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# A New Deal for the Climate? Lessons from the Inflation Reduction Act

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# Lessons from the Inflation Reduction Act

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**Abstract**

The Inflation Reduction Act (IRA), passed under the Biden administration in August 2022, is the biggest US climate bill to date. Its focus on subsidy-driven decarbonization incentives marks a potential turning point in US industrial policy and might prevent its repeal under the upcoming Trump administration. This paper closely examines how the IRA aims to address the crisis of US capitalism with a particular emphasis on its ecological, geopolitical, and social objectives. Central to the IRA are strategies for decarbonizing the power and transport sectors, enhancing US competitiveness in the clean energy and battery industries, and linking subsidies to workers' rights. Despite its transformative potential to advance renewable energy and generate 'green' jobs, the IRA also includes concessions to the fossil fuel industry and incorporates protectionist measures that could heighten international tensions, especially with China. This analysis situates the IRA within the broader context of the crisis of post-Fordism and explores its role in a potential 'state-interventionist turn' towards a greener capitalism, while critically assessing its adequacy in addressing the urgency of climate action.

**Key words**

Inflation Reduction Act, Industrial Policy, Decarbonization, Energy Transition, Regulation Theory

**JEL codes**

H23, J58, O25, P18, Q42, Q48, Q54

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# 1. Introduction

It is safe to say that the upcoming second Trump presidency, combined with a Republican-controlled Congress, will be a disaster for the fight against climate change. Over the next four years, the US will likely withdraw from climate diplomacy, roll back environmental regulations, weaken institutions such as the Environmental Protection Agency and drastically increase domestic oil production (Davenport & Friedman, 2024; Tänzler, 2024).

Trump has also pledged to terminate one of Biden's flagship projects, the Inflation Reduction Act (IRA). The IRA includes a corporate tax reform, moderate adjustments to the healthcare sector, and, notably, the largest US climate bill to date[1] (Tamborrino, 2024). According to estimates of the Congressional Budget Office, $391 billion are allocated towards the decarbonization of the economy (Grimm et al., 2023). For context, this represents about four times the funding[2] for climate initiatives provided by the previous record-holder, the Obama-era American Recovery and Reinvestment Act (ARRA) (Schalatek, 2022).

Cancelling expenses for climate change mitigation measures perfectly complements the agenda of the president-elect, who combines fantasies of a slim state with climate change denialism (Tamborrino, 2024). However, Trump might face resistance from within his party. While no Republican lawmaker voted for the IRA in 2022, a number of Republican representatives have since spoken out in favour of keeping at least parts of the bill (Corbyn, 2024). This does not reflect a newfound climate conscience, but rather stems from the IRA's generous subsidies for clean energy manufacturing and renewable energy sites which have sparked a boom in domestic green investments – over 80% of which went to Republican congressional districts (Davenport & Friedman, 2024).

On closer inspection, the IRA also includes a number of provisions that might please Trump himself, such as extensive concessions to the fossil fuel industry that include generous support for carbon capture and storage technology (CCUS) and subsidies designed to challenge Chinese hegemony in the renewable energy manufacturing and battery sector. Provisions aiming to guarantee fair working conditions for those employed in subsidized projects and a new fund for bottom-up climate action in marginalized communities, however, might soon be history (Bipartisan Policy Centre, 2022, p. 4, 6, 8; Gili & Tentori, 2024b, p. 59; Internal Revenue Service, 2022; Steinberg et al., 2023, p. 5).

[1] For a detailed breakdown of the costs of the individual policy areas that are addressed in the bill and the sources of income that the IRA opens up, see the Committee for a Responsible Federal Budget 2022.

[2] The ARRA invested around $90 billion in the clean transition. Official estimates for the IRA predict climate expenditures of $391 billion (Bailey, 2019, p. 8; United States Department of State, 2010, p. 40). The comparison is not adjusted for inflation.

Neither the passage of the IRA nor its potential dismantling under the next administration occurs in a political vacuum. Substantial evidence suggests that the IRA is not only an attempt to mitigate climate change, but also an answer to the crisis of social cohesion in the US and China's dominance in the clean power and manufacturing sector (Gili & Tentori, 2024b, p. 41; Mayer, 2022, p. 53; Tankersley, 2024). In this paper, I will examine how the IRA addresses these crises, the objectives of its individual policies, and the extent to which the mode of industrial support deviates from the trajectories of previous administrations.

My main research question guiding this analysis is: to what extent does the Inflation Reduction Act signify a turning point in US industrial policy?

As part of this analysis, I will also answer my sub-research question: which design logics are at the core of the IRA's policies and how do they complement or contradict each other?

To answer these questions, I will first provide a brief introduction to the industrial policy debate and introduce Abels and Bieling's (2022, pp. 432–435) approach of different design logics that will later guide my analysis. Following Bieling's (2024, pp. 263–268) conclusion that a return to an active industrial policy might be an indicator of a 'state-interventionist turn', I will give a short outlook to the regulation theory debate and how the IRA might point towards a greater shift in the regulation of US capitalism. After detailing how the IRA was developed and which conflicting interests led to the passage of the final bill, I will briefly compare it to the EU's Green Industrial Plan to provide an assessment of the IRA's relative size and impact, before giving an overview of the individual policies in the bill. The focus of my analysis lies in a closer look at the IRA's most impactful industrial climate provisions. Those will be clustered according to their dominant design logic, which will allow me to examine them in the broader context of the crisis they are addressing and determine to what extent this approach is a novelty or stands in the political tradition of previous governments. In the discussion part, I will link the individual findings and determine to what extent the IRA's policies signify turning points in US industrial policy or rather follow a path dependency.

## 2. Why industrial policy matters

The absence of a universal definition of industrial policy is a testament to the controversial debate surrounding it (Andreoni & Chang, 2016, p. 493; Eder et al., 2018, p. 8). Very broadly speaking, industrial policy includes any policy that influences a country's competitiveness (Beath, 2002, p. 222) or any government measure encouraging or discouraging structural change (Price, 1981, p. 17). While some scholars argue that industrial policy only includes policies directly aimed at the manufacturing sector, others claim that any policy aimed at affecting the industry is industrial policy. This would then also include infrastructure, education, and tax policies (Andreoni & Chang, 2016, p. 493).

However, using such a broad definition ultimately permits categorizing almost any economic policy initiative as industrial policy, which might reduce the conceptual usefulness of the approach (Eder et al., 2018, p. 9). In this thesis, I will use a narrower definition of industrial policy and use this concept to analyse the IRA policies aimed directly at the manufacturing sector and the provision of clean energy.

A common distinction that will be useful for my analysis is between vertical and horizontal industrial policy. Horizontal (or untargeted) industrial policy focuses on compensating for market failures and generating a level playing field for all businesses by preventing monopolies, lowering the tax burden, or guaranteeing access to public goods by funding basic research and investing in the training of skilled workers (Abels & Bieling, 2022, p. 433; Eder et al., 2018, p. 8).

Vertical (or selective) industrial policy on the other hand intentionally prioritizes specific industries or sectors by shielding them from market forces (Eder et al. 2018, p. 9; Hufbauer & Jung 2021, p. 4). As an antithesis to free market policy, it actively restricts and forms competition (Abels & Bieling, 2022, p. 231). This corresponds with Pack's (2006, p. 268) narrower definition of industrial policy as "any type of selective intervention or government policy that attempts to alter the structure of production toward sectors that are expected to offer better prospects for economic growth than would occur in the absence of such intervention".

In conclusion, horizontal policies provide businesses with the necessary framework conditions for their success but let the market decide how resources should be allocated between the sectors, whereas vertical industrial policies incentivize or discourage the extension of certain sectors.

## 2.1 The industrial policy debate from a regulation theory perspective

From the 1930s in North America and the post-World War II era in Western Europe, vertical industrial policy served as a cornerstone of economic stabilization, closely intertwined with Fordism. From the 1960s on, both North America and Western Europe faced a decrease in productivity growth as well as increased inflation. This crisis was then addressed by an internationalization of capital, the transferral of Fordist mass production to the Global South, a move from demand to supply side management and a dismantling of workers' rights and social protections (Bevir, 2024; Dräger, 2001; Rustin, 1989). With this erosion of Fordism, the prevalent view took over that the state lacked the necessary information to 'pick winners' and had a tendency to lend life support to non-viable industries which lead to an inefficient allocation of resources (Abels & Bieling, 2022, p. 432). While vertical industrial policy remained popular in East Asia and contributed to historically unmatched growth rates (Hufbauer & Jung, 2021, p. 1; Stiglitz et al., 2013, p. 6), it disappeared from public

discourse in North America and Western Europe, was significantly scaled back in politics and continued only in a concealed manner.

However, the post-Fordist era proved highly unstable. From the 2000s on, the paradigm in the Global North shifted again with mainstream economists campaigning for a partial return of industrial policy in sectors prone to market failure. Investments in research and development were especially popular, as businesses were unwilling to fund them due to high uncertainty and a risk of 'free riders' (Eder et al., 2018, p. 4). The financial crisis of 2008 then triggered "a rethinking of many aspects of what might be thought of as the conventional wisdom in economics" (Stiglitz et al., 2013, p. 2). The market failure evidenced by the collapse of the global economy fostered a broad consensus that government action was necessary to safeguard the market economy, which lead to a newfound interest in vertical industrial policy.

The observation that countries with a strong industrial base recovered considerably faster than highly financialized economies was perhaps equally important because it led to a revived interest in the manufacturing sector. Next to being the primary driver of technology-driven productivity growth[3], manufacturing was appreciated as the learning centre of the economy[4] and as a guarantor of jobs with above-average pay, while also being recognized as especially vulnerable to globalized competition because of its highly tradable products (Andreoni & Chang, 2016, p. 495). More recently, industrial policy has stepped into the spotlight as a possible lever towards a green economy by supporting non-competitive green technologies against market forces (Eder et al. 2018, p. 10; Stiglitz et al, 2013, p. 2).

Therefore, industrial policies slowly made their way back into the spotlight, both in academia and politics. For example, Obama's American Recovery and Reinvestment Act of 2009 included mostly horizontal measures such as research and development funding and general demand stimuli as well as limited vertical support for clean energy production (Warwick, 2013, p. 9).

In the EU, Abels and Bieling (2022, p. 440, 446) note a more far reaching shift than in the US, starting with the bank bailouts and economic stimulus programs after the financial crisis, and continuing with a new industrial strategy and significant investments in climate measures from 2014 onward. The latest development came with the Covid pandemic, when the European Commission loosened regulations concerning industry subsidies on the national level and established the NextGenerationEU

[3] While agriculture quickly faces natural constraints – such as soil exhaustion – many services cannot be sped up significantly without degrading in quality – hair cannot be cut much faster with better scissors, a thorough patient-doctor interview can only be replaced to a limited extent by new technology. Therefore, it is primarily the manufacturing sector that translates technical progress into productivity and output growth (Andreoni & Chang, 2016, p. 495).

[4] What is developed in manufacturing will soon be an input in other sectors, driving growth or, alternatively, sustainable solutions (Andreoni & Chang, 2016, p. 495).

recovery fund, which finances the economic recovery of the EU through joint revenue streams. Sablowski, Schneider, and Syrovatka (2022, p. 234) interpret this development as an effort to tackle the crisis tendencies that emerged in the aftermath of the Euro crisis, which were themselves a reflection of the broader crisis dynamics that emerged with the focus on financialization and the competitive state model of integration (Hirsch, 1996, p. 101; 1997).

These analyses are carried out from the perspective of regulation theory. Building on Marx's assumption that capitalism is inherently unstable, regulation theorists such as Abels and Bieling and Sablowski, Schneider, and Syrovatka aim to explain why relatively stable periods of capitalism emerge nonetheless. They assume that capitalism develops through a series of regimes of accumulation, meaning specific configurations of production and consumption, which are shaped by the dominance of certain capital fractions, such as financial capital in post-Fordism. The underlying contradictions between capital and labour, which are, according to Marx, at the core of capitalism, then emerge in the form of historically specific crises. These are addressed by modes of regulation, which are composed of a set of policies and social norms that mediate social conflicts in a way that contains the contradictions of the accumulation regime and thereby allows for its reproduction. Regulation thus means the way a social relation "reproduces itself in spite of and because of its conflictive and contradictory character" (Lipietz, 1985, p. 109, translation P.K.). However, the interplay of the regime of accumulation and the modes of regulation not only leads to temporary stability, but always produces new contradictions as well (Brand & Wissen, 2024, p. 97, 104; Tickell & Peck, 1995, pp. 360–363). As mentioned above, for example, the increased financialization of the economy and the weakening of workers' rights were part of a policy set deemed to fix the crisis of Fordism, but ultimately lead to the financial crisis and the ongoing crisis of post-Fordism.

Recently, the EU has selectively promoted individual sectors through economic stimulus programs in an effort to support the domestic capitalist economy against global rivalries as well as shielding it from the effects of economic and ecological crisis. For Bieling (2024, p. 267), this development is a sign that we might be experiencing a 'state-interventionist turn' towards a new mode of regulation.

Regardless of whether they welcome or oppose this development, many observers interpret the IRA as a resurgence of US industrial policy (Eichengreen, 2023; Goldwyn & Clabough, 2023). If that is the case, which will be analysed in this paper, it neatly fits into the "remarkable comeback in the political discourse, as well as in economic research" (Eder et al., 2018, p. 4), that has been observed in the EU. The following analysis will therefore not only analyse to what extent the IRA signifies a turnaround in US industrial policy, but also whether this development might point towards a bigger shift in the regulation of US capitalism.

## 2.2 Design logics behind industrial policy

Like any other political measure, industrial policy is the result of various (conflicting) interests and might pursue a number of different objectives. Abels and Bieling (2022, p. 432) refer to these overlapping aims of a policy as design logics. These can be interpreted as elements of (new) modes of regulation, addressing certain contradictions of the accumulation regime while creating new ones. Whether these different design logics are contradictory or complementary to each other and what influence they each have is shaped by the power relations behind the policies.

Reacting to a crisis of capital accumulation, a *capitalist design logic* aims to counteract crisis dynamics in the medium term by guiding excess capital towards sectors promising long-term growth. It thereby stabilizes the capital accumulation process until a redirection and expansion of capital becomes necessary again. Abels and Bieling name the investment into infrastructure as an example of this process: since infrastructures enable the expansion of productive activity, investing in them might stabilize the capitalist accumulation process.

Following the necessity of expansion, the capitalist design logic closely correlates with a *geoeconomic design logic*. Since capital accumulation operates across borders, there is always an emphasis on integrating, securing, and controlling transnational spaces through industrial policies. In the traditional, more geopolitical sense, this design logic aims to control remote regions for reasons of national security or to access raw materials and resources. From a broader perspective, a geopolitical design logic might also include limiting market-liberal operations by providing exclusive market access and competitive advantages for domestic companies or by implementing protectionist measures that make it harder for foreign competitors to enter markets.

Following Abels and Bieling (2022, p. 435), *a social integrative design logic* might be a reaction to pressure from unions and civil society. It aims to mitigate the negative consequences of structural change for employees either via a *defensive* reaction or by pursuing an *active* transition policy. A defensive restructuring accepts that a development – such as the disappearance of a domestic industry due to globalized competition, a structural change necessitated by climate change, or the emergence of new and better technology than the one being produced in this particular firm or sector – might be inevitable in the long term. It therefore tries to slow down this development by helping the affected businesses to remain competitive in the short term, e.g., by allowing the merging of businesses. Simultaneously, the welfare state is prepared to provide basic security for the affected workers, as well as retraining measures for those young enough to switch sectors (Rehfeld & Dankbaar, 2015, p. 493). An active transition policy, on the other hand, ideally happens before the structural change has taken hold. It pursues a long-term strategy that aims to form this development and profit from it

instead of slowing it down. Businesses receive support to be at the forefront of research and technology development, and the aim is to develop sustainable sectors in the long term, which will then, in turn, lead to new employment opportunities (Rehfeld & Dankbaar 2015, p. 493).

Relatively new, but central to an analysis of the IRA's policies is the *ecological design logic*. Following an ecological design logic, an investment is sustainable when it not only promises stable returns in the midterm but also builds up production that does not produce negative externalities for the environment (Abels & Bieling, 2022, p. 435). Mazzucato (2015, p. 135) argues that progressive industrial policy is necessary for the green revolution since early and capital-intensive investments into infant industries must be made by the state – an actor that can cope with possible failure and is big enough to shape the market to allow for innovative industries to succeed. Following Mazzucato (2015, p. 135), effective industrial policy not only has to derisk and crowd in private investments in sustainable technologies, it should also lead "the way with a clear and courageous vision". Historically, this has been largely successful: the falling costs for renewables, for example, can be largely attributed to government interventions such as the support for research and development, and promoting technologies that have not been competitive from the start (Flegal, 2023, p. 19). Eder et al. (2018, p. 11) argue that an industrial policy that does not follow the green growth paradigm but instead promotes structural change does not only have to pick winners, but also losers, which includes shutting down unsustainable industries.

In the following sections of this paper, I will use the ecological, social, and geoeconomic design logic to approach the IRA's climate policies in a structured manner. I will analyse how different policies respond to the different design logics, which power relations may have influenced the orientation of different policies towards these aims, which crises and problems are being addressed in this manner and whether this marks a change of direction in the US government's approach to these problems. The capitalist design logic will not be used for the clustering of different polices, since I would argue that as the superordinate logic of the bill, it is prevalent in most of its aspects. This claim will be substantiated in Section 7.1 of this paper, where the conflicts between the different design logics will also be highlighted.

# 3. An overview of the IRA's climate provisions

## 3.1 From a Green New Deal to the Inflation Reduction Act

The IRA is the outcome of a long political process: after admitting defeat in the democratic primaries in 2020, Bernie Sanders joined Joe Biden's presidential campaign. Their campaign groups formed six joint working groups that developed proposals for concrete compromises in central policy areas. The climate change task force, co-chaired by representative Alexandria Ocasio-Cortez (representing

the progressive wing of the democratic party) and Barack Obama's former Secretary of State John Kerry (representing the democratic establishment that includes Biden) brought Biden's climate policy from the abstract goal of a carbon neutral economy by 2050 to a list of policy recommendations. The campaign coined the term 'Build Back Better' for a climate policy aiming to grow out of the pandemic sustainably (Löhle, 2020; Oprysko, 2020). Build Back Better drew from blueprints on the state level, such as California, that had introduced ambitious decarbonization plans as a reaction to Trump's withdrawal from the Paris Climate Agreement, as well as from Ocasio-Cortez's 2019 proposal for a Green New Deal (Data For Progress, 2020; NBC, 2019). The planned ambitious investments in the US industry were, however, also a reaction to China's increasing dominance on the world market (Abels & Bieling, 2022, p. 731).

After Biden's election, the relatively vague Build Back Better Plan was restructured into three policy packages: The American Rescue Plan (ARP), the Infrastructure Investment and Jobs Act (IIJA) and the Build Back Better Act (BBBA). The American Rescue Plan, a $1.9 trillion Covid relief bill, was passed in March 2021 and distributed $450 billion as direct stimulus payments to low-income households, $350 billion to state and local governments, and $300 billion to extend unemployment benefits as well as investing in tax relief for low- and middle-income households, financing a vaccination campaign, extending medicare, and aiding small- and medium-size businesses (Dullien et al., 2021, p. 1).

The speaker of the House and the Senate majority leader, Nancy Pelosi and Chuck Schumer, as well as other leading figures of the Democratic party, initially planned to pass the Infrastructure Investment and Jobs Act (IIJA) only after an agreement concerning the Build Back Better Act. This strategy aimed to secure the support of conservative Democrats for the BBBA by only passing the widely approved IIJA if the more progressive BBBA was passed as well. However, under the pressure of conservative Democratic representatives, the IIJA was passed alone – with the support of 13 Republican representatives in the House of Representatives and 19 in Senate and without the votes of the Democratic *Squad*[5] which had withdrawn its support due to the broken promise of passing both packages together. The IIJA invested $1.2 trillion in US infrastructure, such as the modernisation of streets and bridges, the extension of the power grid and highspeed internet as well as public transport. Extensive climate regulations from the original draft were removed. Instead, $25 billion were allocated to support fossil companies in the development of CCUS solutions and hydrogen fuels (Mayer, 2022, p. 108). Evidently, the BBBA – then reduced from the initial $6 trillion to $2.2 trillion

[5]The Squad is the colloquial term for six progressive members of congress, most prominently represented by Alexandia Ocasio-Cortez and Cori Bush (Mayer, 2022, p. 71).

– failed to pass the Senate in November 2022 because conservative Democrat Joe Manchin refused to vote for it[6].

In light of the upcoming midterms, Democrats were under pressure to pass any climate bill before losing the Senate. Jesse Jenkins (2023), a researcher advising the Biden government during the Build Back Better negotiations, recalls how Joe Manchin was pressured into re-entering negotiations in July 2022 by industry actors expected to profit from the bill. The list of callers offers insights into how industry-friendly the revised policy proposal was: next to prominent advocates such as Bill Gates, who had invested in battery development as well as in nuclear energy and energy storage projects, oil companies such as BP stressed that their hydrogen projects would benefit, and the US' largest steel company, Nucor, advocated for the bill since it would benefit from tax credits supporting its investments in West Virginia (Fairley, 2023; Jenkins, 2023). The IRA was finally passed by the US Senate on the 6th of August 2022, with a financial scope less than a third of the Build Back Better Act[7] (Mayer, 2022, p. 116).

## 3.2 The IRA in context: How does it compare to the EU's climate expenditures?

To get a grasp on the relative size of the IRA, it is helpful to take a look at the Franco-German Council of Economic Experts' (Landais et al., 2023, p. 5) comparison with the EU's climate expenditures.

The council mainly compared the IRA with the EU's Green Deal Industrial Plan which was launched in 2023 as a European response to the IRA. The Green Deal Industrial Plan allocates around $220 billion earmarked for the green transition from the Recovery and Resilience Fund to member states, and another $340 billion from the RePowerEU programme is being invested to achieve energy security through a transition to green energy production. Independently from the Green Deal Industrial Plan, an additional $40 billion from the Recovery and Resilience Fund have already been claimed for decarbonization projects, which totals investments of $600 billion until 2030 (Landais et al., 2023, pp. 5–6). Comparing the EU's climate spending with the US' proves rather difficult, since neither the Green Deal Industrial Plan nor the IRA are standalone projects: while EU member states grant additional national subsidies under the 2023–2025 Temporary Crisis and Transition Framework (Ysewyn & Maczkoviks, 2023), US states can also grant their own sub-national subsidies, and both the EU and the US have previous climate packages whose impact on the industry is difficult to fully take into account. If the predictions of the Congressional Budget Office are correct[8] and the IRA

[6] Not only is Joe Manchin "a top recipient of campaign contributions from the mining, oil and gas industries" (Flavelle et al., 2022), he also owns a coal plant himself.
[7] Looking only at decarbonization expenditures, the difference is smaller: The Build Back Better Act designated $550 on decarbonization – around one third more than the IRA (Schalatek, 2022).
[8] The extent to which official estimates and estimates by scientific institutes and think tanks diverge here is discussed in the next section.

spends $391 billion on decarbonization over the decade, the EU's expenditures ($600 billion) are roughly 50% bigger than the IRA's. It is, however, not unlikely that the IRA's climate spending will be much higher than the calculations of the Congressional Budget Office predict (Bistline, Mehrotra, et al., 2023, p. 15; Credit Suisse, 2022, p. 15). *If* the IRA spends up to $900 billion on decarbonization, it will in turn surpass the EU's expenditures by around 50%.

## 3.3 An overview over the IRA's climate provisions

Unlike its title suggests, the Inflation Reduction Act does not primarily focus on combatting inflation. However, it is not a pure climate package either. Over a 10-year expenditure window (2022–2031), it will create roughly $738 billion of revenue, the majority of which is created through a prescription drug pricing reform (allowing Medicare to directly negotiate the prices of selected drugs with manufacturers) and the introduction of a corporate minimum tax. $238 billion will be used to reduce the US deficit and $108 billion will go into healthcare affordability programs (Committee for a Responsible Federal Budget, 2022).

However, climate change is at the heart of the IRA: its policies represent an important step towards meeting the US climate targets under the Paris Climate Agreement of reducing greenhouse gas emissions by 50% until 2030 (in comparison to 2005 levels). Without the IRA, the climate provisions already in place would lead to a decrease of greenhouse gas emissions of 25% to 31% by 2030, while the IRA is predicted to achieve emissions reductions of 33% to 40% (Bistline, Blanford, et al., 2023, p. 3).

This prioritization is also reflected in the expenditure: the Congressional Budget Office estimates that the IRA will spend around $391 billion on its decarbonization measures over a decade (2022–2031), more than half its overall budget. According to estimates from the Department of Labour and the Congressional Budget Office, around 30% ($121 billion) of the IRA's decarbonization spending are direct expenditures, among others on forestry and agriculture as well as grants and energy loan programs (Bistline, Blanford, et al., 2023, p. 2). More than 70% (around $261 billion) of the IRA's investment in climate change mitigation measures will be delivered through tax incentives (Bistline, Blanford, et al., 2023, p. 2; Committee for a Responsible Federal Budget, 2022; US Department of Labour, 2023a).

However, how much money exactly will be dispersed this way is unclear, since the benefits are uncapped – meaning that the more corporations and private individuals apply for the support, the more money is spent. While the US government follows the estimates provided by the Congressional Budget Office presented above, Bistline, Mehrotra, and Wolfram (2023, p. 15) estimate that the tax credits alone might cost the US government around $780 billion – more than three times the estimate

by the Congressional Budget Office, while the entire decarbonization expenditures of the IRA might reach up to $900 billion[9]. In the following overview of the IRA's decarbonization programs, I will however use the official estimates by the Congressional Budget Office. These numbers will hopefully help to gain an understanding of the scope of the measures but must be taken with a grain of salt, nonetheless.

Table 1: Overview of Climate Related Expenditure

| | Category | Amount |
|---|---|---|
| Tax Credit Program | Clean Electricity Generation and Storage (includes the Clean Electricity Production Tax Credit and the Clean Electricity Investment Tax Credit) | $131 billion |
| | Clean Energy and Efficiency Incentives for Individuals | $37 billion |
| | Clean Energy Manufacturing (includes the Advanced Manufacturing Production Tax Credit and the Advanced Energy Project Investment Credit: Both subsidize the manufacturing of components needed for clean energy technology) | $37 billion |
| | Nuclear Power Production Tax Credit | $30 billion |
| | Clean Fuels (includes incentives for Biodiesel and Renewable Diesel Production and alternative fuels such as LNG or liquified hydrogen) | $19 billion |
| | Clean Vehicles (includes a Clean Vehicle Tax Credit for individuals buying zero-carbon cars) | $14 billion |
| | Carbon Capture and Sequestration | $3 billion |
| Direct Expenditure | Agricultural and Forestry Conservation and Sequestration Projects | $21 billion |
| | Energy Loans | $17 billion |
| | Energy Efficiency | $11 billion |
| | Industrial Decarbonization | $5 billion |
| | Greenhouse Gas Reduction Fund | $27 billion |
| | Other | $39 billion |

Source: Bistline, Mehrotra, and Wolfram (2023, p. 6)

[9] The Franco-German Council of Economic Experts and an analysis by Credit Suisse also consider these numbers to be probable (Credit Suisse, 2022, p. 15; Landais et al., 2023, p. 4)

# 4. The ecological design logic

## 4.1 The US and climate change

US climate change policy has been "highly inconsistent and contradictory over time, […] changing directions – at home and abroad – numerous times" (Selin & VanDeveer, 2020, p. 124). The US was one of the first countries to significantly invest in wind and solar power in the 1980s but failed to offer reliable support in the long term; it held its first congressional hearing on climate change in 1988, but did not pass any decisive regulation in the following decades (Larsen et al., 2022, p. 1; Mazzucato, 2015, p. 143). While Europe, Japan, and China took the lead in the production of green technologies in the 1990s and 2000s, the US lagged and remained, until today, the largest emitter per capita (Mazzucato, 2015, p. 143).

Obama, on whose presidency climate activists had placed great hopes, left a mixed record. Compared to previous presidencies, his government showed a greater commitment to international climate policy, such as a bilateral agreement with China affirming their commitment to the 2 °C goal which laid the groundwork for the passage of the Paris Agreement (Selin & VanDeveer, 2020, p. 128). Obama capitalized on the opportunities presented by the 2008 financial crisis to implement green funding in his 2009 stimulus package, the American Recovery and Reinvestment Act (ARRA). The ARRA invested around $90 billion in the clean transition through energy efficiency grants, renewable energy research, and loans for renewable energy projects (Bailey, 2019, p. 8; United States Department of State, 2010, p. 40). However, Obama failed to implement a CO2 tax and his 2015 Clean Power Plan, which would have set specific targets for the reduction of carbon dioxide emissions from existing coal- and gas-fired power plants, was halted by the Supreme Court because it had been passed without the approval of Congress (Bailey, 2019, p. 7; Schalatek, 2022).

The first Trump presidency represented a new low point in US climate policy – additionally to withdrawing from the Paris Agreement, the government managed to revoke around 100 environmental rules and opened up more land for oil and gas leasing (Popovich et al., 2021).

Under pressure from progressive Democrats and alliances such as the Sunrise Movement and the BlueGreen Alliance, climate change became a major issue in the 2020 democratic primaries as well as in Biden's platform (Mayer, 2022, p. 54; Tomasky, 2020). The investment-based approach of the IRA carries the hope of shifting the challenge of decarbonizing "from one of policy compliance to opportunity capture" (Bistline et al., 2024, p. 10) by effectively "incorporating climate change mitigation into economic recovery efforts" (Murray & Monast, 2024, p. 445).

## 4.2 How the IRA updates the tax credit program

In short, tax credits lower the amount of taxes owed for business entities and individuals alike, because the tax credit will be deducted directly from the taxes owed to the state. The IRA's tax credits are refundable, meaning that individuals and businesses will receive payments from the government if the amount of tax credits exceeds the amount of taxes they would have to pay. Additionally, a lot of these tax credits work like price rebates: they are deducted at the time of purchase and don't have to be claimed in the tax return (US Internal Revenue Service, 2023).

### 4.2.1 Planning reliability for the green transition

Federal tax credits for renewables are in itself nothing new. A production tax credit for wind energy was first established in 1992 and investment tax credits for solar projects were introduced in 2005 (Mai et al., 2016, p. 1). The IRA continues a series of central tax credits, extends the scope of others and introduces new ones, the most important of which will be discussed below.

What sets the IRA apart from earlier tax credit programs is not only the scope of these investments, but the planning certainty guaranteed to investors. The IRA's tax credit program is designed to run for a decade, which means that projects can apply for credits until the end of 2031. Since tax credits will be paid out for up to ten years after the beginning of construction, a project beginning construction in 2031 could receive credits until the 2040s (Bistline, Blanford, et al., 2023, p. 16).

This marks a significant improvement to past legislature: since federal tax credits for renewables were introduced in 1992, the US Congress has allowed the credit system to expire six times, and in other instances, extensions were often granted at short notice. This uncertainty resulted in "boom and bust cycles" (Union of Concerned Scientists, 2015) in annual renewable energy installations, accompanied by significant job losses (Mai et al., 2016, p. 1).

Mazzucato (2015, p. 137, 144) claims that this past unwillingness of the US government to guarantee support for green investments has resulted in the fact that the US, which has long been an important consumer of green energy products, failed to become a significant producer as well. Instead, China and the EU took the lead in green energy production with the EU's steady research and development support and the strategic industrial policy of the Chinese government.

### 4.2.2 Subsidies for 'clean' power

The IRA's tax credits subsidize a range of low carbon investments, from energy production and storage to energy efficiency measures and electric vehicles. In this section, I will focus on the most impactful credits that are characteristic of the Biden government's approach to climate change mitigation.

As shown in Table 1, approximately two-thirds of the IRA's tax credits ($238 billion) are aimed at clean energy production and storage, and the largest share of this is spent on the IRA's Clean Electricity Production Tax Credit and Clean Electricity Investment Tax Credit, which incentivize the generation of zero-carbon electricity (Committee for a Responsible Federal Budget, 2022; Podesta & The White House, 2023, pp. 9–11).

Until the end of 2024, the IRA extends already existing tax credits for selected renewable energy technologies[10], which will be replaced by the Clean Electricity Production Tax Credit and Clean Electricity Investment Tax Credit in 2025. The combined costs of the old and new tax credits for zero-carbon electricity generation are an estimated $131 billion (Bistline, Mehrotra, et al., 2023, p. 6).

The Clean Electricity Investment Tax Credit reimburses 30% of investment costs for clean energy projects, whereas facilities that choose the Clean Electricity Production Tax Credit receive 1.5 cents/kWh of clean electricity generated. This support runs out in 2032 or when the electric power sector's emissions have decreased by 75%[11] (Bipartisan Policy Centre, 2022, p. 6).

Both the Clean Electricity Production Tax Credit and the Clean Electricity Investment Tax Credit are technology-neutral and therefore subsidize all carbon-neutral energy production projects, as well as standalone storage facilities (Bipartisan Policy Centre, 2022, p. 4). Next to supporting technologies that are necessary for the production, transportation, and storage of renewables, such as batteries, microgrid controllers, and linear generators, the tech-neutral tax credits also subsidize plants that burn fossil fuels, but use CCUS technology to achieve carbon neutrality (Bipartisan Policy Centre, 2022, p. 5).

### 4.2.3 The mirage of carbon capture and storage

CCUS technology is not only being indirectly supported by the clean energy credits but also directly through the Carbon Capture and Sequestration Tax Credit[12]. Depending on the exact technology used, plants can receive from $50 up to $180 per tonne of stored CO2, which will cost the government an

[10] The already existing Investment Tax Credit and Production Tax Credit apply to multiple solar and wind technologies as well as energy production from municipal solid waste, geothermal and biomass, and components like microturbines and fuel cells as well as energy storage connected to wind and solar projects. Some technologies are only eligible for either the ITC or the PTC (US Environmental Protection Agency, 2022).
[11] Whichever happens later.
[12] "Carbon sequestration is the process of capturing and storing atmospheric carbon dioxide", (United States Geological Survey, n.d.) whereas Carbon capture is the process of capturing the Carbon before it reaches the atmosphere. The Carbon is then stored, most commonly in rock formations underground (United States Environmental Protection Agency, n.d.). The terms Carbon Sequestration and Carbon Capture are often used synonymously.

estimated $3 billion (Bipartisan Policy Centre, 2022, p. 9; Committee for a Responsible Federal Budget, 2022; Podesta & The White House, 2023, pp. 9–11; Steinberg et al., 2023, p. 5).

The German Environmental Agency estimates that capturing CO2 during the combustion of fossil fuels and subsequently storing it underground could theoretically keep about 85% of the captured CO2 permanently out of the atmosphere. However, the capture, transport, and storage of CO2 is highly energy-intensive, meaning that to lower the environmental impact of fossil fuels through the use of CCS technology, even more fossil fuels might have to be burned (Umweltbundesamt, 2024). At least as alarming is the fact that a long-term secure storage cannot be guaranteed as yet, since stored CO2 might leak due to geological anomalies that cannot be ruled out (Purr & Spindler, 2023, p. 10). In addition, it must be noted that in the US, CCUS is predominantly used for "enhanced oil recovery", a procedure during which captured carbon dioxide "is injected into oil fields to extract additional oil that would otherwise be trapped underground" (Harvey & House, 2022). The supposedly green technology is therefore not only highly unreliable, but actively supports the extraction of fossil fuels.

## 4.3 A win for the fossil fuel industry

In addition to the reduced expenditure, new regulations were added to secure Joe Manchin's support for the bill. Last-minute alterations of the IRA determine that over the next decade, leases for offshore wind development may only be issued if at least 60 million acres were offered for lease for oil and gas projects in the preceding year. Holding a lease sale does not mean that the land will be leased out however – most of the land offered for drilling is never developed (Husselbee & Oakes Dobie, 2022). Additionally, onshore wind and solar allowances on federal land may only be sold if a minimum of two million acres was offered up for onshore oil and gas leases in the previous 120 days (Inflation Reduction Act Tracker, 2024). Even though these mandatory sales might not actually lead to a significant extension of fossil fuel production, the allowance of new wind and solar projects on federal land is now dependent on a requirement the developers have no control over. This uncertainty betrays the US government's aim to deliver a cohesive climate policy and investment security for clean producers (Marks, 2022).

## 4.4 A few sticks in a sea of carrots

Next to its extensive subsidies, the IRA also introduces and increases fees to decrease fossil fuel production and use. It reintroduces a petroleum superfund tax (that has been disabled since 1995). Superfund taxes follow the 'polluter pays' principle and aim to ensure that companies whose products are responsible for environmental contamination carry at least a part of the cost. From 2023 onwards, producers and importers of petroleum have to pay 16.4 cents per barrel of petroleum, nearly twice as

much as the 1995 rate (Cilluffo & Bearden, 2021; Muresiano, 2022). However, this still only amounts to 0.1 cents per litre petroleum, which does not even begin to cover the costs of pollution.

The IRA also raises the cost of extracting oil and gas on federal land as well as changing the basis for the calculation of the leasing costs: historically, producers had paid royalties depending on their oil and natural gas sales. Under the IRA, they will also have to pay for gas lost in the production process. This might incentivize producers to increase their efforts to obviate leakages or even discourage potential developers to lease land for the extraction altogether (Husselbee & Oakes Dobie, 2022).

The most powerful direct regulation of fossil fuels in the IRA is the Methane Emissions Reduction Programme (MERP), which puts a fine on methane emissions across the oil and gas supply chain. Starting in 2024, oil and gas facilities will have to pay fines for emissions extending a certain threshold. Not only does this mark significant progress concerning methane regulation in the US, with loose performance standards introduced under Obama and abolished under Trump, it also "represents the first time the federal government has levied a fee on the emission of any greenhouse gas" (Webb, 2022). After Obama's unsuccessful attempt to introduce a CO2 tax (Schalatek, 2022), Biden's new methane regulation may point the way to a future of stricter greenhouse gas regulations.

## 4.5 The IRA as a meta law

In April 2024, the US Environmental Protection Agency (EPA) finalized new emission standards for coal- and gas-powered plants. From 2032 onwards, coal- and gas-powered plants must capture 90% of their emissions. From 2032 to 2047, these standards are expected to prevent around 1.38 billion metric tons of carbon pollution, making it one of the Biden administration's most potent climate policies (Associated Press, 2024; Sturges & Cobb, 2024). While this policy is not part of the IRA, it is only possible *because of* the IRA, due to the cost-benefit rule federal agencies must comply with. Since the 1970s, the EPA has to provide an estimate of its proposals' societal costs and benefits. Only proposals whose monetary benefits outweigh the costs may be passed, which effectively dictates how ambitious a policy is allowed to be (Meyer, 2023).

However, only the *new* costs are included in the analysis, whereas existing subsidies that reduce compliance costs are not factored into the calculation. In this case, this means that the compliance cost for plant operators already includes the Carbon Capture and Sequestration Tax Credit, which means that it is assumed to be much lower than without the IRA (Environmental and Energy Law Program Harvard, 2022; Murray & Monast, 2024, p. 448). In this case, IRA subsidies for technological 'solutions' that fortify fossil fuel dependencies and directly benefit fossil fuel companies that would have invested in these solutions anyway, lay the groundwork for more aggressive regulations (Meyer, 2023).

## 4.6 A big step forward, a few steps back – the climate impact of the IRA

If one only looks at the expansion of carbon-neutral electricity production, then the IRA's climate policy is a big step in the right direction. The tax credit programs for investments in the production of carbon-neutral electricity, combined with the clean manufacturing credits (which will be introduced in section 7.2.1 of this thesis) make the production of electricity from renewable sources significantly cheaper. If this price reduction is passed on to consumers, which is very likely, the USA will have the cheapest renewable electricity in the world in the medium term (Credit Suisse, 2022, p. 5).

Simultaneously, the subsidies will lead to an increase in the deployment of wind and solar energy capacity. Bistline et al. (2023, p. 3) predict that yearly deployment of renewables will be more than twice as high annually as in the baseline scenario[13]. By 2035, this increased employment should lead to an emissions reduction of 75% for the power sector[14].

Looking at the role of green industrial policy in the US, the IRA clearly builds on Obama's American Recovery and Reinvestment Act, the first stimulus package aiming to overcome an economic crisis while simultaneously greening the economy. Biden's willingness to follow in the Obama government's footsteps is also evident in the selection of his staff: John Podesta, for example, who oversaw the passage of the IRA, had also worked as Obama's climate advisor (Milman, 2024). However, while climate change mitigation was more of an afterthought in the ARRA, it is at the heart of the IRA. This is evident not only by the much bigger financial scope, but also by the rhetoric employed by those promoting the bill and the longevity of the program's support (Bistline, Blanford, et al., 2023, p. 16; The White House, 2023). The fact that the IRA's subsidies are used as a stepping stone for stricter regulation also enforces this impression and suggests a strong long-term impact.

Looking at the nature of the industrial policy, the IRA focuses on the promotion of production instead of research and development funding, as is more common in the EU and was still very prevalent in the ARRA (Grimm et al., 2023, p. 3). Given that efficient green technologies have been available for years and are primarily faced with the challenge of a fossil 'lock-in' of the economy, this seems only logical. The direct support of firms producing carbon-neutral energy technologies marks a return to a more vertical industrial policy: the IRA's subsidies do not only level the playing field for renewables but also distort the price signal (Credit Suisse, 2022, p. 2).

[13] "Across all models [analysed by Bistline et al.], growth rates from 2021 to 2035 range from 10-99 GW/yr for solar and wind under IRA (58 GW/yr average), which is more than twice the average of 27 GW/yr without IRA and higher than the record 33 GW installed in 2021" (Bistline, Blanford, et al., 2023, p. 3).

[14] The emissions reduction of 75% is in comparison with 2005 levels (Bistline, Blanford, et al., 2023, p. 3).

However, the government did not dare to pick a winner but instead chose to support all carbon-neutral energy production alike. Since carbon capture and storage technology is pricey, the market might just rule in favour of renewable energy production, but the support of unsustainable practices is nonetheless a testament to the unwillingness to confront the fossil fuel lobby (Bipartisan Policy Centre, 2022, p. 5). The coupling of renewable energy leases to oil and gas leases reinforces this impression (Husselbee & Oakes Dobie, 2022).

Ultimately, the IRA introduces some promising regulations for the fossil fuel sector and greatly improves the conditions for renewables. At the same time, its policies are largely contradictory and show a failure to decisively turn away from fossil fuels – which is hardly surprising, given a razor-thin majority in the Senate and the lobbying power of fossil fuel companies.

# 5. The social integrative design logic

## 5.1 Deindustrialisation, job losses and the 2016 election

When the Clinton administration concluded a series of free trade agreements in the 1990s, and thereby contributed to the outsourcing of manufacturing, it created a "metro-rural split" (Mayer, 2022, pp. 51–55). Clinton had promised that the loss of US manufacturing jobs would be more than offset by new opportunities from the emerging high-tech sector but the new jobs did not settle where the old ones had been lost. Instead, rural communities, non-college-educated workers, and people of colour were disproportionately affected by the loss of well-paid, highly unionized jobs[15] (BlueGreen Alliance, 2023, p. 1). After the 2008 financial crisis, cities recovered faster than rural areas where job loss remained a widespread issue. The Obama administration brought a newfound interest for the reshoring of manufacturing jobs – but failed to keep its promise of creating a million new manufacturing jobs (Bonvillian, 2016, p. 38). This also became an issue for the Democratic party: Mayer (2022, p. 52) insinuates that the Democratic party had lost touch with rural and working-class voters, and thereby increasingly relied on votes of the educated urban middle class – a minority in the US. In 2016, this approach backfired, when rural Americans predominantly voted for Trump (Porter, 2016).

## 5.2 The Bonus Credit Program

During his 2020 election campaign, Biden sought talks with the BlueGreen Alliance, which was later actively involved in IRA negotiations, where it successfully lobbied to subject the eligibility of businesses to the IRA's tax credits to social justice criteria (Moraal et al., 2023).

[15] Unemployment of male workers without a college degree increased from 10% in 1990 to 18% in 2013, whereas the wages of those employed decreased by around 20% (Bonvillian, 2016, p. 27).

### 5.2.1 The Prevailing Wage and Apprenticeship Bonus Rate

The most impactful condition applying to tax credits is the prevailing wage and apprenticeship requirement: to qualify for the full credit or deduction amounts (bonus rate), the construction and maintenance of the subsidized facilities must meet certain requirements regarding the employed workers. All labourers employed by the taxpayer himself, their contractors or subcontractors, must be paid wages at rates equal to or higher than the prevailing rates for this type of work in the state the project is situated in. The minimum wage requirements aim to match 'clean tech' wages with (the usually higher and more likely unionized) fossil fuel wages (Internal Revenue Service, 2022). Prevailing wage requirements have a long history in US subsidy programmes: the 1931 Davis-Bacon Act requires contractors on federally funded or assisted construction projects to pay their workers at least locally prevailing wages. This requirement was also included in the ARRA (Text - H.R.1 - 111th Congress (2009-2010), 2009, p. 303; US Department of Labour, 2023b). The apprenticeship requirement, on the other hand, is new in this form. To comply with the requirement, 10%[16] of the work must be carried out by qualified apprentices to ensure that the firms involved in construction and maintenance fulfil their duty to offer traineeships (Apprenticeship Labour Hour Requirement). If the Prevailing Wage Requirement and the Apprenticeship Labour Hour Requirement are unmet, the project is only eligible for 1/5$^{th}$ of the tax credits[17] (Internal Revenue Service, 2022; REPEAT, 2023). A project eligible for the Clean Electricity Investment Tax Credit, will therefore, if it fails to satisfy the prevailing wage and apprenticeship requirements, only receive a 6% tax credit – much lower than pre-IRA subsidies (Bistline, Mehrotra, et al., 2023, p. 13).

### 5.2.2 The Low-Income Communities Bonus Credit and the Energy Community Bonus Credit

On top of the clean energy credits, developers of small solar or wind installations and storage solutions can receive a bonus credit of up to 10% under the Low-Income Communities Bonus Credit located in low-income communities[18] on Indian[19] land. Facilities are eligible for a 20% bonus if their revenue benefits low-income households[20] or if they are located in social housing projects (Office of Energy Justice and Equity, 2023; U.S. Department of the Treasury, 2023). Under the Energy Community Bonus Credit, facilities receive an increase of their tax credits by 10% if they are situated

[16] The percentage depends on the date of the start of construction: if the construction starts in 2022: 10%; in 2023: 12,5%, in 2024 or later: 15% (Internal Revenue Service, 2022).
[17] Unless otherwise specified, all subsidies presented in this thesis are calculated as if the project meets the wage and apprenticeship requirements and thus qualifies for the bonus rate.
[18] A community is officially considered "low income" if the poverty rate is at least 20% or if the median family income is at most 80% of the median family income of the state (Office of Energy Justice and Equity, 2023).
[19] Meaning land in possession of a Native American community (Office of Energy Justice and Equity, 2023).
[20] A low income household earns less than 80% of the area's median income (Office of Energy Justice and Equity, 2023).

in an area that is especially affected by the phase-out of fossil fuels: this refers to areas with above-average employment in the extraction and processing of coal, oil or natural gas and an above-average unemployment rate (Interagency Working Group on Coal and Power Plant Communities and Economic Revitalization, 2024). The bonus credit programs are expected to decrease the dependence of communities on fossil fuels, which will lead to lower energy costs and a more dependable electricity supply. Profit sharing between developers and residents might also increase acceptance towards the green transition (Russo, 2024).

## 5.3 The Greenhouse Gas Reduction Fund

The Greenhouse Gas Reduction Fund is one of the newly created flagship projects of the IRA. It awards $27 billion to the US Environmental Protection Agency, which in turn distributes competitive grants to state, local, and tribal programs providing financial and technical support to low-carbon projects. At least 70% of the funds will go to low-income and/or disadvantaged communities that would otherwise struggle to gain funding (Bipartisan Policy Centre, 2022, p. 18; Bistline, Blanford, et al., 2023, p. 11; Podesta & The White House, 2023, p. 10). The Greenhouse Gas Reduction Fund aims to provide a more bottom-up approach to the green transition by actively involving communities. However, organizations operating within disadvantaged communities might lack the resources to apply for the grants in the first place (Joselow, 2023).

## 5.4 New jobs for the working class – the social impact of the IRA

An analysis from the University of Massachusetts projected that the IRA will directly create around 8.5 million new jobs until 2032, with job opportunities expanding especially for non-college educated workers (Wicks-Lim & Pollin, 2024, p. 1). Between the passage of the IRA and February 2024, 523 new clean energy projects have already been announced. 44% of these projects will be located in low-income communities, where they are expected to create more than 100,000 new jobs (Climatepower.US, 2024, p. 2). Biden's plan of bringing back manufacturing jobs for the working class[21] seems to be on the right track. This is a huge win for workers: due to high productivity growth and highly specialized training, but also due to the strong bargaining power of those overseeing the production of high-value consumption goods, manufacturing jobs are usually highly unionized and relatively secure, and workers receive above-average wages (Eder et al., 2018, p. 10; Rehfeld & Dankbaar, 2015, p. 497). This results in benefits for the whole region – not only is the income gap in regions with a strong manufacturing base smaller than in regions relying heavily on the service sector,

[21] Following the definition used by the Centre for American Progress (CAP), the 'working class' is comprised of workers without a college degree. However, it must be noted that most members of the working class work in the service industry and might therefore not profit from a revival of manufacturing. (Manufacturing remains the second most important employment for the working class.) (Glass, 2023).

but high wages also result in high tax revenue for the state, while higher job security leads to a smaller burden for the welfare state (Goebel & Gorning, 2015, p. 20).

The Greenhouse Gas Reduction Fund with its focus on bottom-up action and energy security is also promising. However, as the issue of a complicated application process perseveres, it remains to be seen how far it will increase engagement with and acceptance of the green transition.

The bonus credits seem to be bearing fruit as well, as low-income communities and communities that have faced a disproportionate loss of manufacturing jobs since 2001 benefit above average (Glass & Madland, 2024), setting a good example of an active transition policy. Rural communities profit from the bonus credits as well as from the fact that they offer the cheap land needed for energy projects and large-scale manufacturing sites that urban areas lack. Since rural areas in the U.S. primarily vote Republican, a curious pattern has emerged: districts represented by lawmakers who opposed the IRA are far more likely to benefit directly from it than Democratic-leaning districts. By June 2024, the IRA had spurred over $200 billion in planned investments for clean technology manufacturing, $161 billion of which will be invested in red districts – more than four times the investments in blue districts (Denning et al., 2024)

Nevertheless, this disproportional win for red districts failed to change voter loyalty in the November 2024 election. This might be due to the lack of knowledge concerning the IRA: a minority of US residents approve of the IRA, and only three out of ten even know what the IRA is[22], even though individual measures such as the expansion of tax credits for electric cars, solar panels, and wind turbines enjoy widespread support (Romm et al., 2023). This failure to link the local investment boom to federal policies are also in line with Republican representatives welcoming IRA investments in their districts while simultaneously openly calling for the repeal of the bill[23] (League of Conservation Voters, 2024).

# 6. The geoeconomic design logic – how does the IRA address China's growing influence?

## 6.1 The End of Chimerica

As early as the 1970s, China pursued an active industrial policy with major investments in infrastructure which enabled the production of simple export goods, such as textiles and apparel

[22] A year after its passage, 71% of the respondents to a poll by the University of Maryland and the Washington Post said they knew little or nothing about the IRA (Romm et al., 2023).

[23] The "Hall of Republican Clean Energy Hypocrisy" by the environmental nonprofit organisation League of Conservation Voters (2024) offers insight into this paradox by contrasting statements of Republican representatives concerning IRA investments with their official stance towards the IRA.

(Hufbauer & Jung, 2021, p. 25). Meanwhile, the US heavy industry declined, while the GDP share of the financial sector grew. In the 1990s, the term 'Chimerica' was coined to describe the complementary accumulation regimes of China and the US. While China increasingly exported cheap consumption goods to the US and created an export surplus, US consumers saved money by buying Chinese imports and the US economy grew increasingly reliant on the financial sector, while industrial jobs were outsourced and the US accumulated a large foreign trade deficit (Köncke & Schmalz, 2024, p. 136).

After the global financial crisis, this complementary – although unsustainable – relationship changed. The Chinese government focused on products higher up the value chain, increased the technological quality of its products, internationalized Chinese corporations, and invested in future technologies (Abels & Bieling, 2022, p. 729; Ferguson & Xu, 2018, p. 244). China's engagement on the African continent increased substantially with the launch of the Belt and Road Initiative, which did not only secure political support, but also better access to the continent's raw materials, which are necessary for the green transition (Chen et al., 2024, p. 6; Gili & Tentori, 2024b, p. 15; Savage & Mirir, 2024).

An increasingly independent China, which saw itself as more than just a supplier of simple products, began to be perceived as an economic and political threat by the United States. The Obama government initiated efforts to reshore industrial production to the US and decrease the US dependence on Chinese imports. Thus the 2009 American Recovery and Reinvestment Act (ARRA) stated that all federal, state, and municipal projects receiving funds must use US' produced steel and iron as well as manufactured items[24] (Government of Canada, 2021; Hillstrom, 2015, p. 289; Schneider & Syrovatka, 2024, p. 15).

Trump, who had run on an anti-Chinese platform and vowed to bring back manufacturing jobs to the US, disrupted political consensus by imposing tariffs on Chinese imports worth more than $360 billion, provoking retaliations from the Chinese government (Tankersley, 2024). However, once Biden – who had criticised Trump's trade war with China in his election campaign – was in office, he did not roll back any of his predecessor's tariffs. On the contrary, Biden substantially increased tariffs on solar cells, steel and aluminium products, semiconductors, and electric vehicles. Consumers buying Chinese electric vehicles imported to the US now have to pay a tariff of 100% – effectively doubling the price of the vehicle[25] (Hufbauer & Jung, 2021, p. 3; Tankersley, 2024). A week before the IRA came into effect, Biden also signed the CHIPS and Science Act into law, a bill specifically designed to counter Chinese dominance in the semiconductor industry (The White House, 2022). The

[24] For clarification: this provision only affected projects carried out by government agencies – individuals and private firms were exempted (Hillstrom, 2015, p. 289).
[25] Under Trump, the tariffs for electric vehicles amounted to 25% of the sales price (Tankersley, 2024).

CHIPS and Science Act allocates over $50 billion to semiconductor manufacturing in the US and severely restricts US residents from investing in Chinese-made semiconductors. The focus on semiconductors is closely linked to national security interests, since they are critical components for electric vehicles and electronic devices such as smartphones as well as for military equipment (Luo & Van Assche, 2023, pp. 1425–1426; The White House, 2022).

Biden's change of heart concerning his China policies might be because the supply difficulties during the pandemic and Russia's war against Ukraine exposed the inherent vulnerability of global supply chains and underscored the necessity to enhance their resilience by "re-shoring, near-shoring, or friend-shoring" (Gili & Tentori, 2024b, p. 41) the production of core products. The New York Times, on the other hand, suspects that Biden's hard stance towards China might also be a strategy to ease voter anxiety in areas most affected by the outsourcing of manufacturing jobs (Tankersley, 2024).

It is important to note, however, that Biden is not merely continuing Trump's protectionism, but is also adding an environmental focus by not only restricting Chinese imports but simultaneously stimulating US production of low-carbon technologies (Tankersley, 2024).

Whether this is the right strategy is debatable, but Biden's concerns about falling behind China in the green transition are at least understandable, since China has become the leading producer of green technology. In 2023, 80% of solar panels used globally, 76% of lithium batteries (an essential component of electric vehicles), and 60% of plug-in electric vehicles were being produced in China (Gili & Tentori, 2024a, p. 15, 22).

## 6.2 Supporting domestic production along the energy supply chain

Broadly speaking, every single one of the IRA's green subsidies is an incentive for domestic production, since it lowers costs for businesses and therefore increases their willingness to keep, expand, or install factories in the US instead of a competing site abroad. However, the policies analysed in the following section stand out since they do so in a highly straightforward manner and are therefore worth a closer look.

### 6.2.1 The Advanced Energy Project Investment Tax Credit and the New Advanced Manufacturing Production Credit

The Advanced Energy Project Investment Tax Credit is capped at $10 billion and reimburses 30% of investment costs for the re-equipment or erection of a manufacturing facility for the production and recycling of components for renewables, energy conservation, CCUS, and low-emission vehicles (Credit Suisse, 2022, p. 32; Internal Revenue Service, 2024). More impact is expected from the complementary Advanced Manufacturing Production Tax Credit: it subsidizes the sale of US-

manufactured components for green energy technology. Individual subsidies apply to the refinement of raw materials (such as silicon for solar modules and aluminium for battery cells), the manufacturing of pre-products (such as blades or swimming platforms for offshore wind parks), and the finished product (such as the connection of photovoltaic cells into a solar module)[26] (BlueGreen Alliance, 2023, p. 18; Internal Revenue Service, 2024). The Committee for a Responsible Federal Budget estimates that companies will take advantage of around $27 billion under the Advanced Manufacturing Production Tax Credit (Bistline, Blanford, et al., 2023, p. 6). However, according to estimates by Credit Suisse (2022, p. 31), it may become the IRA's "single most expensive ticket item" with up to $250 billion in claimed tax credits, because the subsidy is so attractive to businesses.

### 6.2.2 The Domestic Content Bonus Credit

The Domestic Content Bonus Credit is a 10% bonus on the Clean Electricity Production Tax Credit and Clean Electricity Investment Tax Credit introduced in section 5.2 of this thesis (Bipartisan Policy Centre, 2022, pp. 4–6). While the aforementioned manufacturing credits support manufacturers in the production of green energy technology, the domestic content bonus credit creates an incentive for energy providers to buy these domestically produced technologies.

A project is eligible for the Domestic Content Bonus Tax Credit if it a) uses only domestic steel and iron for structural materials[27] and b) uses at least 40% domestically manufactured products, with the percentage rising annually[28]. Domestically manufactured in this case means that the refinement of the materials into complex goods must have taken place in the US (enelnorthamerica, 2023; Podesta & The White House, 2023, p. 12).

A solar power production plant built in 2025 would be entitled to support via either the New Clean Electricity Investment Tax Credit or the New Clean Electricity Production Tax Credit. The New Clean Electricity Investment Tax Credit offers a 6% base credit rate, meaning that if the project complies with the Prevailing Wage and Apprenticeship Requirements, it will receive 30% of its investment costs as tax credits. With the Domestic Content Bonus Credit, an additional 10% of the existing tax credits are being granted, which entitles the projects managers to a reimbursement of 33% of their initial investment costs.

[26] For an extensive list of all subsidized components and the individual size of the subsidies, see the website of the Internal Revenue Service (2024).
[27] Smaller parts like bolts and screws are exempted from this rule (enelnorthamerica, 2023).
[28] The domestic content requirement rises annually by 5%, from 40% in 2024 up to 55% from 2027 onwards (Podesta & The White House, 2023, p. 12). For an extensive list of all manufactured items that fall under the domestic content requirement, see Blue Green Alliance 2023, page 4.

The New Clean Electricity Production Tax Credit offers a base rate of 0.3 cents/kWh of electricity, which amounts to a tax credit of 1.5 cents/kWh of electricity if the Prevailing Wage and Apprenticeship Requirements are being met. With the Domestic Content Bonus Credit, this support rises to 1.65 cents/ kWh (Bipartisan Policy Centre, 2022, pp. 4–6).

## 6.3 Subsidizing a reshoring of the battery supply chain

Joe Biden's attempt to gain the upper hand on the green transition is particularly evident when it comes to zero-emission cars and battery production. Biden's goal is to ensure that by 2030, at least half of all new cars sold do not emit greenhouse gases – and that as many of these cars as possible are produced in the US. In this sub-section, I will highlight two policies that aim to increase the domestic production and sale of electric and hybrid cars and their components.

### 6.3.1 The Domestic Manufacturing Conversion Grants

The IRA's Domestic Manufacturing Conversion Grants make $2 billion available to support the conversion of existing manufacturing facilities to a production site for hybrid, electric, and hydrogen fuel cell electric vehicles. Projects receiving these grants can get up to 50% of their conversion costs reimbursed by the US government. Factories that have ceased operation or are expected to do so soon are being favoured (Interagency Working Group on Coal and Power Plant Communities and Economic Revitalization, 2023). According to a Webinar hosted by the US Department of Energy, the grant aims to retain or return manufacturing jobs in vehicle manufacturing, strengthen and expand collective bargaining agreements in the involved projects, and "decrease U.S. dependence on competitor nations" (Ward, 2023, p. 6).

Businesses that did not receive support from the Conversion Grant due to its expenditure limit might still be available for support for the production of battery cells and modules under the uncapped "Advanced Manufacturing Production Credit"[29] (Congressional Research Service, 2022, p. 17) and the "Advanced Energy Project Investment Tax Credit" (Mehdi & Moerenhout, 2023b, p. 2), that reimburses up to 30% of investment costs in energy storage solutions.

### 6.3.2 The Clean Vehicle Credit

The Clean Vehicle Credit is a demand-side subsidy that directly depends on domestic content requirements. Individuals buying a car can receive up to $7,500 in subsidies if the car was assembled in the US, Canada, or Mexico. Additionally, at least 40%[30] of the critical minerals used to produce

[29] Battery cells can earn a credit of $35 per kWh. Battery modules are eligible for a credit of $10 per kWh or $45 if the battery module does not use battery cells (Congressional Research Service, 2022, p. 17). Given that the production cost of a lithium-iron-phosphate cell is around $125 per kWh, a credit of $35 is "a game changer" in increasing the competitiveness of US made batteries (Mehdi & Moerenhout, 2023b, p. 2, 3).
[30] The thresholds increase yearly, up to 80% in 2028.

the vehicle and at least 50% of the battery components must be US-sourced or from a country in a free trade agreement with the US. Furthermore, from 2025 onwards, the use of batteries or critical minerals sourced from foreign entities of concern – such as China, Russia, Iran, or North Korea – will disqualify a car buyer from obtaining the tax credit (Bipartisan Policy Centre, 2022, p. 8; Gili & Tentori, 2024a, p. 59).

## 6.4 Made in the US – the impact of the IRA on domestic production

The American Clean Power Association (2023, p. 2), a US trade association representing clean energy companies, reported that from August 2022 to August 2023, investors announced the building of 83 new clean energy manufacturing facilities in the US, most of them in solar manufacturing[31]. The announced investments in these 12 months between the adoption of the IRA and the publication of the report exceeded the total investments from 2014 to 2022 (American Clean Power Association, 2023, p. 2). This enthusiastic news, particularly coming from an industry association, must be received cautiously, as announced projects should not be equated with completed ones. However, with the majority of projects due to start construction by 2025, optimism is certainly warranted.

But the new clean energy manufacturing credits not only make the production of clean energy components in the US attractive for manufacturers, they also make the products very cheap for those who purchase the components for their wind and solar parks. In 2021, before the passage of the IRA, Mayfield and Jenkins (2021, p. 3) estimated that a solar plant using 100% domestic components would face a 7% increase in costs in comparison to one that uses imports. A year after the passage of the IRA, Min et al. (2023, p. 1) found that the cost of domestically assembled solar modules using only US-made components had dropped to around 70% of the cost of imported modules. Additionally, under the IRA, the domestic production of components for onshore and offshore wind projects is also cheaper than imports.

If one now adds the Domestic Content Bonus in this calculation, energy providers have a strong incentive to buy American. What the IRA does here is called “Credit Stacking” (Credit Suisse, 2022, p. 10). If, for example, a wind turbine is manufactured in a US facility and then sold to an offshore wind developer, the facility receives a subsidy under the Advanced Manufacturing Production Credit and the US wind developer then receives a 10% rebate on their purchase through the Domestic Content Bonus Credit – a double incentive.

[31] 52 solar manufacturing facilities, 14 utility scale battery storage manufacturing factories, 11 manufacturing factories for onshore wind power and 6 for offshore wind power were announced (American Clean Power Association, 2023, p. 1)

For the battery sector, the IRA replicates China's strategy after the financial crisis, leveraging both demand-side and supply-side subsidies and government support to build a robust supply chain (Mehdi & Moerenhout, 2023b, p. 13). However, it does so with limited success.

As the green transition progresses, a more than twentyfold demand increase for battery demand for vehicles and energy storage solutions is expected over the next decade (Mehdi & Moerenhout, 2023a, p. 11). The IRA's generous subsidies decrease the cost of producing batteries by around 30% and thereby make US batteries cheaper than those of their Chinese competitors (Mehdi & Moerenhout, 2023b, p. 3). This has had a massive impact on investment activities: in June 2022, before the launch of the IRA, researchers projected that US gigafactories would be able to produce around 700 GWh in battery capacity by 2030. In July 2023 the new projections predicted a capacity of 1.2 TWh by 2030, an increase of approximately 70% (Mehdi & Moerenhout, 2023b, p. 4). Therefore, the US will most likely have the necessary gigafactories to assemble enough battery cells to meet domestic demand in the near future. It is, however, very unlikely that these factories can use exclusively locally refined components, since the US lacks nickel and lithium resources (Mehdi & Moerenhout, 2023a, p. 12). This means that the US will remain dependent on imports from China and Indonesia, which of course leads to a certain degree of vulnerability. Since subsidies for electric vehicles depend on the use of battery materials sourced from the US or from countries that have a free trade agreement with the US, domestically sourced and refined battery components are most likely to be used for car batteries, whereas foreign components will be used for energy storage (Landais et al., 2023, p. 10).

Apart from the issue of raw materials, it is also worth questioning whether investing in electric and hybrid cars is the most sensible way to decarbonize the transport sector. EVs have a much better carbon footprint than cars with internal combustion engines, even when they do not only use green electricity. However, as long as the US energy mix is not 100% renewable, EVs and hybrid cars are still not carbon neutral. Additionally, the extraction of rare-earth metals used in electric vehicles has severe ecological and social impacts on the affected regions (Brand & Wissen, 2017, p. 144). Since a car of one's own is neither affordable for lower income brackets, nor enjoyable for the urban population, a strong focus on the 'green' car and the lack of support for public transport also does not make sense from a social perspective.

# 7. Discussion and Conclusion

## 7.1 A quick recap of the IRA's policies and their inherent logic

Despite being significantly smaller in scope than its theoretical predecessors, the Green New Deal and the Build Back Better Act, and containing a number of policies that are favourable to the fossil fuel industry, the IRA marks a turning point in US climate policy. While it is certain that the IRA

alone will not be sufficient to achieve the US climate targets of a 50% emissions reduction by 2030 (relative to 2005 levels), it will significantly decrease the implementation gap[32]. The biggest progress can be expected in the power sector, which will likely be responsible for most of the total emission reductions under the IRA[33]. Additionally, the IRA will significantly increase the sale of electric vehicles: by 2030, electric and hybrid vehicles are estimated to amount to 32% to 52% of all new car sales[34] (Bistline, Blanford, et al., 2023, p. 3).

The acceleration of decarbonization will mainly be reached through the promotion of private investment (Grimm et al., 2023). The expansion of the tax credit programs is the IRA's most influential and expensive instrument – especially if its expenditures will in fact amount to up to four times the official estimates (Bistline, Mehrotra, et al., 2023, p. 15; Credit Suisse, 2022, p. 15). These programs offer planning reliability for investors and are relatively easy to access – at least compared to EU subsidies (Landais et al., 2023, p. 6). The combination of subsidies for producing clean energy technology and its components along with incentives that decrease costs for buyers – be it clean energy developers or individuals buying a car – promotes both the production of clean alternatives in the US and their domestic use. This strategy is expected to be highly successful, making US electric vehicles cheaper than their competitors, triggering a boom in domestic clean energy manufacturing, and providing US residents with the most affordable clean energy worldwide (Credit Suisse, 2022, p. 5, 31; Mehdi & Moerenhout, 2023b, p. 4; Min et al., 2023, p. 1).

Simultaneously, the influx of new investment into green energy manufacturing decreases US dependencies on foreign suppliers and therefore reduces the danger of bottlenecks, albeit the US will remain dependent on raw material imports (Mehdi & Moerenhout, 2023a, p. 12). Additionally, it is expected to create around 8.5 million new jobs, predominantly in economically weaker regions (Wicks-Lim & Pollin, 2024, p. 1). This policy thereby follows an ecological, a social, and a geopolitical design logic simultaneously.

However, one must wonder whether the strong focus on US competitiveness is actually beneficial for the fight against climate change. In a best-case scenario, competing countries which fear a migration of investments to the US will react by creating favourable conditions for investors themselves, as can be seen with the EU Green Industrial Plan, thus creating a "race to the top" in the promotion of green manufacturing and renewable energy supply (Landais et al., 2023, p. 5; Majkut, 2023). On the other hand, the Chinese government has already announced retaliations against the IRA and warned that a

[32] Without the IRA, 2030 emissions in the US would only be 25-31% lower than in 2005. With the IRA, an emissions reduction of 33-40% is very likely (Bistline, Blanford, et al., 2023, p. 3). (If none of the policies are abolished.)
[33] Predictions for emission reduction in the power sector vary widely, from cuts of 47% to 83% by 2030 (as opposed to 41 to 60% in the baseline scenario without the IRA).
[34] In the baseline scenario, 22% to 43% of 2030 vehicle sales will be electric or hybrid cars (Bistline et al., 2023, p. 3).

confrontational stance towards China might "undermine international cooperation on climate change" (Siciliano, 2024).

As Biden put it on the first anniversary of the IRA's passage: "When I think climate — not a joke — I think jobs" (The White House, 2023). Beyond the creation of new jobs, the IRA prioritizes good working conditions by linking the tax credits for green energy production and green energy manufacturing to wage and apprenticeship requirements. It thereby promotes the green transition as an opportunity for the US working class. Although the US is quite late in investing in its domestic clean energy supply (Mehdi & Moerenhout, 2023b, p. 13), the IRA nonetheless follows a proactive industrial policy through the promotion of future industries while simultaneously ensuring that economically lagging regions, or those specifically suffering from the transition away from fossil fuels, benefit from the new production sites.

Beyond the focus on 'good' jobs reaching disadvantaged communities, the Greenhouse Gas Reduction Fund is particularly noteworthy in the context of a social integrative design logic. It follows a bottom-up approach and actively includes communities in the green transition, instead of 'only' making sure they receive a share of the benefits (Bipartisan Policy Centre, 2022, p. 18; Bistline et al., 2023, p. 11; Podesta & The White House, 2023, p. 10). By intentionally directing resources towards carbon-neutral technologies on an unparalleled scale and thereby enabling them to outcompete fossil fuel-based alternatives while tying their support to labour standards and benefits to disadvantaged communities, it places climate change mitigation at the centre of a strategy for more prosperity for the first time in US history.

Returning to the ecological impact of the bill, one must note that the IRA follows an extremely narrow interpretation of an ecological design logic by interpreting the fight against climate change mainly as a decarbonization of the economy while disregarding other environmental impacts, such as the negative effects of intensive resource extraction and overconsumption (Schalatek, 2022).

But even the focus on decarbonization is not pursued consistently. Not only are the IRA's policies extremely industry-friendly, they also fail to decisively turn away from fossil fuels. While the IRA introduces and enables a number of promising regulations, most notably the Methane Emissions Reductions Program and the EPA's new regulations for coal plants (Environmental and Energy Law Program Harvard, 2022; Webb, 2022), policies such as the coupling of renewable energy leases on federal land to leases for fossil fuel extraction, or the introduction of an extremely weak superfund tax, are a testament to the reliance on support from the fossil fuel industry (Cilluffo & Bearden, 2021; Inflation Reduction Act Tracker, 2024; Muresiano, 2022). The support for nuclear energy, the overfunding of hydrogen production and the subsidies for CCUS technology, undeterred by

uncertainties and the high energy demand associated with this technology, are of course also a reflection of entrenched lobbying interests and political priorities in US policy making (Addison, 2024; Bipartisan Policy Centre, 2022, p. 9; Committee for a Responsible Federal Budget, 2022; Meyer & Pontecorvo, 2023; Podesta & The White House, 2023, pp. 9–11; Steinberg et al., 2023, p. 5).

As reasoned in Section 2.2 of this paper, the capitalist design logic has not been used to structure the empirical analysis so far, since it is arguably the superordinate design logic of the IRA and therefore prevalent in most of its policies. As Abels and Bieling (2022, p. 435) put it, industrial policy following a capitalist design logic counteracts crisis dynamics by guiding capital towards sectors with long-term growth opportunities. In the case of the IRA, one could argue that path dependencies and profit interest halted a market-led transition towards a decarbonized economy. Supporting the establishment and international competitive domestic production of future-proof technologies is therefore a way of stabilizing the market economy and reducing the risk of future crises. Also in line with the stabilization of a capitalist economy is the fact that the IRA's decarbonization logic is based on a decoupling of economic output and CO2 emissions, even though an absolute decoupling is not physically possible. Therefore, post-growth approaches or the reallocation of monetary resources towards e.g. the care sector, as suggested in Eder et al.'s (2018, p. 11) vision of a progressive industrial policy, did not find a way into the bill.

To address my sub-research question: "What are the core design logics of the IRA's policies, and how do they complement or contradict each other?", I would answer that the IRA mainly aims to stabilize the US capitalist economy by promoting investment in sustainable industries, decreasing US reliance on China, and addressing the crisis of social cohesion threatening the liberal democracy by laying a focus on good jobs and the benefits of a green transition for marginalized communities. Within this overarching logic, I would argue that an ecological design logic, which is in this case primarily a decarbonization logic, holds significant influence. The IRA does not offer a revolutionary rethinking of US capitalism but it does realize that maintaining and improving the status quo is not possible in the long term without climate change mitigation. The ecological design logic and the social design logic mainly go hand in hand – the creation of 'good and green' jobs decreases the dependency of US workers on the fossil fuel industry while simultaneously giving carbon-neutral energy production a competitive advantage over their fossil competitors which greatly benefits the fight against climate change. As hinted above, the geoeconomic design logic sometimes complements – as seen in the general reshoring of manufacturing jobs – the social and capitalist design logic. On the other hand, it might lead to new contradictions, such as an escalating trade war with China which might hurt the US economy and affect the basis for multilateral climate agreements. Looking at the

transport sector, tensions between the geoeconomic and the capitalist design logic on the one side and the social and ecological design logic on the other become apparent: instead of promoting public transport, which is both more sustainable and more affordable for individuals, the IRA instead promotes the domestic production of electric vehicles to win the battery battle with China.

## 7.2 A turning point in US industrial policy?

Drawing on the EU response to the pandemic, Bieling (2024, pp. 263–268) predicted that the perceived threat to the capitalist-democratic model due to multiple crises might lead to a return to an active industrial policy, which might indicate a larger state interventionist turn.

Does this prediction also hold for the IRA and the regulation of US capitalism?

Evidently, the IRA is a reaction to an increased necessity to actively shape and support the US capitalist system stemming from the 2008 financial crisis and the pandemic.

Concerning its geopolitical impact, the IRA follows in the footsteps of both the Obama and the Trump administration. While the ARRA included provisions requiring state infrastructure projects to primarily use US components as a reaction to the deterioration of the 'Chimerica' construct, Trump declared a trade war with China and imposed tariffs to bring back US jobs (with limited success). The IRA continues this trade war and expands Obama's domestic content requirements, especially in the area of battery and EV production and sales.

Regarding the acceptance of more active government intervention in the economy, the Obama administration had already laid some groundwork with the ARRA. While its industry subsidies and its investment in decarbonization amounted to only a fraction of the IRA's expenditures, it nonetheless "represented an open return to Keynesian fiscal policy for the first time since the Reagan administration" (Berg, 2017, p. 223) and thus initiated a change of direction for the return of a more active economic policy.

The IRA therefore marks a continuation and expansion of the state-interventionist turn that begun under the Obama administration by employing industrial policy on a much larger scale, shifting the focus towards vertical support and placing decarbonization at the heart of its strategy of reviving the US economy.

In doing so, the IRA shies away from initiating profound changes in production and consumption patterns towards a truly sustainable economy. Instead, it supports a greening of US capitalism that is predominantly in accord with industry demands and does not necessitate a questioning of power relations, consumption patterns, or lifestyles (Schalatek, 2022).

Brand and Wissen call this moderate reform process “an ecological modernisation of the imperial mode of living in the direction of a green capitalism” (Brand & Wissen, 2024, p. 97, translation P.K.). Following a regulation theory approach, we can see that the IRA selectively addresses some of the issues of post-Fordist US capitalism, namely the climate crisis as a result of a fossil-based lifestyle and the crisis of the US working class resulting – among other factors – from the outsourcing of manufacturing and the weakening of workers’ rights. At the same time, the prevalent power structures, such as the heavy influence of big corporations, will not be challenged. On the contrary, they are supported in their pursuit of profits, as long as their production has a low carbon footprint. On the same note, the impact of overconsumption and excessive resource extraction on individuals outside the US and the environments of the Global South are not being addressed. Nevertheless, “a state interventionist turn” (Bieling, 2024, p. 267) that carves the way towards a greener capitalism could at least be expected to contain – if not sufficiently address – the climate crisis.

After Trump’s election, even this vision of the future seems like wishful thinking. Whether and in which form the IRA will survive a second Trump term is up to speculation. Given the industry-friendly approach and the influx of jobs into Republican states, at least parts of the tax-credit system might survive. However, the IRA’s more progressive policies, such as the Greenhouse Gas Reduction Fund or the wage and apprenticeship requirement, might soon be history.

If the IRA were to be fully repealed—despite the disadvantages this would pose for Republican districts—the United States could irreversibly lose its opportunity to emerge as a major player in green energy production (Milman, 2024b). Nonetheless, experts agree that while the Trump administration will most likely substantially slow down the pace of decarbonization, it cannot halt the process. This is due to the declining costs of renewable energy – a development that has already been significantly accelerated by the IRA – which will outcompete fossil fuels in the medium term (Domonoske, 2024; Horowitz, Carlson, and George, 2024; Milman, 2024b). However, with the 1.5-degree Celsius target already appearing unrealistic under Biden’s administration, this transition will most likely be much too slow.

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