



**IBTTA**  
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# Sustainability & Resilience Task Force Meeting

December 13, 2022

# Today's Agenda

1. Welcome
2. The Global Climate Context Heading towards COP 27
3. Some COP 27 Takeaways
4. Setting the IBTTA Agenda
  - 2023 Organization of the S&R Task Force
  - Survey of member interests, initiatives, and resources
  - Statement of IBTTA Sustainability & Resiliency Principles



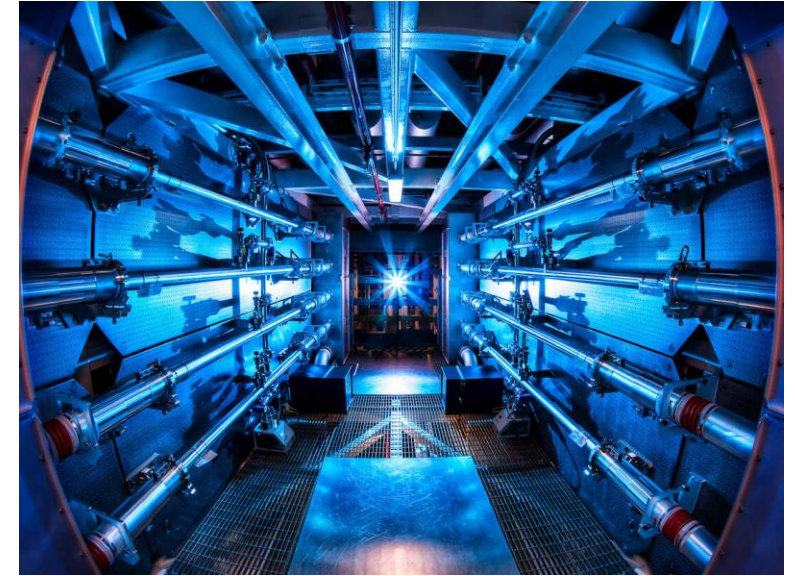
# In the News: Nuclear Fusion Breakthrough

- Researchers say that fusion energy could one day provide clean, safe electricity without greenhouse gas emissions.
- Unless there's an even larger breakthrough, fusion is unlikely to play a major role in power production before the 2060s or 2070s.
- The NIF facility is the world's most powerful laser system. It is designed to aim 192 beams onto a tiny cylinder of gold and depleted uranium. Inside the cylinder is a diamond capsule filled with two isotopes of hydrogen that can fuse together to release astonishing amounts of energy.

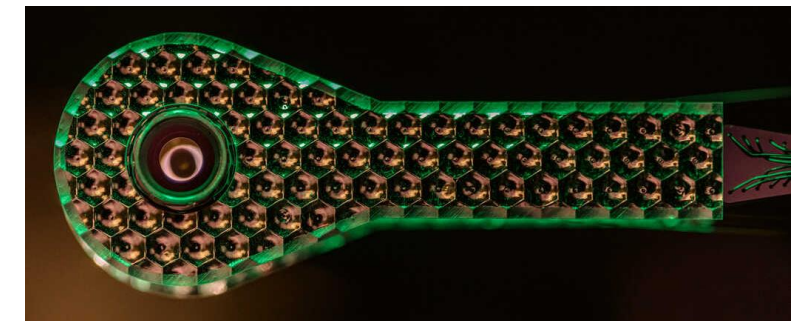
## ***The Next Challenge - producing more power from the tiny capsule than the lasers put in***

- The lasers require more than 300 megajoules worth of electricity to produce around 2 megajoules of ultraviolet laser light. So, even if the energy from the fusion reactions exceeds the energy from the lasers, it's still only around 1% of the total energy used.
- It would take many capsules exploding over and over to produce enough energy to feed the power grid.

Source: National Public Radio



Lawrence Livermore National Laboratory's National Ignition Facility (NIF) has used 192 laser beams to create net energy from a tiny pellet of nuclear fuel.



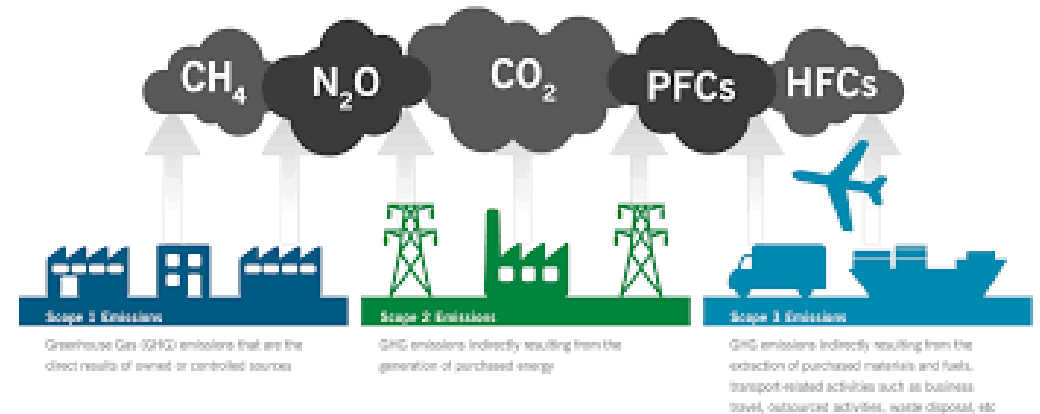
Scientists zap a target about the size of a pencil eraser.

A satellite-style map of the world, showing the continents of North America, South America, Africa, Europe, Asia, and Australia. The map is centered on the Atlantic Ocean, with the Americas on the left and Europe, Africa, and Asia on the right. The text "Setting the Context for COP27" is overlaid in white, bold, sans-serif font across the center of the map.

# Setting the Context for COP27

# Greenhouse Gas (GHG) Emissions: Where We Stand

We are falling short of the Paris climate agreement's goal of keeping global temperature increases  $\leq 1.5^{\circ}\text{C}$ .

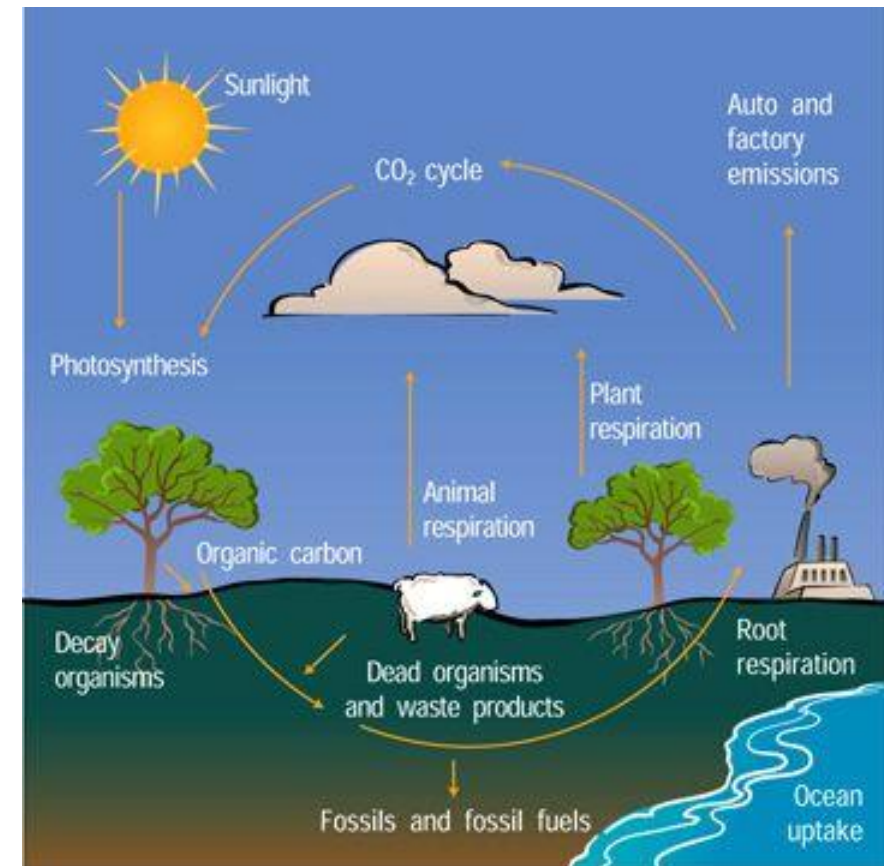


- Burning fossil fuels for energy is the largest source of human-caused climate change.
- The U.S. is the world's largest historical contributor to the 1.2°C increase since the Industrial Revolution.
- China emits the most greenhouse gases, releasing more than 25% of the global total.
- 65% of human-caused GHG greenhouse gases is from burning fossil fuels.
- Methane is the main component of natural gas and responsible for 16% of global GHG emissions.
  - Methane is that fastest growing GHG source due to horizontal drilling and fracking practices.
  - Wetlands emit methane, as do cattle.
- Agriculture and deforestation are also a significant sources of GHGs.
- Melting permafrost found in colder climates, is releasing more GHGs as the planet warms.
- Harvesting timber, clear-cutting forests to expand land for grazing or development, and wildfires all put more GHGs into the atmosphere.

# Greenhouse Gas (GHG) Emissions: Mitigating Measures

Policymakers are challenged to balancing economic, financial, political, and moral considerations in transitioning from fossil fuels, and the fairness of seeking developing nations to abandon cheaper, dirtier energy sources.

- Carbon capture and storage projects are yet to be proven on a large scale.
- Natural solutions (planting trees, curbing deforestation, and adopting sustainable agricultural methods) would absorb or prevent the release of GHGs.
- Replacing fossil fuel-based electricity with renewable energy (e.g., wind, solar) and converting combustion engine vehicles and appliances to electric would generate the biggest gains.
- New technologies to capture emissions before they reach the atmosphere, or pulling existing molecules directly from the air, are attracting attention and investment.

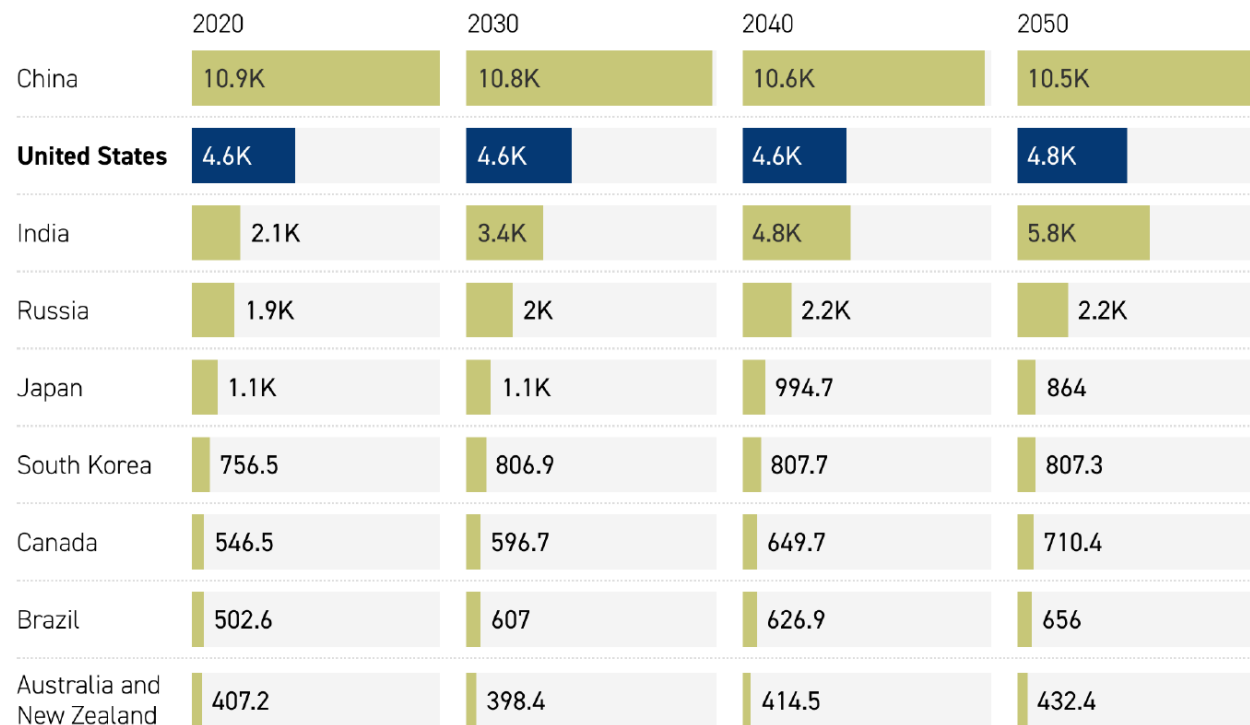


# The GHG Record and CO<sub>2</sub> Forecast Are Troublesome

- US goal of reducing 2030 emissions 50% of 2005 levels is lagging.
- China has not moved significantly on its near-term targets.
- Developing nations want to grow economies with fossil fuels and are projected to drive future GHG emissions.

## U.S. carbon dioxide emissions projected to rise 5 percent by 2050

Projected carbon dioxide emissions, in million metric tons



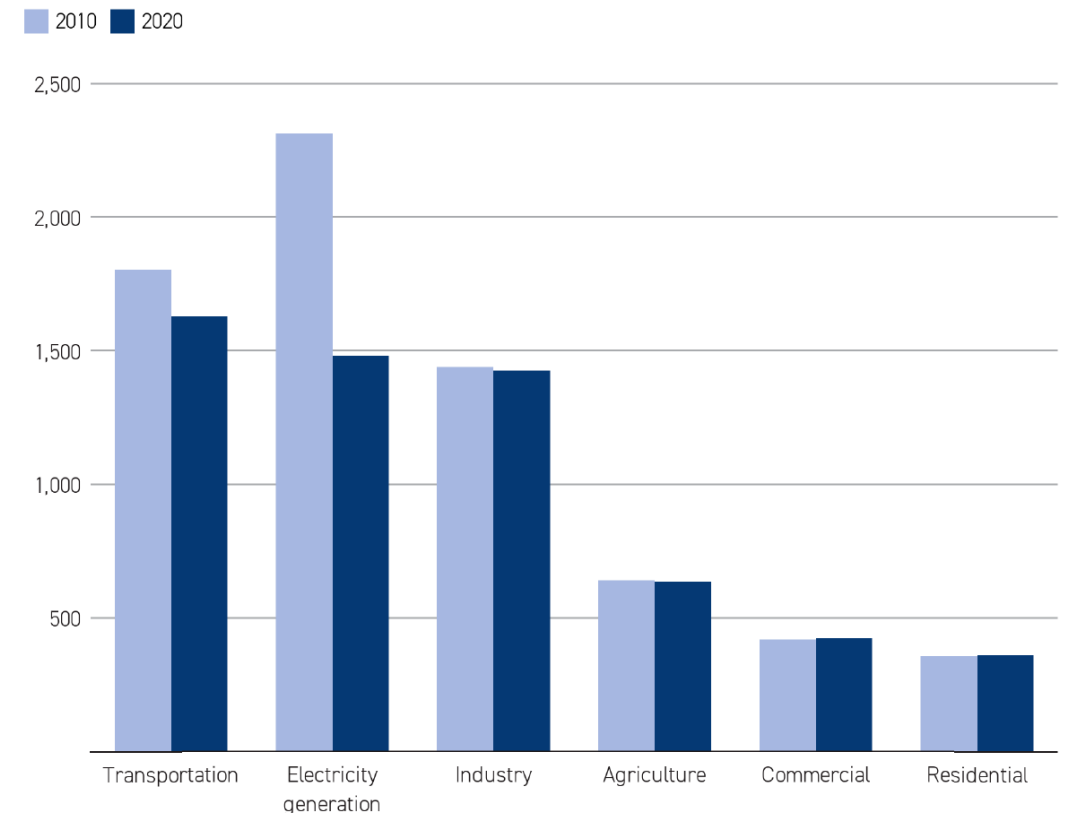
Note: 2020 uses actual historical emissions data. Projections as of October 2021.

Source: Energy Information Administration

Madi Alexander / POLITICO

## U.S. reduced emissions nearly 15 percent over 10 years

Annual greenhouse gas emissions in million metric tons of carbon dioxide equivalents, by sector



Note: Greenhouse gases include carbon dioxide, methane, nitrous oxide and fluorinated gases.

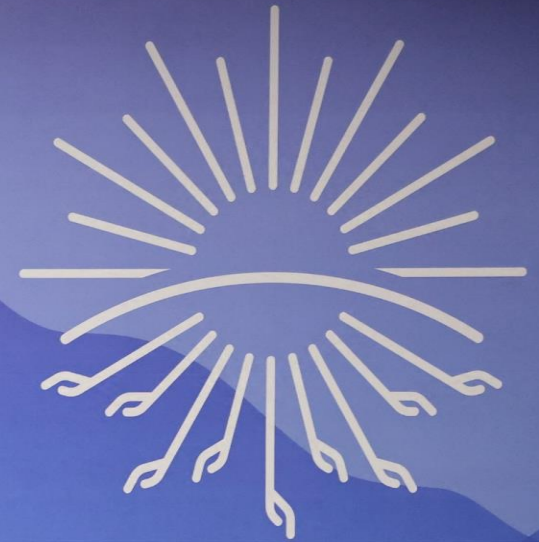
Source: EPA

Madi Alexander / POLITICO



United Nations  
Climate Change

**COP27**  
SHARM EL-SHEIKH  
EGYPT 2022



# Key Takeaways from COP27





# COP27: Some Key Takeaways

## Fund For Climate Justice

- First agreement to set up a fund for payouts to developing countries that suffer "loss and damage" from climate-driven storms, floods, droughts and wildfires.
- Details on how the fund will be run, including disbursements and eligibility, are still years away.

## Fossil Fuel Flow

- Criticism of the COP27 outcome cites weakness on emissions controls, lacking ambitious national targets and commitments to reduce fossil fuels (e.g., coal, oil and natural gas).

## Brazil Returns

- New President Luiz Inacio Lula da Silvanot attended and entered an agreement with Indonesia and the Democratic Republic of Congo to cooperate on forest preservation.

## U.S.-China Cooperation Rekindled

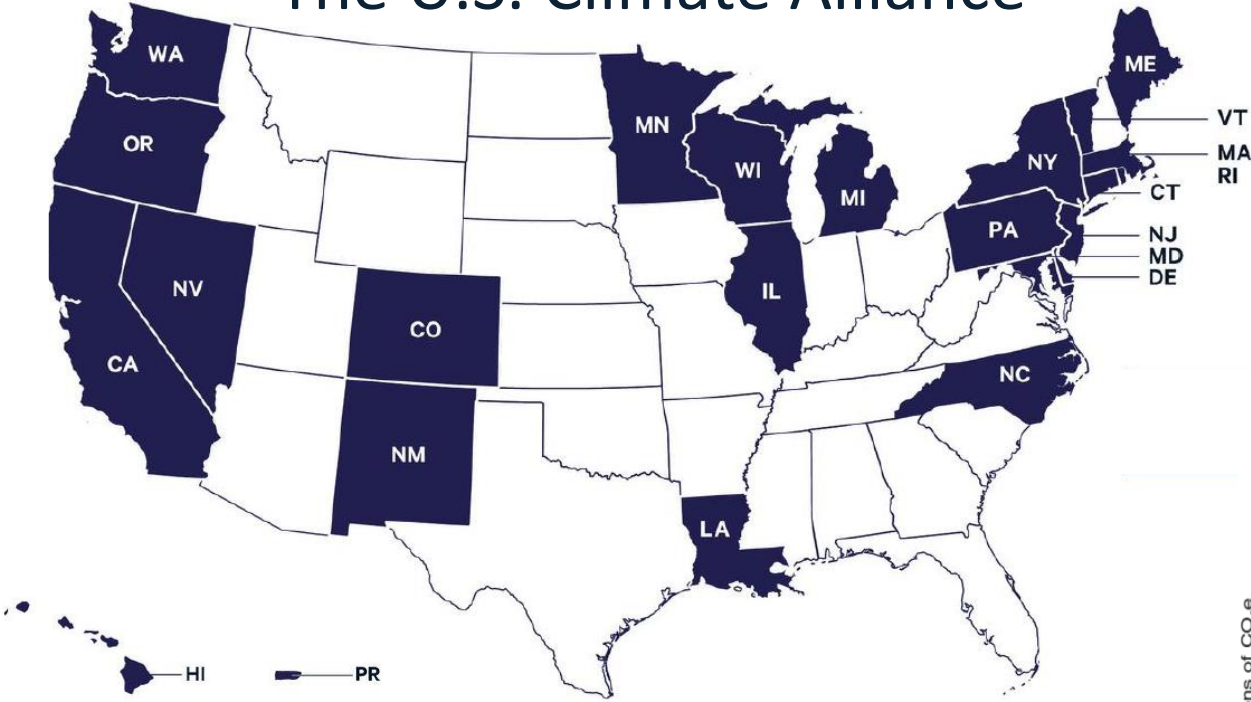
- Heads of the largest greenhouse gas emitters agreed to restart cooperation on climate change after a hiatus due to tensions over Taiwan.

## Billions in Private Finance is a Small Start

- A plan to reform public lenders (e.g., World Bank, etc.) to allow more risk and more to attract private investors.

# The Emergence of Subnational Actors In Climate Response

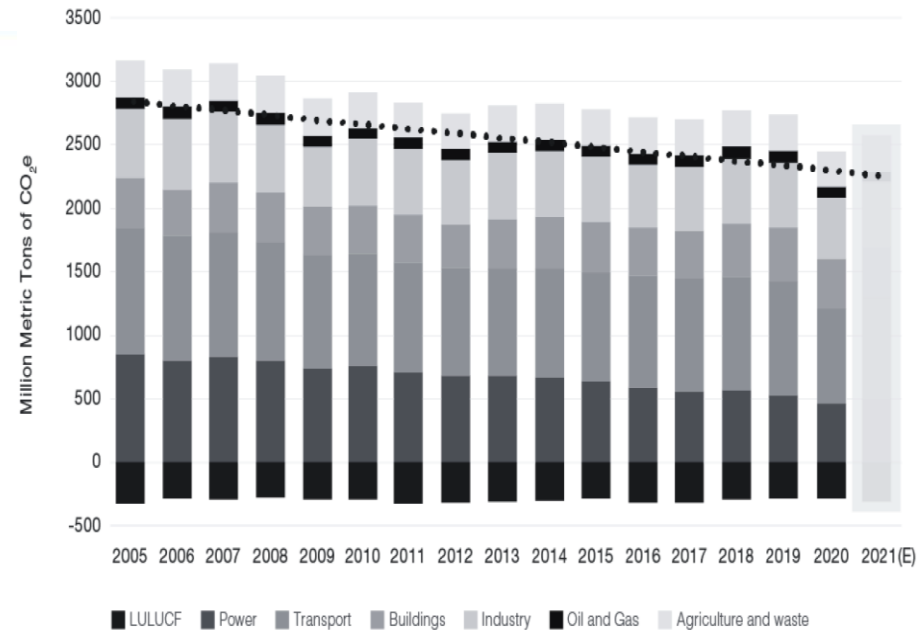
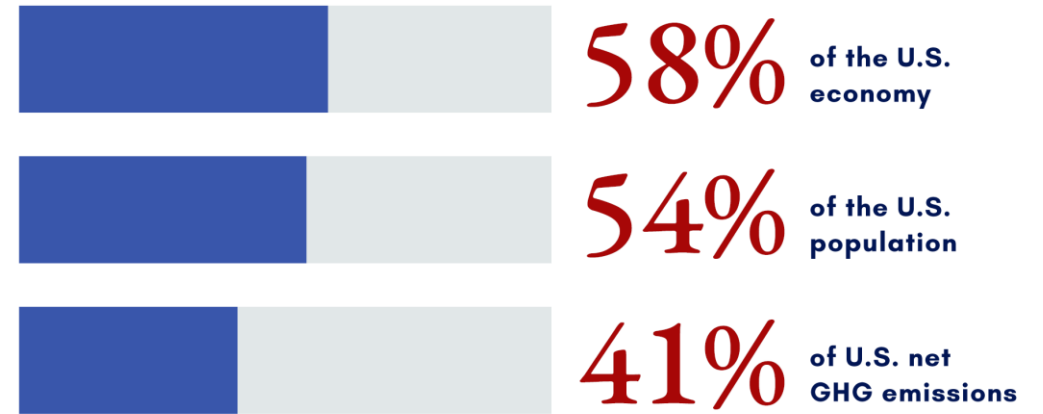
## The U.S. Climate Alliance



Bipartisan Coalition of 24 states working towards the goals of the Paris Agreement.

### POLICY PRIORITIES

- Power
- Buildings
- Industry
- Transport
- Just Transition & Equity
- Resilience
- Natural & Working Lands
- Social Cost of GHGs



THE ALLIANCE'S COLLECTIVE NET GHG EMISSIONS DECREASED AN ESTIMATED

**24%**

**2005-2020**

Source: Rhodium Group Climate Deck. Note: LULUCF = land use, land-use change, and forestry

# Reaffirming Task Force Focus Areas



- Performance Measurement and Metrics: Using Data to Drive Program Development
  - Emissions Valuation
  - S&R KPIs and Best Practices
  - ESG Reporting
- Vehicle Electrification and Alternative Fuels
  - EV Adoption and Charging Infrastructure Deployment
  - The Future of Other Alternative Vehicle Fuels
- Policy & Communication
  - Develop Task Force web page and resource library
  - Organize S&R activities within IBTTA events.
  - Assist with S&R legislation, regulation, and resources



# Proposed IBTTA Climate Action Principles Document

IBTTA's Executive Committee has endorsed the importance of establishing a statement of principles on global climate action. We seek to have IBTTA's principles address:

- The need for serious deliberations within the IBTTA community and leadership to produce our own set of principles.
- The need for substantive action to accompany high-level concepts. We would like IBTTA endorsements to the global climate crisis to be backed with substance.
- A commitment to develop a policy and set of principles in the next year that we can proudly offer as our views with the international transport community in 2023.

WISHING YOU

*health, happiness  
and peace*

DURING THIS HOLIDAY SEASON  
AND THROUGHOUT THE COMING YEAR!

- THE IBTTA STAFF -

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