Show me the data
Renewed US climate ambition intensifies need for global emissions data

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Overview

1. Update on where US and global climate action stands
2. Implications for climate data
3. Discussion
Biden-Harris climate goals put US on path to net-zero

But will require Congressional action, and divided Senate limits opportunities for big wins

Biden-Harris Climate Plan

- Ensure the U.S. achieves 100% clean energy by 2035 and reaches net-zero emissions no later than 2050.
- Accelerate EV deployment (to 100%), expand charging stations by 500,000 by 2030, advance fuel economy/GHG standards.
- Energy efficiency and electrification investments that reduce the carbon footprint of the U.S. building stock 50% by 2035.
- Advanced Research Projects Agency (ARPA-C) focused on climate innovation, including energy storage, green hydrogen, alt fuels.
- Accelerate the development and deployment of carbon capture sequestration technology.
- Biden’s climate and environmental justice proposal will make a federal investment of $2 trillion over the next ten years, leveraging additional private sector and state and local investments to total to more than $5 trillion.
- Conserve 30% of US federal lands and waters.
To meet 50-52%, get on track for net-zero electric emissions by 2035

Source: Rhodium Group analysis: Pathways to Build Back Better

- Under **Current Policy**, electric power emissions are flat over the next decade with no further decarbonization progress. Renewables added to the grid are offset by nuclear retirements.

- **Limited Executive Action** tackling CO₂ and conventional pollutants from coal and CCS for new coal and gas is not sufficient to put the sector on a straight-line path to zero in 2035.

- **Limited Exec and Legislative Action** (10yr RE credit extension, nuclear incentives, debt relief for coal retirements from coops) put emissions on track through 2027, by retaining nuclear and driving renewable energy capacity builds of 57 GWs per year on average. Nearly double 2020’s record. Emissions decline by 73% compared to 2005 levels by 2030.

- The **CES** in **American Jobs Plan** achieves an 81% reduction in emissions relative to 2005 in 2030.

**US electric power CO₂ emissions, 2020-2030**

Million metric tons, % reduction from 2005

Source: Rhodium Group analysis: Pathways to Build Back Better
Earth Day US Leaders Summit raised the bar for 2030 ambition

Selected developed country NDC reductions by 2030
Below selected base year

-80% -70% -60% -50% -40% -30% -20% -10% 0%

UK Germany EU Norway* Switzerland US* Japan Iceland Canada* Australia*

-68% -65% -55% -55% -51% -38% -43% -41% -40% -41% -45% -41% -45% -41% -28% -25%

vs. 1990 vs. 2005 vs. 2010
This is the year for setting mid-term 2030 ambition
Most important metric – on path to net zero by mid-century?

55 Countries have submitted new NDC targets
6 Countries have proposed new NDC targets
103 Countries have not updated their targets
Focus on world’s largest emitters
Emissions dynamics shift quickly, requiring up-to-date emissions data to track

Share of global emissions in 2019
Million metric tons of CO₂e (Net)

<table>
<thead>
<tr>
<th>Country</th>
<th>Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>27%</td>
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<tr>
<td>US</td>
<td>11%</td>
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<tr>
<td>India</td>
<td>6.6%</td>
</tr>
<tr>
<td>EU-27</td>
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<td>Indonesia</td>
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<td>Russia</td>
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<tr>
<td>Brazil</td>
<td>2.8%</td>
</tr>
<tr>
<td>Japan</td>
<td>2.2%</td>
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</tbody>
</table>

China surpasses developed world for first time in 2019
Annual GHG emissions (gigatons of CO₂e)

Source: Rhodium Group ClimateDeck, UNFCCC
China recently updated the three core elements of its NDC

New China GHG projections
Billion tons CO₂e

- Xi Jinping recently announced that China will increase its carbon-intensity target from 60-65% below 2005 levels by 2030 to “more than 65%”, raise its non-fossil target from 20% to 25% in 2030 and increase its forestry target from 4.5 to 6 billion cubic meters.
- China also committed to implement the Kigali Amendment to the Montreal Protocol.
- With these additional steps, we would expect China’s net GHG emissions to peak within the next few years then begin a very gradual decline.

Source: Rhodium Group analysis.
The world has already made considerable climate progress

Global GHG emissions
Billion metric tons CO₂e on an inventory basis

- **Pre-Paris**, global emission were projected to grow by 1.6% per year on average between 2014 and 2030, reaching 63.4 gigatons CO₂e that year. By 2040, emissions were projected to reach 72.2 gigatons.

- In our Current NDCs + Kigali scenario, global emissions are essentially flat through 2040, resulting in a 20% reduction from Pre-Paris levels in 2030 and a 29% reduction in 2040.

- Part of this reduction comes from slower than expected economic growth. But climate policy and accelerated clean energy deployment played a major role. The carbon-intensity of global energy supply, for example, is now projected to be 11% lower in 2030 than was expected Pre-Paris.

Source: Rhodium Group analysis.

Pre-Paris

Current NDCs + Kigali

Source: Rhodium Group analysis.
Adding in current net-zero targets further improves the picture...

Global GHG emissions
Billion metric tons CO2e on an inventory basis

- A number of countries have announced mid-century net-zero targets, including the EU, the UK, Japan, Korea, Norway, Canada and China. Biden campaign also announced a net-zero goal.
- If implemented, these targets would reduce 2050 emissions from the roughly 50 gigatons projected under Current NDCs+Kigali, to around 36 gigatons.
...and if implemented puts the world within striking distance of 2°C

Change in global mean surface temperature (degrees C)
Median model estimates relative to pre-industrial levels. Solid lines are from the FaIR model and dashed lines are from the MAGICC model.

- If implemented on top of existing NDCs and the Kigali amendment, current net zero targets would provide a **50% chance** of limiting increases in global temperatures to 2°C.
- Implementation will be challenging, and countries will need to be held accountable through mid-century strategies and other reporting mechanisms for their progress.
- These targets do not cover international aviation and maritime emissions (1.2 gigatons today, projected to grow to 1.5 gigatons by 2030). Sectoral agreements in these areas would deliver additional tons and further increase the probability of staying below 2°C.

Source: Rhodium Group analysis.
# Climate and emissions data are critical inputs for Biden climate plan

## Global Temperature Goals and Progress
- IPCC Assessment Reports
- 2023 Global Stock-take
  - Global/country historical emissions data
  - Global/country projections
- Paris Enhanced Transparency Framework

## National 2030 and 2050 targets
- Relative US contributions to historic/future emissions
- Historic/future contribution of sinks + uncertainty
- Tracking progress (annual GHG inventories + projections)

## Domestic Policy Planning
- Detailed sectoral emissions breakdowns, annual historic/future trends
- Ancillary impacts (e.g., criteria pollutants)
- Integrated forest assessment

## Implementation and Tracking
- Regular emissions reporting and monitoring (annual)
- Troubleshooting - are regs effective at reducing emissions? Any super-emitters? (more frequent monitoring + alerts)
- Unintended consequences?
- Forests and land use

## International Cooperation
- Pressure campaign (G20, MEF) – historical/projected GHG by country
- Sectoral agreements (bunkers, Kigali, agriculture, forests) – historical/projected by sector
- Trade measures –embedded GHGs, 3rd party verification

## What have we missed?
- New research to highlight what else matters that we need to monitor/estimate/track
  - Forests
  - Agriculture/lands
  - Oceans/water
  - Underground carbon sequestration
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