

[US Election] Joe Biden announces cloudless skies for climate and environmental research



President-elect Joe Biden plans to deploy a “progressive” climate policy by aligning the United States, the world’s second largest carbon emitter and the largest historical emitter, with the group of nations that are tackling global warming head-on. During the election campaign, Joe Biden committed to a [\\$2 trillion climate program](#) that includes several components including \$400 billion for clean energy research and development.

He first promised to join the Paris Climate Accord on his first day rolling back the withdrawal by President Trump. He also announced the goal of carbon neutrality by 2050, making him the seventh nation to set such target. The president called on the United States to have a carbon-neutral electricity grid in 15 years, one of the most ambitious goals in the world.

The election paves the way for a challenge after many executive orders from Trump administration that ended methane emission caps for the oil industry, relaxed national fuel efficiency standards, increased vehicle emission levels among other.

The American election will undoubtedly revive the international momentum to address climate change, while climate and environmental research should also benefit from this new administration which is more sensitive to scientific expertise.

The main directions announced in favor of research for the environment and climate

If there is one topic that crystallizes the differences between the two candidates' political priorities, it is climate change. The topic is one of the backbones of his project, as opposed to his Republican opponent's. His program recalls the climate emergency and the need to "provide a systemic response" by integrating it into the agenda of "all federal agencies". He promises to take action based on the recommendations of scientific experts, thus making a 180° turn from the previous administration.

The President-elect's program sets out several priorities for research in environmental and climate science:

1. The creation of a research agency called *Advanced Research Projects Agency for Climate* specializing in low-carbon innovation. This agency will focus on the development of key clean energy technologies such as:
 1. low-cost lithium-ion batteries,
 2. small modular nuclear reactors;
 3. GHG-free refrigerant reactors;
 4. energy self-sufficient buildings;
 5. green hydrogen;
 6. carbon-neutral steel, concrete, chemical and building materials;
 7. for the agricultural sector;
2. The development of supports and programs for :
 1. R&D in the field of biofuels;
 2. the emergence of an organic, low-carbon, resilient and sustainable agriculture;
 3. the development of electric mobility technologies;
 4. the development of energy, water and waste management infrastructures in line with environmental standards.
3. The program mentions the objective of listening to scientific recommendations for :
 1. re-establish emission quotas for the energy industry;
 2. prepare communities for climate-related disasters and strengthen their resilience.

4. In addition, the new team indicates its willingness to support NASA and NOAA research programs in Earth observation and analysis of the consequences of climate change on society and finally the increase of U.S. funding for the IPCC.

The *House of Representatives Select Committee on the Climate Crisis* had published at the end of June 2020 a proposal for a roadmap to Congress toward addressing the climate crisis. This roadmap contained in particular a whole chapter devoted to the support of research in climate science, thus drawing the outlines of a legislative project in accordance with scientific recommendations.

Joe Biden's program for scientific research is therefore diametrically opposed to that of the Trump administration. Indeed, Donald Trump's election platform published on August 23, 2020 did not contain any mention of climate change or the interest in strengthening climate science.

A growing awareness of the climate issue among public opinion.

Joe Biden is expected to take office at a time when a growing majority of Americans support the idea of climate action. In a poll conducted on October 27th by the public station PBS, the climate issue becomes the third priority after economics and COVID. A study conducted by Yale University shows that 82% of Americans support the idea of a shift toward a 100% clean energy.

Republican support for the climate issue and the consideration of scientific facts is increasing. With the prospect of a Senate with a Republican majority, major climate legislation and the deployment of important scientific programs will rely on their willingness to act and on Joe Biden's ability to foster a bipartisan process for systemic change.

In the private sector, the last four years have been marked by increasingly ambitious announcements and commitments in favor of the climate from major companies that have notably joined the "We're still in" initiative. They expect stable and consistent policy and regulation from the Biden administration.

The need to regain control of federal agencies.

A few days after the election, the Trump administration appointed a climate change denier to lead the development of the *4th US National Climate Assessment*. David Legates, recently appointed *Deputy Assistant Secretary of Commerce for observation and prediction* at NOAA and known for his positions against the international consensus, is to replace Michael Kuperberg (Executive Director of the *U.S. Global Change Research Program*). This four-year document, delayed by the Trump administration and postponed to 2023, involves 13 federal agencies and numerous American scientists who are establishing a state of play of the impact of climate change in the United States.

The inauguration of the new administration is therefore particularly awaited by the American scientific community. The election of Joe Biden is of particular importance for the scientists of the *Environmental Protection Agency* (EPA) who have suffered from Trump's efforts to roll back regulations, increase the influence of industry or oppose scientific consensus.

In addition, the Biden administration is likely to revisit recent NOAA appointments. Last October, Craig McLean, the agency's chief scientist, was replaced by meteorologist Ryan Maue, who is linked to the libertarian think tank Cato Institute and is known to downplay the severity of climate change. Maue having been joined by a climatoskeptic, Professor David Legates from the University of Delaware in the recently open assistant secretary position.

Some reactions from the scientific community.

The *Union for Concerned Scientists* believes that the Biden administration should repeal a series of Trump administration decrees such as Executive Order 13771, which makes it more cumbersome to introduce new air pollution standards, Executive Order 13766, which relaxes the rules for obtaining permits for infrastructure projects, Executive Order 13875, which requires the elimination of one-third of the federal scientific advisory committees, and Executive Order 13957, which facilitates the dismissal of federal scientists who do not follow the administration's guidelines.

It should be noted that issues related to biodiversity are barely mentioned in the Biden program, as Shahid Naeem, Professor of Ecology at Columbia University, [reminds us](#), while the Democratic initiative “30 by 30” suggests listening to science for the establishment of nature conservation policies.

Finally, several voices are already being raised to ask for more public money for academic research, especially in the fields of environment and climate. In order to obtain a full engagement of researchers on applied research objects, the Biden administration will simultaneously have to ensure its long-term support for basic research.

Streamlining science and protecting scientific integrity.

Roger Pielke, professor of environmental science at the University of Boulder, [raised](#) the issue of scientific integrity which has been particularly challenged in recent years. He calls for the implementation of harmonized legislation aimed at limiting the diversity of existing statutes between agencies and research organizations. Such harmonization would strengthen the scientific integrity of researchers, and the ability of Congress to control the executive branch on these issues. A relevant bill had been introduced in the House in 2019 with the support of more than 200 representatives.

Once again, the Biden administration will have the opportunity to quantify the social cost of carbon emissions, taking into account the most up-to-date research. Climate experts have argued that the Trump administration’s estimates (\$7 per ton) or the Obama-era estimates (\$42 per ton) are too low. Some recent studies indicate that the measure should be well above \$100 per tonne of CO₂.

New perspectives.

In recent weeks, the Trump administration has continued to weaken U.S. environmental protection regulations. However, the election of Joe Biden paves the way for an accelerated global effort to fight climate change at a time when record heat, forest fires and hurricanes are hitting communities in various states in the United States. His team believes that the damage caused by the Trump administration requires a sustained effort to effectively regain control, especially

when it comes to restoring skills and confidence in federal agencies and research organizations.

Advisors to the President-elect suggest creating a new *National Climate Council* equivalent to the existing *National Economic Council* to coordinate and lead the administration's climate policy. A think tank and prefiguration committee is currently being formed around a number of decision-makers, including several from the Obama administration. With the help of 150 experts, the group would prepare recommendations for 11 federal administrations, including NOAA and EPA involved in the scientific field.

President-elect Joe Biden has also made a series of appointments to form his transition team, including those for the EPA, which will be led by Patrice Simms, now Vice President for Healthy Communities at Earthjustice.

However, the new administration, which will certainly be more attuned to scientists, will have to take care of the existing consultative mechanisms. The U.S. government currently has more than 1,000 bodies with a mission formalized by the law on "federal advisory committees". J. Biden's team will have to ensure that these committees are composed of independent experts, selected for their competence, with a clearly defined mission.

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