

Final US Emissions Estimates for 2018

In January, Rhodium provided preliminary estimates of US carbon dioxide (CO₂) emissions in 2018. In this note, we provide final energy CO₂ emissions data and preliminary estimates for economy-wide US greenhouse gas (GHG) emissions in 2018. CO₂ emissions from fossil fuel combustion rose by 2.7% in 2018, the second largest annual increase since 2000. Economy-wide GHG emissions likely rose by between 1.5% and 2.5% last year. That puts US emissions at 10.7% to 11.6% below 2005 levels, leaving a decently large gap to close in the next two years to meet the country's Copenhagen Accord target of "in the range of 17%" reduction in all GHG emissions by the end of 2020.

Trevor Houser
tghouser@rhg.com

Hannah Pitt
hpitt@rhg.com

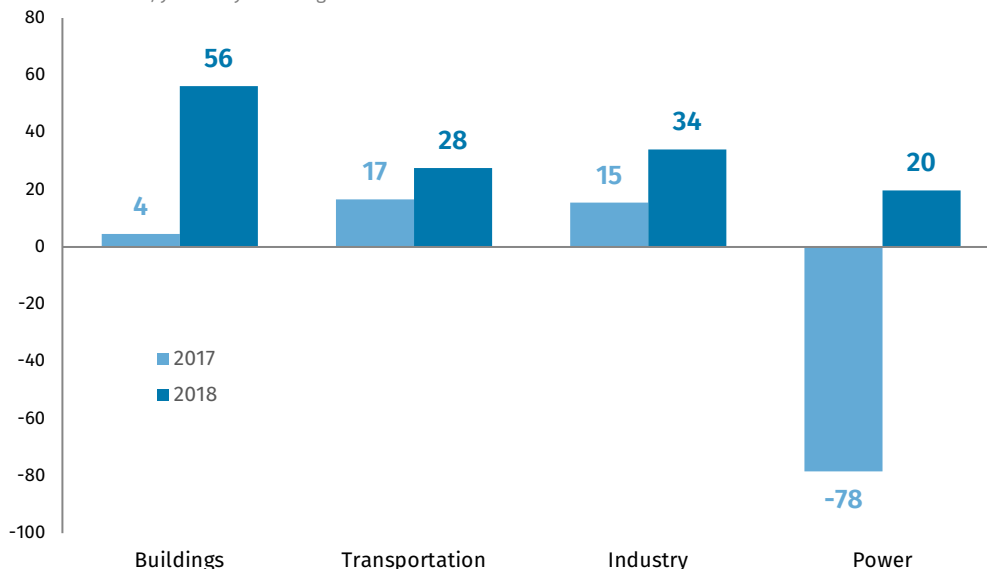
Hannah Hess
hhess@rhg.com

Building and Power Sectors Drive a Sign Change in Energy CO₂

As discussed in our [preliminary estimates](#) note, energy-related CO₂ emissions rose in 2018 after three years of continuous decline. Emissions in the transportation and industrial sector helped drive this trend, growing in 2017 and at an accelerated pace in 2018 on the back of stronger economic growth. But the big change year-on-year was in the buildings and power sectors. Growth in buildings sector emissions, as we noted in our January report, was primarily due to a reversion to historical average winter weather after an atypically warm 2017. That was partially responsible for the increase of 20 million metric tons in power sector emissions, coming after 2017 decline of 78 million metric tons.

FIGURE 1
Change in energy CO₂ emissions

Million metric tons, year-on-year change



Source: EIA and Rhodium Group estimates

Tel: +1.212.532.1157
Fax: +1.212.532.1162
Web: www.rhg.com

New York
5 Columbus Circle
New York, NY 10019

California
312 Clay Street
Oakland, CA 94617

Hong Kong
135 Bonham Strand
Sheung Wan, HK

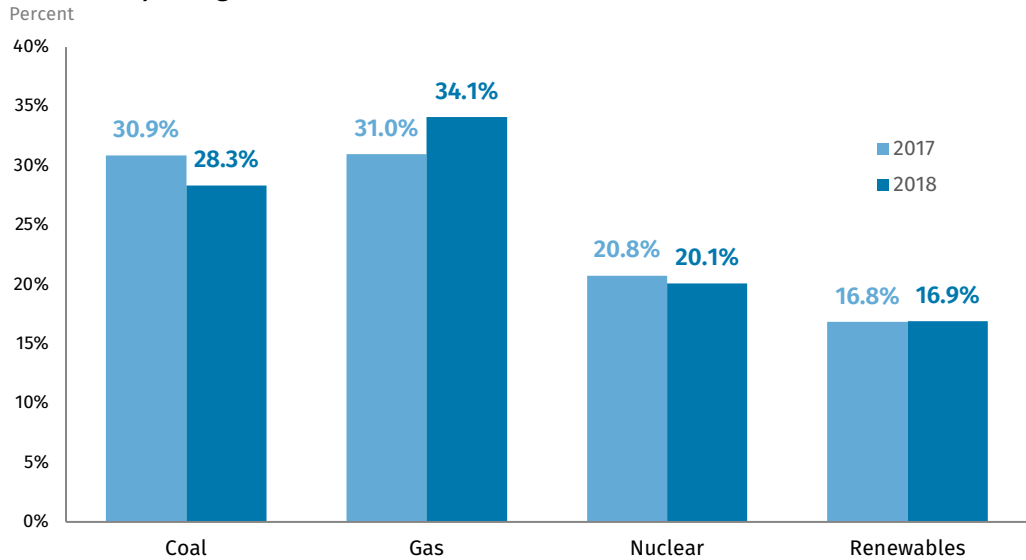
Paris
33 Avenue du Maine
75015 Paris

The pace of decarbonization of the power sector also slowed in 2018. Coal's share of power generation declined from 30.9% to 28.3% but gas's share rose from 31% to 34.1%, offsetting some of those gains.

Nuclear’s share declined from 20.8% to 20.1% while renewable’s share remained relatively flat, due to a decrease in hydro that offset a modest increase in wind and solar.

The downward revision from our 3.4% estimate in January to the final 2.7% number was due primarily to a significant drop in coal-fired power generation in December of last year. Between January and November, coal-fired power generation was down 4.5% year-on-year. In December it was down by 9.2%.

FIGURE 2
Share of US power generation

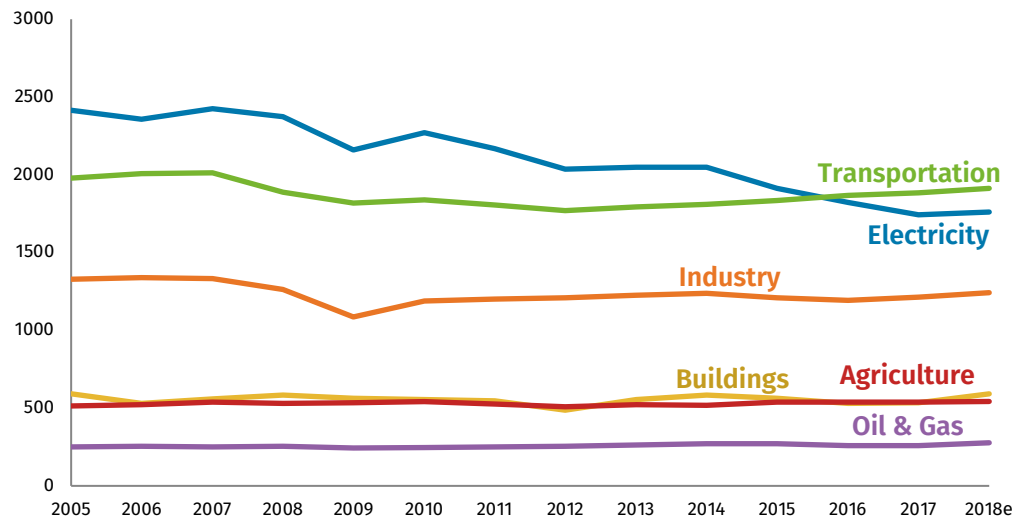


Source: Rhodium US Climate Service

All GHG Emissions

Energy-related CO₂ emissions account for 86% of all GHG in the US. Here we provide preliminary estimates for economy-wide emissions in 2018 using recently released Environmental Protection Agency (EPA) inventory estimates for 2017 and our method for estimating economy-wide GHG from the modeling used for our annual [Taking Stock](#) report. Our methodology is consistent with reporting guidelines for countries tracking progress toward their national commitments under the UN Framework Convention on Climate Change. We estimate that economy-wide emissions increased by 1.5% to 2.5% in 2018 (Figure 2).

FIGURE 2
US GHG emissions by sector
 Million metric tons CO₂ equivalent



Source: Rhodium US Climate Service

For the third year in a row, transportation was the largest source of US emissions. Electricity emissions ticked up after five years of decline. Industrial emissions posted their strongest year-on-year growth since the 2010 rebound from the Great Recession, and methane emissions continued to grow on the back of expanded oil and gas production.

All told, we estimate that net US GHG emissions were 10.7% to 11.6% below 2005 levels in 2018. The US emission reduction pledge under the Copenhagen Accord was a reduction “in the range of 17%” below 2005 levels by 2020. Next month, in our 2019 Taking Stock report, we will assess the prospects of the US meeting this target over the next two years, as well as the potential to make progress on the Paris Agreement target of a 26% to 28% reduction by 2025.

Disclosure Appendix

This material was produced by Rhodium Group LLC for use by the recipient only. No part of the content may be copied, photocopied or duplicated in any form by any means or redistributed without the prior written consent of Rhodium Group.

Rhodium Group is a specialized research firm that analyzes disruptive global trends. Our publications are intended to provide clients with general background research on important global developments and a framework for making informed decisions. Our research is based on current public information that we consider reliable, but we do not represent it as accurate or complete. The information in this publication is not intended as investment advice and it should not be relied on as such.

© 2019 Rhodium Group LLC, 5 Columbus Circle, New York, NY 10019. All rights reserved.