Congress Close to Boosting the U.S. Green Technology Sector

On June 8, 2021, the Senate passed the U.S. Innovation and Competition Act ("USICA"), an expansive, $250 billion bill, aimed at maintaining America's position as a global science, technology, and manufacturing leader. Organized into seven divisions, the bill seeks to bolster U.S. manufacturing capacity of critical electronic goods, like semiconductors, and stimulate domestic innovation in several key emerging technology areas.

From the solar panel cells and turbines that transform light and wind into energy to smart devices, semiconductors serve a key role in powering sustainable technologies.[1] Since 1990, America's global semiconductor production share has gradually dwindled, while foreign manufacturing capacity, led primarily by China, Taiwan, South Korea, and Singapore, has flourished.[2] USICA's Creating Helpful Incentives to Produce Semiconductors ("CHIPS") for America program is designed to bolster America's semiconductor manufacturing capacity by dedicating over $50 billion for semiconductor research, testing, and production.

In addition to CHIPS, the Endless Frontier Act ("EFA"), USICA Division B, energizes exploration into 10 emerging technology areas. By offering generous research grants, promoting science, technology, engineering, and mathematics ("STEM") school programs, and creating various interagency and cross-sector bodies, the EFA positions America to address environmental challenges through innovation into areas such as advanced energy production, artificial intelligence, quantum computing, and biotechnology. The EFA supplies the National Science Foundation ("NSF") with more than $70 billion to implement technology test beds, fund research, and sponsor STEM education. It also provides the Department of Energy with over $16 billion, in part to research "energy-related supply chain activities within the key technology focus areas[.]"

Some EFA sections target green technology innovation. For example, USICA Section 2686 directs NASA to develop environmentally friendly, zero-emission aircraft. Section 2217, the Bioeconomy Research and Development Act of 2021 ("BRDA"), directs a cohort of federal agencies and the NSF to support engineering biology research and educational programs. Because engineering biology captures a wide range of sub-fields, research performed by the BRDA may range from vaccine development to "non-polluting batteries . . . and microbes that can chew through persistent toxic chemicals."[3] The Act also directs the Department of Energy to sponsor research related to "advanced biofuel[s]" and to pursue "environmental remediation" research. And the Environmental Protection Agency ("EPA") must research how to leverage engineering biology to "protect the environment."

Finally, the Strategic Competition Act of 2021, a different USICA division intended to counter China's global economic influence, also considers green technological development. In 2013, China implemented the Belt and Road Initiative, a multi-billion dollar infrastructure plan intended to advance the

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1 *See* Ben Pilkington, *The Role of Semiconductors in Clean Energy*, AZO CLEANTECH (Sept. 4, 2019), https://www.azocleantech.com/article.aspx?ArticleID=965.

2 *See* ANTONIO VARAS ET AL., GOVERNMENT INCENTIVES AND US COMPETITIVENESS IN SEMICONDUCTOR MANUFACTURING 1 (2020).

3 *See* Press Release, Senators Markey, Gillibrand, Rubio, and Capito Reintroduce Bipartisan Bioeconomy Research and Development Legislation (Apr. 27, 2021), https://www.markey.senate.gov/news/press-releases/senators-markey-gillibrand-rubio-and-capito-reintroduce-bipartisan-bioeconomy-research-and-development-legislation.

country's economic hegemony by investing in infrastructure in developing economies.[4] USICA Section 3259 encourages the CEO of the U.S. International Development Finance Corporation to work with entities like the World Bank and European Investment Bank to "support low carbon economic development . . . in developing countries[,]"[5] which could include projects that would "improv[e] energy efficiency" and "reduc[e] CO2 emissions[.]"[6]

Although USICA's passage reflects Congress' most recent commitment to clean and green innovation, USICA is not the only bill under consideration that may impact green technology. On March 31, 2021, the White House released the American Jobs Plan ("AJP"), a massive, multi-trillion dollar proposal aimed, in part, at reinvigorating America's aging infrastructure. After weeks of bipartisan negotiations, President Biden and Congressional Democrats and Republicans agreed on a Bipartisan Infrastructure Framework (the "Framework"), a $1.2 trillion initiative that emphasizes the infrastructure component of Biden's original AJP.

The Framework's contents have yet to be revealed in great detail. However, a June 24 White House release makes clear that the Framework is sustainability-oriented and will emphasize clean development across economic sectors. The Framework dedicates $312 billion for transportation infrastructure improvement, which includes $15 billion for electric buses and vehicle infrastructure that "w[ould] accomplish the President's goal of building 500,000 EV chargers." Other initiatives might also ostensibly reduce emissions. By "[r]epair[ing] and rebuild[ing] . . . roads and bridges with a focus on climate change mitigation[,]" the Framework makes driving alternatives, like walking or cycling, safer and more accessible. Moreover, the Framework commits over $100 billion to public transit improvement projects, further increasing access to clean, multi-modal transportation.

The White House also boasts that the Framework is "the single largest investment in clean energy transmission in American history." By some estimates, U.S. power lines stretch over 150,000 miles and service over 140 million Americans.[7] The Framework would further expand the reach of America's massive transmission network "to facilitate the expansion of renewable energy[.]" Finally, in addition to the initiatives described above, the Framework proposes $20 billion for infrastructure financing. Funds would be distributed through a new Infrastructure Financing Authority that would "leverage billions of dollars into clean transportation and clean energy[.]" In essence, the Framework is aimed at fortifying America's infrastructure to withstand a changing climate and meet other twenty-first century challenges, like "cyber attacks . . . and extreme weather events."

While the Framework has yet to advance as far as USICA, both demonstrate keen interest in bolstering the U.S.'s green technology capacities. Each of the foregoing proposals, if signed into law, promise to transform key domestic industries and put America at the forefront of the clean energy transition.

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4 *See* Andrew Chatzky & James McBride, *China's Massive Belt and Road Initiative*, COUNCIL ON FOREIGN RELATIONS (Jan. 28, 2020), https://www.cfr.org/backgrounder/chinas-massive-belt-and-road-initiative.

5 *See* U.S. Innovation and Competition Act of 2021, S. 1260, 117th Cong. § 3259 (2021).

6 *See* Hu Yuan et al., *What Is Low-Carbon Development? A Conceptual Analysis*, 5 ENERGY PROCEDIA 1706, 1711 (2011).

7 *See* Sara Hoff, *U.S. Electric System Is Made Up of Interconnections and Balancing Authorities*, U.S. ENERGY INFORMATION ADMINISTRATION (July 20, 2016), https://www.eia.gov/todayinenergy/detail.php?id=27152.

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