NXG INVESTMENT MANAGEMENT

The Next Generation of Investment Management

Government Support for Clean Technology Is Accelerating

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Why are US, EU, and India rushing to reform their clean industries? Clean technologies are not new; the first photovoltaic solar cell was invented before the airplane,[1] while the use of wind power in industry goes back more than a thousand years. Solar and wind power generation and electric vehicle adoption has been accelerating over the past two decades because of economics, yet governments are increasing financial support to further quicken this transition. This funding is being provided because clean technologies can radically increase energy independence, increase employment, and lower consumer costs.

NXG Investment Management is dedicated to providing Next Generation investment strategies to investors seeking long-term growth in companies focused on a clean and sustainable future, as well as traditional and transformational infrastructure companies.

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Benefits of Clean Technology

While each country has its own goals, overall increased funding for green tech raises the potential to drastically improve progress in a variety of key strategic national objectives:

- **Energy Independence.** Domestically-generated renewable power does not require importing oil from the Middle East or natural gas from Russia. Despite war disruptions and embargoes, Europe still sourced 44% of imported natural gas from Russia during the fall and winter of 2022-23[2]. Solar and wind power generation are not subject to the global price fluctuations seen in commodity markets. Reduced reliance on imports reduces geopolitical supply vulnerability and generally improves a country's strategic energy position.
- **Job Creation.** In the first five-and-a-half months after the passage of the Inflation Reduction Act (IRA) there have been 101,036 new jobs announced along with $89.5bn of new clean energy investment[3]. Projects have been announced in 29 states with Kansas (20,500), Georgia (16,627) and Arizona (11,635) being the biggest beneficiaries[4]. These new jobs are mostly in direct manufacturing of renewable generation equipment, and may lead to additional job creation of ~3-4x more jobs as suppliers to these manufacturers increase their workforces as well[5].
- **Cost Deflation.** Solar and wind are the cheapest sources of new power generation. Renewables still only contribute 17% of electricity generation in the developed world[6], despite being 52% cheaper than natural gas in 2022[7]. Over 90% of new power in the US is expected to be from renewables, and increasing the mix will lower overall utility costs to residential and business users. Additionally, EVs offer ~$3,000 in annual savings compared to internal combustion vehicles, making EVs 45% cheaper to operate. The cost savings will grow as domestic battery production decreases the upfront costs of EVs.

Minimum of $1.2 Trillion in Support

Government support for clean tech is set to skyrocket. The IRA is a landmark bill that is estimated to provide $391bn in support to clean tech[8]. This bill is revolutionary because it aims to lower costs to acquire renewable

[1] APS News. "April 25, 1954: Bell Labs Demonstrates the First Practical Silicon Solar Cell" April 2009.
[2] NXG, Bloomberg, BNEF. Russian pipeline imports as percent of Russian pipeline imports and LNG imports for October 2022 through February 2023.
[3] World Economic Forum, "Here's How the Inflation Reduction Act Is Impacting Green Job Creation" 3/14/2023
[4] World Economic Forum, "Here's How the Inflation Reduction Act Is Impacting Green Job Creation" 3/14/2023
[5] Durable and Utility supplier job multiples. Economic Policy Institute, "Updated Employment Multipliers for the US Economy" 1/23/2019
[6] As of 2021. BP, "Statistical Review of World Energy 2022"
[7] Average of solar and onshore wind cost advantages vs natural gas for 2022. BNEF, "2H 2022 LCOE Update" 12/8/2022
[8] Committee for a Responsible Federal Budget "CBO Scores IRA with $2380bn of Deficit Reduction" 9/7/2022

technology by providing tax credits for upstream manufacturing, not just support for project costs. This approach will lower capital costs, operating costs, and onshore the supply chain.

Many of the IRA's credits are 'uncapped', meaning that as long as companies meet the requirements of the bill, they may claim an unlimited amount of credits. There is significant upside into the amount of government support that will be provided because of the uncapped provisions that could push the total spending from the bill to $800bn[9]:

- Manufacturing credits could end up being $250bn, ~8x greater than the CBO's estimate[10]
- Announced carbon capture projects could claim $100bn in credits, ~30x greater than the CBO's estimate[11]

The EU is looking to adopt this manufacturing credit approach with their €430bn EU Green Industrial Plan[12]. The plan is expected to reform power markets and limit regulatory reviews for renewables. Member countries would also get the ability to extend further aid like the IRA, something that Germany has already proposed[13]. The EU has also released the Net Zero Industry Act,[14] a plan to produce 40% of the EU's annual consumption of clean tech within Europe, specifically targeting job creation within the renewables sector.

Government support has accelerated and will begin to flow through to companies beginning in late 2023. We believe that this funding will persist because of the positive impacts it has on the economy, especially the labor market.

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[9] Credit Suisse. "US Inflation Reduction Act. A Tipping Point in Climate Action" 9/28/2022
[10] Credit Suisse. "US Inflation Reduction Act. A Tipping Point in Climate Action" 9/28/2022
[11] BNEF. "Getting Real: Inflation Reduction 2023 Roadmap" 3/8/2023
[12] NXG, European Commission
[13] Bloomberg, "Germany Wants Tax Credits for Green Energy to Counter US IRA" 2/21/2023
[14] European Commission, "Net-Zero Industry Act: Making the EU the Home of Clean Technologies Manufacturing and Green Jobs" 3/16/2023