2022 Energy Trends Report

LOOKING AHEAD

At IGS Energy, we keep an eye on the market for trends we believe will have an impact on consumers, whether you own a home or business. And if we know one thing for certain, it's that 2022 will be another pivotal year for the energy sector.

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Last year, the industry continued to experience meaningful change, as more consumers demanded—and governments and industries responded to—a shift toward responsible, renewable energy generation.

But throughout this period of massive growth and change, **consumption of fossil fuels continued to grow in 2021,** driven by an imbalance in energy supply and demand—reversing the decline in carbon emissions we saw at the start of the coronavirus pandemic. As we look ahead at the trends that will influence the industry and consumers this year, it's clear that the future of energy is one that's cleaner, more connected and more efficient. But a complete transformation will take innovation and pragmatism.

In this report, we highlight seven trends we believe will impact the energy industry in **2022 and beyond.**

Global Energy Demand Drives Prices and Emissions

In 2020, we saw a historic drop in energy demand. But, in the last two years, a surge in global demand has strained energy markets—and prices have hit highs around the world.

According to the U.S. Energy Information Administration, global energy demand in 2021 was 0.5 percent higher than in 2019. By 2050, global energy use is projected to increase nearly 50 percent. This is driven, in part, by economic and population growth in countries not part of the Organization for Economic Co-Operation (OECD), an intergovernmental organization focused on economic development.[1]

In fact, nearly 70 percent of the projected increase in global energy demand will occur in emerging markets and developing economies.[2]

To support this increase in consumption, oil and natural gas production will continue to increase—non-OECD Asia leads the growth in liquid fuel consumption—which could hinder global efforts to reduce energy-related carbon dioxide (CO2) emissions.[3]

0.5%
HIGHER ENERGY DEMAND IN 2021 COMPARED TO 2019

KEY TAKEAWAY:

To meet global demand, fossil fuel consumption **will remain high in 2022,** underlining the need for a pragmatic yet swift transition to renewable energy.

50%
PROJECTED INCREASE IN ENERGY CONSUMPTION BY 2050

Volatility in the Natural Gas Market

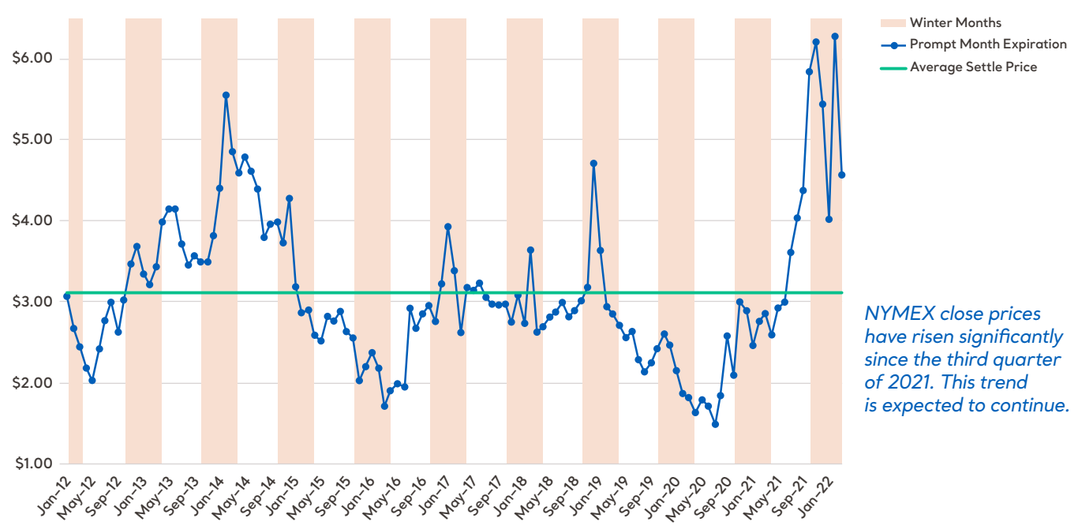
As 2021 came to a close, **the U.S. Energy Information Administration** had some good news for consumers: The natural gas market (which influences power prices, too) was evening out, though volatility was likely to remain.

But within the first two months of 2022, it became evident that energy markets will be even more volatile than they were in late 2021, when prices fluctuated wildly. Due to uncertainty around seasonal demand, flat production, a continued rise in U.S. natural gas exports[1] and, now, the conflict in Europe, consumers can expect price uncertainty to continue well into 2022.

Throughout the next several months, the market will react to a significant imbalance in supply and demand, particularly in Europe and Asia. Prices in these markets are estimated to remain extraordinarily high throughout the year.[2]

DEMAND FAR OUT PACING SUPPLY

Monthly NYMEX Expiration Prices | Jan. 2012 - March 2022



NYMEX close prices have risen significantly since the third quarter of 2021. This trend is expected to continue.

KEY TAKEAWAY:
Consumers will continue to see energy prices that are higher than in the last several years.

Renewable Energy Remains Competitive

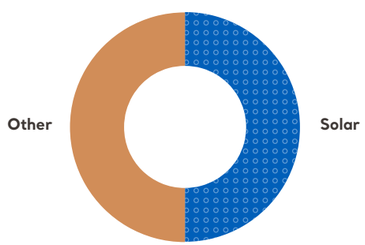
The conversation around renewable energy is beginning to stretch beyond meeting sustainability goals to one that highlights renewables' cost-competitiveness.

Of the wind, solar and other renewable sources that came online in 2020, 62 percent were cheaper than the cheapest new fossil fuel.[1] In most markets, solar photovoltaic technology and wind now represent the least expensive available source of new electricity generation.[1]

Solar is projected to lead renewable generation in the short- and long-term, accounting for nearly half of all new power generation in the U.S. for 2022.[3] Globally, solar generation is expected to surpass natural gas and coal between 2040 and 2050.[4]

But while renewable energy will be the primary source for new electricity generation moving forward, natural gas, coal and batteries will continue to be used to meet load and support grid reliability.[4] The transition to a greener grid will not be dominated by one solution—rather by an approach that includes renewable energy, storage and other innovative solutions.

Planned U.S. utility-scale electric generating capacity additions for 2022 (in GW)



In 2022, solar power will account for almost half of new U.S. electric generating capacity.

KEY TAKEAWAY:
Lower costs mean more consumers are making the switch to a cleaner energy source.

Renewed Growth in the U.S. EV Market

It's estimated that electric vehicles (EVs) will represent 31 percent of total global passenger vehicle stock by 2050.[1] But in the U.S., EV adoption is still in its infancy.

In 2020, after a decade of rapid growth, more than 10 million electric cars were on the world's roadways, with battery electric vehicle models leading the way. But despite this growth—a 43 percent increase over 2019[2]—the U.S. represents only about 17 percent of these vehicles.[3] Still, the number of EVs on American roads in 2020 was three times what it was in 2016.[3]

It's likely this number will continue to rise as drivers see more options. Thirty new models are expected to launch in 2022 alone, and 18 of the 20 largest manufacturers have committed to increase their EV offerings, as more than 10 of the world's largest manufacturers have declared electrification targets. Notably, GM plans to offer only light-duty electric vehicles by 2035.

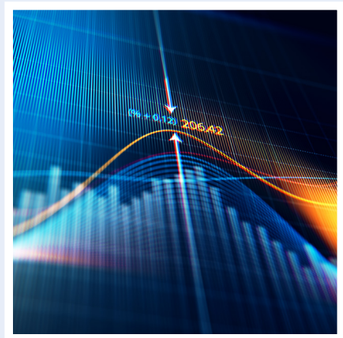
In August 2021, the Biden administration announced a target for EVs to represent half of all U.S. auto sales by 2030. This shift will be made possible by the declining cost of batteries, infrastructure improvements, and greater access to a green electricity source at home, where most EV charging occurs.

KEY TAKEAWAY:

In recent years, **EVs have accounted for just 2% of the U.S. new-car market,** but dramatic shifts are on the horizon as options expand.

Increased Focus on a Smart(er) Grid

As our energy needs have increased, the North American power grid has failed to keep up. This challenge is only complicated by the undeniable need for this energy to come from renewable sources in order to combat climate change.

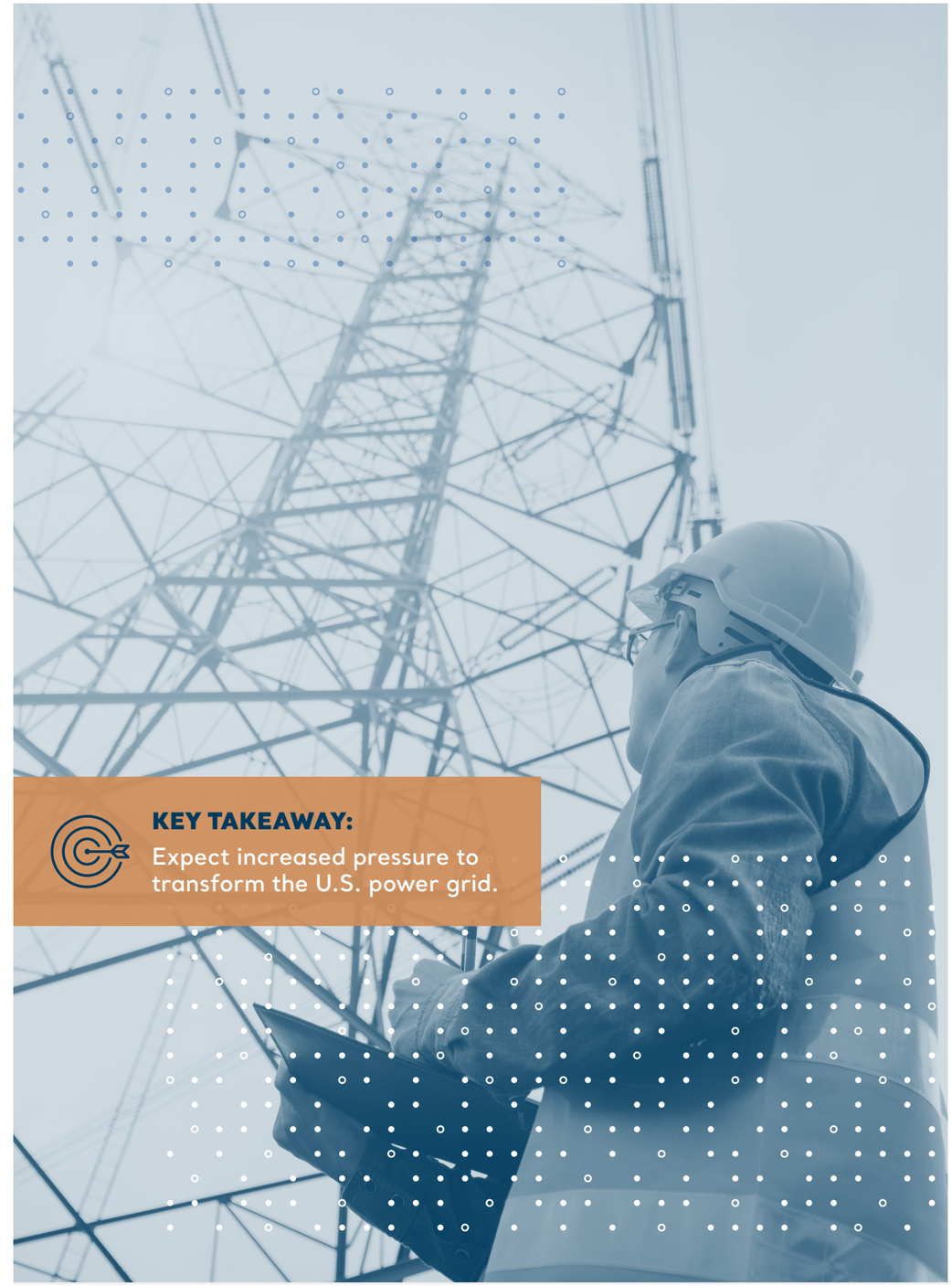


The potential for grid failure has received a great deal of attention in recent years. In 2021, the American Society of Civil Engineers gave our energy sector a C- grade. Meanwhile policy makers grapple with the fact that most of our power grid is simply too old, with some components over a century old.[1]

Experts have made it clear that what the U.S. needs is a smart grid—one that can detect and manage imbalances between supply and demand in real-time, ensuring reliable power even when demand spikes. The proposed Bipartisan Infrastructure Deal seeks investment to not only build thousands of miles of new transmission lines, but also implement smart grid technologies.[2]

Still, technological advancement—from smart thermostats to rooftop solar panels and energy storage solutions—continues to outpace both infrastructure capabilities and policy development, as states work to align policy with the rapidly changing energy market.[3]

The challenge facing policymakers in 2022: Allow innovative technologies to shift us away from a centralized grid with one-way energy flows toward a two-way system built around microgrids.



KEY TAKEAWAY:
Expect increased pressure to transform the U.S. power grid.

An Emphasis on Innovative Storage Solutions

Greater reliance on renewable energy has increased our need for storage solutions that can keep the grid stable. This means balancing supply and consumption—even when it's not sunny or breezy enough for solar and wind power to meet demand. And while the cost of lithium-ion batteries has fallen dramatically—about 80 percent over the last five years[1]—new solutions are increasingly being developed, tested and put into operation.

As of 2020, the Department of Energy Global Energy Storage Database included 700 projects across the U.S., with storage technologies ranging from batteries to thermal systems and pumped hydropower.[1] By 2030, energy storage installations are estimated to be 20 times greater than at the end of 2020.[2]

Also front-and-center this year: growing pressure around the need for safer and more ethical processes for sourcing the materials needed for storage solutions, notably the cobalt mined for lithium-ion batteries.

The Energy Information Administration **estimates that 10GW of battery storage capacity will be added over the next two years.** More than 60% of this is expected to be co-located with solar PV projects.

700
STORAGE PROJECTS

KEY TAKEAWAY:
The industry continues to broaden focus on energy storage to include a variety of innovative solutions.

Corporations Driving Offset Demand

Each year, more companies are using carbon offsets to neutralize their emissions impact and make progress on their net-zero goals. In late 2021, the voluntary carbon markets hit a value of more than $1 billion for the first time—a 58 percent increase in value and a 27 percent increase in volume over 2020.[1]

Corporations like Amazon, Delta, Alphabet and Microsoft are driving demand to new highs. As a result, carbon offset projects and retailers are challenged to keep up, and the cost of certain types of credits—most notably forest and land-use projects—is on the rise.[1] Projects that reduce emissions by protecting and managing at-risk forests, grasslands and other ecosystems saw demand more than double in 2021.[1]

As the markets try to meet this demand, the challenge facing corporations in 2022 is to carefully consider the projects they invest in. This comes as consumers grow more aware of the offset market and call on businesses to invest in newer projects that have the potential for greater environmental impact.[2]

KEY TAKEAWAY:

As corporations continue to drive demand for carbon offsets, we'll see a rise in prices as well as scrutiny from consumers.

58%
INCREASE IN CARBON OFFSET MARKET VALUE

$1 BILLION +
VALUE OF THE CARBON OFFSET MARKET

SOURCES

Global Energy Demand Drives Prices and Emissions

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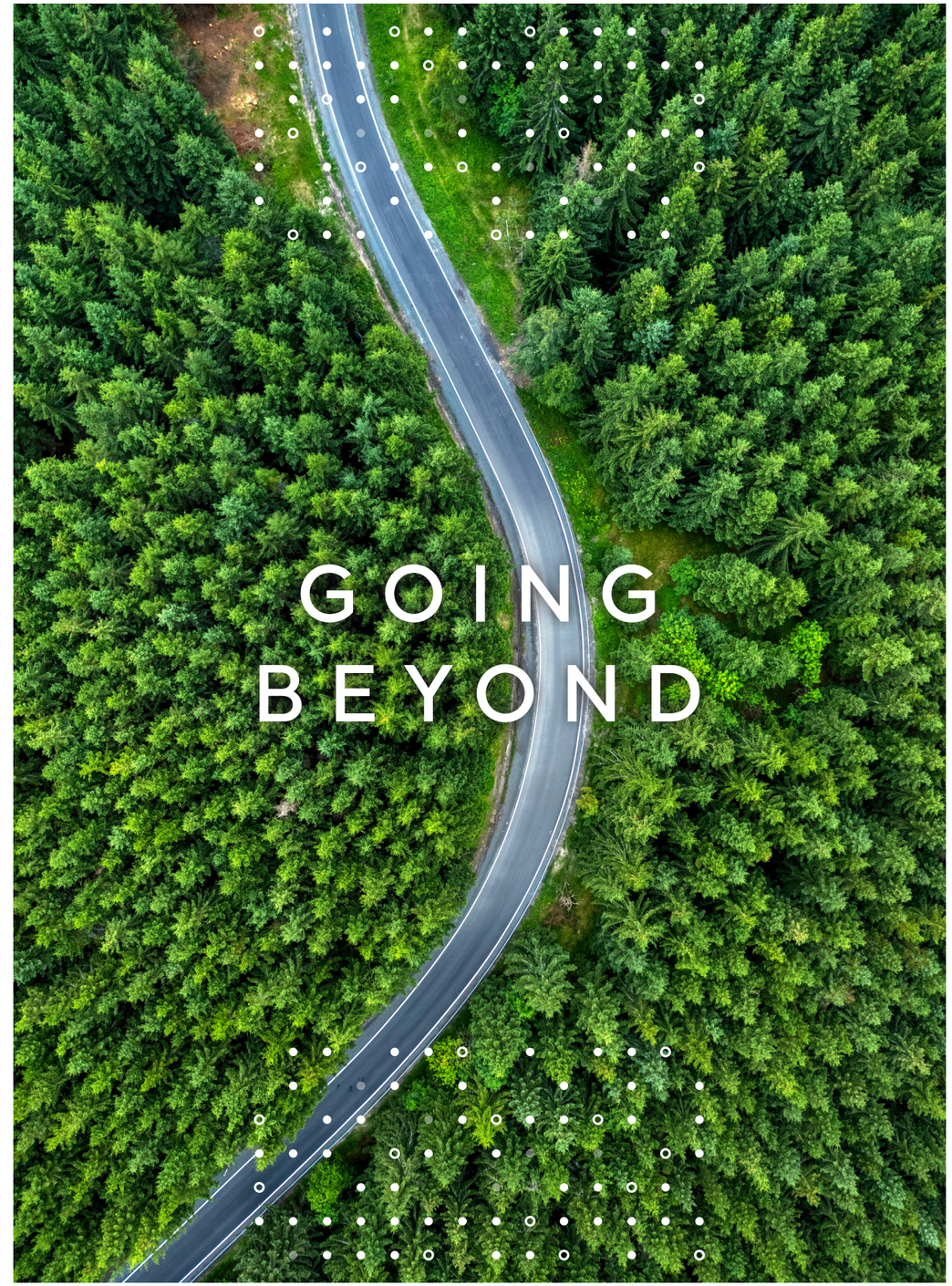

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