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Governance Lab Papers

**The Green Deal Industrial Plan:
opportunities and challenges for
the green hydrogen and electricity
storage sectors**

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The Net-Zero Industry Act: a key driver for EU industrial leadership in green hydrogen?

Authors: Blanca Méndez Egea and Soeren Schneider

On 1 February 2023, the European Commission presented the Green Deal Industrial Plan (“GDIP”). The GDIP aims to boost the EU’s net-zero industry in order to propel the green transition towards climate neutrality.¹ The package of measures comes within the framework of the European Green Deal and is intended to complement other measures such as the Fit for 55 package or REPowerEU. One important part of the GDIP is the proposal of a Net-Zero Industry Act (“NZIA”), published by the Commission on 16 March 2023.² In this paper, we analyse the measures and possible impact of the NZIA, and whether it responds to the challenges and potential of the emerging green hydrogen industry, or as stated in the NZIA, green energy production by means of electrolysis. Additionally, and given the current Spanish Council presidency, and the relevance of the country regarding green hydrogen production, we will use its example to study the development of its green hydrogen production industry in the country.

The paper will be structured as follows. First of all, we will review the main tools that the NZIA offers. Secondly, we will analyse the impact of the NZIA on the green hydrogen sector and whether or not it is seen by experts as a useful tool to address the challenges of the sector. Finally, we will undertake a study on the current and future development of the Spanish green hydrogen production industry.

1. The race towards a net-zero industry: The Net-Zero Industry Act

The NZIA proposal seeks to tackle some of the challenges the European industry is facing on the way to net-zero. It especially focusses on creating a unified European regulatory framework which is beneficial for the rollout of net-zero technologies. For this purpose, the proposal identifies in its Annex eight “strategic net-zero technologies”.³ The production of green hydrogen is included under the keyword “electrolysers”. The core ambition of the NZIA is that by 2030, the EU manufacturing capacity in the strategic net-zero technologies reaches at least 40%.⁴ The tools of the NZIA to reach this target are based on several pillars, which are of relevance to the production of green hydrogen:⁵

¹ European Commission. "A Green Deal Industrial Plan for the Net-Zero Age," *European Commission - Press Corner*, last modified 1 February 2023, accessed 16 April 2023, https://ec.europa.eu/commission/presscorner/detail/en/ip_23_510.

² European Commission, “Proposal for a Regulation on establishing a framework of measures for strengthening Europe’s net-zero technology products manufacturing ecosystem (Net Zero Industry Act)”, COM (2023) 161 final, Brussels, 16 March 2023.

³ “Solar photovoltaic and solar thermal technologies, Onshore wind and offshore renewable technologies, Battery/storage technologies, Heat pumps and geothermal energy technologies, Electrolysers and fuel cells, Sustainable biogas/biomethane technologies, Carbon Capture and storage (CCS) technologies, Grid technologies”.

⁴ European Commission, *op. cit.*, art. 1.

⁵ See for the following: European Commission, Proposal for a Net Zero Industry Act, *op. cit.*, p. 5.

- **Simplify the regulatory framework:**⁶ Most importantly, the NZIA seeks to facilitate investments by decreasing regulatory burdens for the European net-zero industries. This simplification also affects green hydrogen installations. To this end, it includes provisions on simplifying and accelerating permitting processes.
 - a) It proposes a “One Stop Shop”-principle for the permit-granting procedures, so that promoters only have to deal with one competent national authority.
 - b) The proposal also limits the maximum duration of permit-granting processes to 12 or 18 months, depending on whether the envisaged annual manufacturing capacity exceeds 1 GW. For net-zero strategic projects, the admissible duration is decreased even further to 9 and 12 months respectively.
 - c) Other simplifications concern the environmental impact assessments under Union law. Net-Zero strategic projects must enjoy procedural privilege by granting them the highest priority status under national MS law in terms of planning and dispute resolution.
- **Regarding access to finance**, the proposal is rather vague. While the recitals contain some details about the possible financing,⁷ the concrete legislative tools are limited to obliging the Commission and MS to “undertake activities to accelerate and crowd-in private investments in net-zero strategic projects”, including “providing and coordinating support”.⁸ Furthermore, a “Net-Zero Europe Platform” is created which can advise project promoters on the financing of their projects.
- **Capture, use and storage of CO2 emissions:** The proposal sets out an annual injection capacity of at least 50 million tons of CO2 by 2030, which may be of relevance for the production of blue hydrogen. It seeks to simplify the related administrative burdens by increasing the transparency of CO2 storage capacity data and by obliging the fossil fuel industry to contribute to CO2 storage capacity.
- **Better access to markets:** The proposal seeks to reform public procurement procedures and auctions by including mandatory sustainability and resilience criteria in the tender, accounting for between 15% and 30% of the award criteria.
- **Enhance skills and create quality jobs:** The proposal envisages the creation of “European Net Zero Industry Academies” to tackle the lack of skilled labour forces for the renewables sector. Furthermore, the Net-Zero Europe Platform (composed of MS and Commission representatives) “shall support the availability and deployment of skills in net-zero technologies”.⁹ It will have more of an advisory capacity rather than real powers.
- **Boost innovation:** The proposal encourages the creation of regulatory sandboxes, especially designed for small and medium enterprises, to boost innovation in the field of net-zero technologies.
- **Implementation governance and monitoring:** The rather technical chapters on “Governance” and “Monitoring” set out detailed rules for the governance of the Net-Zero Europe Platform and several monitoring obligations for the Commission and MS.

⁶ We focus more on this paragraph than the others since the simplification of the regulatory burden is the most important and most promising measure of the NZIA to boost net-zero technologies including green hydrogen.

⁷ European Commission, Proposal for a Net Zero Industry Act, *op. cit.*, rec. 40-48.

⁸ European Commission, Proposal for a Net Zero Industry Act, *op. cit.*, art. 14.

⁹ European Commission, Proposal for a Net Zero Industry Act, *op. cit.*, art. 25.

2. The Net-Zero Industry Act as effective driver of green hydrogen in Europe?

In the following chapter, we will highlight the main challenges currently faced by the green hydrogen industry in Europe. Thereafter, we will analyse whether the NZIA contains the necessary tools to effectively address these challenges. We will also conduct an analysis of the NZIA in this sector in Spain and discuss how the Spanish presidency can take advantage of its privileged situation to close this type of open files during its mandate.

2.1. Current challenges for the European clean hydrogen industry

The hydrogen production industry is in an important phase of development. Studies predict that the value of the net zero emission industry will triple, reaching an estimated 600 billion euros by 2030.¹⁰ Other benefits such as job creation and potential economic growth are a major incentive as well. This has triggered an international race to “increase the resilience and diversity of clean energy supply chains while also competing for the huge economic opportunities”.¹¹ Not only the US and China are part of this race, but other countries such as Japan, India or the UK also compete with measures that “combine their climate, energy, security and industrial policies”.¹² The NZIA takes a general approach that aims to respond to these and other challenges, such as the insufficiency of its own production and dependence on essential materials, from countries such as China, and the lack of qualified workers.

Although developing at fast pace, the European clean hydrogen industry is still far away from the production capacity needed for the green transition. The current annual overall capacity in Europe stands at 1.75 GW, while a scale-up to an estimated yearly 100 GW would be necessary to match the REPowerEU target of 10 million tons of annual renewable hydrogen production capacity.¹³ According to the Joint Declaration of the Commission and European Clean Hydrogen Alliance, the green hydrogen industry in Europe faces three main challenges:

- **Access to Finance**

Sufficient access to financing is of crucial importance to meet the needs of the evolving hydrogen industry. This includes access to existing EU funds, but also the creation of new public financing sources. Furthermore, the industry will need a beneficial interpretation and if needed adaptation of current state aid rules to support the industry development.

- **Complex and Lengthy Regulatory Framework**

The development of an integrated hydrogen supply chain requires “important infrastructure upgrades for the transmission, distribution and storage of hydrogen. (...) The simplification and shortening of permitting procedures for renewable energy projects is therefore of paramount importance. Overly complex and lengthy permitting procedures for the manufacturing and installation of electrolyzers constitute a challenge as well. The European Commission already called on Member States to ensure that (...) the production of energy from renewable sources,

¹⁰ IEA, *Energy Technology Perspectives 2023* (Paris, 2023), accessed 16 April 2023, <https://www.iea.org/reports/energy-technology-perspectives-2023>.

¹¹ IEA, *op. cit.*, p. 21

¹² *Ibid.*

¹³ European Commission and European Clean Hydrogen Alliance, “Joint Declaration of the European Electrolyser Summit”, Brussels 5 May 2022, p. 1.

including renewable hydrogen, are considered as being in the overriding public interest (...) and should thus qualify for the most favourable procedure available.”¹⁴

- **Value Supply Chains**

Integrated supply chains are necessary to decrease European dependence on third countries. However, the production of electrolyzers requires the availability of the necessary components and raw materials at an affordable price.

2.2. Is the NZIA sufficient to address the current challenges?

The industrial stakeholders gave mixed feedback on the NZIA. Some voices praised the proposal as “huge step into the right direction”¹⁵ or a “a major step forward for the growth of the hydrogen manufacturing sector.”¹⁶ Others were disappointed by the proposal and criticize a lack of ambition.¹⁷

An often-heard criticism revolves around the failure of the NZIA to offer the needed **access to financing sources**. A representative of the hydrogen company TES-H2¹⁸ pointed out that the NZIA is not clear enough on these aspects and does little to offer firms the money they need to upscale the European hydrogen industry – unlike the IRA, which contained very concrete numbers on how much subsidies the US government will grant for which specific projects.¹⁹ And indeed, if one compares the NZIA with the IRA, it becomes clear that the IRA contains very detailed provisions on the amount of public financing companies can expect when making a certain investment. The NZIA on the other hand offers very little in this regard. Art. 15 NZIA is vague and only refers to financing “coordination”. From an investors’ perspective, the IRA gives much more clarity on future investments – and clarity is crucial for the European net-zero industry.²⁰ Furthermore, the IRA targets the production of green hydrogen more specifically, whereas the NZIA focusses only on the production of electrolyzers. All this entails the real risk that industry will be drawn away from Europe and focus their production capacities on the US and the subsequent import of hydrogen to Europe,²¹ thus jeopardizing the 40% domestic production benchmark of the NZIA. However, one must acknowledge that the NZIA is only one tool in the toolbox and that the public funding is contained in other EU measures like the different EU funds. Also, the European Investment Bank or the new European Hydrogen Bank²² can offer concrete financial support which the industry so desperately needs.

The most promising tool of the NZIA for green hydrogen is by far the chapter which deals with **the complex and lengthy regulatory framework by simplifying and accelerating permitting**

¹⁴ European Commission and European Clean Hydrogen Alliance, *op. cit.*, p. 3.

¹⁵ Intervention of Olivier Dufour (Co-Founder of battery company Verkor), “The Fast and the Furious: Speeding up the Green Transition”, *Conference by the Iberdrola Manuel Marín Chair and the College of Europe*, Brussels 12 April 2023.

¹⁶ “Net-Zero Industry for EU Manufacturing”, *Hydrogen Europe*, 16 March 2023, accessed 16 April 2023, <https://hydrogeneurope.eu/net-zero-industry-for-eu-manufacturing/>.

¹⁷ “EU plan will boost heat pumps but aims too low”, *European Heat Pump Association*, 16 March 2023, accessed 16 April 2023, https://www.ehpa.org/press_releases/eu-plan-will-boost-heat-pumps-but-aims-too-low/.

¹⁸ Tree Energy Solutions B.V. (<https://tes-h2.com/>).

¹⁹ Informal interview with representative of TES-H, “The Fast and the Furious: Speeding up the Green Transition”, *Conference by the Iberdrola Manuel Marín Chair and the College of Europe*, Brussels 12 April 2023.

²⁰ Intervention of Armando Martínez (CEO of Iberdrola), “The Fast and the Furious: Speeding up the Green Transition”, *Conference by the Iberdrola Manuel Marín Chair and the College of Europe*, Brussels 12 April 2023.

²¹ Informal interview with representative of TES-H, *loc. cit.*

²² For further information see European Commission, Communication on the European Hydrogen Bank, *op. cit.*

processes. Especially the provisions about the maximum duration of a permit-granting procedure could be a game changer. However, what sounds promising in theory needs implementation in practice. It will depend on the MS' behaviour if the proposal translates into faster permitting processes since it is the national authorities issuing the permits. There are some promising incentives for the MS: Breaching the maximum duration might result in damages claims by the project promoters. Also, Art. 14 para. 4 NZIA seems to be a powerful tool, according to which a lack of authorities' reply within the maximum duration period is considered an approval (albeit with several exceptions).

Whether the NZIA will contribute to securing the **value supply chains** remains to be seen. The provisions on faster permitting processes especially focus on net-zero technology manufacturing projects which can decrease the European dependence on imports from third countries and which positively impact the EU's industry supply chain (Art. 10 para. 1 NZIA). However, one must bear in mind that the critical raw materials needed for the electrolyser production often originate from outside the Union. Securing a robust supply of these materials without overly relying on certain third countries will require more than simpler permitting processes. On the other hand, the NZIA is only one piece of the puzzle, and the Commission has other projects in the pipeline to address the supply problems, e.g. through the proposed Critical Raw Materials Act.²³

In total, the NZIA is only one part of the GDIP and thus cannot be expected to solve every issue. Within the scope of its application, especially the chapter about permitting processes might be a significant improvement. However, the proposal relies very much on the MS and offers little in concrete EU measures. Whether this will prove a weakness in practice, remains to be seen.

2.3. The NZIA and the Spanish clean hydrogen market

If we analyse the green hydrogen industry in Spain, we realise that the country has great potential to become a clean hydrogen production centre in the coming years. According to the Cambridge University's Competitive Sustainability Index, Spain is the second country in the EU in terms of availability of solar resources, behind only Portugal, and is the fifth country with the most wind resources in the EU. As we can see in *Figure 1.*, however, although resources are abundant, these energies have not been developed to their full potential.²⁴

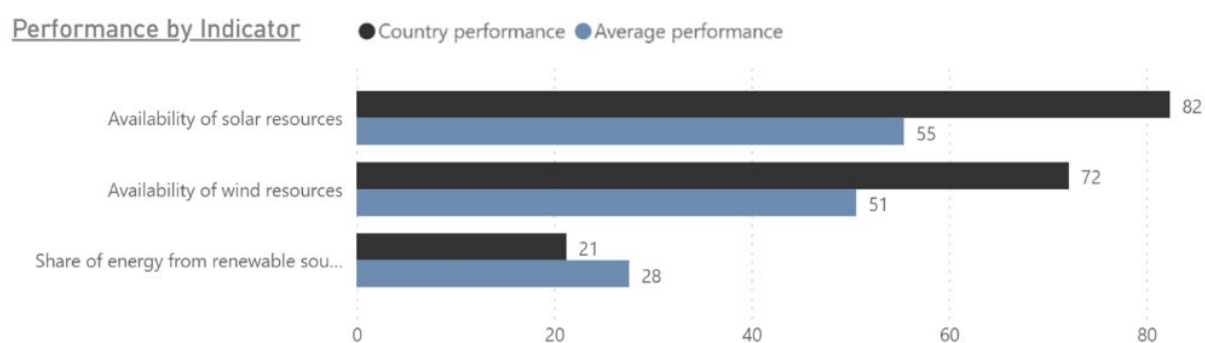


Figure 1. (University of Cambridge Institute for Sustainability Leadership, (CISL) 2022)

²³ European Commission, "Proposal for a Regulation on establishing a framework for ensuring a secure and sustainable supply of critical raw materials and amending Regulations (EU) 168/2013, (EU) 2018/858, 2018/1724 and (EU) 2019/1020", COM (2023) 160 final, Brussels, 16 March 2023.

²⁴ University of Cambridge Institute for Sustainability Leadership (CISL), *The Competitive Sustainability Index: New Metrics for EU Competitiveness for an Economy in Transition*. (Cambridge, UK, 2022), accessed 16 April 2023, <https://app.powerbi.com/view?r=eyJrIjoiYzlxMDFjYmMtMTZzMjZlMTZlL1NWUtYmQzNjcwM2E2NTQ3IiwidCI6IjE1YWQxMGU2LWJlNWYtNDY3ZS05MDZjLWQ4MmRlMzQ1ZDM3ZiIsImMiOiJh9&pageName=ReportSection160872450b649510847b>.

Despite this lack of development, the Sanchez government has shown a strong commitment to the development of renewables and net zero emission technologies such as green hydrogen. This can be seen with the National Integrated Energy and Climate Plan 2021-2030,²⁵ presented by the government in 2020, which already foresaw strong support for these types of projects even before the energy crisis caused by the Russian invasion of Ukraine. Furthermore, the country, which currently holds the presidency of the Council since 1 July 2023, will take advantage of this presidency to, in the words of the Foreign Minister, “push forward all these debates, especially on the energy transition and the climate agenda, promoting the agreement between Member States on issues such as the promotion of green hydrogen, the development of renewable energy sources, and investment in R&D to develop the necessary technology to achieve climate neutrality.” (authors’ translation)²⁶ This is important because Spain is at a crucial moment in the closing of the European Institutional Cycle before the upcoming European elections, so it will probably have to promote the agreement on all these open files that have been recently proposed by the Commission, such as the NZIA.

On the other hand, we found that by the end of 2022, Spain already hosted 20% of the world's green hydrogen projects, with only the USA performing better.²⁷ The country’s good performance results from it facing the main industry challenges mentioned above. First, Spain is showing high commitment to allocating funds to projects focused on the development of the green hydrogen industry. By the end of June, the country had already announced support for the industry with 1.6 billion euros in aid from recovery funds, adding to the 1.55 billion already earmarked for the industry by the government in its first post-Covid recovery plan. We must also bear in mind that this source of financing is additional to private financing such as, for example, the €3 billion that the Spanish oil and gas company, Cepsa, intends to invest.²⁸ Secondly, Spain has “entities that cover every link of the hydrogen value chain”²⁹. Moreover, the country is developing projects such as the so-called BarMar or the Cepsa project, which aim to connect the Campo de Gibraltar with the port of Rotterdam, showing that Spain is not only thinking about energy generation projects and its own resources, but also has the idea of obtaining a future surplus of green hydrogen that could be exported to other countries, and would be, therefore, increasing the interconnections for its transport.³⁰ This objective of positioning Spain as one of the main green hydrogen exporting countries is based on the country's very competitive production costs. While in Germany the average cost would be between €3.9 and €5 per kg of green hydrogen, in Spain the cost would be €3.1 /kg.³¹ This is due to the country's privileged situation in terms of access to

²⁵ Ministerio para la Transición Ecológica y el Reto Demográfico. *Plan Nacional Integrado De Energía Y Clima (PNIEC) 2021-2030*, 31 March 2021, accessed 16 April 2023, https://www.boe.es/diario_boe/txt.php?id=BOE-A-2021-5106.

²⁶ Concha Gómez, “La Presidencia Española De La UE Impulsará El Debate Sobre La Transición Energética,” *Euroefe Euractiv*, 27 September 2022, accessed 16 April 2023. <https://euroefe.euractiv.es/section/politicas/news/la-presidencia-espanola-de-la-ue-impulsara-el-debate-sobre-la-transicion-energetica/>.

²⁷ La Moncloa. “The President of the Government Highlights Spain's Investment Attractiveness in Renewables and the Success of the PERTE Green Hydrogen Project,” *La Moncloa - President's News*, last modified 1 December 2022, accessed 16 April 2023, https://www.lamoncloa.gob.es/lang/en/presidente/news/Paginas/2022/20221201_perte-green-hydrogen.aspx.

²⁸ <https://www.hydrogeninsight.com/production/spain-doubles-cash-on-offer-to-its-green-hydrogen-industry-with-another-1-6bn-of-support/2-1-1468713>

²⁹ <https://www.hydrogeninsight.com/production/appetite-for-green-hydrogen-production-in-spain-is-about-150-higher-than-national-roadmap-target/2-1-1484039>

³⁰ La Moncloa. “The President of the Government Highlights Spain's Investment Attractiveness in Renewables and the Success of the PERTE Green Hydrogen Project,” *loc. cit.*

³¹ <https://www.hydrogeninsight.com/production/appetite-for-green-hydrogen-production-in-spain-is-about-150-higher-than-national-roadmap-target/2-1-1484039>

energy obtained from renewable sources.³²

All these projects and commitments mentioned before are in line with the Green Deal Industrial Plan and the NZIA proposal. As for the impact of the latter, we have seen that there are mixed opinions within the sector. On the one hand, the insufficiency of the NZIA in relation to precisising the funding and aid for these projects is highlighted, which, compared to the US proposal with the IRA, does not seem to convince the sector. Even so, the NZIA should not be considered as a stand-alone legislation but in association with other measures such as the European Hydrogen Bank or the measures proposed within the Temporary Crisis and Transition Framework. This latest measure taken by the Commission allows for greater state aid to promote these net zero technologies, as we have seen in the case of Spain, and also reduces the conditions for its granting.³³

As for the NZIA's provisions regarding the simplification of permitting procedures for renewable energy or green hydrogen projects, the measures proposed by the Commission seem to have been received with enthusiasm in the country, as it proposes answers to one major challenge of the sector. In an interview held at the end of last March, the Minister for Ecological Transition even joked about the effect caused by these measures, indicating that "a few months ago, the government was told that the lack of predictability and the delay of the procedures was a concern, and now that the formalities have been cleared, it turns out that they are complaining because the process is piling up for them." (authors' translation)³⁴. As of July 6, 2023, the AeH2 Hydrogen Project Census confirmed that "a total of 123 projects covering the entire hydrogen value chain"³⁵ were already registered.

We can therefore say that Spain not only has the ideal conditions for the development of this industry, but that, thanks to the measures proposed by the European Commission, we are likely to see an uptick in projects aimed at its development, despite the lack of clarification regarding funding, which remains a question mark in terms of competitiveness for the sector.

Conclusion

Recent historical developments as well as new market opportunities in the net zero emission industry have led to an avalanche of new measures by the EU Institutions to respond to recent and growing challenges and thereby achieve not only sustainability and resilience of energy supply, but at the same time a rapid transition to clean energy. The development of green hydrogen production technologies plays an important role in this objective, as this type of fuel production is an essential element in achieving strategic energy supply autonomy.

We can see that, while there is some criticism of the NZIA for not making the financing of these technologies more concrete, this new EU act brings with it important advances in terms of obtaining permits more quickly and efficiently. On the other hand, it should be noted that this act requires to be analysed in parallel with other packages of measures proposed by the Commission in order to have a clear picture of the changes that these may bring to the industry. This is because

³² Ibid.

³³ European Commission. "State Aid: Commission Adopts Temporary Crisis and Transition Framework to further Support Transition Towards Net-Zero Economy," *European Commission - Press Corner*, last modified 9 March 2023, accessed 16 April 2023, https://ec.europa.eu/commission/presscorner/detail/en/ip_23_1563.

³⁴ Laura Ojea, "Ribera: "Bruselas Presenta Una Reforma Eléctrica Que Incluye Pocas Novedades Para Estabilizar Precios"," *El Español*, 27 March 2023, accessed 16 April 2023, https://www.elespanol.com/wakeupspain/foro-economico-2023/20230327/ribera-electrica-propuesta-bruselas-incorpora-novedades-estabilizar/751675047_0.html.

³⁵ <https://www.aeh2.org/centenar-iniciativas-registradas-censo-proyectos-aeH2/>

different aspects such as financing or the reform of the electricity market are scattered in different proposals and not only in the NZIA.

Likewise, we see how the Spanish case is exemplary for the EU's important position in the race to develop the hydrogen production industry. If the government's commitment, not only to Spanish industry but also to boosting the sector at European level, persists, we could see major advances in the coming months and during the Spanish presidency that will allow us to increasingly observe a significant development of net zero emission technologies leading us towards the much-coveted climate neutrality.

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The Energy Storage Sector: Perspectives on the IRA and the EU Green Deal Industrial Plan

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This report outlines the regulatory and investment policies adopted by the European Union and the United States to accelerate the green transition, notably the latter's Inflation Reduction Act and the EU's Green Deal Industrial Plan.

We assess why and how European battery manufacturers may be incentivised to relocate to the US or remain in the EU, based on policy analysis and examples of corporations. Finally, we will determine whether, and how, the European Union's existing institutional frameworks and new mechanisms, such as the proposed Strategic Technologies for Europe Platform (STEP) or a hypothetical common EU fund, can incentivise battery developers to remain and develop in the EU, without undermining the cohesion of the single market.

The report starts by comparing the legislative developments in the EU and US in relation to support for the net-zero industry, in particular in relation to the energy storage sector. This is followed by an assessment of the EU and US policies' effects on attractiveness to invest in energy storage in both markets. Finally, we discuss the budgetary aspect for the EU, in relation to its competences, through the possibility to develop a common European fund to support energy storage as a net-zero industry.

1. Recent developments in legislation for the energy storage sector in the EU

The 2022 US Inflation Reduction Act (IRA) was a wake-up call for government support to energy production, including storage. Aside from its potential to fuel geopolitical and trade tensions, the IRA has significant ramifications for European industry and the manufacturers in the energy storage sector, represented by EASE. The EU and its Member States must therefore consider how to withstand the economic pressure from Washington.

The EU has made and implemented several legislative proposals to incentivise production of energy storage technologies required for the energy transition:

First, the Green Deal Industrial Plan (GDIP) indicates the EU's response to the IRA and consists of three main changes to the regulatory framework:

- The Critical Raw Materials Act, which aims to secure raw materials supply by proposing targets of domestic extraction, processing and recycling for critical components, thus reducing Europe's dependency on imports;
- The Net-Zero Industry Act (NZIA), which provides a simplified regulatory environment by identifying provisions for a select list of green technologies, including batteries;³⁶

³⁶ European Commission, *Communication: A Green Deal Industrial Plan for the Net-Zero Age*, 1 February 2023. https://commission.europa.eu/system/files/2023-02/COM_2023_62_2_EN_ACT_A%20Green%20Deal%20Industrial%20Plan%20for%20the%20Net-Zero%20Age.pdf. Accessed 6 April 2023.

- The reform of the electricity market design, which sets out to adapt the European electricity market to the growing share of renewable energy, and includes specific provisions for energy storage as a complement for variable energy production.³⁷

The GDIP also contains dispositions related to loosening state aid rules, as well as funds for green industrial sectors through the proposed Strategic Technologies for Europe Platform (STEP).

The GDIP encapsulates the EU's strategy and ability - or lack thereof - in answering the IRA's threat to European competitiveness. Rather than mirror the US approach, which is based on large subsidies for the installation of capacity of production, the EU's mechanisms are of a typically regulatory character which target decarbonisation and renewable energy installation. This is consistent with the traditional policy production of both the US and the EU. Investment plans such as the IRA are of political importance in the US, given their potential to boost the economies of crucial battleground states, such as Pennsylvania, Virginia and Ohio, in view of the 2024 Presidential elections. The EU, lacking direct budgetary competences, usually acts via regulation and fixing targets. It produces texts which are financed and directives which are applied by Member States. . This does not mean that the EU response does not contain funds or fiscal incentives to support the development of green industry, but they are contingent upon the agreement Member States have on developing new common EU tools or, in case no agreement can be found, their capacity of mobilizing funds through state aid.

We will now demonstrate the tangible effects of these mechanisms on European companies, illustrating how the IRA's financial capacities may be more attractive than the EU's broader regulatory framework. Having assessed the main characteristics of both European and American green industrial policy, we will take a deeper look at their implications for the storage of energy, focusing on batteries. Our aim is to determine whether the Green Deal Industrial Policy (GDIP), which is the European response to the IRA, makes adequate provision for the development of a green European energy storage industry by 2030.

2. Assessment of the energy storage sector in US vs Europe: comparison of the IRA and GDIP

2.1. The IRA: a model based on large tax credits

The IRA provides \$369 billion in investments directed towards domestic energy production and manufacturing over the next decade.³⁸ Schemes such as the Energy Infrastructure Reinvestment (EIR), the Advanced Technology Vehicles Manufacturing Direct Loan (ATVM) Programs, and tools such as Installation Tax Credits (ITC) and Production Tax Credits (PTC), offer lucrative financial incentives for green energy, infrastructure and tech companies. However, because some of these subsidies are only accessible to companies manufacturing in the United States, the IRA has a discriminatory feature that is harmful to European competitiveness as it might compel producers to shift their activity to the US.³⁹

Since the publication of the IRA, concerns have been raised regarding the capacity of the European market to resist the economic impetus for companies to install facilities in the United

³⁷ European Commission, "Electricity market design", https://energy.ec.europa.eu/topics/markets-and-consumers/market-legislation/electricity-market-design_en. Accessed 15 September 2023.

³⁸ Senate.gov, *Summary: The Inflation Reduction Act of 2022*, https://www.democrats.senate.gov/imo/media/doc/inflation_reduction_act_one_page_summary.pdf. Accessed 4 April 2023.

³⁹ David Kleimann *et. al.*, 'How Europe should answer the US Inflation Reduction Act', *Bruegel*, 23 February 2023. <https://www.bruegel.org/policy-brief/how-europe-should-answer-us-inflation-reduction-act>. Accessed 4 April 2023.

States. The doubts expressed by Swedish battery manufacturer Northvolt, which stated it could build a gigafactory in the United States and pause its project in Germany, show why the IRA is perceived as a potential threat for the preservation and development of an advanced European battery and energy storage ecosystem.⁴⁰ Furthermore, according to *Transport & Environment*, 68% of the potential battery capacity in Europe, equivalent to 1.2TWh, was at risk after the publication of the IRA, resulting in projects being potentially delayed, less ambitious or non-completed.⁴¹ The main risk is unlikely to resemble a complete shift of activity from Europe to the US, but more realistically that the US experiences a significant boost in development plans for battery production, at the expense of the EU.⁴² There are strong tensions inherent in the supply chain of batteries, in large part given the difficulties of developing a skilled workforce, a global scarcity of capital, mounting energy prices, and Chinese domination in the extraction of raw materials.⁴³ The strong competition in the sector explains why recent legislation proposed in the US, EU and China is strongly geared towards market activity.

An energy storage developer can benefit from two main features of the IRA. The first main innovation is that *tax credits are now accessible to every storage project*, and not only to those directly linked to solar power projects.⁴⁴ This indicates a strong will to develop the energy storage sector independently. Second, the IRA focuses on *tax credits both for the installation of batteries* (Installation Tax Credits, ITC) *and their manufacturing* (Production Tax Credits, PTC).

Regarding the ITC, the first important add-on from the IRA is setting their rates until 2032 without decreasing, thus allowing long-term visibility for market actors.⁴⁵ The baseline tax-cut rate is 30%. However, for a battery project over 1MW of capacity to be eligible to this rate, it must respect prevailing wage and apprenticeship requirements, meaning workers must receive a regulated wage and apprentices fulfill a minimum number of work hours.⁴⁶ The IRA provides additional benefits if certain conditions are met, with the potential to increase the ITC 30% baseline to 70%.

- One of these conditions is locating the storage device in an “energy community”, mainly brownfields, coal communities and territories with high unemployment rates and where fossil fuels and coal extraction activities are important. The relatively broad definition of those three areas is such that a large part of US territory matches one of the three conditions. This means that projects are eligible for an additional 2% to 20% tax cut in a large percentage of US territory.⁴⁷ While it might appear that such a broad formulation of

⁴⁰ Dan Mihalascu, ‘Northvolt May Delay German Battery Plant, Is Looking At US’, *InsideEVs*, 29 November 2022, <https://insideevs.com/news/624170/northvolt-may-delay-german-battery-plant-is-looking-at-us/>.

⁴¹ Julia Poliscanova and Alina Racu, ‘How not to lose it all: Two-thirds of Europe’s battery gigafactories at risk without further action’, *Transport & Environment*, March 2023. https://www.transportenvironment.org/wp-content/uploads/2023/03/2023_03_Battery_risk_How_not_to_lose_it_all_report.pdf.

⁴² Cameron Murray, ‘US Gigafactory Plans Growing Twice as Fast as Europe’s since Inflation Reduction Act’, *Energy Storage News*, 6 December 2022. <https://www.energy-storage.news/us-gigafactory-plans-growing-twice-as-fast-as-europes-since-inflation-reduction-act/>.

⁴³ *Ibid.*

⁴⁴ ‘IRA Sets the Stage for US Energy Storage to Thrive’, *Utility Dive*, 7 November 2022. <https://www.utilitydive.com/spons/ira-sets-the-stage-for-us-energy-storage-to-thrive/635665/>.

⁴⁵ Penny Liao, ‘How Inflation Reduction Act reforms U.S. energy storage market?’, *InfoLink Consulting*, 4 January 2023. <https://www.infolink-group.com/energy-article/energy-storage-topic-impact-of-ira-on-us-energy-storage-market>.

⁴⁶ US Department of Labor, ‘Prevailing Wage and the Inflation Reduction Act’, *dol.gov*, consulted on 8 April 2023. <http://www.dol.gov/agencies/whd/IRA>.

⁴⁷ Daniel Raimi and Sophie Pesek, ‘What is an energy community?’, *Resources.org*, 7 September 2022. <https://www.resources.org/common-resources/what-is-an-energy-community/>.

the criteria goes against the objective to direct investment to specific communities, in fact it is designed to make a broader range of projects eligible for tax cuts.

- For medium-sized equipment, installation in a low-income community can provide another additional 10 to 20% increase in the ITC.
- Finally, certain domestic content requirements can add 2 to 10% in ITC, on the condition of having all its steel and iron produced in the US and 40% of the total cost of its manufactured products component produced domestically.⁴⁸ This disposition means that producing battery cells and modules in the US is directly incentivized for the sole installation of batteries under the IRA, with a percentage that can represent millions of dollars of tax cuts for consequent energy storage facilities (*Figure 1 in Annex*).⁴⁹

PTCs apply for the manufacturing of battery cells and modules, for example in gigafactories. The system here is relatively simple: the amount of tax credits depends on the capacity of the component produced, with \$35 per KWh in tax credit for a battery cell and \$10 per KWh for a battery module. Battery modules which do not use battery cells can directly apply for a \$45 per KWh tax credit.⁵⁰

We will now turn our attention to the GDIP and the NZIA, which represent the EU's responses to the IRA, and indicate whether the EU can compete with US funding.

2.2. Regulatory and financial complexities of the EU response to the IRA

First, in terms of the regulatory framework, there are further opportunities for a simplification. This is what the NZIA aims to do, by reducing permit-granting delays for strategic net-zero projects. However, other issues emerge from the diversity of policy responses brought up by the EU, as compared to the simplicity of the IRA tax cut mechanism. First, national discrepancies in the attribution of state aid and EU funds might undermine a global strategy to promote investment in energy storage. Spain has recently launched a vast investment plan in energy storage, accounting to €150 million in total to cover from 40 to 65% of the investment costs, allowing it to compete with the IRA. However, this funding only applied for co-located energy storage projects, limiting the possibilities to fund an energy storage ecosystem independent from production sources.⁵¹

Furthermore, focusing on innovation requires developing skills. Precisely, the GDIP has the ambition to enhance skills to foster highly qualified jobs necessary for the green transition. The NZIA proposes to establish European Net Zero Industry Academies, to develop training and education in green technologies across the EU. However, both the limited announced budget (€5.5 million of total seed funding) and the example of the EBA Academy, which was launched last year but has not yielded concrete results, does not raise much optimism.⁵² Moreover, the GDIP is

⁴⁸ 'Domestic Content Requirements of the Inflation Reduction Act: Basic Requirements, Qualification Analysis, and Lingering Questions', *jdsupra.com*, consulted on 5 April 2023.

<https://www.jdsupra.com/legalnews/domestic-content-requirements-of-the-5954792/>.

⁴⁹ Penny Liao, *loc.cit*

⁵⁰ Christine McDaniel, 'The cost of battery production tax credits provided in the IRA', *Forbes*, 1 February 2023. <https://www.forbes.com/sites/christinemcdaniel/2023/02/01/the-cost-of-battery-production-tax-credits-provided-in-the-ira/?sh=1e51e9b479ef>.

⁵¹ Cameron Murray, 'Spanish State Providing €150 Million in Grants for Co-Located Energy Storage Projects', *Energy Storage News*, 9 January 2023. <https://www.energy-storage.news/spanish-state-providing-e150-million-in-grants-for-co-located-energy-storage-projects/>.

⁵² European Commission, 'Proposal for a regulation of the European Parliament and of the Council on establishing a framework of measures for strengthening Europe's net-zero technology products manufacturing ecosystem (Net Zero Industry Act)', *Official Journal of the European Union*, COM(2023) 161 Final, Brussels, 16 March 2023, p.12. https://eur-lex.europa.eu/resource.html?uri=cellar:6448c360-c4dd-11ed-a05c-01aa75ed71a1.0001.02/DOC_1&format=PDF

lacking in social provisions, as pointed out in a joint statement by the European Trade Union Confederation and IndustriALL, who recalled that the American IRA is oriented towards the recognition of workers' rights.⁵³ This, combined with the IRA dispositions on apprenticeship, makes the IRA much more worker- and skills-oriented than the European framework.

Regarding funding, the first element to consider is state aid. Since the GDIP loosens state aid regulation, it could, under certain conditions, allow Member States to distribute aid to match the amount received for similar net-zero technology projects outside the EU.⁵⁴ This could be a tool allowing state aid to fill the gap the IRA has created in battery production: analysis conducted by the European Battery Alliance (EBA) estimates the cost of a battery pack in the US and China at \$127 per KWh, while the estimated cost in the EU will raise to \$178/KWh due to soaring energy costs.⁵⁵ However, the first problem for private actors is long-term predictability, as the loosening of state aid rules under the EU's Temporary Crisis and Transition Framework will only last until 2025, while the American IRA provides constant tax credits until 2032.⁵⁶ Furthermore, loosened national state-aid policies in the EU do not match the amount of aid the IRA will grant, as we will develop further on. Moreover, there is a notable procedural delay that projects endure to be granted such aid. The recent withdrawal of Tesla, which had applied for more than €1bn in state aid for building a power plant in Germany under the framework of an Important Project of Common European Interest (IPCEI) project, illustrates the limits of such an approach. As the project was delayed, Tesla had already implemented plans to develop its battery production technology in Texas and was thus no longer eligible for state aid in the framework of an IPCEI project, as it was no longer the "first industrial deployment" of the technology.⁵⁷

Another important factor is European support for R&D in installation and production projects, which can be seen as a double-edged sword. European fiscal programs in this area focus on research and development through IPCEI and on the GDIP Innovation Fund, but this undermines the EU's capacity to fund more mature projects, such as building a gigafactory. This is stressed by Olivier Dufour, representative of Verkor, a French start-up currently gathering funds to build an EV battery factory in Dunkerque. He states that the EU strategy is too innovation-oriented and thus not fit to help fund the scale-up of more advanced projects, such as Verkor's, compared to the simplicity of the general tax cuts provided by the IRA.⁵⁸ He also stated that even if a similar approach of the recently-announced Hydrogen Bank, which will directly subsidise

⁵³ ETUC and IndustriALL, 'ETUC and IndustriAll letter discussion on competitiveness in the framework of the Green Deal Industrial Plan' 22 February 2023. <https://www.etuc.org/en/document/etuc-and-industrial-letter-discussion-competitiveness-framework-green-deal-industrial>.

⁵⁴ European Commission, 'Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions: A Green Deal Industrial Plan for the Net-Zero Age' *Official Journal of the European Union*, COM(2023) 62 Final, Brussels, 1 February 2023, p.10. https://commission.europa.eu/system/files/2023-02/COM_2023_62_2_EN_ACT_A%20Green%20Deal%20Industrial%20Plan%20for%20the%20Net-Zero%20Age.pdf

⁵⁵ European Battery Alliance, 'EBA Discussion Paper for the 7th High-Level Meeting of the European Battery Alliance', 1 March 2023. https://www.eba250.com/wp-content/uploads/2023/03/EBA_DiscussionPaper_Battery-Ministerial_01_03_2023.pdf.

⁵⁶ Julia Poliscanova, Alina Racu *et al.*, 'A European response to the IRA: How Europe can use its soft and financial powers to build a successful electric vehicle value chain', *Transport & Environment*, January 2023, p.35. https://www.transportenvironment.org/wp-content/uploads/2023/01/2023_01_TE_Raw_materials_IRA_report-1.pdf.

⁵⁷ Joe Miller, Edward White, et Peter Campbell, 'Tesla forced to turn down €1.1bn in EU support for German battery plant', *Financial Times*, 26 November 2021. <https://www.ft.com/content/98f9a39c-de78-4cbf-b98b-0955db98c7dd>.

⁵⁸ Olivier Dufour, 'The Fast and the Furious: Speeding up the green transition' (Speech at IBERDROLA Manuel Marin Chair for European Energy and Climate Policy conference, Brussels, 12 April 2023).

hydrogen production using fundings from the Innovation Fund, could be used for batteries, the initial amount (800 million €) is way too low when compared to the IRA.⁵⁹

EU funds also face limits regarding their size. Indeed, *InvestEU* funding mostly comes from *NextGenerationEU*, meaning that more than half of its amount needs to be committed by end 2023, leaving only roughly €11 billion for the period 2024-2027.⁶⁰ Both the low total amount (€26 billion only of EU funds, compared to the \$360 billion of the IRA) and the strict timeline causing a lack of visibility are important constraints. Furthermore, political players have expressed scepticism with the funding scheme, as many funds detailed in the GDIP are part of existing EU financial frameworks: the lack of fresh money might undermine EU ambition to present it as a new ambitious strategy.⁶¹

This diversity of approaches, between different national strategies for supporting the industry and different EU funds whose companies can apply, pose an existential threat to the European response to the IRA, whose simplicity is a very efficient argument for a private actor wishing to invest. While EU funds have interesting possibilities, notably by helping innovation under the framework of IPCEI, the whole framework seems to fall short in competing with the IRA, even after the publication of the GDIP. The lack of fiscal competences of the EU undermines its efficiency, and we will now try to assess how the EU can tackle this issue, with the proposal of a new Strategic Technologies European Platform (STEP), as well as by analysing the possible advantages of the creation of a European common fund, which has been postponed by the Commission due to wide opposition.

3. Assessing the need for a common European fund to support energy storage

The EU lacks a green subsidy mechanism comparable to the IRA, and the financial tools it does possess to support cleantech are deployed at European, national, and regional levels, making it difficult to coordinate between all those levels to ensure its efficiency. Among the most important tools is the EU Innovation Fund and the IPCEIs, making EU support more innovative, and less subject to the same stringent set of rules. At a national level, state aid remains the most important tool for Member States to grant funds for the green industrial transition. At regional level, cohesion policies, including the Just Transition Fund, represent an important financial lever. The European Investment Bank also provides loans and is of central importance in the implementation of the InvestEU program, a main driver of funding for net-zero technology deployment in the GDIP. However, the fragmentation of subsidy mechanisms weakens the EU in its competition with the IRA, which is characterised by its simplicity, accessibility and availability for production and installation projects of mature technologies. In the mid-term review of the 2021-2027 Multiannual Financial Framework, the Commission proposed a regulation installing a Strategic Technologies for Europe Platform (STEP). However, the GDIP previously mentioned the establishment of a European Sovereignty Fund (ESF), which has been postponed, as president von der Leyen stated that STEP would be a “precursor to a fully fledged Sovereignty Fund”.⁶² The success of the STEP proposal, as well as the creation of a European common fund, are

⁵⁹ *Ibid.*

⁶⁰ European Commission, ‘A Green Deal Industrial Plan for the Net-Zero Age’, *op.cit.*, p.13.

⁶¹ Samuel Stolton and Pieter Haeck, “Europe Embarks on Subsidy Race It Can’t Win” *POLITICO*, 1 February 2023, <https://www.politico.eu/article/europe-subsidy-green-deal-industrial-plan-state-aid/>.

⁶² European Commission, *EU budget: Commission proposes Strategic Technologies for Europe Platform (STEP) to support European leadership on critical technologies*, 20 June 2023. Link : https://ec.europa.eu/commission/presscorner/detail/en/ip_23_3364

contingent upon their ability to provide a single financing common scheme to support the industrial transition.⁶³ Thus, we shall assess the differences between those two instruments, the pros and cons of both of them and why the ESF ambitious proposal has been delayed to implement a less ambitious, but more realistic platform (STEP). The first point they have in common is to be a tool allowing to go beyond a strategy based only on state aid.

Indeed, EU industrial policy cannot rely solely on a wide loosening of state aid, which is being proposed under the Temporary Crisis and Transition Framework (TCTF) and permits releasing state aid to fund the rollout of strategic equipment. An approach so embedded in state aid principles risks undermining the integrity of the Single Market, having negative effects on developing an EU-wide strategy for a green industry.

First, France and Germany accounted for more than 80% of state aid approved under pandemic emergency rules.⁶⁴ Loosening these rules would principally benefit larger Member States, jeopardising the EU's level-playing field for green industry. This seems to have been proven, as Germany accounted for 48,4% (for a total of €742 billion) of the total amount of approved state aid by the Commission between March 2022 and September 2023, followed by France with 22,6% and Italy with only 7,8%.⁶⁵ This undermines the EU's broader strategy, as neither France nor Germany alone can compete with American market power or develop adequate domestic, consumption-driven policy.

While the risk of uneven state aid distribution already undermines the Single Market, this is accentuated by the imbalances of state aid relative to national GDP. Member States that provided more state aid before the pandemic, measured by percentage of GDP, have only increased this practice, widening the chasm with Member States whose spending decreased.⁶⁶ Further relaxing state aid rules could further reinforce a dispersion in the public financing of European economies, at the expense of the Single Market (*Figure 2 in Annex*).⁶⁷

Smaller Member States' research and innovation capacities would be hindered, allowing larger economies to dominate the market, such as through financing large projects such as gigafactories. A common EU fund would create a more uniform level-playing field. It can support Member States who have proven their ability to support the battery sector, such as Hungary and Spain, whose development is promising but could be hindered by both the IRA and a state aid-driven approach.⁶⁸

The financing of a common EU fund, however, is yet to be determined. The European Council has set ambitious objectives for the EU's competitiveness in light of the IRA, but it is devoid of fresh ideas for such: it has resorted to encouraging the Commission to simplify state aid rules, the unlocking of available European funds, and the streamlining of the regulatory framework for industries⁶⁹.

⁶³ European Commission, *Statement: A European Sovereignty Fund for an Industry "Made in Europe"*. Blog of Commissioner Thierry Breton, 15 September 2022. Link: https://ec.europa.eu/commission/presscorner/detail/en/STATEMENT_22_5543. Accessed 10 April 2023.

⁶⁴ Stolton & Haeck, *loc cit.*

⁶⁵ Théo Bourgery-Gonse, 'Analysis : EU subsidy race is on – and Germany is winning it', *Euractiv*, 13 September 2023, https://www.euractiv.com/section/economy-jobs/news/analysis-eu-subsidy-race-is-on-and-germany-is-winning-it/?_ga=2.89321371.144768075.1694982739-1063691198.1694593986, Accessed on 14 September 2023.

⁶⁶ Kleimann et al., *op. cit.*, p.12.

⁶⁷ *Ibid.*

⁶⁸ Poliscanova & Racu, *loc.cit.*, p. 12

⁶⁹ European Council, Extraordinary Meeting, Conclusions, 9th February 2023.

A solution could be found in direct contributions from Member States or, more realistically, borrowing on the secondary financial markets, as the European Commission has been acting for the SURE program. This, however, would fuel new EU-level debt. The ‘Frugal Four’ – Sweden, the Netherlands, Austria and Denmark – and Czech Republic, Finland, Ireland, Estonia, and Slovakia have voiced their opposition to such a solution.⁷⁰ They argued that, given the €800 allocated to NextGenerationEU since 2020, of which only half has been spent, a common EU fund could be financed on an existing financial mechanism. This view was reflected in the European Council’s February 2023 conclusions; by failing to agree on a reference to common debt, they have set a low standard for European economic solidarity.⁷¹

Likewise, despite flirting with the idea of a new common debt, the Commission has fallen back on the idea of using existing funds. Given the urgency of the situation, prescribed as an emergency by the Commissioner for Internal Market, Thierry Breton, it would be more straightforward for decision-makers to agree on the financing of a common EU fund through the reallocation of existing budgetary resources, rather than discussing a new EU-backed debt.⁷² Moreover, the concrete purpose of a EU fund made at the begging of the GDIP was unclear, as Commissioner Gentiloni declared in May 2023 that its purpose should be to fund projects of interest for all European countries, such as developing green hydrogen,⁷³ while Commissioner Breton proposed it could be used to buy out firms of systemic importance for the EU, thus ensuring the strategic autonomy of the continent.⁷⁴

Furthermore, a new EU fund would still require the revision of the Multiannual Financial Framework to reallocate some of the unused funds, the strategy which is indeed suggested in the GDIP communication.⁷⁵ However, at the October European Council summit, leaders indicated their hesitance to allocate more funds to the EU, potentially tightening the Commission's purse strings.⁷⁶ Without clear data, it is difficult to measure the impact of such action on the NextGenerationEU recovery plan, which could be drained to support the new industrial strategy, notably at the expense of health policy. The latter already contains a “Make it green” programme, whose funds could be redirected to serve double objectives also targeted by a common EU fund,

⁷⁰ Nikolaus J. Kurmayer, “L’Autriche et la Finlande disent « non » à toute nouvelle dette commune”, *Euractiv*, 20 February 2023. https://www.euractiv.fr/section/concurrence/news/lautriche-et-la-finlande-disent-non-a-toute-nouvelle-dette-commune/?_ga=2.54078248.1661137779.1678696335-391238514.1673527667. Accessed 14 April 2023 ; Seven European countries oppose new EU funding as response to US green subsidies’, *Euractiv*, 28 January 2023. https://www.euractiv.com/section/energy-environment/news/seven-european-countries-oppose-new-eu-funding-as-response-to-us-green-subsidies/?_ga=2.26480446.2023620200.1681560497-654302936.1676645721. Accessed 14 April 2023.

⁷¹ Jonathan Packroff, ‘Aides d’Etat: une référence à la dette commune supprimée des conclusions du Conseil européen’, *Euractiv*, 9 February 2023. https://www.euractiv.fr/section/all/news/aides-etat-une-reference-a-la-dette-commune-supprimee-des-conclusions-du-conseil-europeen/?_ga=2.121146319.694893666.1675642846-1182941313.1675642846. Accessed 14 April 2023.

⁷² Théo Bourgery-Gonse, ‘Thierry Breton: oui à la transition verte, mais sans dette commune européenne’, *Euractiv*, 15 March 2023. <https://www.euractiv.fr/section/concurrence/news/thierry-breton-oui-a-la-transition-verte-mais-sans-dette-commune-europeenne/>. Accessed 14 April 2023.

⁷³ ‘European Sovereignty Fund could finance joint EU projects – Gentiloni’, *Reuters*, 23 March 2023, <https://www.reuters.com/business/sustainable-business/european-sovereignty-fund-could-finance-joint-eu-projects-gentiloni-2023-03-23/>. Accessed 5 September 2023

⁷⁴ Théo Bourgery-Gonse, ‘EU’s Breton wants Sovereignty Fund to buy out firms of strategic importance’, *Euractiv*, 1 June 2023, <https://www.euractiv.com/section/economy-jobs/news/eus-breton-wants-sovereignty-fund-to-buy-out-firms-of-systemic-importance/>. Accessed on 3 September 2023

⁷⁵ European Commission, ‘A Green Deal Industrial Plan for the Net-Zero Age’, *loc. cit.*

⁷⁶ Paola Tamma, Barbara Moens, ‘EU countries tell Brussels to tighten its own belt’, *Politico*, 27 October 2023. <https://www.politico.eu/article/budget-slovakia-spending-priorities-frugals-debt-funds-hungary-european-commission/>.

avoiding competition between both objectives. Nevertheless, using old funds would certainly undermine the potential effect of the GDIP which would not be granted fresh money.

In the end, the European Commission decided, in the light of those political cleavages, to postpone the discussion on the ESF and replace it with the STEP proposal. This shift is a clear sign of a diminished ambition of the EU industrial policy, as coming to an agreement for a new fiscal instrument was considered too complicated, even in the context of the need to react to the IRA.

The €10 billion STEP proposal was announced by President von der Leyen in a context of “limited budgets”⁷⁷ - and stripped to €1.5 billion in the December 2023 European Council summit. The proposal would mostly consist in reallocating and streamlining existing funds for specific objectives of developing deep tech, clean tech and biotech and ensuring the EU industrial autonomy. The STEP would also encourages Member-States to redirect cohesion funds to projects granted a STEP “sovereignty seal”.⁷⁸ The EU seems to have taken a low-ambition approach in the context of the revision of the MFF, causing opposition from MEPs from multiple political groups. Moreover, NGOs such as CAN Europe also oppose the new path taken by the Commission, stressing that this diverts funds from the Recovery and Resilience Facility and the cohesion funds for private-sector led initiatives, without clear social and environmental conditionalities, while undermining regional development.⁷⁹ Thus, the STEP proposal seems to fall short on its two ambitions of ensuring EU industrial sovereignty and allowing its shift towards cleaner practices.

Furthermore, these limitations show that it is difficult to build a European industrial policy without a common European fiscal policy, as the distribution of funds between the EU and its Member States is key to an ambitious industrial strategy. Thus, on a more distant timeframe, fiscal union could make Member States more effective in weathering future economic shocks, technological uncertainties, and climate challenges. Increasing the EU’s own resources is one of the options being considered. Various proposals, such as the Emissions Trading System, the Carbon Border Adjustment Mechanism (CBAM), and the new OECD tax on multinational company profits, have already been tabled for this purpose.⁸⁰ But while those measures are expected to generate up to €17 billion for 2026-2030, most of the revenues will be directed to repaying NextGenerationEU debt interests.⁸¹ Furthermore, while taxation at 15% of profits has been agreed on at EU level, there is political reluctance for new common fiscal instruments, and despite ongoing debate in the European Parliament to increase the EU’s own resources, the agreed amount might fall short of the ambition of the green transition.

Conclusions

A strong European common fund for green industrial policy appears contingent upon a common-backed debt, but the absence of a common fiscal policy draws clear limits to the EU’s ambitions. Such a path is highly unlikely today, given significant opposition from Member States, demonstrated by the lack of ambition of the STEP proposal which can be seen as a lowest-

⁷⁷ Théo Bourgerie-Gonse, ‘EU Commission wants new technology fund, but no fresh cash in sight’, *Euractiv*, 20 June 2023, <https://www.euractiv.com/section/economy-jobs/news/eu-commission-wants-new-technology-fund-but-no-fresh-cash-in-sight/>. Accessed 5 September 2023.

⁷⁸ *Ibid*

⁷⁹ Climate Action Network Europe, ‘Reaction: the STEP proposal: recovery funds and cohesion policy should not be cannibalised for financing dubious objectives’, 21 June 2023, <https://caneurope.org/the-step-proposal-recovery-funds/>.

⁸⁰ Olivier Noyan,, Théo Bourgerie-Gonse, ‘Industrial policy: Will the EU have the money to finance its ambitions?’, *Euractiv*, 24 March 2023. <https://www.euractiv.com/section/economy-jobs/news/industrial-policy-will-the-eu-have-the-money-to-finance-its-ambitions/>. Accessed 14 April 2023.

⁸¹ *Ibid*.

common denominator to bypass opposition to a common fiscal instrument, which was first proposed as the ESF. However, the concept of European sovereignty is today more than ever present in the EU public debate, underscored by President Macron's speech in The Hague in April 2023.⁸²

We have advanced that EU industrial sovereignty is crucial to ensure the greening of the EU economy and development of energy storage capabilities, allowing the EU to extract itself from foreign dependencies and develop renewable energies. But a common fiscal framework is needed to make it match its ambitions and avoid a scattergun approach in which the EU cannot harness the industrial output of companies like Northvolt, Verkor or Tesla. For the EU to remain globally competitive and achieve its decarbonisation industrial objectives, a common EU fund must be implemented, and it must not be based on financial rearrangements without new commitments and schemes. And for such a fund to be realised, the EU must accept the notion of European sovereignty.

Today, the fear is that the European strategy, to match the ambitions of the IRA, will fall short due to the complicated and overlapping policy tools of the GDIP. The European focus on innovation, through the Innovation Fund and IPCEI, is the EU's most concrete response to the IRA given its lack of competences. Moreover, Member States' reluctance to develop European fiscal tools places the emphasis of the GDIP firmly within the realm of state aid, contributing to the fragmentation, rather than efficiency, of European Green Deal industrial policy. A common EU fund is necessary to bypass those limitations and could represent a path towards a proper EU fiscal Union to guarantee EU industrial sovereignty. Such debates will have to be put on the table during the next EU legislative term (2024-2029), in order to achieve the EU's high ambitions for a green European energy storage sector.

⁸² 'France's Macron says Europe must shape its own destiny', *DW*, 11 April 2023. <https://www.dw.com/en/frances-macron-says-europe-must-shape-its-own-destiny/a-65280420>. Accessed 15 April 2023.

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Annex

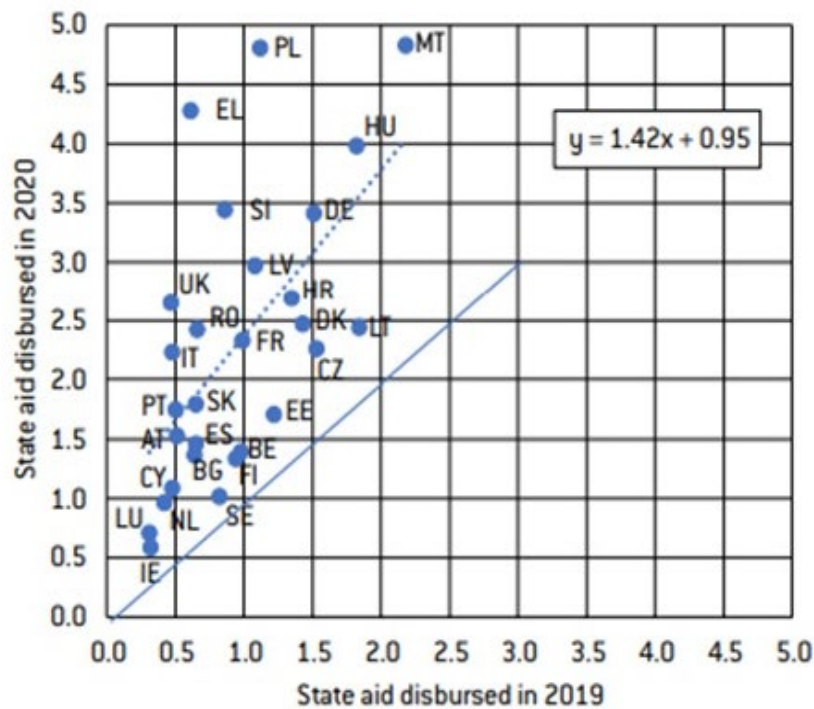
Figure 1 – ITC requirements under the IRA.

Table 3. ITC requirements under the IRA

Labor requirements	Net output > 1 MW		Net output < 1 MW
	Not satisfied	Satisfied	No need to satisfy
Base credit	6%	30%	30%
Certain domestic content requirements	2% - 10%	2% - 10%	10%
Located in energy communities	2% - 10%	2% - 10%	10%
Low-income communities (below 5 MW)	10%-20%	10%-20%	10%-20%
Total credit	6% - 46%	30% - 70%	30% - 70%

Source: Liao, 2023.⁸³

Figure 2 – Total state aid disbursed in 2020 compared to total aid disbursed in 2019 (aid content, % of GDP)



Source: Kleimann *et al.*, 2023.⁸⁴

⁸³ Penny Liao, 'How Inflation Reduction Act reforms U.S. energy storage market?', *InfoLink Consulting*, 4 January 2023. <https://www.infolink-group.com/energy-article/energy-storage-topic-impact-of-ira-on-us-energy-storage-market>.

⁸⁴ David Kleimann *et al.*, 'How Europe should answer the US Inflation Reduction Act', *Bruegel*, 23 February 2023. <https://www.bruegel.org/policy-brief/how-europe-should-answer-us-inflation-reduction-act>. Accessed 4 April 2023.