

# Climate action can be a win for rural communities

Bidisha Bhattacharyya  
Deputy Director of Climate Policy  
Center for American Progress  
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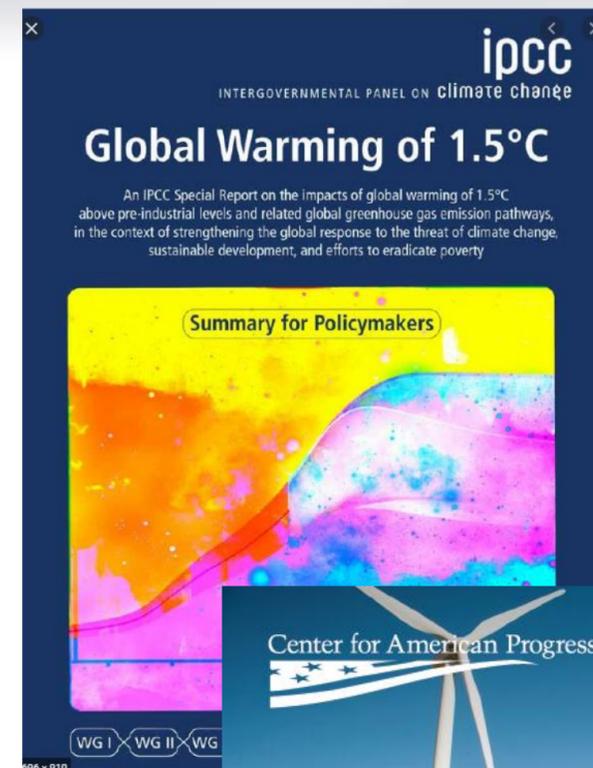
# The goal: Net Zero Emissions by 2050

## A new target – 1.5 degrees of warming

The 2018 IPCC Special Report warns that allowing warming to exceed 1.5° C would cause irreparable harm to ecosystems and human livelihood

This means we have to get to net-zero emissions by mid-century, globally.

This is going to take an all of the above approach. No longer is there one silver bullet solution that can decarbonize the economy fast enough .



## A 100 Percent Clean Future

By John Podesta, Christy Goldfuss, Trevor Higgins, Bidisha Bhattacharyya, Alan Yu, and Kristina Costa

October 2019



# U.S. GHG Emissions

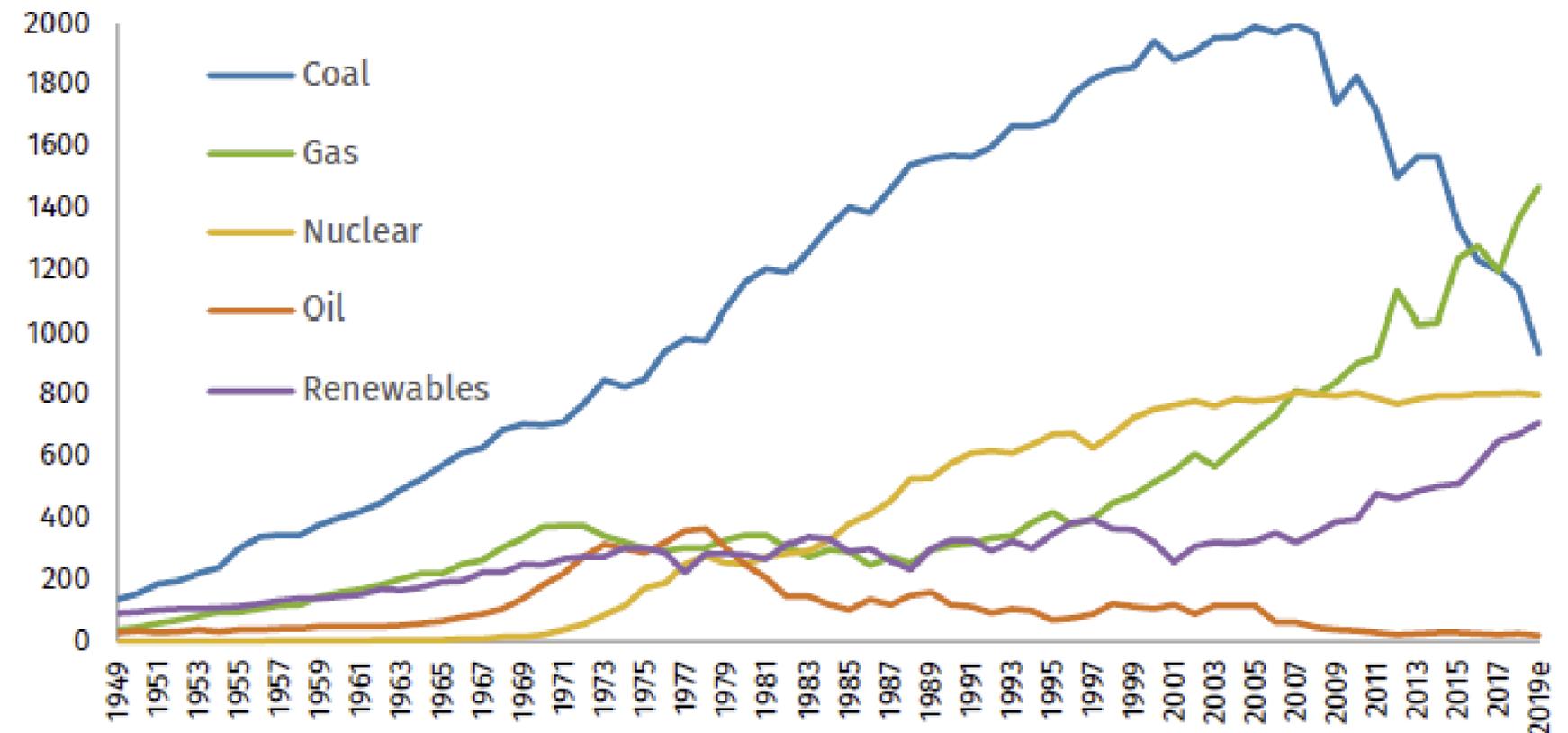
After an alarming increase in 2018, U.S. emissions fell by 2.1% in 2019, ending slightly higher than at the end of 2016.

This was primarily driven by switching from coal to natural gas in the power sector. All other sectors made little progress.

FIGURE 1

## US power generation by energy source

Billion kWh, electric power sector only, does not include distributed generation



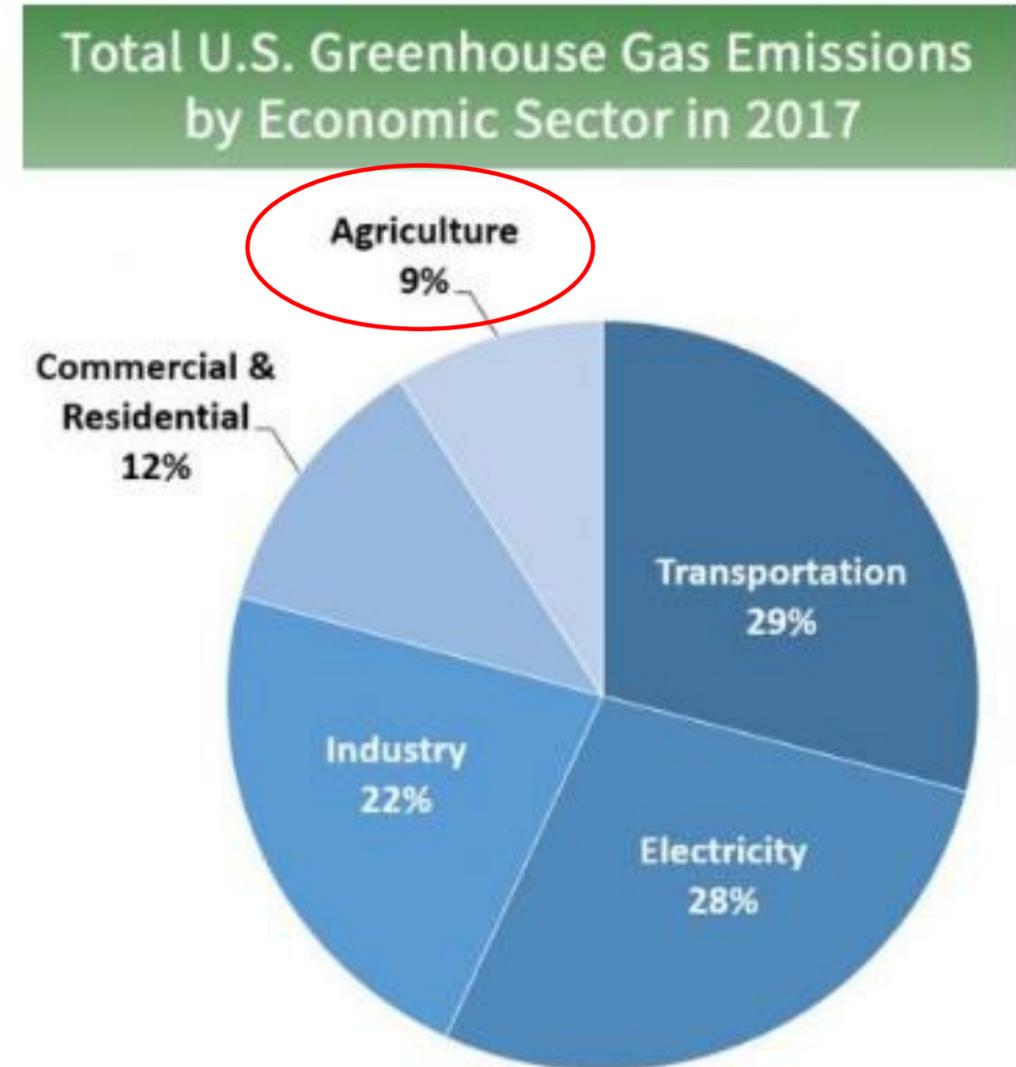
Source: Rhodium Climate Service

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# Agriculture makes up about 10% of US emissions

*Direct emissions only:* Note this does not include the indirect emissions from manufacturing of agricultural inputs such as fertilizer



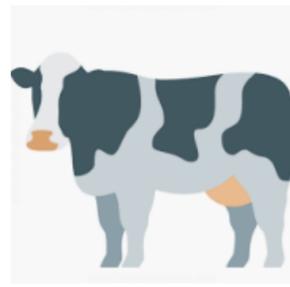
Source: EPA Greenhouse Gas Inventory 2017

# Major sources of U.S. agricultural emissions



## Crop cultivation

Input-intensive crop cultivation releases nitrous oxide, a potent greenhouse gas that accounts for half of the emissions from U.S. agriculture



## Livestock

Methane emissions from enteric fermentation and manure management accounts for over 40% of emissions from agriculture



## On-farm fuel combustion

Carbon Dioxide emissions from diesel-fueled farm equipment accounts for 6% of on-farm emissions

# Rural communities face major challenges

**\$3 billion**

Estimated flood damages across the Midwest in 2019

**19 million**

Acres that went unplanted in 2019 due to flooding



**24%**

Increase in Chapter 12 bankruptcies October 2018-2019

**31 million**

Acres farmland lost to development from 1992-2012, and the trend has continued

## Building a 100 Percent Clean Future Can Drive an Additional \$8 Billion a Year to Rural Communities

By Bidisha Bhattacharyya, Ryan Richards, and Rita Clifton | Posted on January 8, 2020, 12:01 am



Getty/Scott Olson

Corn and soybeans grow on a farm near Tipton, Iowa, July 2018.

Climate-smart policies  
can drive \$8 billion  
a year to rural  
communities



Photo: USDA NRCS

## Working lands

Climate-smart agricultural practices like planting cover crops and no-till present opportunities to increase soil carbon, reduce nitrous oxide emissions, all while increasing soil health and resilience.

Farmers can be compensated for the environmental benefits of these practices. Need more funding and more technical assistance capacity at USDA to increase adoption of these practices.

# Conservation



Photo: Prairie Business Magazine

- Land retirement programs like CRP and CREP provide a revenue source for moving the most vulnerable croplands out of production.
- Forestry programs can do the same for private forest lands.
- There is an opportunity to expand these programs and prioritize lands with high carbon sequestration potential.



Photo credit: USDA

## Livestock

- Methane digesters can capture methane coming off of manure management systems and put them to productive use on-farm.
- Cost and technology limitations pose barriers to many livestock operations
- There is a major role for R&D in developing new types of feed that reduce enteric fermentation.

# Renewable energy



Photo credit: Solar connection

- On-farm farm renewable energy and energy efficiency improvements can enable farmers to reduce their on-farm electricity costs and the associated emissions.
- Federal programs such as the Rural Energy for America Program (REAP) can be expanded to support these.
- Also need to make grid improvements to enable rural utilities to bring on-farm generation onto the grid.

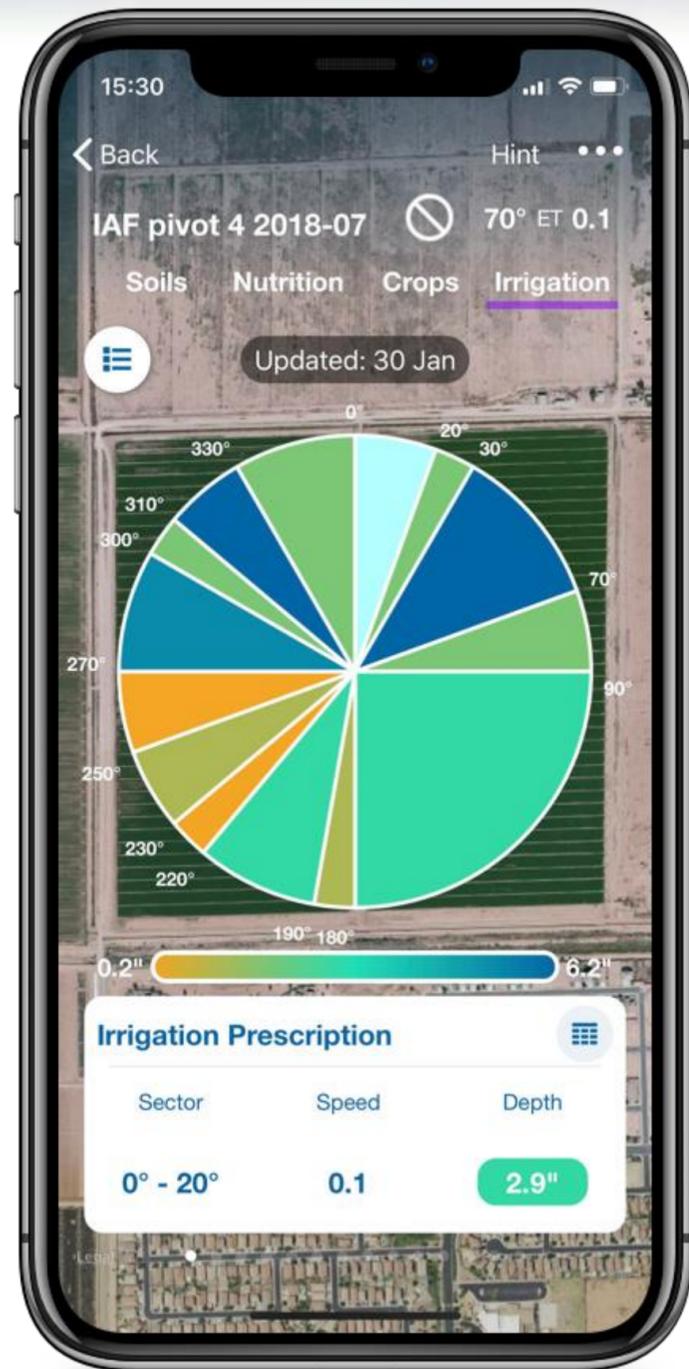


Photo: CropX

## Innovation

- Development and deployment of regenerative agriculture techniques at scale
- Methane management through digester technologies that work for more types of livestock as well as innovations in animal feed
- Precision agriculture for things like variable rate application
- Better soil carbon measurement and reporting processes

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