

Tyndall Scientists Appeal to the US Administration to Continue to Support US and International Climate Initiatives and transition to a low-carbon economy

Key Messages

- As Donald Trump is attempting to undo the Obama plans to curb climate change, we appeal to the US Administration and Congress to consider the enormous amount of evidence that shows that human-activities are adversely changing the Earth's climate (with much of the evidence developed by US scientists). We urge the US to continue to demonstrate global leadership by remaining active members of the Paris Agreement and significantly reducing US greenhouse gas emissions by transitioning to a low-carbon economy:
 - Doing so will provide business opportunities in the use of energy and the transition to renewable and low-carbon energy technologies, all of which are cost effective. Developing a domestic renewable manufacturing industry would offer secure and long-term employment and open up significant and rapidly growing export markets.
 - In contrast, returning to a coal-based policy would have serious implications for local air quality, with associated health impacts. Moreover, any new investment in coal could rapidly become a stranded asset should future administrations re-engage in the international climate change agenda;
 - The rapidly decreasing costs of renewable energy technologies, coupled with improved storage capability and enhanced end-use efficiency, is already stimulating a cost-effective transition to a low-carbon economy, even in the absence of US action;
 - Climate change is recognized to be a security issue for the US given that global instability, and international terrorism, are likely to be exacerbated by the impacts of climate change.
- We urge the US Administration and Congress to continue to support the generation of new knowledge and the international assessment process (IPCC). Not only have US scientists been at the forefront of this endeavor, but the US needs to remain well informed of the opportunities and risks to its people and its economy, and to understand the serious security implications for the US of international tensions increasingly exacerbated by a changing climate
 - For the US to develop its own adaptation strategy, detailed spatial information is needed on the impacts of climate change now and in the future.
- We commend those nations who have already demonstrated their willingness to strengthen their support for the Paris Agreement, even in the absence of US actions. Nevertheless, the full engagement of the US can only serve to reinforce the international community's clear resolve to tackle the challenges posed by climate change. If however, the US does abandon its leadership role, the early responses of China and other nations give us confidence that any leadership void will be short-lived.

State of Science

- Human-induced climate change is unequivocal, the scientific consensus is clear and overwhelming that rising greenhouse gases from human activities are the main cause of the

observed warming, and that without a transition to a low carbon economy temperatures will continue to warm;

- Human-induced climate change adversely affects socio-economic sectors (e.g., food and water security), human health and ecological systems (e.g., forests), hence many of the UN Sustainable Development Goals endorsed by all countries, including the US.
- Climate change is already impacting the well-being and prosperity of more climate-vulnerable communities and, in the absence of concerted action, will increasingly have direct and indirect impacts on the US and other industrialised nations.
- Limiting human-induced change requires rapid and concerted global action to transition to a low-carbon economy;
- The long-term economic costs of mitigating climate change are a small percentage of GDP. Failure to mitigate emissions will incur high and escalating costs.

Importance of the Paris Agreement

- All countries of the world acknowledged that human-induced climate change is unequivocal and poses a real threat to human well-being, and that actions are urgently needed to reduce the emissions of greenhouse gases (i.e., mitigation) and reduce the vulnerability to climate change (i.e., adaptation);
- The Paris Agreement supports the development of a low-carbon economy, opening new markets, new employment opportunities and driving down the costs;
- The Paris Agreement supports adaptation to climate change in poor countries, improving geopolitical stability and reducing the risks of conflicts;
- The Paris Agreement recognizes the need to provide financial support, \$100B per year, to developing countries for mitigation and adaptation activities.

Implications of US Administration Policies

A. Withdrawal from the Paris Agreement or Failure to Implement the Paris Agreement

- A US withdrawal from the Paris Agreement, and associated US funding for the international climate fund promised under the Paris agreement (\$100B per year), potentially reduces the commitment of a number of countries to achieve their Paris pledges, especially those whose pledges were: (i) dependent upon all countries (especially the large emitters) reducing their emissions, and (ii) conditional on financial assistance. Thus a US withdrawal from the Paris Agreement or the UNFCCC will potentially:
 - Weaken the Paris Agreement;
 - Leave a leadership vacuum that would likely be filled by China;
- The failure of the US to continue to apply its world leading science and innovation to an issue accepted as important by the wider global community risks ceding the economic and employment opportunities to other nations – at a time when the President wants to see a renaissance in US manufacturing;
- Even if all countries achieved their pledges the Paris agreement would not put the world on a pathway to limit climate change well below 2°C, let alone the aspirational target of 1.5°C. The current pledges would suggest that the 1.5°C target would be passed in the early 2030's and the 2°C target around 2050-2060:
 - Hence to achieve the Paris targets will require a significant strengthening of the pledges, not a weakening;

- As noted by Pope Francis, the issue of human-induced climate change is a moral and ethical issue, hence, given the historic and current emissions of the US, long with the technological and financial power of the US, the US should take a leadership position in reducing its greenhouse gas emissions;

B. US withdrawal from IPCC and or a significant reduction in US funding for research

- Either of these decisions would seriously undermine both the generation of new knowledge and the assessment of knowledge upon which evidence-based policies should be formulated, e.g., a regionally-based adaptation strategy;
- The US scientific community has made significant contributions to the understanding of climate change and its impacts, losing that capability would be a significant loss. In particular, the NASA and NOAA space programs provide invaluable data sets from global to detailed local;

Successfully tackling climate change is key to a prosperous and safe future. The US can help support the rapid transition to a low-carbon economy and benefit in return. If the US chooses to step aside, we must hope that there is a significant strengthening of the international resolve, with the US being relieved of its leadership role by other progressive nations.

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