Sustainable Energy in America 2021 FACTBOOK

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Faces Behind the Facts

Success Stories of the 2021 Sustainable Energy in America Factbook



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A year of records and resilience

- Covid-19 touched virtually all aspects of U.S. energy in 2020. But clean energy showed remarkable resilience despite extraordinary circumstances.
- As the economy contracted, primary energy use plummeted 7.8% the largest annual drop in three decades.
- **Transportation-related energy demand fell hardest** (-14.4%) as Americans traveled less to stay safe. Electricity demand declined least.
- Energy "productivity" (GDP / total energy consumption) rose as Americans curtailed consumption due to stay-at-home orders or economic hardship.
- Renewables had a record-shattering year with 33.8GW built 50% above the previous annual record. Renewables provided 1/5th of 2020 U.S. power generation.
- **40% of 2020 generation was zero-carbon (renewables + nuclear).** Including natural gas, these sources provided 81% of power. Coal's role dwindled to 19%.
- Electric vehicle sales were flat year-on-year at 325,000 while internal combustion engine vehicle sales dropped sharply.
- U.S. greenhouse gas emissions sank 9% to end 2020 20% below 2005 levels. The U.S. temporarily got on track to meet its Paris Agreement goal, but 2021 emissions should rebound with economic recovery.
- **Policy-wise, the year ended on a positive note for clean energy** with the election of Joe Biden, Democrats taking Senate control, and the passage of a major stimulus bill.
- Some 2020 changes reflect once-in-a-century events (*hopefully*), others could prove permanent

U.S. 2020 energy productivity rose, but Americans suffered

U.S. GDP and primary energy consumption



U.S. energy productivity

Source: Bureau of Economic Analysis, EIA, BloombergNEF Notes: Values for 2019 are projected, accounting for seasonality, based on latest monthly values from EIA (data available through September 2020). 2020 GDP estimate is a projection from economists compiled at ECFC <GO> on the Bloomberg Terminal.

Fossil fuel use dropped very sharply, electricity demand also fell but by less

U.S. primary energy consumption, by fuel type

U.S. electricity demand



Source: EIA, BloombergNEF Notes: "CAGR" on the right hand side graph is compound annual growth rate. Values for 2020 are projected, accounting for seasonality, based on the latest monthly values from EIA (data available through September 2020). BTU stands for British thermal units.

Lower-carbon sources now predominate in U.S. power

U.S. electricity generation, by fuel type



Source: EIA, BloombergNEF Note: Values for 2020 are projected, accounting for seasonality, based on latest monthly values from EIA (data available through October 2020)

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Renewables had a blockbuster year, despite challenges

U.S. new renewable energy capacity build (GW)



Source: BloombergNEF, EIA Notes: All values are shown in AC except solar, which is included as DC capacity. Numbers include utility-scale (>1MW) projects of all types, rooftop solar, and small- and medium-sized wind. Includes installations or planned installations reported to the EIA through October 2020, as well as BloombergNEF projections.

Finance: Corporate procurement of clean energy in the U.S.





Largest corporate offtakers, 2020



Corporate power purchase agreements (PPAs) for clean energy totaled 11.9GW in 2020. This is down from 14.1GW in 2019, and is the first drop
in annual corporate PPA volumes since 2016. Covid-19 was the biggest factor in the drop – just 4.3GW of deals were announced in the first half
of the year as companies tightened budgets and shifted priorities internally in response to the pandemic. Some 7.6GW of deals were announced
in the second half of the year, signaling that companies will be better prepared to carry on sustainability initiative during any future disruptions.

- Solar has become the dominant clean energy technology sought by corporations. This is emblematic of a growing power markets expertise among buyers, who are trying to capture peak power pricing, which solar tends to capture better than wind. Additionally, many wind projects in popular markets like ERCOT and SPP have seen their revenues erode as more zero marginal cost clean energy is built, which depresses prices. This has prompted companies to instead seek solar contracts in these markets.
- Amazon was by far the largest corporate buyer of clean energy in 2020, at 3.8GW. The company announced 21 individual clean energy PPAs in the U.S., with most projects cited in Virginia and Ohio. Verizon (1GW) and General Motors (797MW) were the next largest buyers. A slew of firsttime buyers also entered the market in 2020, including Applied Materials, Henkel and Nucor.

Source: BloombergNEF Note: Charts show offsite PPAs only

Finance: Corporate sustainability targets



- The Climate Group's RE100 initiative, whose signatories pledge to offset 100% of their electricity consumption with renewables, had another record year of growth in 2020. Some 65 new companies joined, bringing the total number of signatories to 285. The U.S. holds onto its title as the most dominant market, with 79 (28%) of these companies. Technology (18) and Financials (18) are the most prominent sectors in the U.S.
- Through 2020, 123 companies have joined The Climate Group's EP100 campaign, which is nearly double the 64 that had joined at the end of 2019. Signatories pledge to double their energy productivity by 2030, while also cutting energy waste and owning and operating energy-smart buildings. Notable companies to join in 2020 include Lloyds Banking Group, Mitie and Derwent.
- The Climate Group's EV100 campaign, under which companies make a public commitment to integrate electric vehicles (EV) into their fleet or support EV charging infrastructure at their operations by 2030, is now up to 92 companies. Members such as DHL and EDF have already made significant progress in electrifying their vehicle fleets, purchasing 22,300 and 3,600 EVs, respectively.

Source: BloombergNEF, The Climate Group, company announcements Note: Chart is a list of companies that have either joined a respective campaign or made other efforts in these sectors.



The RNG value chain





- Traditionally, biogas (the feedstock for RNG) was used for electric generation onsite or sold into the power market. However, thanks to supportive policies and industry growth, energy incumbents from the oil & gas and utility sectors are developing strategic partnerships and investment opportunities to convert biogas into pipeline compatible natural gas with a much lower carbon footprint than geologic natural gas.
- Investor-owned utilities that have made net-zero carbon emissions targets by 2050 are investing in RNG projects to achieve those goals. For example, Dominion Energy and Smithfield Foods have formed a partnership to invest up to \$500 million over the next 10 years.
- Oil and gas companies with decades of experience in production and transportation of energy products see RNG as an extension of their core business and an opportunity to make clean energy investments. Total and BP committed to invest a combined \$100 million in partnership with the natural fueling company, Clean Energy Fuels, to develop new RNG production facilities. UGI Corporation, a gas and electric distribution company purchased GHI Energy, a Houston-based RNG marketing company.
- More gas utilities are making carbon emissions reduction goals and are leveraging the low carbon intensity of renewable natural gas as a pathway to achieve these net zero goals.

Source: BloombergNEF

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U.S. energy overview: Jobs in select segments of the energy sector

Jobs in select energy segments, 2019



- In 2019 (the last year for which complete data is available), the sustainable, nuclear and storage energy sectors employed an estimated 4.0 million Americans, according to the U.S. Energy and Employment Report. This number is slightly above 2018 levels. Energy efficiency alone supported 2.3 million jobs, while natural gas supported roughly 398,000 jobs and solar 345,000 jobs.
- Including upstream fuel-related jobs notably boosts total employment for fossil-fired generation and bioenergy. In 2019, 69% of the jobs associated with the natural gas sector came from fuel supply (down from 71% in 2018). Coal employed 161,000, with 49% in fuel supply (up from 46% in 2018).
- Energy efficiency jobs related to construction often involve individuals who also do other, non-efficiency related tasks. In fact, 78% of the 2.3 million employees involved in energy efficiency spent the majority of their time on energy efficiency tasks.
- In 2020, according to BW Research, the clean energy sector finished the year with the fewest number of workers since 2015. 429,000 (12% of the nation's clean energy workforce) remained unemployed by year's end, making 2020 the first year that clean energy employment saw a decline. 70% of the jobs lost in the clean energy sector had yet to be recovered by year end. At the rate of recovery over the last six months of 2020, the clean energy sector would not reach pre-COVID employment levels for another two and a half years.
- At the state level, 38 states and the District of Columbia continue to suffer double-digit unemployment in clean energy, with four states seeing unemployment of 20% or more.

Source: The U.S. Energy Employment Report, NASEO and EFI. Notes: This data relies on thousands of data points provided via survey. Transmission, distribution and storage jobs not included.



U.S. energy overview: Energy as a share of personal consumption expenditures

Total energy goods and services as share of total consumption expenditure



Components of total consumption expenditure, 12-month rolling avg.

- Energy spending accounted for just under 3.5% of total U.S. personal consumption expenditures in 2020, down .5 percentage points from 2019 levels as overall energy consumption slid. While Covid-19 restrictions altered consumer behavior in 2020, the year also reflects the ongoing trend of consumers devoting relatively small shares of their total spending to energy compared to historical levels, helped along by the rise of renewables, energy efficiency measures, and technological changes.
- Consumer spending on electricity ticked up while natural gas held steady as people spent more cooling their homes starting in mid-March (when lockdowns swept the nation, after 2020's mild, early-year heating months). 1.73% of household expenditures went to electricity and gas in 2020, only slightly above 2019 levels of 1.53%. This slight uptick was offset by deep declines in motor fuel spend, which reflect the steep overall declines in transportation energy consumption, shifting from 1.96% of spend in 2019 to 1.60% in 2020.

Source: Bureau of Economic Analysis, BloombergNEF

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2016

Power emissions are down, at least for now



Power emissions goals

U.S. greenhouse gas emissions by sector

Source: BloombergNEF, EIA, EPA Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2016 Notes: "Sinks" refer to forests and green areas which absorb carbon dioxide. Values for 2020 are projected, accounting for seasonality, based on monthly values from EIA available through September 2020 and BNEF projections.

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Electric vehicle sales beat the odds



U.S. electric and fuel cell vehicle sales

Source: BloombergNEF, Bloomberg Terminal, Marklines. Note: PHEV stands for plug-in hybrid electric vehicle, BEV stands for battery electric vehicle, HEV stands for hybrid electric vehicle and FCV stands for fuel cell vehicle. EV includes BEVs and PHEVs. FCV sales data not available prior to 2016. FCV sales numbers too low to be visible.

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Finance: Total new clean energy transition investment

Global economy-wide investment, by country



U.S. economy-wide investment, by sector



- Global energy transition investment hit \$500 billion for the first time in 2020 a 9% increase over 2019 marking the largest growth since 2016-2017.
- The U.S. accounted for \$85 billion (or nearly 20% of this global investment), but decreased 11% below 2019. The nation continues to spend the lion's share of its energy transition capital on renewable energy (58% of total spend) while transport remained a strong growth area (a 42% investment increase in the last 5 years, relative to power's 31%). Notably, the U.S. now invests roughly \$100 million/year in hydrogen, the vast majority of which is tied to fuel cell vehicle sales.
- U.S. renewable energy was not immune to the multi-sector investment dip in 2020. Last year, \$12 billion less was invested in renewable technologies (a 20% decrease) than in 2019. Solar and wind continued to pull the majority of the capital, accounting for 99% of all renewable energy investment.

Source: BloombergNEF, "Energy Transition Investment Trends, 2021"

Governments globally included decarbonization in stimulus packages

Global Covid-19 stimulus approved as of January 2021



New U.S. green stimulus



Source: Governments, media reports, BloombergNEF Note: 'Approved green stimulus' includes support to CO2-intensive sectors and companies with green conditions. Enhanced tax credit funding levels are based on U.S. Congress Joint Committee on Taxation estimate of new spending for those functions during 2021-30 fiscal years. Excludes extension of excise tax credits relating to alternative fuels because this includes support for fossil fuels and green fuels.

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In the U.S., this meant RD&D and tax credits

Energy RD&D spending in U.S. stimulus bill (\$millions)



Fusion

ARPA-E

- Carbon capture demonstration
- Energy storage
- Large-scale carbon capture pilots
- Carbon capture demonstration
- Carbon storage
- Wind





- Solar Investment Tax Credit
- Residential energyefficiency/biomass fuel
- Onshore wind **Production Tax** Credit
- 17D commercial buildings efficiency
- 45Q carbon capture use and storage
- Homeowners energy efficiency
- ITC for offshore wind
- Construction of energy efficient new homes
- Waste energy recovery credit

Sources: BloombergNEF, U.S. Congress Joint Committee on Taxation

Policy: Infrastructure and resilience

U.S. billion-dollar weather and climate disasters



Quarterly residential energy storage systems installed in California



- The U.S. in 2020 experienced a record 22 climate disasters causing at least \$1 billion in damage, far exceeding the previous record of 16 events in each of 2011 and 2017. The 2020 events, made up of tropical cyclones, severe storms, droughts and wildfires, are estimated to have caused \$95 billion in damage.
- California last year recorded five of the six largest wildfires in its history. Millions of utility customers in the state were left without electricity as utilities cut service to address fire risk from arcing transmission lines.
- Motivated by policy incentives and concerns about grid reliability, California utility customers installed more than 11,500 residential energy storage systems in Q1-Q3 2020. This number is 52% greater that of the same time period in 2019.
- Additional investment in transmission will be key to meet renewable energy goals as well as to enhance grid resilience and reliability in the face of increasingly frequent extreme weather events. Additionally, transmission projects also deliver significant economic benefits via job creation as well as cost savings for consumers and millions of dollars in new state and local tax revenue

Source: National Oceanic and Atmospheric Administration, BloombergNEF. Note: Portrays annual counts of drought, flooding, freeze, severe storm, tropical cyclone, wildfire and winter storm events in the U.S. with losses of more than \$1 billion each.

2020 put the U.S. on the path to Paris, but probably just temporarily

Economy-wide U.S. greenhouse gas emissions



Greenhouse gas emissions by sector

Source: BloombergNEF, EIA, EPA Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2016 Notes: "Sinks" refer to forests and green areas which absorb carbon dioxide. Values for 2020 are projected, accounting for seasonality, based on monthly values from EIA available through September 2020 and BNEF projections.

2020

Power

Industrial

Buildings

Agriculture

'15

'10



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Dan LeFevers

Director, State and Consumer Programs Gas Technology Institute

Deployment: U.S. natural gas pricing, wholesale and by end use

Natural gas spot prices



Natural gas prices to end users

- U.S. natural gas prices fell in 2020 due to lost demand from the Covid-19 pandemic. Year-over-year wholesale prices declined 22%.
- Natural gas prices rose just under 1% for residential consumers in 2020. Since 2010, all three segments saw steep declines: residential (-21%), commercial (-31%), and industrial (-39%).
- Residential price adjustments tend to lag behind index prices by 6-12 months depending on utility practices.

Source: BloombergNEF, EIA; Note: Natural gas spot prices derive from Henry Hub annual spot prices. Values for 2020 commercial and industrial prices are projected based on EIA forecasts for residential prices.



Deployment: U.S. natural gas demand by end use



- After a decade of growth, total demand for U.S. gas decreased for the first time since 2009 due to the Covid-19 pandemic.
- While overall load fell, gas demand for power generation grew by 0.6Bcfd due to lower year-on-year gas prices and continued coal-fired power plant retirements.
- LNG exports also grew significantly due to new liquefaction capacity coming online via multiple export facility projects.
- Industrial, residential and commercial heating demand decreased 4.2%, 10.5%, and 10.2%, respectively.

Source: BloombergNEF, EIA. Note: Values for 2020 are projected, accounting for seasonality and impacts of covid-19; data based on the latest monthly values from EIA (available through October 2020) and reported pipeline deliveries.

Deployment: Industrial gas demand by region



U.S. Natural Gas Industrial Consumption (Tcf)

- Industrial gas consumption slipped 7.5% in 2020 from the year prior. Consumption decreased in all regions, but by varying amounts: the East was down 14%; the Midwest by 14%; South Central by 2%; the Mountain region by 6%; and the Pacific by 9.5%. In the decade prior to 2020, however, overall U.S. gas industrial consumption has jumped 32%, spurred by lower prices. The majority of industrial consumption continues to come from facilities in the South Central region.
- Industrial sector gas consumption totaled 7.8Tcf in 2020, of which 1.3Tcf was consumed in the East, 1.5Tcf in the Midwest, 3.7Tcf in South Central, 0.5Tcf in the Mountain region, and 0.8Tcf in the Pacific.
- There has been a long-term gradual slide in gas consumption from the Pacific region. Demand peaked there in 2014 at 0.92Tcf and has declined nearly every year since.

Source: BloombergNEF, EIA; Note: Values for 2020 are projected, accounting for seasonality, based on latest monthly values from EIA (data available through October 2020). 2017 industrial consumption numbers were used as proxies for missing monthly values for a number of states.

Deployment: Industrial on-site power generation, by type of fuel



Industrial, on-site power generation, TWh



100% 90% 35% 33% 37% 36% 41% 41% 40% 39% 80% 43% 42%

Industrial, on-site power generation, % total



- Total industrial sector energy consumption had risen 24% in the decade before 2020. In 2019, it accounted for 23% of total U.S. primary energy demand. The sector's total emissions of greenhouse gases rose at a slower, 14% pace over the same period. The industrial sector also accounted for 23% of total U.S. GHG emissions in 2019. However, 2020 was an anomaly: the sector's consumption fell by 5.8% last year.
- Industrial sector, on-site power generation is when electricity is produced at an industrial plant's premises rather than coming from the grid. From 2019 to 2020, on-site industrial power generation fell 2%. Before 2020, it was up 12% since the start of the decade.
- In 2020, natural gas was responsible for an estimated 99TWh of on-site generation at industrial facilities. Other sources provided an additional 47TWh. In total, industrial on-site generation decreased 3TWh over 2019 levels. Prior to 2020, the percent of on-site generation provided by natural gas had increased in the last decade, from 57% in 2009 to 66% 2019, as natural gas displaced other, more expensive fuels, namely coal. This shrunk the size of an otherwise more carbon-intensive, coal-dominated fuel mix.

Source: BloombergNEF, EIA; Note: Values for 2020 are projected, accounting for seasonality, based on latest monthly values from EIA (data available through October 2020)

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Policy: Infrastructure and resilience

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Source: National Oceanic and Atmospheric Administration, BloombergNEF. Note: Portrays annual counts of drought, flooding, freeze, severe storm, tropical cyclone, wildfire and winter storm events in the U.S. with losses of more than \$1 billion each.

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Deployment: National microgrid penetration



- There are 2.9GW of operational and 1.6GW of planned microgrids in the U.S. spread across 462 and 221 sites, respectively. This is up from 2.7GW (242 sites) of operational and 1.4GW (138 sites) of planned in 2019.
- Of these, 1,065MW of operational and 374MW of planned microgrid capacity come from combined heat and power (CHP) systems, representing around 33% of all operational and planned capacity. There are currently 44 CHP sites paired with solar generating capacity, 19 with diesel generators and 30 with storage. Other technologies have ten or fewer sites paired with CHP.
- The commercial sector has the largest number of microgrid systems with a combined 250 operational and planned sites. The municipal and military sectors have the second and third largest with 92 and 63 sites. The commercial and military sectors have 181 and 52 sites currently in operation. With only 35 current sites, the city/municipal sector has the second largest "planned" pipeline (commercial's is 69).

Source: ICF Microgrid Database, BloombergNEF Note: Microgrid is defined as a group of interconnected loads and distributed energy resources (DERs) that can disconnect and re-connect to the utility grid as a single entity, allowing facilities to remain operational during utility outages.

Deployment: U.S. CHP deployment by fuel and sector, 2019

U.S. CHP deployment by fuel source



U.S. CHP deployment by sector

- Fuel source distribution of CHP essentially remained the same from 2018 to 2019 (the last year for which complete data exists). Natural gas continued to supply the majority of CHP fuel at 72% (58MW). 14% of total operational capacity relies on units using biomass, wood, or waste. Coal's contribution ticked down 1%, from 12% to 11%. Additionally, there are 13 propane systems operating in the U.S. and its territories. And two of these systems help provide energy to critical infrastructure.
- For both the commercial and industrial sectors, CHP facility build and retirements balanced in 2019, leading to relatively flat shares of the market held at 16% and 78%, respectively.

Source: BloombergNEF, DOE CHP Installation Database (maintained by ICF) Note: totals may not add to 100% due to rounding.

Deployment: U.S. midstream gas infrastructure capacity and investment

U.S. transmission pipeline capacity additions



U.S. gas transmission and distribution rate base (gas utility plant)



• Growth in the lower 48 states pipeline network slowed considerably in 2020 with the lowest level of capacity additions since 2016. Only two projects completed were new pipelines (as opposed to conversions, expansions, laterals, or upgrades) for combined capacity of less than 1 Bcfd.

• Natural gas infrastructure investment grew in 2019, hitting \$601 billion. The vast majority of this investment was spent on the natural gas transmission and distribution systems, accounting for 47% and 43% of the spending, respectively.

Source: BloombergNEF, American Gas Association, EIA Notes: EIA data include both first-mile takeaway capacity and pipeline additions that do not impact takeaway capacity. 2019 transmission capacity is a BloombergNEF estimate.



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Stuart Saulters

Vice President of Government Relations American Public Gas Association

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Deployment: U.S. natural gas residential customers vs. consumption

Residential demand vs. consumption



Heating degree-days



- Residential natural gas consumption decreased by 8% in 2020 even as the number of customers grew by 1%. Prior to 2020, the customer base for residential gas has expanded by 5 million, or 8%, in the last decade and by 12.1 million, or 21%, over the past 20 years. Meanwhile, residential consumption remained largely flat over the same time, rising 7% in 10 years, but only 8% in 20 years, due to efficiency gains in the use of gas.
- Residential gas consumption is volatile year-to-year as it's driven by weather patterns. Consumption dropped during the abnormally mild winter of 2012, which saw a 13% fall in the number of heating degree days from the previous winter. It then jumped during the polar vortices of 2013 and 2014. 2020 was another mild winter (after an atypically cold 2018 and 2019), driving the 8% decrease in consumption.

Source: BloombergNEF, EIA Notes: Values for 2020 are projected, accounting for seasonality, based on latest monthly values from EIA (data available through October 2020). Heating degreeday data are available through September 2020.



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Patrick Serfass

Executive Director American Biogas Council

Financing: U.S. bioenergy asset finance

Asset finance for U.S. biomass



Asset finance for U.S. biogas, waste-to-energy

- Asset (project) finance for new biomass continues to fluctuate as biogas investment continued its resurgence that began in 2017. In 2020, AcuComm tracked 15 investments into large biomass, biogas and waste-to-energy projects with a combined capacity of over 156MW and total investment value of \$1.65 billion, over double the investment value of bioenergy plants financed in 2019.
- Lower investment for biomass in the past five years suggests that new build will continue to be subdued. Plants take two to four years to build and commission, so investment functions as a leading indicator for build.
- AcuComm is an alternate data provider providing coverage of select bioenergy plants throughout the U.S.

Source: BloombergNEF, EIA, company announcements, AcuComm Notes: Values are nominal and include estimates for deals with undisclosed values. Biogas includes anaerobic digestion (1MW and above, except for wastewater treatment facilities) and landfill gas.



First generation biofuels (billion gallons)

Next generation biofuels (million gallons)



- Each gallon of biofuel receives a renewable identification number (RIN) upon blending, which the blender can count towards annual mandated targets or sell to other blenders who otherwise would not meet targets. Prices rose through 2020 for biomass-based diesel and advanced biofuel RINs (D4 and D5), which in both cases began the year at less than \$0.50 and ended it within a few pennies of \$1.
- The highest value are cellulosic or 'next generation' biofuels. These include cellulosic ethanol, diesel and biogas (including renewable natural gas), which are made from non-food feedstocks and possess low carbon footprints. Cellulosic RINs (D3) recovered from a low of \$0.98 during the March 2020 pandemic retreat to more than \$2 at year-end.

Using RINs as a proxy for physical volumes, we estimate that refiners blended an estimated 14.4 billion gallons of first-generation biofuels in 2020, 32% less than in 2019. The volume of next-generation biofuels blended in the year grew 13% to 428 million gallons.
 Source: BloombergNEF, EPA Notes: Fuels under the Renewable Fuel Standard are categorized by D codes, to determine fuel type. D3 stands for Cellulosic Biofuels, D4 for Biomass-based Diesel, D5 for Advanced Biofuel, D6 for Renewable Fuel, D7 for Cellulosic Diesel. See the EPA's website for more information. Volumes exclude imported biofuels.





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Jacob Peterson

Senior Manager, External Relations, National Propane Gas Association

Deployment: Heating demand for natural gas

Percent change in total end use customers (residential, commercial, and industrial), 2009-2019



Primary heating source by household



© 2021 Mapbox © OpenStreetMap

- Natural gas is the largest heating source in the residential sector, with 58.7 million homes heated by utility natural gas. That is equivalent to 48% of U.S. households. The second largest heating source, electricity, accounts for 39% of households.
- In absolute terms nationwide, the total number of end users burning natural gas for heating has risen by 7.4% since 2009. However, usage changes vary substantially by region. For example, usage grew swiftly in the New England states as the share of consumers displacing more costly fuels rose by double digits.
- An additional 5.8 million households rely on propane to meet their primary space heating needs. In 2020, propane companies also provided space heating to pop-up Covid-19 testing and evaluation sites around the country.

Source: BloombergNEF, US Census Bureau

Deployment: Natural gas demand from natural gas vehicles on U.S. roads

Bcf

59.6 59.6 50.4 51.1 50.1

- Natural gas use in vehicles has grown steadily since 2013, and jumped 16% in 2020 from the year prior to reach 60Bcf. This represents a 7.6% compound annual growth rate over the last decade. A consumption uptick in 2014 coincided with the start of a period of low natural gas prices across the U.S.
- Compressed natural gas (CNG) remains more widely used than liquefied natural gas (LNG), and this is reflected in the amount of fueling
 infrastructure available for each technology. As of October 2019, there were 1,591 CNG stations across the U.S., compared to 119 LNG
 stations (including public and private stations). The number of CNG stations shrank by 4% from 2018, and the number of LNG stations fell by
 an even steeper 13%.
- Comparatively, there are now 2,991 propane stations in U.S., down 4% from 2019. Of these, 950 are primary propane refueling stations, a number that increased by 16% from 2019. There are 20,090 propane school buses deployed in 48 states.

Source: EIA, natural gas monthly Notes: Values for natural gas demand in 2020 are projected, accounting for seasonality, based on latest monthly values from EIA (data available through September 2020). Data exclude gas consumed in the operation of pipelines.