

ENVIRONMENT

EPA data rule questioned

Independent science board will review decisions by the US environment agency to repeal or change climate regulations and rules on the use of non-public data.

BY JEFF TOLLEFSON

Science advisers to the US Environmental Protection Agency (EPA) voted on 31 May to review a series of controversial rules that the agency has proposed over the past eight months. These include a plan that would limit the types of scientific research that the EPA could use to justify environmental regulations, and proposals to strike down limits on greenhouse-gas emissions.

EPA administrator Scott Pruitt framed the data rule as part of a push for transparency — and against ‘secret science’ — when he released it on 24 April. The policy would prevent the EPA from relying on studies that include any data that have not been made public.

The decision by the EPA Science Advisory Board (SAB) to review the rule comes after earlier criticism by some of its members. In a 12 May memorandum, an SAB working group chastised the EPA for not submitting the proposal to the board for review.

“The working group is very much in favour of transparency,” said Alison Cullen, an environmental-health researcher at the University of Washington in Seattle, during the advisory board’s meeting. But on this particular proposal, there is a “very real lack of clarity” in how the rule would be applied, said Cullen, who chairs the working group.

The proposed transparency rule is modelled

on a similar bill that Republican lawmakers in the House of Representatives have pushed for years. The House passed the latest version of the legislation in 2017, but it died in the Senate.

Scientists and environmentalists have decried the EPA’s proposal, noting that many important epidemiological studies are based on public-health data that cannot legally be released owing to privacy concerns. As a result, critics say, such a rule would prevent the agency from considering some of the best health research, ultimately making it harder to create new environmental regulations.

Under previous presidents, the EPA has typically given the SAB advanced notice of regulatory actions, such as the release of a proposed rule, although that is not required by law. This week’s meeting was the first time that the full panel had considered the transparency rule. The EPA is not required to follow the advice of its advisory board, but failing to do so could bolster legal challenges against the agency.

The environment agency has yet to finalize the transparency rule: the deadline for public comments, originally scheduled to close on 30 May, has been extended to 16 August.

EMISSIONS FIGHT

The science-advisory board also voted to assess the research underlying a series of proposed regulations to limit greenhouse-gas emissions from power plants, vehicles, and oil

and gas operations. That includes a review of the research behind Pruitt’s decision to repeal the Clean Power Plan. The plan sought to reduce carbon emissions from existing power plants and was former president Barack Obama’s signature climate-change policy. The advisers also intend to look over a decision made by the EPA in April to revoke emissions standards for vehicles manufactured between 2022 and 2025.

Separate emissions standards set by the state of California, and followed by a dozen other states, would remain in place; California

“Any administration can reject our advice, but we are part of the record.”

officials have warned that they will fight any attempt by Pruitt to revoke a waiver that allows the state to set its own regulations in this regard.

The EPA has yet to propose new standards to replace the Clean Power Plan or the Obama administration’s vehicle-emissions regulations.

The advisers did what they were supposed to do, said board member Steven Hamburg, chief scientist for the Environmental Defense Fund, an advocacy group based in New York City. “The SAB is a congressionally chartered organization,” he said. “Any administration can reject our advice, but we are part of the record.” ■

ATMOSPHERIC SCIENCE

Hurricanes around the world linger longer

This means more rain and possibly more damage from storms.

BY GIORGIA GUGLIELMI

Sluggish hurricanes have become increasingly common over the past 70 years, according to a new study. Storms that linger over a given area for longer periods, such as Hurricane Harvey, which stalled over eastern Texas for almost a week in August 2017, bring more rain and have greater potential to cause damage than ones that pass quickly. Scientists

are not sure why this is happening, but if the trend continues, future hurricanes could be even more disastrous.

The study, published this week in *Nature*¹, is the first to analyse hurricane speeds globally. It finds that the speed at which tropical cyclones moved across the planet slowed by about 10% between 1949 and 2016: from more than 19 kilometres per hour on average in 1949, to about 17 kilometres per hour in 2016.

Over land, cyclones affecting regions along the western North Pacific slowed by 30%; over Australia and areas in or near the North Atlantic, they slowed by about 20%.

“That’s a big signal,” says study author James Kossin, a climate scientist at the US National Oceanic and Atmospheric Administration’s (NOAA) Cooperative Institute for Meteorological Satellite Studies in Madison, Wisconsin. Research suggested that atmospheric circulation patterns in the tropics might be slowing as a result of global warming, so Kossin set out to see whether hurricanes, which are carried along by these wind currents, have also slowed.

Because storms are becoming more sluggish, there’s more time for rain to fall. Kossin notes that a 10% reduction in hurricane speed corresponds to a 10% increase in the amount of rainfall over a given area. The effect could be magnified by a warming climate, because ▶



JOE RAEDLE/GETTY

Hurricane Harvey lingered over eastern Texas for days, flooding cities including Houston (pictured).

► recent global simulations estimate up to a 10% increase in rainfall per degree Celsius of warming.

Slower, more rain-heavy hurricanes would lead to more flooding events, says David Nolan, a hurricane scientist at the University of Miami in Florida. Stronger, more sustained winds are also more likely to damage buildings, he says.

The study results are interesting, says Tom Knutson, a research meteorologist at NOAA's Geophysical Fluid Dynamics Laboratory in Princeton, New Jersey. But researchers aren't sure what has caused the slowdown. Knutson says it's an open question whether human-driven climate change or natural variability is to blame. It's also unclear if the slowdown in atmospheric tropical circulation patterns

influences the speed at which hurricanes move across the globe. Knutson notes that his team's climate models, which simulate future Atlantic hurricanes, don't predict that storms will slow down — even when researchers tweak their models to slow those circulation patterns².

The observed decrease in hurricane speed could be a result of unreliable data, says Kevin Trenberth, a climate scientist at the US National Center for Atmospheric Research in Boulder, Colorado. He notes that satellites have tracked storms across the globe only since the late 1960s, so data acquired before then might not be reliable and should be discounted.

But Kossin disagrees, saying that data on the speed of these storms are less sensitive to technological advances than data about their frequency and intensity. Moreover, he says, a study this year found that several past hurricanes would have been slower had they occurred in a warmer climate³. "That gives us more confidence that the slowing is there and is related to warming." ■

1. Kossin, J. *Nature* <https://doi.org/10.1038/s41586-018-0158-3> (2018).
2. Knutson, T. R. *et al. J. Clim.* **26**, 6591–6617 (2013).
3. Gutmann, E. D. *et al. J. Clim.* **31**, 3643–3657 (2018).

RESEARCH GRANTS

Europe's top funder shows high-risk research pays off

European Research Council publishes third impact assessment of the projects it supports.

BY INGA VESPER

A popular and unusual self-review carried out by Europe's most prestigious science funder is back. The annual assessment, now in its third year, found that nearly one in five projects supported by the European Research Council

(ERC) led to a scientific breakthrough.

The independent review, undertaken in 2017 and published on 31 May (see go.nature.com/2jg2n3v), assessed 223 completed ERC projects that had ended by mid-2015. It concluded that 79% of them achieved a major scientific advance, 19% of which were considered fundamental breakthroughs. That proportion

rose to 27% for ERC Advanced Grants, which are awarded to experienced researchers. Only 1% of the total were judged to have made no appreciable scientific contribution.

Established in 2007 to improve the quality of Europe's science, the ERC is the European Union's premier funder of blue-skies research and is part of Horizon 2020, the EU's main science-funding programme. It awards generous, multiyear grants in any discipline, and applications are judged solely on their quality. The council has undertaken annual reviews of the projects it funds since it ran a popular pilot assessment in 2015. That is a pioneering strategy among European funders, most of which evaluate success on a project-by-project basis, and it has been praised for taking a qualitative approach rather than relying, for instance, on bibliometrics.

The latest assessment was carried out by senior scientists convened by the ERC's Scientific Council. Each panel member was asked a series of questions about a randomly selected

SOURCE: ERC

EUROPE'S TOP RESEARCH GRANTS

About one-fifth of projects funded by prestigious European Research Council grants make scientific breakthroughs, according to the council's qualitative self-assessments.

