esade
RAMON LLULL UNIVERSITY

EsadeGeo-Center
for Global Economy
and Geopolitics

EsadeGeo POSITION PAPER **MAY 2023**

The EU Response to the U.S. Inflation Reduction Act

Joan Villoslada Camps

Research Fellow, EsadeGeo Center for Global Economy and Geopolitics

Angel Saz-Carranza

Director, EsadeGeo Center for Global Economy and Geopolitics

Table of Contents

The EU Response to the U.S. Inflation Reduction Act

Joan Villoslada Camps
Research Fellow, ESADEgeo Center for Global Economy and Geopolitics

Angel Saz-Carranza
Director, ESADEgeo Center for Global Economy and Geopolitics

May 2023

Executive Summary

This study analyses and compares the most recent American and EU economic plans regarding renewable energy and the green transition. In the summer of 2022, the American Government passed the Inflation Reduction Act (IRA) to develop its domestic clean-energy industries up to Chinese and European standards. Under the IRA, the US is introducing unprecedented subsidies and these maye trade distortive constituting a great deviation from WTO trade rules. The European Commission was initially outraged by the IRA measures and responded with a plan to better counteract the possible consequences of the IRA on the European market. Both economic plans are important for the green transition of the Western economies and signal a clear shift away from a neo-liberal free trade economic policy.

Keywords: IRA, NGEU, green transition, GDIP, electric vehicles, renewable energy, and European Commission.

1. Introduction

After decades of failure to transition away from fossil fuels, the largest global economies are now rapidly investing in green energy production and decarbonization. These economies have finally realized that the green transition is no longer an idealistic pursuit, and given climate imperatives and technological global competition, support for transition policies are seen as critical for self-sufficiency and dominance of the future energy market.

Some economies such as China and Europe have recognized this trend and invested heavily in clean technologies over the past decade. The latest participant in the clean energy race is the United States under the Biden administration.

The 2022 Inflation Reduction Act (IRA) is a landmark American legislative package aimed primarily at bolstering domestic clean energy production. In recent months, it has sparked some controversy regarding the open trade consequences of its generous “Made-in-America” subsidies.

The EU has been concerned about the IRA because it threatens Europe’s share of the global clean energy market and will attract companies to invest in the American economy rather than Europe. For these reasons, in February 2023, the president of the European Commission, Ursula von der Leyen, presented a new energy plan that updates the existing NextGenerationEU (COVID recovery) plan to protect the EU green industry from the IRA.

2. What is the IRA?

The 2022 Inflation Reduction Act (IRA) is a legislative package implemented by the Biden administration that combines large-scale green subsidies with healthcare savings and new revenue measures. The package includes essential

reforms to the American tax and healthcare systems. But most notably for this article, it also includes new energy security and climate change legislation which provides subsidies to companies that produce clean energy and electric vehicles (EV) in North America.

The original objective of the IRA was to reduce American greenhouse gas (GHG) emissions by 50-52% by 2030 (from the 2005 levels). However, after senate majority leader Chuck Schumer and Senate energy and natural resources chair Joe Manchin reached a compromise agreement in July 2022, the IRA goals were lowered to reduce net GHG emissions by 31-44% below 2005 levels by 2030.[1] To put this into perspective, current policy trajectory without the IRA means the US would have reduced its net GHG emissions by 24% below 2005 levels by 2030. The IRA has an approved budget of $369bn for the energy security and climate change programs for a 10-year period.

The IRA aims at strengthening the American clean energy and EV industries, and so indirectly help transition the US to a net-zero emitter of GHG. The IRA implements three policies to carry out its goals:

2.1 Electric Vehicles EV:

Subsidies for purchasing EVs include a $7500 consumer tax credit for electric cars. The EV tax credits also expand for companies that buy and use clean vehicles, including car leasing companies.

The $7500 consumer tax credit applies exclusively to EVs whose ‘final assembly’ was in North America (the US, Canada, or Mexico). In addition, half of the tax credit is linked to the origin of the batteries, at least 50% must be manufactured

[1] King, B., Larsen, J., & Kolus, H. (2022, July 28). A Congressional Climate Breakthrough. *Rhodium Group*.

in the US or in states with free trade agreements with the US. The other half of the tax credits are correlated to the source of the raw materials (at least 40%) used in electric vehicles.[2] Moreover, the minimum requirements will increase by 10% each year.[3]

To qualify for the IRA tax credits, the manufacturer's suggested retail price (MSRP) must be under a certain limit. Vans, SUVs, and pickups must have an MSRP of $80,000 or under to be eligible. For other passenger vehicles, the top limit is $55,000 or under; while the price cap drops to $25,000 for used vehicles.[4] However, the tax credit does not apply to high-earning individuals. Individuals who are single and whose modified adjusted gross income is over $150,000 cannot qualify for the EV tax credit. Married couples qualify for the tax credit if their income is below $300,000, and the limit is $225,000 for head of household income.[5]

2.2 Clean-Tech Development:

The IRA provides subsidies for manufacturers of clean-tech products and suppliers of critical raw materials, such as the batteries and components used in renewable electricity generation.

These subsidies include dollar tax credits per unit or energy unit of the respective product. They are available for batteries, wind turbine parts, solar technology components, and critical materials like aluminum, cobalt, and graphite. Providers of eligible critical materials can also receive tax credits of up to 10% of production cost. For example, a mid-sized 75kWh battery for an EV would receive a total of $3375 in subsidies (equivalent to 30% of its cost).

---

[2] Kleimann, D., Poitiers, N., Sapir, A., Tagliapietra, S., Véron, N., Veugelers, R., & Zettelmeyer, J. (2023, February 23). *How Europe should answer the US Inflation Reduction Act*. Bruegel. p. 4
[3] Ibid
[4] Parys, S. (2023, February 16). *EV Tax Credit: How it Works, What Qualifies*. NerdWallet.
[5] Taylor, K. R. (2022, August 15). *EV Tax Credit 2023: What's Changed and What's Ahead*. Kiplinger.

Manufacturers can also receive investment subsidies of 30% in tax-credits if their clean energy technology investment is selected as part of a "qualifying advanced energy project" program. These 30% investment tax credits (ITC) are available to investors in solar energy properties, geothermal properties, fiber-optic solar properties, fuel cell properties, microturbine properties, wind energy properties, combined heat and power properties, energy storage technology and waste energy recovery properties. On top of that, there is a 10% ITC bonus for every investment placed in locations with traditionally heavily polluting industries or with low-income communities. Additionally, the IRA also creates a new $5.8 billion program under the Office of Clean Energy Demonstration (OCED) for projects to reduce emissions from energy-intensive industries such as iron, steel, concrete, glass, pulp, paper, ceramics, and chemicals.[6]

2.3 Production of Carbon Neutral Electricity and Carbon Capture:

The IRA includes subsidies for producers of carbon-neutral electricity, including energy production with carbon capture (CCS) – including natural gas or hydrogen production with CCS – as well as nuclear energy.

Producers of carbon-neutral electricity are eligible for a $0.015/kWh production subsidy (which can be higher under certain conditions).[7] Renewable energy producers are also eligible for a 10% bonus subsidy if the steel and iron used in an energy production facility are 100% US-produced.

Furthermore, the legislation also encourages the capture of CO2 produced by industries. It offers a tax credit of $35 to $60 per ton when captured CO2 is used to produce low and zero-carbon fuels, chemicals, building materials, and other

[6] *Inflation Reduction Act Summary: Energy and Climate Provisions*. (2022, August 4). Bipartisan Policy Center.
[7] Kleimann, D., Poitiers, N., Sapir, A., Tagliapietra, S., Véron, N., Veugelers, R., & Zettelmeyer, J. (2023, February 23). *How Europe should answer the US Inflation Reduction Act*. Bruegel. p. 3

products. To be eligible for such a tax credit, companies must comply with a design capacity requirement – a requirement demanding that electrical generation units incorporate carbon capture equipment to capture at least 75% of the unit's CO2 production.[8]

3. The Reasons Behind the IRA

In recent decades, the US government had demonstrated little interest in promoting the development of green technologies or in transitioning the American economy into a carbon-neutral energy producer. Washington has traditionally been reluctant to implement these types of measures. Let's not forget that in 2017 president Donald Trump even withdrew the US from the 2015 Paris Agreement on climate change mitigation – and many politicians applauded him.

However, other governments appreciated the potential of nurturing a robust green energy industry. Thanks to years of state-sponsored investment, the EU and Chinese economies currently enjoy a considerable advantage in clean-tech innovation and renewable energy manufacturing over the US. In response to this development, the Biden administration is committed to shortening the distance between the US green energy industry and its global competitors.

The US is focused on catching up with the undisputed sector leader – the Chinese renewable energy industry. China is by far the leading economy in clean-tech innovation, renewable energy production, EV manufacturing, and exports of critical rare earth materials. China's renewable global electric production share grew from 16% in 2005 to 28% in 2021, while the US has only just recently reached the 20%

[8] *Inflation Reduction Act Summary: Energy and Climate Provisions*. (2022, August 4). Bipartisan Policy Center.

threshold.[9] China's total clean energy production capacity is 678GW, while the combined production capacity for the EU and US is 571GW.[10]

The stark distinction between the US and China is that Beijing foresaw the strategic necessity of the green transition, and has consistently invested to support its domestic industry. China spent 1.73% of its GDP on industrial policy spending in 2019, equivalent to $248bn at the nominal exchange rate. This rate of GDP expenditure is 2.5 times greater than South Korea and more than double the US.[11] Moreover, China also invested $380bn in clean energy industries in 2021, while the United States invested $235bn.[12] Beijing has long set targets to become dominant in wind and solar production. It opened lines of credit to the principal private companies in the clean energy sector and offered subsidies to transform clean energy sources into competitive alternatives to other cheap energy sources. Thanks to the state promotion of the Chinese green energy industry, according to the National Energy Administration, in 2022 approximately 70% of solar PV modules and wind turbines worldwide were made in China.[13]

Over the past decade, the Chinese government has provided more than $100bn to what it calls the "new energy" vehicle industry.[14] As a result, the Chinese EV market is large and well-established. Some 3.3 million electric cars were bought in

[9] Pike, L., Deen, A. & Levitan, D. (2022, August 17). *China is beating the U.S. in clean energy. Can America catch up?* GRID.
[10] Hensley, B., & Lappetelainent, A. (2023). *Race to the top on clean energy - The US and EU response to China's dominance*. Kaya. p. 7
[11] DiPippo, G., Mazzocco, I., Kennedy, S., & Goodman, M. P. (2022). Red Ink: Estimating Chinese Industrial Policy Spending in Comparative Perspective. *CSIS*. p. 2
[12] *World Energy Investment 2022 Datafile—Data product—IEA*. (2022, June). International Energy Agency IEA.
[13] Yep, E., & Yin, I. (2023, February 28). *US climate investment plan to challenge China's dominance in clean energy*. S&P Global.
[14] Kennedy, S. (2020). The Coming NEV War? Implications of China's Advances in Electric Vehicles. *CSIS*.

China in 2021, 16% of the total Chinese market; while only 5% of vehicles sold in the US in 2021 were electric.

In the aftermath of the Covid-19 pandemic and the invasion of Ukraine, Washington realized the importance of diversifying its supply chains and reducing its vulnerability to sudden fuel price changes. The first step towards energy self-sufficiency and preparing the American economy for the post-fossil fuel era is to build up a more competitive green economy. The IRA is the American response to the Chinese global dominance of clean energy supply chains. By strengthening domestic manufacturing and building alternative supply chains outside of China, Washington hopes to improve its energy autonomy and eventually become a global challenger to Chinese industry. However, many politicians recognize the impossibility of completely substituting the established supply chains, and cooperation with friendly partners remains vital. In the meantime, the goal is for America to catch up with its competitors in clean energy production.

4. Complaints from the International Community

Every significant shift in public policy always attracts controversy, and the IRA is no exception. The IRA openly offers generous subsidies on the condition that companies relocate their supply chain to North America. In other words, American investment capacity is being used to attract clean-tech enterprises away from their countries of origin. According to IRA critics, economic practices such as trade-distortive subsidies, including local-content requirements, are prohibited by World Trade Organization agreements.

Trading partners like South Korea, the EU, and Canada have made public their discomfort about the nature of the IRA. For instance, South Korea (a country that holds a large stake in the EV industry) has lodged a legal complaint against the IRA under

the terms of the WTO[15] and the Korea Free Trade Agreement. Prime minister Han Duck-soo reaffirmed that the government will “mobilize all diplomatic and economic channels”[16] to resolve this dispute with the US.

The EU is also worried that the IRA will harm European green business. Policymakers in Brussels believe that the IRA prioritization of subsidies to “Made in America” companies, will persuade European businesses to relocate their manufacturing to the US.[17]

Brussels complains that the IRA violates WTO trading rules on non-discrimination of foreign goods. The French finance minister, Bruno Le Maire, commented, "while subsidies to foster the energy transition are acceptable, they should comply with WTO rules and there should be a level playing field.”[18] French president Emmanuel Macron raised European concerns in Washington during his state visit on November 30, 2022. Macron said the Inflation Reduction Act was “super aggressive” toward European companies and distorted trade.[19] The IRA includes subsidies for production and trade with countries with free-trade agreements with the US, like Canada and Mexico, but Europe is excluded from this list. President Marcon and other European policymakers have demanded the IRA extend the same favorable treatment to European companies.

With an eye on the IRA benefits, many green companies with manufacturing based in Europe have already announced new investments and opened American

[15] Lee, J.-H., Ko, J.-Y., & Kim, S.-H. (2022, August 22). *Korea may file complaint with WTO against US' Inflation Reduction Act*. The Korea Economic Daily.
[16] Jung Ha, S. (2022, December 16). *IRA and the EV Tax Credits: Disruption or Expansion of Trade Alliance? | New Perspectives on Asia | CSIS*. CSIS.
[17] Ibid
[18] Blenkinsop, P., Thomas, L., & Rinke, A. (2023, February 1). Explainer: Why the U.S. Inflation Reduction Act has rattled Europe. *Reuters*.
[19] *Inflation Reduction Act 'super aggressive,' Macron tells his US hosts*. (2022, December 1). EURACTIV.

factories. These major corporations include Audi, Tesla Inc, Northvolt AB, Drax, Holcim AG, Linde, Mercedes-Benz Group, Volkswagen, BMW, ENEL, and Frey.[20] For instance, the Californian company Tesla withdrew its application for over one billion euros in German state aid for an EU battery plant in November 2021 and instead will focus cell production in America in light of IRA incentives.[21] Ecocem, an Irish low-carbon cement producer, announced it will double a planned $120m investment in California as it orients investment towards the US instead of Europe.[22] European politicians worry about industry leakage from the EU to the USA.

However, Washington appears to be ruling out any revision of the IRA despite European and Korean protests. The US climate envoy John Kerry responded that the US is not considering giving more major concessions to Korean and European partners. Instead, he proposes that trade partners make their green investment conditions more attractive and more concise.[23]

5. EU's Response: The EU Green Deal Industrial Plan

Understandably, EU policymakers became anxious after the announcement of the IRA last August. Although the EU market is fragmented and heavily regulated, it enjoyed a considerable head start over the US and a larger green energy production capacity. However, the IRA, in combination with high and volatile energy prices in Europe, poses a serious threat to the sustainability of the European green industry.

---

[20] Mathews, E., Mitra, S., & Bedi, P. (2023, February 24). Factbox: How companies are reacting to the U.S. Inflation Reduction Act. *Reuters*.
[21] Waldersee, V. (2023, February 22). Tesla scales back German battery plans, won over by U.S. incentives. *Reuters*.
[22] Flemming, S., Hancock, A., & Espinosa, J. (2023, February 1). Can the EU keep up with the US on green subsidies? *Financial Times*.
[23] Williams, A., & Fleming, S. (2023, January 26). *How Biden's climate law is charging US green spending and provoking Europe | Financial Times*. Financial Times.

Dutch MEP Paul Tang described the atmosphere in Brussels last December as "Europe is in panic mode."[24]

In recent months, the conversation in Brussels has shifted away from complaining about the IRA to finding solutions on how to best respond. The EU is in a delicate position and must act carefully before taking another major financial gamble. Its economy has been worn down by the covid-19 pandemic and the Ukrainian invasion, and Brussels has already invested €723bn in the transition to green energies and shifted away from its energy dependency on Russia.[25] Everyone agreed when Commission President Ursula von der Leyen stated last December: "We need to give our answer, our European IRA". However, member states were divided on what this response should entail.[26]

Member states such as France and Germany proposed loosening state aid frameworks in the green energy sector. The French commissioner for the EU's internal market, Thierry Breton, called for Europe to develop "strategic autonomy" in energy like the US and demanded a "made in Europe" strategy in response to the IRA.[27] For its part, Spain supported the EU in taking active measures to counteract the IRA, stating that they were "not opposed" to creating an EU-level common financing instrument that was funded by EU common debt.[28]

However, many more member states were nervous about escalating the situation by starting a "subsidy race" with the US and China, and many doubted that the EU

[24] Flemming, S., Hancock, A., & Espinosa, J. (2023, February 1). Can the EU keep up with the US on green subsidies? *Financial Times*.
[25] *Is the European Union on track to meet its REPowerEU goals? – Analysis*. (2022, December). IEA.
[26] *Made in Europe? The EU's response to the US Inflation Reduction Act (IRA)*. (2022, December 22). EuroEFE: EURACTIV
[27] Flemming, S., Hancock, A., & Espinosa, J. (2023, February 1). Can the EU keep up with the US on green subsidies? *Financial Times*.

[28] *Made in Europe? The EU's response to the US Inflation Reduction Act (IRA)*. (2022, December 22). EuroEFE: EURACTIV.

needed more common indebtedness. On January 26, 2023, a letter addressed to the European Commission vice-president of trade, Valdis Dombrovskis (signed by the Czech Republic, Denmark, Finland, Austria, Ireland, Estonia, and Slovakia, with the indirect support of Belgium, the Netherlands, and Germany) expressed opposition to new EU common funding in response to the IRA. Instead, the letter proposed taking advantage of the still unused post-covid-19 subsidies and explained that: “We have to ensure that the economy can better absorb the already agreed EU funding and so far only around €100 billion of the total of €390 billion of the Recovery and Resilience Fund (RRF) grants have been used.” [29]

Additional EU debt was politically inviable. However, at the time, there were also serious concerns about freeing energy state aid rules at the member state level. The main concern was that it would benefit the larger member states who enjoy a stronger fiscal position, like Germany and France; while member states with limited fiscal resources would lose industries in a subsidy “race to the bottom” inside the EU. Therefore, the European Commission had in January the task of creating an effective response plan that distributes existing EU common funds proportionally among all member states. European commissioner, Margrethe Vestager of Denmark argued that the EU should not “go down the slippery slope” of using procurement to favor aid to European businesses, [30] but should focus on creating a “business-friendly environment” while maintaining its “open approach to global trade.” [31]

---

[29] *Seven European countries oppose new EU funding as response to US green subsidies*. (2023, January 28). EURACTIV.
[30] Mackrael, K. (2023, January 25). *EU to Seek ‘Firm but Proportionate’ Response to US Inflation Reduction Act—Update—MarketWatch*. Market Watch.
[31] Europe cannot afford to engage in tit-for-tat with the US. (2023, January 26). *Financial Times*.

The final IRA-response plan of the European Commission was presented on February 2 by Ursula von der Leyen as the Green Deal Industrial Plan (GDIP).[32] The GDIP builds on previous EU initiatives, like the European Green Deal and the REPowerEU, to create an updated plan that promotes the EU transition to clean energy – while responding to the IRA.

The Green Deal Industrial Plan is the latest revision of the larger grand vision of the European Commission to transition Europe into green energy self-sustainment. The GDIP is a central part of the larger EU energy plan, the European Green Deal, which in turn encompasses multiple sub-plans like the NextGenerationEU, which includes the Recovery and Resilience Facility (RRF) and was later updated with the REPowerEU Plan (inside of which the sits the GDIP).

5.1 The European Green Deal:

The European Green Deal was introduced by the Commission in 2019. It functions as a set of EU initiatives to redirect the EU's climate, energy, transport, and taxation policies with the objective of reducing net GHG emissions by at least 55% by 2030 compared to 1990 levels. In the long term, it strives to transform Europe into the first climate-neutral continent by 2050.[33]

The Green Deal intends to achieve these goals by setting new tariffs, taxes on fossil fuels, and generous public investments in green industries. For example, it legislated the Carbon Border Adjustment Mechanism, which will impose extra tariffs on carbon-intensive imports and goes into effect in 2026.[34] But most notably, through

[32] *The Green Deal Industrial Plan*. (2023, February 1). European Commission.
[33] *A European Green Deal*. (2021, July 14). European Commission.

[34] *Carbon Border Adjustment Mechanism*. (2021, July 14). European Commission.

financial instruments like InvestEU, it will muster public investment and facilitate private funding with an approximate budget of €1 trillion.[35]

5.2 NextGeneration EU (NGEU):

As the covid-19 pandemic affected the world economy in 2020, the European Green New Deal quickly required an major update. The Commission designed the NGEU as a temporary recovery instrument within the Green Deal, and which aimed to aid Europe to recover "from the coronavirus pandemic and build a greener, more digital, and more resilient future."[36]

The NGEU was announced in June 2021 with a total budget of €806.9bn out of the original €1trillion from the Green Deal. All EU member states are required to invest at least 30% of the NGEU funds received in fighting climate change locally.[37] To do so, the Commission is subsidizing up to €250bn (or 30%) of NextGenerationEU by issuing NGEU Green Bonds. Thanks to the NGEU Green Bonds, the Commission will become the largest green bond issuer in the world.[38]

5.3 Recovery and Resilience Facility (RRF):

The Recovery and Resilience Facility is a subdivision of the NGEU and the key feature of the recovery plan. It functions as a recovery instrument of the Commission to raise funds to help member states achieve the mandated reforms and investments necessary to comply with the NGEU. It entered into force on the February 19, 2021, and will last until December 31, 2026. The RRF has available €723.8bn out of the NGEU's total budget of €806.9bn. From within this budget, €385.8bn will be offered

[35] *Financing the green transition*. (2020, January 14). [Text]. European Commission.
[36] *NextGenerationEU*. (2021, June). European Commission.
[37] *Recovery plan for Europe*. (n.d.). European Commission.
[38] *NextGenerationEU*. (2021, June). European Commission.

as loans, repaid later to the EU by the member state borrowing, and €338bn will be provided as grants.[39] It is important to note that by late January 2023, only some €100bn of the total of €338bn of RRF grants had been issued.[40]

5.4 REPowerEU Plan:

The REPowerEU is a Commission plan that amends the RRF to better answer the current energy crisis caused by the Russian invasion of Ukraine on February 22, 2022. The main change introduced by the REPowerEU is a restructuring of the RRF and other EU instruments to eliminate Europe's long-term dependency on Russian fossil fuels (mainly by expanding European clean energy production capacity).

To reach this new goal, the REPowerEU will use €225bn of the RRFs loans available. However, the Commission has already warned that the REPowerEU will need an additional €210bn of investment between now and 2027.[41] The Commission plans to draw from multiple sources to finance the current deficit of the RRF financial envelope. For example, the Commission proposes to pull €20bn in grants from the sale of EU emission trading system allowances as voluntary transfers to the RRF,[42] an additional €26.9 billion from the existing cohesion funds, and €7.5 billion from the common agricultural policy.

The REPowerEU has developed several projects to carry out revisions to the energy strategy. In the short term, it has secured record levels of LNG imports into Europe for the years 2022-2023. Moreover, in the long term, it has set the target of attaining a domestic production capacity of 10 million tonnes of renewable hydrogen and 10 million tons from imports by 2030, and it has designed an EU solar strategy

[39] *Recovery and Resilience Facility*. (n.d.). European Commission.
[40] *Seven European countries oppose new EU funding as response to US green subsidies*. (2023, January 28). Euractiv
[41] *REPowerEU*. (2022, May 18). European Commission
[42] Marcos, M. (2023, February 21). *REPowerEU: Additional grants of €20 billion | FI Group Grants*. Grants FI GROUP.

to double solar photovoltaic capacity by 2025 and install a total of 600GW solar photovoltaic capacity by 2030. To reduce the EU's dependency on gas imports, the Commission has engineered a scheme to combine the biomethane action plan (which will increase domestic biomethane production to 35bcm by 2030) with other energy plans such as energy savings & efficiency, fuel substitution, electrification, and enhanced uptake of renewable hydrogen and biogas. The Commission argues that as a result, European industry could save up to 35 bcm of natural gas by 2030 on top of what is foreseen under the fit for 55 proposals[43] (which is the main broad and overarching EU environmental legislation).

5.5 The Green Deal Industrial Plan (GDIP):

Finally, the Green Deal Industrial Plan is the latest energy plan that updates the European Green Deal. Published by the European Commission on the February 1, 2023,[44] it is a direct reaction to the American Inflation Reduction Act, but also serves as the step for the EU to move towards strategic energy autonomy. The GDIP includes new measures, as well as complementing and repurposing ongoing measures included in the **European Green Deal** and **REPowerEU.**

The GDIP is built around four pillars: a predictable and simplified regulatory environment; faster access to funding; enhanced skills; and open trade for resilient supply chains.

A Predictable and Simplified Regulatory Environment:

The first pillar centers around simplifying the regulatory framework within the EU. To achieve this, the Commission has proposed to two new major acts:

[43] *REPowerEU*. (2022, May 18). European Commission
[44] *The Green Deal Industrial Plan: European Commission's Further Initiative to Foster Green Transition in Europe | Cleary Gottlieb*. (2023, February 22). Cleary Gottlieb.

The Net-Zero Industry Act (NZIA):

To support the manufacture of carbon-neutral technologies like batteries, windmills, heat pumps, solar, electrolyzers, carbon capture, and storage, the proposed act will improve the administrative regulatory capacity of member states and speed the processing time for offering permits for manufacturers of technologies key to the EU's climate goals. Finally, to help private projects obtain EU and national funding, the act will clarify the minimum criteria for identifying European strategic projects.[45]

Critical Raw Materials Act (CRMA):

The Critical Raw Materials Act was proposed on the March 16 and focuses on "global cooperation and making trade work for the clean transition". The proposals include:

(i) Using the Critical Raw Materials Club to bring together raw material consumers with resource-rich countries to facilitate cooperation and secure a sustainable and affordable global supply of raw materials:

(ii) Clean tech/net-zero industrial partnerships to support the adoption of net-zero technology globally; and

(iii) an export credit facility to foster coherence with other EU green policies.[46]

The EU is anxious about an overreliance on a few import sources of key raw materials for the current and future green industries. At the moment, 98% of the EU's rare earth element supply comes from China, 98% of the EU's supply of borate comes from Turkey, and 71% of the EU's needs for platinum come from South Africa.[47] These

[45] *Ibid*
[46] *European Critical Raw Materials Act*. (2023, March 16). European Commission.
[47] *In-depth reviews of strategic areas for Europe's interests*. (n.d.). European Commission.

three key materials are vital for the European manufacturing of batteries, active pharmaceutical ingredients, hydrogen, semiconductors, processing of raw materials, and cloud and edge computing. There are currently few alternatives for evading these monopolies.

The GDIP proposes restructuring the current import supply chains and diversifying the import portfolio to ensure sufficient access to the critical raw materials that are vital for manufacturing key technologies – while fostering research and innovation to reduce the use of such materials and develop bio-based substitutes.

Loosening state-aid further

To preserve the internal market's level playing field, the plan envisages allowing countries to draw on existing EU funds. The principal source of capital will be the €225bn of loans and €20bn of grants remaining from the EU's €800bn post-pandemic NGEU fund.

The commission will consult member states on a proposal to transform the Temporary Crisis Framework (TCF) into the Temporary Crisis and Transition Framework (TCTF). The proposed TCTF would allow member states to provide state-aid to businesses under an extended range of circumstances.

The TCTF would extend TCF aid provisions to all renewable technologies, as well as renewable hydrogen and biofuel storage. Furthermore, it would simplify TCF provisions on subsidies to the decarbonization industry by allowing a laxer aid ceiling to facilitate private investment in the hydrogen, energy efficiency and electrification sectors. Thirdly, it would enhance investment support schemes for the production of strategic carbon-neutral technologies and provide more precise aid targets for major new projects in strategic net-zero production value chains. The funding provided by the Innovation Fund, InvestEU, and the RRF will enable the Commission to launch in

the autumn of 2023 an initial auction to support industries producing renewable hydrogen.[48]

Enhancing skills:

To better prepare human capital for the green transition, the Commission proposes establishing net-zero industry academies to offer people up-skilling and re-skilling programs in strategic industries. The EU has created 14 industry partnerships, including the automotive and agri-food sectors, designed to boost education and re-skill workforces. EU funds are also available for apprenticeships and vocational training in green and digital skills.

Open trade for resilient supply chains:

The fourth pillar focuses on strengthening the EU's global cooperation and reshaping international trade networks toward better serving the European green transition. The GDIP will seek stronger partnerships with friendly trade associates to acquire raw materials and clean tech to diversify the EU's import portfolio. For instance, it has expanded the EU's network of trade agreements, such as those already agreed with countries like Chile, Mexico, New Zealand, Australia, and Mercosur, and soon with India and Indonesia.[49]

Nonetheless, the GDIP also clearly declares that the EU's trade practices and subsidies will respect the principles of fair competition and open trade, honor arrangements made with the EU's partners, and (until now) comply with WTO trade rules.[50]

---

[48] *The Green Deal Industrial Plan: European Commission's Further Initiative to Foster Green Transition in Europe | Cleary Gottlieb*. (2023, February 22). Cleary Gottlieb.
[49] *The Green Deal Industrial Plan: European Commission's Further Initiative to Foster Green Transition in Europe | Cleary Gottlieb*. (2023, February 22). Cleary Gottlieb.
[50] *The Green Deal Industrial Plan*. (2023, February 1). European Commission.

At the same time, the Critical Raw Materials Club has been developed to deliver a secure, sustainable, and affordable global supply of raw materials – and a clean tech/net-zero industrial partnership initiative to promote the adoption of net-zero technologies globally.

6. The IRA vs the European Green Deal

The analysis presented herein highlights a crucial takeaway, namely, that the focus should not be on comparing the budget size of the American Inflation Reduction Act (IRA) and the European Union's Green Deal Industrial Plan (GDIP). Rather, the focus should be on the fact that both sides have committed to doubling down on the green energy transition, which represents positive news in the fight against climate change. It is essential to bear in mind that the US and the EU have diverse needs and face distinct economic challenges – and these differences require tailored approaches.

Although the GDIP was a direct response to the IRA, the US and the EU remain crucial trading allies who have cooperated and supported each other for several decades. While there may be instances of trading friction, the relationship remains robust and a trade war is improbable. The aftermath the covid-19 pandemic and the Ukrainian invasion, have made evident the vulnerabilities of America and EU when their international supply chains are disrupted. The fundamental objective of both industrial plans is to reduce such vulnerabilities to supply disruptions by diversifying strategic supply chains and becoming self-sufficient in energy in the long term. Achieving these objectives entails establishing new trade links to expand raw material providers, upskilling personnel with the required skills, and making significant investments in domestic green industries.

The analysis posits that both Washington and Brussels are moving away from the old neo-liberal economic practices and are slowly transitioning towards a new economic era that is more mercantilist and protectionist concerning the energy and chip industries. While the GDIP was a direct response to the IRA, both industrial plans have similar subsidies for electric vehicle purchases and clean-tech manufacturing, with EU renewable energy subsidies being significantly larger than the American counterparts.

Table: IRA vs EU subsidies

Category	IRA	EU
Consumer tax credit for EV	$7500/car	€6000/car
Clean-tech production	$37bn	€35bn
Renewable energy subsidies	$250bn	€806.9bn

(Source: Kleimann, D., Poitiers, N., Sapir, A., Tagliapietra, S., Véron, N., Veugelers, R., & Zettelmeyer, J. (2023, February 23). How Europe should answer the US Inflation Reduction Act. Bruegel)

From a comparative standpoint, the EU possesses a more mature and well-funded green industry than the US. The President of the German Kiel Institute for the World Economy, Holger Goerg, claimed that the impact of the IRA was "not that dramatic" compared to the EU's NGEU fund[51] (which represents a larger percentage of GDP). The IRA offers EVs a tax credit of $7500/per car, while the EU offers €6000/per EV car, with the annual total spending of the IRA being less than $40bn, which is less than half the €80bn disbursed to renewable energy by the EU in 2021 (representing 0.5% of the EU's GDP).[52] Additionally, the IRA has made $250bn available to invest in the renewable sector, while the NGEU had an expected expenditure available for renewables of €806.9bn in 2021.

[51] *EU-US climate and energy relations in light of the Inflation Reduction Act | Think Tank | European Parliament*. (2023, January 19). European Parliament- Think Tank.
[52] Gros, D. (2022, December 12). *America's Inward Turn on Trade | by Daniel Gros*. Project Syndicate.

While Europe and China have been promoting renewable energies for years, the United States has suffered from prolonged inaction due to a hostile political climate towards the green transition. Indeed, this opposition resulted in the IRA budget being reduced at the last minute. The lack of investment over the years and the diminished subsidies available may have motivated the Biden administration to concentrate resources on directly supporting its domestic clean energy industry – and thereby continuing Donald Trump's "Made-in-America" public policy. Although the IRA was not the first time the US has violated WTO fair trade rules, it is the most extensive breach so far.

The EU cannot claim to be innocent in its trade practices either, as it imposes a 10% tariff on all imported cars[53] (including EVs) and this offers an unfair advantage for European manufacturers. However, both the IRA and the GDIP demonstrate the intentions of the US and the EU in prioritizing domestic industries over foreign competitors. This represents the start of a new economic era in the West – with the end of neo-liberal economics and a shift towards a more mercantilist approach. During the Obama administration there were discussions regarding the end of neo-liberalism, but this was formalized under the Trump administration with tariffs being imposed on Chinese and European products – and many such tariffs remain in force under Biden's presidency.

In conclusion, in the grand scheme of things, both the IRA and the GDIP are positive developments in the fight against climate change. Although a few companies will inevitably relocate to the US after the IRA, the EU remains a well-developed and well-funded market for clean energy. The most relevant fact is that one of the largest

[53] Springford, J., & Lowe, S. (2022, January 27). *The EU should remove tariffs on environmental goods*. Centre for European Reform.

GHG emitters finally committed to the green transition and this is good news for the planet. Furthermore, the GDIP is an effective response to the IRA even though it avoids implementing trade-distortive subsidies, such as the local-content requirements banned under WTO rules. The GDIP instead redirects existing EU funds to protect the EU renewable market without reciprocating American trade practices. But most significantly, both economic plans demonstrate the intentions of the US and the EU to prioritize domestic industries over foreign competitors – and so move closer to industrial and energy self-sufficiency. This signals the beginning of a more protectionist age and the end of the globalized neo-liberal world.

7. References

A European Green Deal. (2021, July 14). European Commission. https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal_en

Amaro, S. (2023, February 2). *Biden's IRA has left Europe blindsided. And playing catch-up could lead to 2 big mistakes*. CNBC. https://www.cnbc.com/2023/02/02/bidens-ira-has-left-europe-blind-sided-and-playing-catchup-could-lead-to-2-big-mistakes.html

Blenkinsop, P., Thomas, L., & Rinke, A. (2023, February 1). Explainer: Why the U.S. Inflation Reduction Act has rattled Europe. *Reuters*. https://www.reuters.com/markets/why-us-inflation-reduction-act-has-rattled-europe-2023-02-01/

Carbon Border Adjustment Mechanism. (2021, July 14). [Text]. European Commission. https://ec.europa.eu/commission/presscorner/detail/en/qanda_21_3661

DiPippo, G., Mazzocco, I., Kennedy, S., & Goodman, M. P. (2022). Red Ink: Estimating Chinese Industrial Policy Spending in Comparative Perspective. *CSIS*. https://www.csis.org/analysis/red-ink-estimating-chinese-industrial-policy-spending-comparative-perspective

Europe cannot afford to engage in tit-for-tat with the US. (2023, January 26). *Financial Times*. https://www.ft.com/content/0bf3708d-20fe-4700-8702-bd0f6ef5591e?emailId=f5537479-61fc-4382-b20a-4091c208f500&segmentId=488e9a50-190e-700c-cc1c-6a339da99cab

European Critical Raw Materials Act. (2023, March 16). [Text]. European Commission - European Commission. https://ec.europa.eu/commission/presscorner/detail/en/ip_23_1661

EU-US climate and energy relations in light of the Inflation Reduction Act | Think Tank | European Parliament. (2023, January 19). European Parliament- Think Tank. https://www.europarl.europa.eu/thinktank/en/document/EPRS_BRI(2023)739300

Factbox: What's in the EU Green Deal Industrial Plan? (2023, February 17). *Hydrogen Central*. https://hydrogen-central.com/factbox-whats-eu-green-deal-industrial-plan/

Financing the green transition. (2020, January 14). [Text]. European Commission - European Commission. https://ec.europa.eu/commission/presscorner/detail/en/ip_20_17

Flemming, S., Hancock, A., & Espinosa, J. (2023, February 1). Can the EU keep up with the US on green subsidies? *Financial Times*. https://www.ft.com/content/85b55126-e1e6-4b2c-8bb2-753d3cafcbe5

Gros, D. (2022, December 12). *America's Inward Turn on Trade | by Daniel Gros*. Project Syndicate. https://www.project-syndicate.org/commentary/inflation-reduction-act-european-criticism-wto-rules-by-daniel-gros-2022-12

Hensley, B., & Lappetelainent, A. (2023). *Race to the top on clean energy- The US and EU response to China's dominance*. Kaya. https://www.unpri.org/download?ac=17824

In-depth reviews of strategic areas for Europe's interests. (n.d.). European Commission. Retrieved March 23, 2023, from https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/europe-fit-digital-age/european-industrial-strategy/depth-reviews-strategic-areas-europes-interests_en

Inflation Reduction Act Summary: Energy and Climate Provisions. (2022, August 4). Bipartisan Policy Center. https://bipartisanpolicy.org/blog/inflation-reduction-act-summary-energy-climate-provisions/

Inflation Reduction Act 'super aggressive,' Macron tells his US hosts. (2022, December 1). EURACTIV. https://www.euractiv.com/section/global-europe/news/inflation-reduction-act-super-aggressive-macron-tells-his-us-hosts/

IRA and the EV Tax Credits: Disruption or Expansion of Trade Alliance? | New Perspectives on Asia | CSIS. (n.d.). Retrieved March 2, 2023, from https://www.csis.org/blogs/new-perspectives-asia/ira-and-ev-tax-credits-disruption-or-expansion-trade-alliance

Is the European Union on track to meet its REPowerEU goals? – Analysis. (2022, December). IEA. https://www.iea.org/reports/is-the-european-union-on-track-to-meet-its-repowereu-goals

Jenkins, J. D., Mayfield, E. N., Farbes, J., Jones, R., Patankar, N., Xu, Q., & Schivley, G. (n.d.). *Preliminary Report: The Climate and Energy Impacts of the Inflation Reduction Act of 2022*.

Jung Ha, S. (2022, December 16). *IRA and the EV Tax Credits: Disruption or Expansion of Trade Alliance? | New Perspectives on Asia | CSIS*. CSIS. https://www.csis.org/blogs/new-perspectives-asia/ira-and-ev-tax-credits-disruption-or-expansion-trade-alliance

Kennedy, S. (2020). The Coming NEV War? Implications of China's Advances in Electric Vehicles. *CSIS*. https://www.csis.org/analysis/coming-nev-war-implications-chinas-advances-electric-vehicles

King, B., Larsen, J., & Kolus, H. (2022, July 28). A Congressional Climate Breakthrough. *Rhodium Group*. https://rhg.com/research/inflation-reduction-act/

Kleimann, D., Poitiers, N., Sapir, A., Tagliapietra, S., Véron, N., Veugelers, R., & Zettelmeyer, J. (2023, February 23). *How Europe should answer the US Inflation*

Reduction Act. Bruegel. https://www.bruegel.org/policy-brief/how-europe-should-answer-us-inflation-reduction-act

Mackrael, K. (2023, January 25). *EU to Seek 'Firm but Proportionate' Response to US Inflation Reduction Act—Update—MarketWatch*. Market Watch. https://www.marketwatch.com/story/eu-to-seek-firm-but-proportionate-response-to-us-inflation-reduction-act-update-271674645119

Made in Europe? The EU's response to the US Inflation Reduction Act (IRA). (2022, December 22). EuroEFE: EURACTIV. https://euroefe.euractiv.es/section/european-newsroom/news/made-in-europe-the-eus-response-to-the-us-inflation-reduction-act-ira/

Marcos, M. (2023, February 21). *REPowerEU: Additional grants of €20 billion | FI Group Grants*. Grants FI GROUP. https://grants.fi-group.com/repowereu-additional-grants-e20-billion-rrf/

Mathews, E., Mitra, S., & Bedi, P. (2023, February 24). Factbox: How companies are reacting to the U.S. Inflation Reduction Act. *Reuters*. https://www.reuters.com/markets/company-reaction-us-inflation-reduction-act-2023-02-23/

NextGenerationEU. (2021, June). European Commission. https://commission.europa.eu/strategy-and-policy/eu-budget/eu-borrower-investor-relations/nextgenerationeu_en

Parys, S. (2023, February 16). *EV Tax Credit: How It Works, What Qualifies*. NerdWallet. https://www.nerdwallet.com/article/taxes/ev-tax-credit-electric-vehicle-tax-credit

Perls, H. (2022, August 12). *The Inflation Reduction Act's Implications for Biden's Climate and Environmental Justice Priorities*. Harvard Law School. https://eelp.law.harvard.edu/2022/08/ira-implications-for-climate-ej-priorities/

Pike, L., Deen, A., & Levitan, D. (2022, August 17). *China is beating the U.S. in clean energy. Can America catch up?* GRID. https://www.grid.news/story/global/2022/08/17/china-is-beating-the-us-in-clean-energy-can-america-catch-up-the-race-in-five-charts/

Recovery and Resilience Facility. (n.d.). Retrieved March 2, 2023, from https://commission.europa.eu/business-economy-euro/economic-recovery/recovery-and-resilience-facility_en

Recovery plan for Europe. (n.d.). European Commission. Retrieved March 2, 2023, from https://commission.europa.eu/strategy-and-policy/recovery-plan-europe_en

REPowerEU. (2022, May 18). [Text]. European Commission - European Commission. https://ec.europa.eu/commission/presscorner/detail/en/ip_22_3131

Reuters. (2023, February 1). Explainer: Why the U.S. Inflation Reduction Act has rattled Europe. *Reuters*. https://www.reuters.com/markets/why-us-inflation-reduction-act-has-rattled-europe-2023-02-01/

Seven European countries oppose new EU funding as response to US green subsidies. (2023, January 28). Www.Euractiv.Com. https://www.euractiv.com/section/energy-environment/news/seven-european-countries-oppose-new-eu-funding-as-response-to-us-green-subsidies/

Springford, J., & Lowe, S. (2022, January 27). *The EU should remove tariffs on environmental goods*. Centre for European Reform. https://www.cer.eu/insights/eu-should-remove-tariffs-environmental-goods

Taylor, K. R. (2022, August 15). *EV Tax Credit 2023: What's Changed and What's Ahead*. Kiplinger. https://www.kiplinger.com/taxes/605081/ev-tax-credit-inflation-reduction-act-2022-changes

The Green Deal Industrial Plan. (2023a, February 1). European Commission. https://ec.europa.eu/commission/presscorner/detail/en/ip_23_510

The Green Deal Industrial Plan: European Commission's Further Initiative to Foster Green Transition in Europe | Cleary Gottlieb. (2023b, February 22). Cleary Gottlieb. https://www.clearygottlieb.com//news-and-insights/publication-listing/the-green-deal-industrial-plan-european-commissions-further-initiative-to-foster-green-transition-in-europe

Waldersee, V. (2023, February 22). Tesla scales back German battery plans, won over by U.S. incentives. *Reuters*. https://www.reuters.com/technology/tesla-scales-back-german-battery-plans-won-over-by-us-incentives-2023-02-21/

Williams, A., & Fleming, S. (2023, January 26). *How Biden's climate law is charging US green spending and provoking Europe | Financial Times*. Financial Times. https://www.ft.com/content/6d43e8be-9b93-4430-b4d7-fe74fafe2835?desktop=true&segmentId=7c8f09b9-9b61-4fbb-9430-9208a9e233c8#myft:notification:daily-email:content

World Energy Investment 2022 Datafile—Data product—IEA. (2022, June). International Energy Agency IEA. https://www.iea.org/data-and-statistics/data-product/world-energy-investment-2022-datafile

Yep, E., & Yin, I. (2023, February 28). *US climate investment plan to challenge China's dominance in clean energy*. S&P Global. https://www.spglobal.com/commodityinsights/en/market-insights/latest-news/energy-transition/022823-us-climate-investment-plan-to-challenge-chinas-dominance-in-clean-energy

김덕현. (2022, October 19). *PM assures Hyundai Motor of solutions over U.S. inflation law*. Yonhap News Agency. https://en.yna.co.kr/view/AEN20221019008100315