Part of the First Sentier Investors Group

Potential Regulatory Risks and Opportunities for Energy Infrastructure Following the 2024 U.S. Federal Elections

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For Institutional clients only

Executive summary

The US is at a crossroads ahead of one of the closest contested presidential elections in years. This election has repercussions for every sector of the world's largest economy and could create significant change depending on whether Donald Trump or Kamala Harris are elected to the White House. Potential impact to the energy infrastructure sector has come into focus during the presidential campaign after historic levels of investment under the Biden administration.

The Biden administration's flagship policy, the Inflation Reduction Act of 2022 ("IRA"), aims to reduce carbon emissions by around 40 per cent by 2030 through billions of dollars of public and private investments in energy infrastructure, accelerating energy transition in the US[i]. The climate law has proven highly contentious in recent years with Republican lawmakers challenging the act. During the presidential campaign, speculation has mounted that Trump, if elected, could seek to repeal or modify the IRA, presenting challenges for investors in the space.

This whitepaper details Igneo's views of how potential outcomes from November's presidential election could impact the investment landscape as well as the opportunities and threats faced by solar PV developers with respect to manufacturing and supply chain challenges. The research looks at the potential risks and opportunities for investors in US energy infrastructure and what investors can expect based on the outcome of the Presidential race.

The report finds that a Republican-controlled Congress and White House could potentially result in changes to IRA's incentives for EV charging, rooftop solar and hydrogen production. However, the analysis concludes that large scale reversal of the core aspects of this legislation is unlikely given it's "place-based industrial policy" where direct investment has aligned with conservative regions in the US. Similarly, the Infrastructure Investment and Jobs Act is viewed as less likely to be targeted for repeal than the IRA. More broadly, the advancement of climate goals will be informed by this and future election outcomes, and asset managers must remain aware of investors' sensitivities with respect to climate goals and emissions reporting.

[i] U.S. Environmental Protection Agency: Inflation Reduction Act (IRA) Overview

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Energy Infrastructure – what potential consequences from the 2024 U.S. Elections?

While electricity generation has been deregulated in many areas of the U.S., federal, state, and local policy and regulatory regimes still play a crucial role in incremental development and investment decisions.

- The Inflation Reduction Act of 2022 ("IRA") provided the industry with certainty around federal level subsidies for over 10 years.
- Different market constructions for the procurement of energy, capacity and ancillary services amongst ISOs/RTOs lead to different generation stack compositions across jurisdictions.
- Distributed generation deployment, which has been largely left to the states by federal regulators, is highly dependent on specific subsidy programs which vary in their incentive structures.

As a result of these overlapping systems, the U.S. market is expected to remain a fragmented market, which partially mitigates the impact of Federal elections.

Igneo's portfolio company, Soltage, enjoys strong policy alignment with relevant state regulators who are seeking (a) to mitigate increasing electricity grid congestion as utility scale generation infrastructure outpaces interconnection and transmission capacity and (b) to satisfy consumer demand for clean energy. This alignment largely manifests as state-driven community solar programs that Soltage projects contract with.

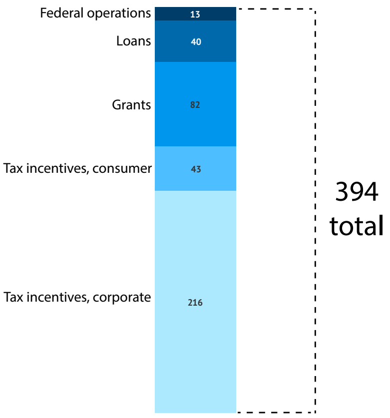
In the event of a shift of control in either the federal Executive Branch and/or Congress, it would likely take through the end of 2026 to see any change in law. And regardless of a change in go-forward policy, Congress has traditionally "grandfathered-in" projects that have already qualified for existing incentives.

Inflation Reduction Act – Potential repeal?

In August 2022, the US Congress enacted the IRA, which aimed to provide federal incentive policy certainty around investing in domestic energy production while promoting clean energy through almost $400 billion of federal funding.

- It has been one of the key legislative achievements of the Biden administration, having delivered on a stated campaign goal of substantially lowering the US's carbon emissions by the end of this decade.
- The funds are to be dispersed via a mix of tax incentives, grants and loan guarantees. Clean electricity generation and transmission infrastructure are expected to receive the highest funding, followed by clean transportation (including electric vehicles ("EV")).

Figure 1: Energy and climate change funding expected in the IRA ($ billion)



Source: McKinsey.

Note: Reflects analysis of the appropriation figures contained in the IRA, as well as those reported by the Congressional Budget Office and Joint Committee on Taxation. This analysis may differ from other analysis due to differences in methodology.

The 2024 US Presidential election campaign has created a headline risk to the IRA, with members of the Republican party calling for a full or partial repeal of the legislation.

In order to fulfill this policy goal, the Republican Party would have to maintain control of the House of Representatives and take control of the Senate and White House. If achieved, they would then need to come to a political consensus between their internal factions on how to address IRA repeal before passing legislation. The compound probability weighting of these events mitigates the likelihood of policy change.

Furthermore, historically it has proved difficult to repeal major legislation. To this date, no energy or climate bill has been repealed after having been signed into law.

In a scenario where Republicans sweep in the election and introduce a budget reconciliation to target the IRA (which would require only a simple majority in the Senate to pass) the incentives for EV charging, rooftop solar and energy efficiency will be most at risk, given the number of bills Republicans introduced targeting those sectors in the past legislative session.

- Since the implementation of the IRA, over $190bn of capital has been announced for projects located in Republican states; as a result, we expect Republicans to be extremely selective in choosing components of the IRA they seek to repeal.
- With the expiry of certain provisions of the Trump administration's Tax Cuts and Jobs Act in 2025, a future Republican congress seeking to extend such tax benefits would be faced with a $4 trillion 10-year funding requirement. One potential target would be EVs and the corresponding 45X "clean energy advanced manufacturing production tax credit", as these subsidies have been significantly higher than the original cost projections.
- In any event, production tax credits ("PTC") and investment tax credits ("ITC") have traditionally received bipartisan support across past administrations and are unlikely to be fully repealed or majorly impacted.
- Similarly, incentives for nuclear, hydrogen, carbon capture and clean fuels, will likely be safe, given more pronounced Republican support for these technologies.

> ***"These are 21st century technologies, China is investing, Europe is investing; it's a critical moment. If we walk away from these investments, it will put the US at tremendous disadvantages"***
> Greg Wetstone, former President and CEO at the American Council on Renewable Energy (ACORE) and former Head of Government Affairs at Terra-Gen on Igneo's Keeping it Real Assets podcast (Jul2024)

If the Republican candidate wins the presidency but control of Congress remains split, the new administration may direct the Treasury and Internal Revenue Service to (a) alter their rule implementation such that domestic content requirements for bonus credits become more stringent and (b) loosen the methodology for carbon intensity scoring for clean fuels (§45Z), power (§45Y), and hydrogen (§45V).

- The Energy Community tax credit bonus receives more bipartisan support as many projects fall onto Republican-leaning political jurisdictions.

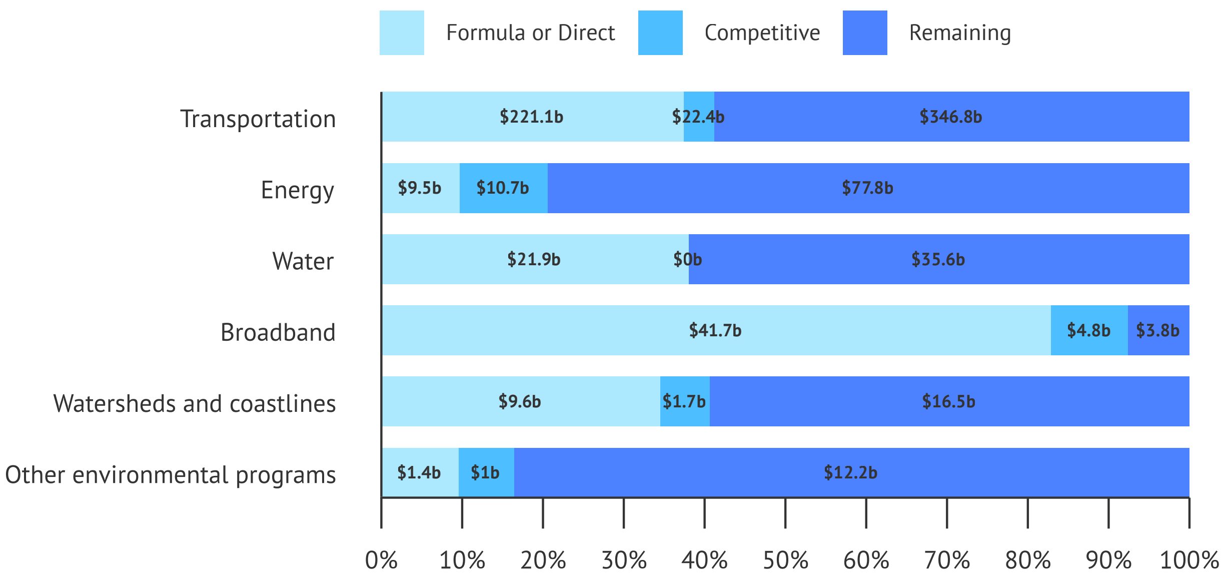
Infrastructure Investment and Jobs Act ("IIJA") – Any risks to its implementation?

In November 2021, Congress passed the Infrastructure Investment and Jobs Act (also referred to as the Bipartisan Infrastructure Law or "BIL"). The aim of the law is to provide federal funding to rebuild significant portions of the US's infrastructure (covering roads, bridges, rail, airports, and digital infrastructure).

- The total funding envelope made available was $1.2 trillion over an eight-year investment period, including $550 billion for new investments in transportation, water, power and energy, environmental remediation, public lands, broadband, and climate resilience.
- Direct spending and formula programs (which are apportioned to state governments to allocate) represent ~75% of funding, while the balance is awarded by the federal government to specific state and municipal projects via competitive grants.
- About half of the direct spending and formula program budget has been allocated to date; most of the competitive grants are yet to be awarded.

Generally, the content of the BIL is viewed as less controversial from a political standpoint and less likely to be targeted for repeal than the IRA. When passed, the BIL was more widely supported by Republicans than the IRA.

Figure 2: Progress of BIL-awarded funding by infrastructure sector and funding type, as of November 2023



Source: Muro, M., Levin, B., & Carlos Martín, A. M. P. (2024, February 29). At its two-year anniversary, the bipartisan infrastructure law continues to rebuild all of America. Brookings Metro. https://www.brookings.edu/articles/at-its-two-year-anniversary-the-bipartisan-infrastructure-law-continues-to-rebuild-all-of-america/

Manufacturing and Supply Chain – Opportunities or threats?

Since 2018, solar PV developers have faced specific supply chain challenges above and beyond other import dependent industries. Disruptions included:

- Section 201 tariffs levied on imported modules from China (2018).
- Federal Department of Commerce's investigation into tariff circumvention (2021).
- Detention of equipment import shipments under the Uyghur Forced Labor Prevention Act (2021)

In the context of rising tensions between the US and China and China's dominate position in clean energy original equipment manufacturers ("OEMs"), import dependent supply chains are likely to be a continued area of risk for US energy developers, regardless of the 2024 federal election outcomes. U.S.-China relations are emerging as area of bipartisan political consensus and as the largest importer of Chinese clean energy equipment, these supply chains represent a key lever for U.S. policymakers to signal a strong stance politically and apply pressure on Beijing.

The IRA created a tax credit adder to encourage the use of "domestic content" in renewable projects that qualify for the PTCs and ITCs. Qualifying projects built using certain required amounts of U.S.-produced steel, iron and manufactured products receive an additional 33% in tax credit value[1].

- Projects must source over 40% of the cost of modules, trackers, and inverters from the U.S. to gain the domestic content bonus, under guidelines set out by the US Treasury Department. As a result, energy project developers and OEMs are investing in greenfield U.S. manufacturing capacity to produce compliant products with reduced risk of the political or supply chain interference that has historically increased price volatility and delayed projects.
- In May 2024, the IRS released guidance on U.S. content requirements that provided for a simple methodology based on invoiced cost that was generally well received by the industry.

While in the long term the market equilibrium for equipment procurement will feature more domestic production with stable prices, in the medium to long term the industry is likely to face continued volatility, long lead times, and competition for supply capacity. Developers will have to navigate these dynamics and adapt their target project profiles accordingly.

Terra-Gen benefits from strong relationships with domestic manufacturers and is currently sourcing domestic equipment from First Solar for solar panels, ATI for trackers and domestic suppliers for piles.

Soltage has typically used foreign-sourced solar panels but continues to evaluate domestic manufacturers as the supply capacity matures.

Beneficiaries of these headwinds will be OEMs with domestic production facilities (including First Solar, Tesla, Enphase, Enel, Qcells, Invenergy, GE, Vestas, and Siemens Gamesa) and those developers with secured supply agreements with these manufacturers.

In addition to the 45X incentive in the IRA, the Biden administration also enacted the CHIPS and Science Act of 2022 ("CHIPS Act"), which supported domestic research and manufacturing of semiconductors in the U.S. with $53 billion of federal funding.

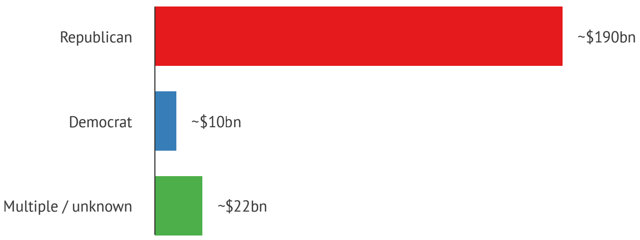
- At least $224 billion in cleantech and semiconductor manufacturing projects have been announced in the US since the passage of the IRA and the CHIPS Act, promising to create over 100,000 jobs.

[1] 30% ITC is increased to 40% with the domestic adder. Value of PTC is increased by 10% (currently at approximately $3/kWh).

Are red states behind on clean energy initiatives?

Over 85% of announced projects since August 2022 have been in Republican states and districts and it is unlikely they will vote to remove subsidies which are driving significant investments and jobs for their constituents.

Figure 3: Cumulative total of announced projects by district partisanship since August 2022



Source: Inside the $220bn American cleantech project boom. (n.d.). Financial Times. https://www.ft.com/content/3b19c51d-462b-43fa-9e0e-3445640aabb5

There is a strong state-level regulatory backdrop as many states have adopted a Renewable Portfolio Standard ("RPS") or Clean Energy Standard ("CES") with specific targets for the production of energy from renewable energy sources:

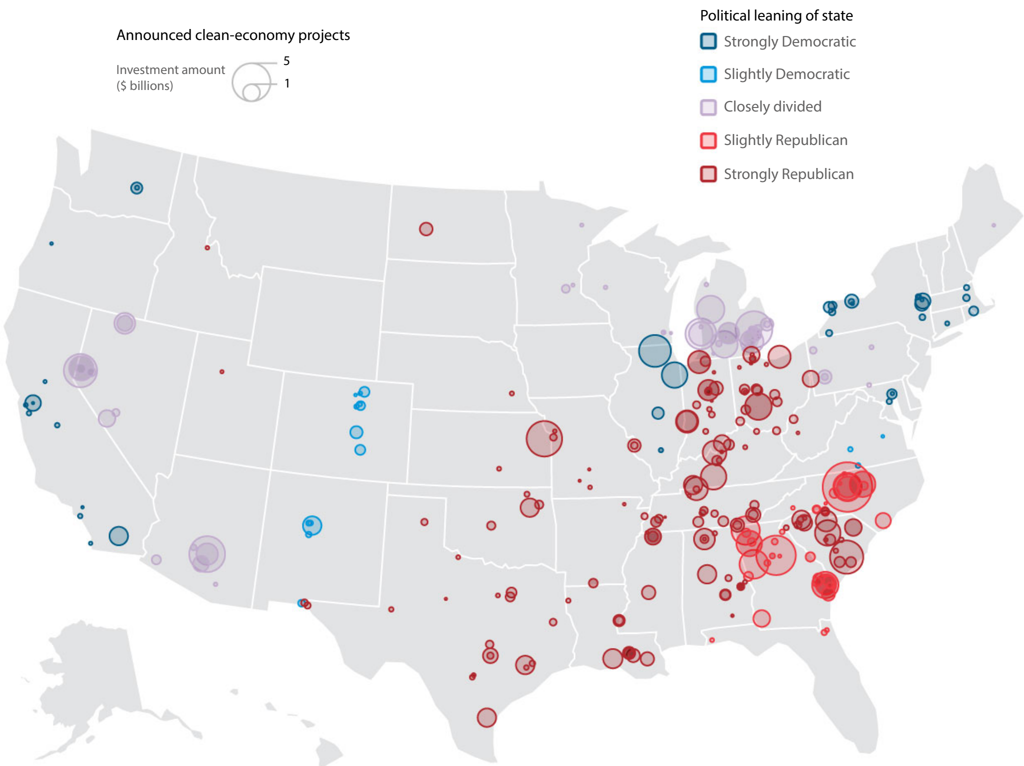
- As of June 2023, among the 30 states with an RPS or a CES, 16 states have RPS targets of at least 50% of retail sales, and 17 states have a 100% target.

Republican-governed states such as Georgia, South Carolina and Ohio have already broken ground on large-scale clean energy and semiconductor manufacturing projects.

Many of the clean energy projects developed to date or in development are located in traditionally Republican states:

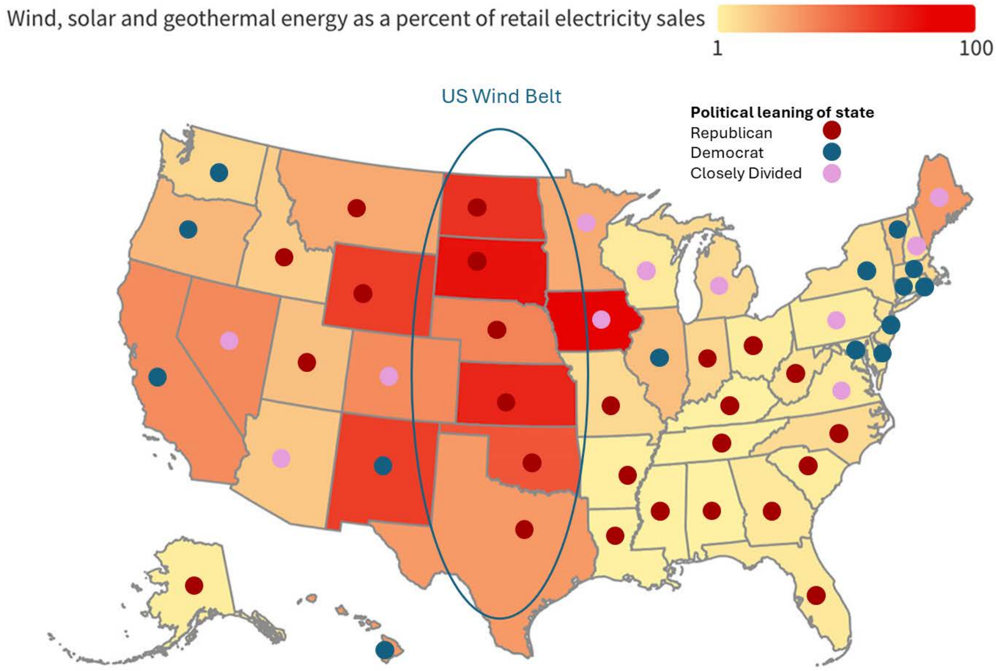
- The U.S. wind corridor where onshore wind resources are the best is primarily located across Republican-led states such as Iowa, South Dakota, Kansas, Oklahoma, and North Dakota.
- While Democrat-led California is the largest solar generator in the US, Texas, Florida, North Carolina, and Arizona round out the top five.

Figure 4: Announced clean-economy projects in the US with political leaning of the state



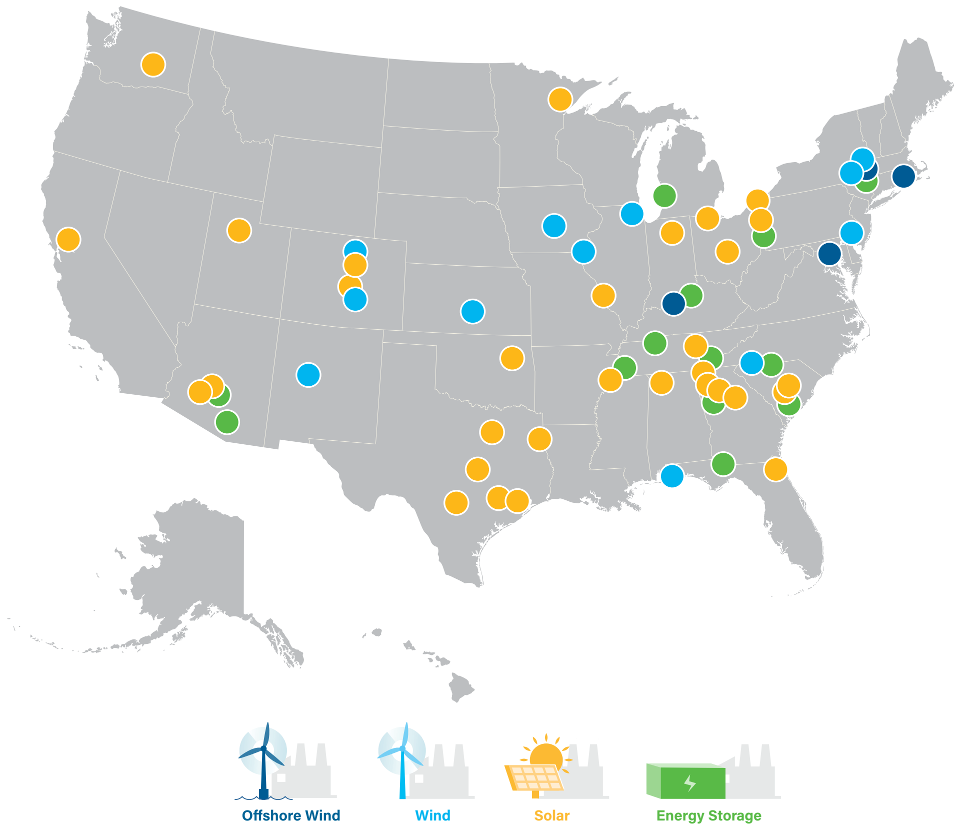
Source: Press Release (based on Atlas Public Policy and Utah State University's Clean Economy Tracker (investments); U.S. House Office of the Clerk (voting history)), as of February 2024.

Figure 5: Clean energy generation by state with political leaning of the state



Source: Environment America Research & Policy Center.

Figure 6: Planned manufacturing projects announced in the US since the IRA



Source: American Clean Power Association, as of August 2023.

Offshore Wind – What impact to the sector?

While state and local level permitting challenges have impeded offshore wind development, the Biden administration has been targeting 30 GW of new offshore wind generation by the end of 2030, creating significant tailwinds along the offshore wind supply chain.

Recently, in the context of the escalation of development and construction costs, as well as delays due to permitting challenges and higher financing costs, sponsors such as Orsted, Equinor or RWE / National Grid have withdrawn from offtake contracts awarded by state offtake solicitation programs and rebid higher pricing in subsequent solicitations. Others have even terminated their prior agreements entirely.

- Key drivers of cost escalation, including the Jones Act which requires essential pylon installation, equipment transportation, and cable laying vessels to be U.S. built and flagged, as well as local and state union labor requirements, are unlikely to change in the near term.

Offshore wind developments also face a risk of delay due to federal permitting if there is a change in the Administration. During the first Trump administration, permitting through the Bureau of Ocean Energy Management ("BOEM") was tightened in what was viewed by the industry as an intentional slowdown by the Administration.

- The BOEM is the federal agency within the US Department of the Interior responsible for holding lease sales, conducting research, and reviewing environmental impacts of proposed projects, which are all key steps of offshore wind development.

However, most states that have ambitious offshore wind targets and projects (such as MA, NY, NJ, and CA), have historically had Democratic majorities and are unlikely to change their policy goals, regardless of the 2024 elections.

- Regional planning has long been viewed as the next phase in maturing the offshore wind industry in the US, because it can drive down the cost of building projects and connecting them to the grid by boosting regional transmission planning and grid upgrades.

As a result of these headwinds and risks, offshore wind projects generally carry a higher levelized cost of electricity production ("LCOE") than alternative technologies, reducing their attractiveness to state procurers in economic terms. This may be mitigated by demand for renewable energy generation, particularly as other high-capacity factor assets (coal and nuclear) approach the end of their useful lives.

Methane Emissions Reductions – Most at risk from a Republican election outcome?

Republicans and former President Trump have campaigned on a platform that includes reversing methane reduction policies and other environmental policies enacted by the Biden administration.

- The IRA created a Methane Emissions Reductions Program, administered through the Environmental Protection Agency ("EPA"), whereby methane emitters will get fined for emissions above a certain threshold from 2024. Oil and gas producers will be mostly impacted by this legislation.
- While small oil and gas producers will likely struggle to amend their operations and avoid the fines, larger oil and gas majors have already started implementing mitigation measures as they are conscious of the long term need to decarbonize amid the push from their consumers. This is particularly true in the LNG space with European and Japanese customers.
- In addition, natural gas Local Distribution Companies ("LDCs") are expected to get behind reducing emissions of their operations regardless of the regulation as they can rate-base any capital expenditures made in support of these efforts.

Clear risks and opportunities that could arise the outcome of the November elections

In the event there is a Republican administration and or control of congress, investors will have to understand their exposure to federal policy and the implications of continued policy support at the state level when managing their investments in the energy transition.

- Based on the significant amount of capital already committed to established tax credits and the economic benefits for traditionally republican states, significant change to the current support framework for traditional renewables is unlikely.
- Similarly, energy transition investments in areas such as hydrogen and carbon, capture, and storage ("CCS") have largely avoided political controversy.
- More at risk is the support for nascent strategies such as EV infrastructure which has become a political talking point in the election. The key to achieving a successful investment within this space will be a thorough understanding of the direction of state policy in the absence of federal support.

Prudent infrastructure investors will have to evaluate how to manage and mitigate policy risk through political cycles given the illiquid nature of their investments and longer hold periods.

- Greenfield LNG export capacity, while an important geopolitical tool for US policymakers, has proven a political flashpoint. In 2024 the Biden administration, through the Department of Energy, issued a moratorium on new LNG export licenses to countries that were not part of free trade agreements with the United States. However, this moratorium was recently overturned by a federal district court after the moratorium was challenged by 17 states.
- Since 2018, trade policy with China has been a target of Congress and multiple administrations. This has in particular impacted US importers of Chinese derived PV panel and steel products.

As many investors have been steered away from investments with significant scope one emissions, bifurcated capital markets have developed where higher returns are achievable for those willing to bear more transition exposure.

- Republicans have traditionally promoted an energy agenda favoring energy independence, security, and affordability. While these are not necessarily incompatible with advancing climate goals, they have historically translated into support for fossil fuels.
- Asset managers will have to remain cognizant of their LP's requirements, including around emissions reporting.

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