contact Us Help