WELLS FARGO

Special Commentary — April 20, 2023

Earth, Wind & Complier

How a Regulatory Framework Can Support Green Initiatives

Summary

- The United States is the second-largest emitter of global greenhouse gases, but it's also increasingly becoming part of the solution. U.S. energy transition investment totaled around $140 billion in 2022, an 11% increase from 2021.
- Wind currently represents nearly half of renewable energy production in the U.S., but replacing energy generated by fossil fuels is only part of the solution. Electrifying transportation and developing clean manufacturing processes (or ways to offset existing ones) are also a key piece to solving this net zero puzzle.
- Proposed regulatory changes and recent legislation are raising the stakes for firms that do not take the transition seriously. Incentives are rising to go green, and this has implications for the entirety of the supply chain.
- The current regulatory landscape around corporate reporting of greenhouse gas emissions is sparse, but that may change based on the SEC's proposal, which would require firms to disclose their end-to-end emissions. The proposal can be broken into the following three scopes:
    - **Scope 1**: *Direct emissions*—those that arise from sources that are controlled and owned by the firm (i.e., emissions created by an automaker's assembly plant).
    - **Scope 2**: *Indirect emissions*—those associated with the firm's purchase of energy sources (i.e., emissions created from the purchase of electricity needed to run an automaker's assembly plant).
    - **Scope 3**: *End-to-end emissions*—those that result both upstream and downstream from the firm's direct business activities (i.e., emissions created in the automaker's supply chain *and* emissions created in the end product of the vehicles produced by the automaker).
- The SEC's proposal would increase the transparency of emissions and help in the transition to net zero, but the broad nature of reporting poses challenges.
- Recent legislation provides clarity and incentive for firms to invest in clean-energy initiatives. The Bipartisan Infrastructure Law, CHIPS Act and the Inflation Reduction Act provide increased financial incentives for firms to invest in clean-energy initiatives over the next decade.
- The Inflation Reduction Act is the most expansive federal package targeted at climate change to date. It includes a little over $200 billion in corporate tax credits to those who make investments in clean energy, transportation and manufacturing, while adhering to specific domestic requirements. This is likely to be felt across the supply chain.
- Domestic procurement or manufacturing requirements will likely encourage changes along the supply chain and/or assembly process to qualify for incentives. This will likely contribute to the recent retreat in globalization, leading to increased production in the United States and require more domestic labor to make it happen. Supply chains may also grow more resilient in the process.

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Zeroing In on the United States

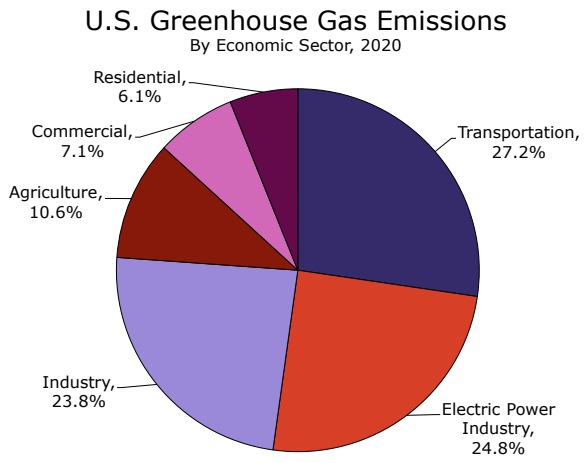
In our inaugural Earth Day report last year, we broke down greenhouse gas emissions—both by who emits them and how they do so. The United States ranks second only to China in terms of share of global emissions, and manufacturing held the top spot for how global greenhouse gasses are created. While the changing climate is a global problem, we zero in on the United States specifically in this report and walk through potential regulatory changes and recent legislation targeting net zero emissions and how it can cause transformation across the U.S. economy.

The United States emitted 5,981 million metric tons of CO2 equivalent in greenhouse gas emissions in 2020 (a million metric tons is roughly the same mass as one million small cars), which is equivalent to 13.5% of the world's total emissions. The source of U.S. emissions comes primarily from three major categories—transportation, electricity production and industry (or manufacturing production) (Figure 1).

But the United States is also increasingly becoming part of the solution. Second again to China, U.S. energy transition investment totaled around $140 billion in 2022, an annual gain of 11%, with a majority of investment concentrated in electrified transport and renewable energy (Figure 2). Wind currently represents nearly half of renewable energy production in the United States, but replacing energy generated by fossil fuels is only a fraction of the battle. Electrifying transportation and developing clean manufacturing processes (or finding ways to offset emissions produced by existing ones) are also a key piece to solving this net zero puzzle.

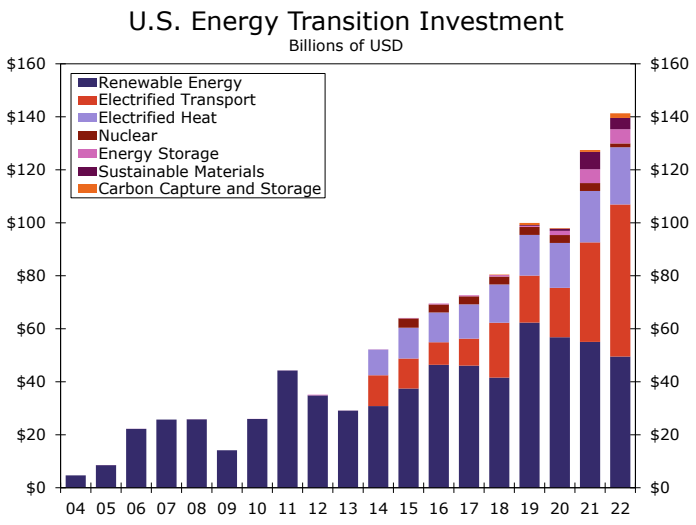
This is particularly true today in light of proposed regulatory changes and recent policy developments. Proposed changes to increase transparency of firms' emissions will likely motivate greener-solutions, and in order to qualify for tax credits under the recently passed Inflation Reduction Act, firms will need to shift sourcing and/or manufacturing back into the United States. Sustainable projects will thus ripple across the supply chain and have the potential to spur production and employment growth in the United States.

Figure 1



Source: U.S. Department of the Interior and Wells Fargo Economics

Figure 2



Source: Bloomberg Finance L.P. and Wells Fargo Economics

Regulatory Green Tape

The current regulatory landscape around corporate reporting of greenhouse gas emissions is composed of just a few rules. The U.S. EPA requires only large-emitting firms to report emissions through its Greenhouse Gas Reporting Program (GHGRP) that was instituted in 2009. This program covers around 8,500 U.S. facilities and suppliers and about 45% of total U.S. emissions.[1] But a proposed rule from the Security and Exchange Commission (SEC) looks to change that. The regulatory change aims to increase registrants' disclosures by providing a comprehensive framework around reporting emissions.

The proposal is broad in nature and asks firms to disclose end-to-end emissions from their business activities. Notably, the rule would require disclosure of *gross* emissions, or a firm's total emissions before accounting for any carbon offsets or capture programs that are included in net emission calculations. Essentially, the rule looks to give investors further insight into public firms' emission inventories, similar to other disclosures required of public companies such as annual revenue and executive compensation.

The SEC breaks a firm's end-to-end emissions into three scopes by source, which we outline in Table 1. *Scope 1* of the proposed rule covers direct emissions from a given firm. Direct emissions are those that arise from sources that are controlled and owned by a firm.[2] *Scope 2* covers indirect emissions, specifically those emissions associated with the purchase of energy sources such as electricity, steam, heat or cooling. For example, an auto manufacturer's greenhouse gas emissions that result directly from an assembly plant would fall under Scope 1, while the emissions associated with the purchase of the electricity needed to run the plant would fall under Scope 2.

Table 1

SEC Proposed Rules
Enhancement and Standardization of Climate-Related Disclosures

Terms		Coverage
Scope 1	Direct	Company facilities and company vehicles
Scope 2	Indirect	Purchased electricity, steam, heating and cooling for own use
Scope 3	Upstream	Purchased goods and services, capital goods, fuel and energy related activities, transportation and distribution, waste generated in operations, business travel, employee commuting and leased assets
	Downstream	Transportation and distribution, processing of sold products, use of sold products, end-of-life treatment of sold products, leased assets, franchises and investments

Source: U.S. Securities and Exchange Commission, U.S. Environmental Protection Agency and Wells Fargo Economics

Everything the Light Touches Must Be Reported

Scope 3 stands to be the most transformative as it covers a broader swath of end-to-end emissions that result from both the upstream and downstream activities of the firm.[3] Emissions that are fueled indirectly by upstream activities, such as by a firm's supply chain, fall within this scope. Other activities that would fall under the upstream activity umbrella of Scope 3 would be employee commuting, business travel and leased assets, among several more. The actual use of a firm's goods and services are considered to be sources of downstream emissions, and the use of these products and services would also fall under the Scope 3 umbrella. The processing of sold products, use of sold products and end-of-life treatment of these products would all qualify as falling within the limits of this scope. Interestingly, one business' Scope 3 emissions are another business' Scope 1 and 2 emissions.

There are several challenges that complicate the practicality of Scope 3 due to how broad it is in reach. SEC Commissioner Hester M. Peirce acknowledged these critiques when she remarked on the issue of "the impossibility of producing disclosures that are anything other than best guesses" in some cases.[4] The enormity of accurately reporting disclosures of this kind could prove to be a large expense in themselves for businesses.

Notably, current reporting requirements under the GHGRP only go as far as to report Scope 1 activities at the facility level, and certain facilities may be exempt if they do not carry out certain business activities or emit greenhouse gasses below a certain threshold. Thus, the full extent of a corporation's Scope 1 emissions may not even be known, let alone Scope 2 or Scope 3 emissions, demonstrating just how extensive this proposal is.

That is not to say that achieving the White House's stated net zero emissions goal by 2050, or any other ambitious emission reduction goal for that matter, is not important. Rather, it is to say that any goal that aims to have a significant impact on reducing greenhouse gas emissions will come with challenges. While the costs to institute Scope 3 may be high, the flip side of the coin may be just as consequential. Disclosures that fail to report a business' upstream and downstream emissions may lead to misgivings about its true carbon footprint. Tough tradeoffs like these bring home the idea that if saving the world were easy, we would've already done it by now.

Outlining the Law

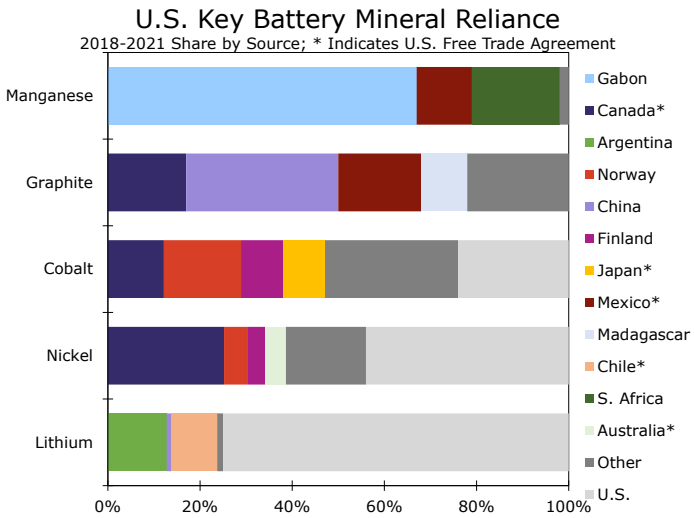
Whether these regulatory changes come to pass remains uncertain, but a slew of new legislation provides increased financial incentive for firms to invest in clean-energy initiatives over the next decade. The Bipartisan Infrastructure Law included about $100 billion for clean energy infrastructure,

mostly dedicated toward carbon capture and charging infrastructure as well as grid enhancement. The CHIPS Act provides aid and incentives to expand research and domestic capacity in the production of semiconductor chips specifically. Then, there is the Inflation Reduction Act (IRA), which is the most significant federal package targeted at climate change to date, aiming to direct about $400 billion toward clean energy initiatives in the form of tax incentives, grants and loan guarantees.[5]

Parsing through all of the specifics of the IRA is beyond the scope of this report, but most of the funding comes in the form of tax credits, with about $216 billion available to corporations who make investments in clean energy, transport and manufacturing. For firms, the credit not only allows them to lower their taxable income, but it's also a way for them to demonstrate support for ESG or green investment to clients. An additional $43 billion is directed toward households in the form of tax credits to help lower the cost of consumer-specific items like electric vehicles, energy-efficient appliances and solar panels.

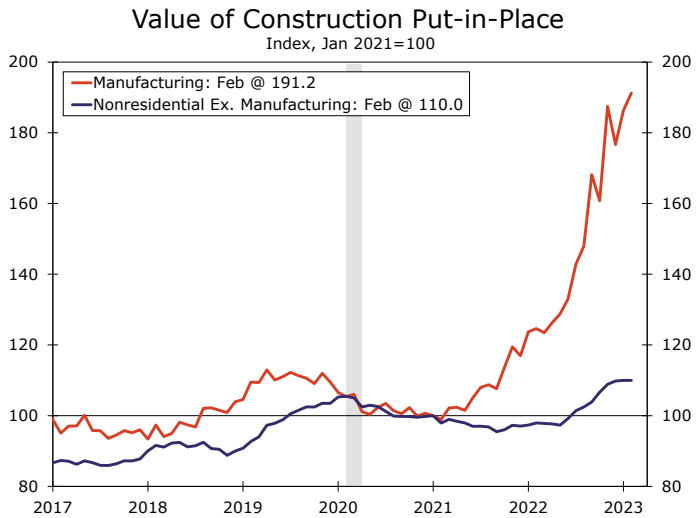
But there is a barrier to entry. The IRA stipulates that firms must meet various requirements in order to qualify for tax credits; some of which are more stringent than in the past. This includes wage requirements at manufacturing facilities and domestic-production or procurement guidelines for key inputs. To the extent firms seek tax credits, it would likely encourage changes along the supply chain and/or assembly process to qualify. Rules around consumer tax credits have specifically grown more stringent. To qualify for the full $7,500 tax credit on electric vehicles for example, that vehicle must now undergo final assembly in the United States, come under price and income caps and meet critical mineral and battery requirements. Specifically, the IRA now requires 40% of the value of critical minerals be sourced in the U.S. or by a free-trade partner to qualify for half ($3,250) of the credit, and 50% of the battery value components must be produced or assembled in North America to qualify for the second half. As seen in Figure 3, the U.S. currently imports many key minerals used in EV batteries, and a decent share come from non-free trade partners.[6] It's expected that only a few electric vehicles currently on the market qualify for the full credit, and according to the Alliance for Automotive Innovation, the North America assembly requirement alone eliminated 70% of models.[7]

Figure 3



Source: U.S. Department of Energy and Wells Fargo Economics

Figure 4



Source: U.S. Department of Commerce and Wells Fargo Economics

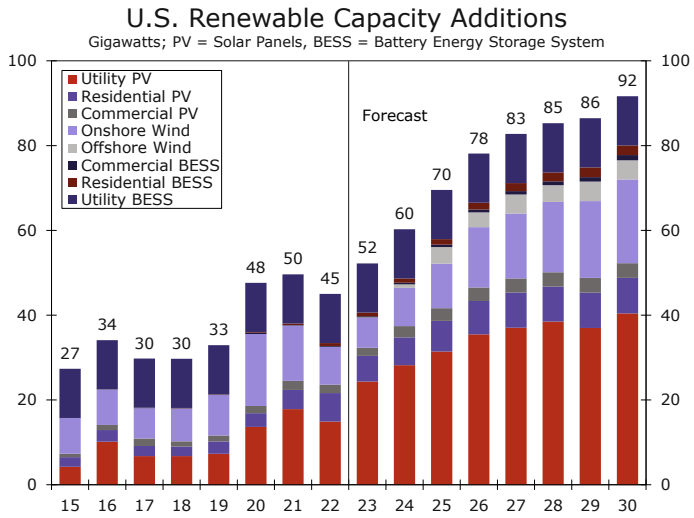
Firms that align production with requirements will likely attract the most demand in the years ahead, and it seems firms are already somewhat taking note. There has been a rise in plans for U.S. battery manufacturing facilities, with one estimate citing around 40 new facilities announced since the IRA was passed in August, which is set to increase battery manufacturing capacity dramatically over the next decade.[8]

As we discussed in great detail in a recent report series, decreased globalization and a rethink of supply chains in an effort to shore up vulnerabilities has already motivated a shift in onshoring. There has been a rapid rise in manufacturing development as a result. Manufacturing represents just around 14% of total nonresidential construction, but as seen in Figure 4, the value of manufacturing facilities construction put-in-place has grown over 90% since the start of 2021. That's over nine-times

faster than growth in other nonresidential construction, amid a shift to domestic procurement or manufacturing causing changes from sourcing to assembly.

Firms that import a lot of inputs and are large emitters like petroleum and chemical products producers are primed for the most disruption. Recent legislation should boost renewables investment and Bloomberg expects annual renewables capacity additions in the United States to rise around 80% over the next five years (Figure 5). The precise implications of recent legislation, however, will depend on the actual implementation and take-up rate of these packages.

Figure 5



Source: Bloomberg Finance L.P. and Wells Fargo Economics

Shift to Transparency

Recent legislation is providing the most financial support to climate initiatives to date. It remains to be seen if the SEC regulatory proposal comes to pass in whole or in part, but even the mere proposal demonstrates increased appetite for more transparency around firms' emissions. Furthermore, a California Senate Bill goes even further than the SEC proposal, attempting to require large *private* companies to disclose emissions as well, which would cover around 5,400 companies.[9] To the extent that other states follow California's lead and as a clearer federal regulatory guidance nudges firms toward greater transparency, firms that consider their end-to-end emissions will have an edge over those that do not.

Ultimately, it's too early to say for certain what the precise economic impact of recent policy developments will be. It depends largely on the take-up rate of incentives and how quickly investment takes place. The rise in manufacturing construction in recent years demonstrates a notable shift. While recent legislation provides financial assistance and clarity around incentives, there remain many challenges in meeting domestic procurement and manufacturing requirements to meet these standards.

We've said it before, and we'll say it again: If not for the planet, do it for the money. Aligning with green principles is growing more advantageous for firms. There is more money than ever set to flow into the clean energy space and help subsidize investment. The firms that consider their emissions footprint prior to potential regulatory shifts may later find themselves ahead of the curve.

Endnotes

1- See GHGRP Reported Data from the U.S. Environmental Protection Agency (Return)

2- See Scope 1 and Scope 2 Inventory Guidance from the U.S. Environmental Protection Agency (Return)

3- See Scope 3 Inventory Guidance from the U.S. Environmental Protection Agency (Return)

4- Commissioner Hester M. Peirce. "It's Not Just Scope 3: Remarks at the American Enterprise Institute." U.S. Securities and Exchange Commission, December 2022. (Return)

5- For a more in depth look of the IRA, see our report Unpacking the Inflation Reduction Act. (Return)

6 - See the U.S. Department of the Interior's 2023 Mineral Commodity Summaries for more detail. See a list of countries the U.S. has free trade agreements with here. (Return)

7- John Bozzella. "What If No EVs Qualify for the EV Tax Credit? It Could Happen." Alliance for Automotive Innovation, Aug. 5, 2022. (Return)

8- New planned electric vehicle battery plants are set to increase North America's battery manufacturing capacity from 55 Gigawatt-hours per year (GWh/year) in 2021 to nearly 1,000 GWh/year by 2030 according to the Argonne National Laboratory; see "Assessment of Light-Duty Plug-in Electric Vehicles in the United States, 2010-2021" for more detail. See "Clean Energy Boom" for more detail on the number of factories announced, where a group tallied news announcements through the end of January. (Return)

9- Jordan Wolman. "California bill would mandate corporate emissions disclosures." Politico, Jan. 30, 2023. (Return)

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