Testimony before the
House Committee on Energy & Commerce
Energy and Environment Subcommittees
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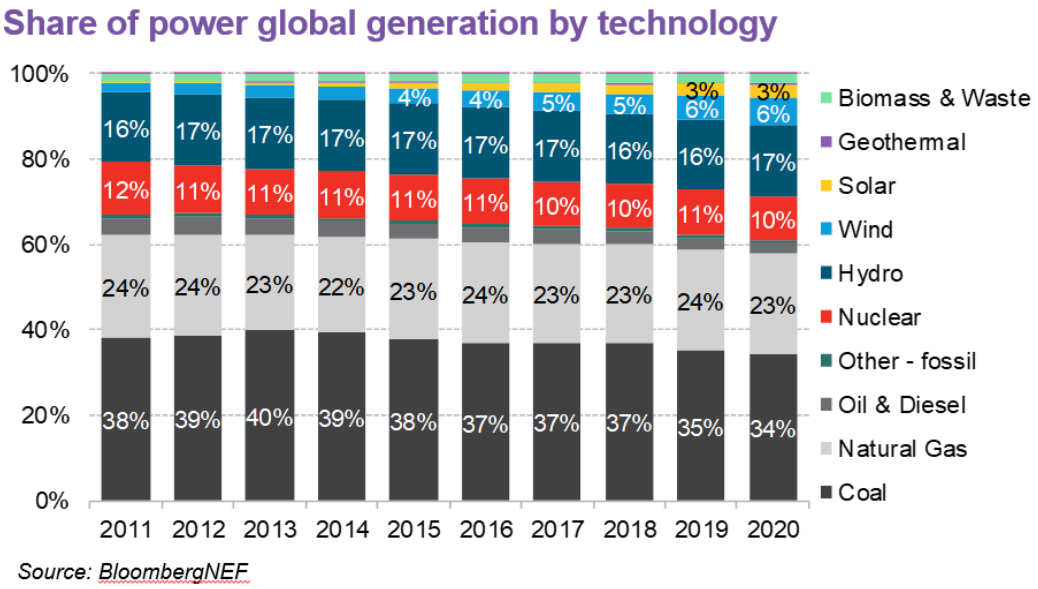
Good morning and thank you for this opportunity, Chairmen Tonko and Rush and Ranking Members Upton and McKinley.

I am here today in my role as analyst at BloombergNEF, a division of financial information provider Bloomberg L.P. Our group provides investors, utilities, oil majors, policy-makers, and others with data and insights on the energy world and other sectors of the global economy undergoing rapid transformation. My remarks today represent my views alone, not the corporate positions of Bloomberg L.P. And of course, they do not represent specific investment advice.

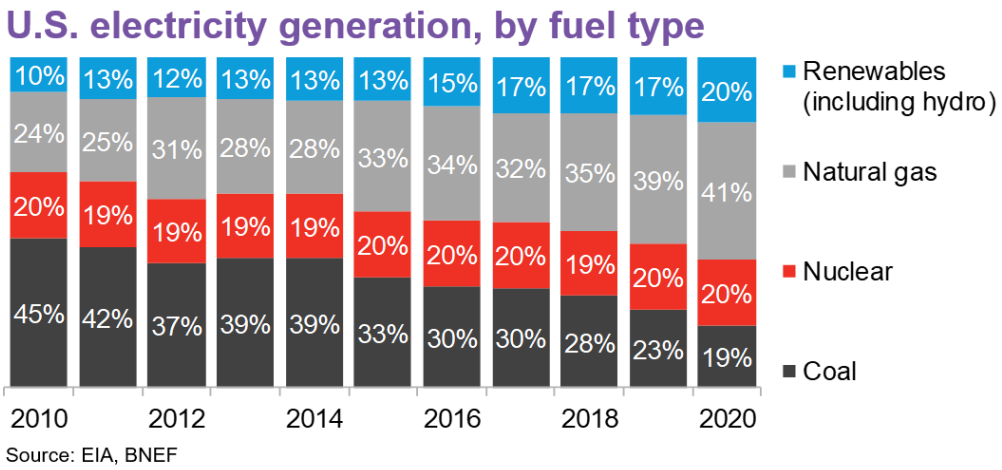
Progress in the energy industry and transportation sector used to be measured in decades. Its sheer scale meant that the adoption of fuels or technologies was, by definition, slow and laborious.

Today, however, how the world generates, delivers, and consumes energy are all not only being transformed radically – but also rapidly. Both around the world and here in the U.S. clean energy technologies are no longer at the margins, but very much at the center of change.

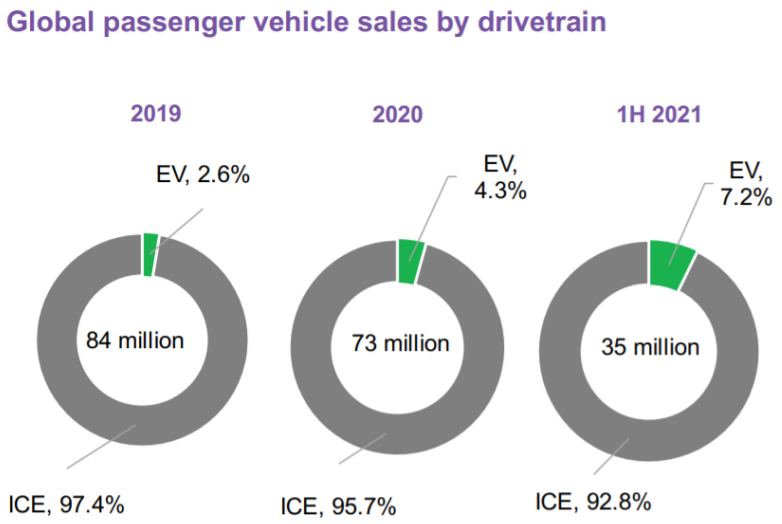
In 2020, wind, solar, geothermal and biomass accounted for 12% of global electricity production. That was up from 9% in 2018 and just 4% in 2011. Two-fifths of global power came from zero-carbon sources, including nuclear power.



In the U.S., wind and solar's share of power generation has doubled in a decade and 20% of our power in 2020 came from all renewable sources. The vast majority of new capacity added to the grid in the last two years has been wind and solar.

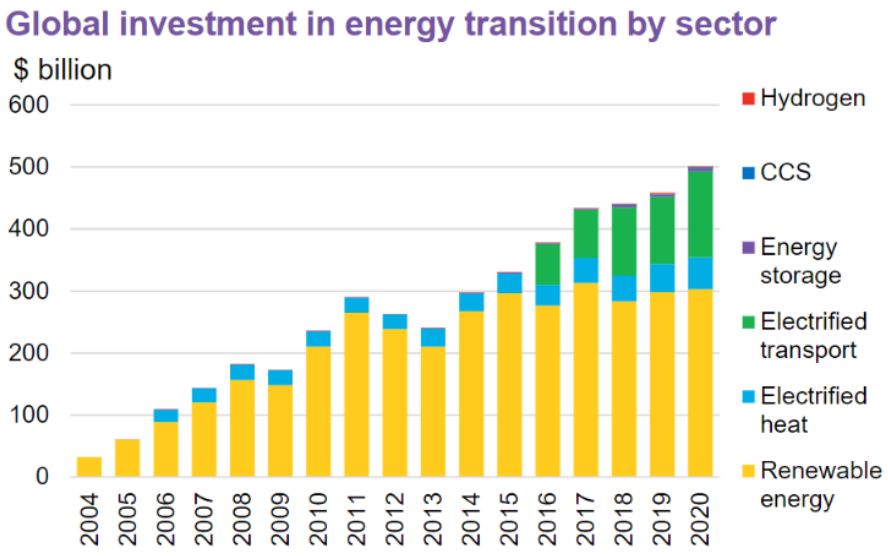


A similar transformation is underway in road transportation, albeit at an earlier stage. In 2015, consumers purchased 0.5 million electric vehicles worldwide. This year, we're on track to see at least 5 million sold and EVs' share vs. internal combustion engine (ICE) cars has nearly tripled since 2019 to 7.2% in the first half of 2021.



Government policies, most notably in China and the EU, have boosted EV sales. But public acceptance and outright enthusiasm for EVs is growing. The cars run quieter, generally require less maintenance and have fewer moving parts. They offer outstanding acceleration. They're also really fun to drive.

Clean energy's growth has, of course, created major economic development opportunities. Our firm has tracked over $4 trillion in energy transition investment since 2004.



Source: BloombergNEF. Note: start-years differ by sector.

Far more lucrative opportunities lie ahead. Renewable power projects alone will attract no less than $10 trillion through 2050, our firm projects. Grid expansions and upgrades will top $11 trillion. The charging infrastructure for EVs is projected to total approximately $600 billion over the next 20 years.

With this fundamental transformation underway, the question is: which companies and which countries stand to reap the economic benefits?

Despite its extraordinary resources – most notably, its human resources – today, the U.S. is not positioned to lead in these rapidly expanding segments of the global economy. The reasons why are detailed in several reports my firm produced with the Center for Strategic and International Studies earlier this year and are referenced in the memo circulated by Chairman Pallone.

Here are a few quick takeaways:

When it comes to manufacturing of solar photovoltaic (PV) equipment, the U.S. today is effectively a bit player, despite being the second largest demand market for such equipment. Chinese companies dominate virtually every segment of the manufacturing value chain for silicon PV modules.

In wind turbine production, the story is a bit more complex. In part because these are such specialized pieces of equipment and partly because they are expensive to ship, the U.S. does meet most of its demand for completed wind turbines locally. However, turbines installed in the U.S. typically contain substantial volumes of components manufactured abroad.

When it comes to electric vehicles, the most critical and costly component is the battery. In terms of volume, the U.S. today a laggard in the final assembly of such

batteries and in the production of battery components. China and South Korea are primary suppliers with Europe coming on strong.

What specific policies could trigger U.S. clean energy manufacturing growth? For clues, it's worth examining the challenges and successes Germany, India and particularly China have achieved.

In our research with CSIS, we found that to attract the private investment required to scale manufacturing, equipment makers must believe significant local demand exists for their products, both in the short and long term.

I raise this point in the context of China, which is not only the largest supplier of clean energy goods on earth – by far – but the largest demand market for such equipment as well.

There has been plenty of attention paid to how China subsidizes the manufacturing of clean energy equipment by making low- or zero-interest capital available to producers. While that is true, China has also created significant demand for clean energy goods by offering higher tariffs for zero-carbon power, or offering rebates for the purchase of EVs or plug-in hybrid EVs.

The U.S. still has the opportunity to become a major player in the production of certain clean energy goods. But achieving scale-up will require a holistic approach to policymaking and the recognition that many of the largest, most sophisticated manufacturing facilities will only come on line if there is sufficient confidence about local demand.

I will close by noting that Congress has before it today legislation that can send the very signals needed to trigger a U.S. clean manufacturing scale-up. The

infrastructure bill passed the other day marked an important step in this direction with its support for transmission, EV charging, and other technologies.

But it is the currently pending Build Back Better legislation that stands to make a far bigger impact in this area. By focusing both on the supply and demand side of the clean energy equation, the bill has the potential to unleash an unprecedented wave of investment in manufacturing capacity on U.S. soil.

Thank you again for this opportunity. I look forward to your questions.

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