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GREEN SUBSIDIES

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INTRODUCTION

Climate-related industrial policies are becoming more prominent globally, with the number of environmentally focused subsidies rising from 359 in 2018 to 403 in 2022.[1] More than one fourth of all industrial policies introduced in 2023 were explicitly driven by climate concerns, highlighting the strategic role of subsidies in tackling global climate challenges.[2]

Subsidies have emerged as the preferred industrial policy to support climate mitigation efforts.[3] In 2023, 24% of these subsidies focused on aluminum, iron, and steel, 19% on hydrogen, 18% on batteries, 11% on electric vehicles, and 8% on cement, fertilizer, and glass. Smaller shares were allocated to power generation equipment (4%), photovoltaic cells (1%), air pollution control equipment (1%), and wind turbines (1%), with the remaining share (13%) distributed across various other sectors.[4] Financial grants were the most common form of subsidy, followed by state loans and state aid, among others.[5]

Leading in the deployment of these subsidy programs are China and the United States, followed closely by Australia, Canada, and the European Union.[6] As producers in China expanded their capacity for clean technology production, the costs of renewable energy technologies have plummeted: over the course of a decade, prices have dropped by 80% for solar, 73% for offshore wind, 57% for onshore wind, and 80% for electric batteries.[7]

While some government efforts to support the green transition have led to lower prices and increased trade, the benefits are not equally spread. These actions have also affected the competitive opportunities of less wealthy countries that lack the resources to subsidize their domestic production. Concerns have also emerged over the opacity of many subsidy programs, making it challenging to address inequities and ensure that measures are contributing to the fight against climate change.

1 Signoret, J., & Cieszkowsky, M. (2024, June 4). *To tackle climate change, governments increasingly turn to green subsidies*. World Bank Blogs. https://blogs.worldbank.org/en/trade/to-tackle-climate-change--governments-increasingly-turn-to-green

2 Evenett, S., Jakubik, A., Martín, F., & Ruta, M. (2024). *The return of industrial policy in data* (IMF Working Paper No. 2024/001). International Monetary Fund. https://www.imf.org/en/Publications/WP/Issues/2023/12/23/The-Return-of-Industrial-Policy-in-Data-542828.

3 *Id*.

4 Exton, O. (2024, June 17). *IMF work on industrial policy and green industrial subsidies* [Presentation]. WTO TESSD Informal Working Group. https://www.wto.org/english/tratop_e/tessd_e/17062024_e/07_Subsidies-4_Presentation%20by%20IMF.pdf

5 *Id*.

6 See *supra* note 1.

7 Rodrik, D. (2024, May 10). *Don't fret about green subsidies*. Project Syndicate. https://www.project-syndicate.org/commentary/green-subsidies-justified-on-economic-environmental-and-moral-grounds-by-dani-rodrik-2024-05

WHAT IS A GREEN SUBSIDY?

Green subsidies are a form of government financial support aimed at promoting environmentally sustainable practices and technologies that facilitate the transition to a greener economy. They are sometimes defined as the allocation of public resources to improve sustainability beyond what could be achieved by market forces alone.[8] According to the World Bank, green subsidies target the development and adoption of green technologies, such as solar panels and electric vehicles.[9]

Green subsidy programs often focus on fostering innovation in green technologies and accelerating the adoption of renewable energy.[10] Some of the most common goals of green subsidies are to develop clean energy industries, phase out fossil fuels, combat climate change, and promote sustainable production and consumption.[11] For example, Japan's Hydrogen Society Promotion Act of 2024,[12] offers subsidies for low carbon fuels like hydrogen and its derivatives (ammonia, e-methane, and e-fuel) that meet specific carbon intensity standards,[13] and the U.S. Inflation Reduction Act (IRA) of 2022, similarly provides subsidies for low-carbon fuels that meet defined emissions criteria, among other green incentives.

WHAT IS THE PROGRESS ON GREEN SUBSIDIES AT THE WTO?

Although specific rules and disciplines on green subsidies have yet to be developed at the World Trade Organization (WTO), there have been important advancements. In 2020, the WTO launched the Trade and Environmental Sustainability Structured Discussions (TESSD), an initiative designed to facilitate "structured discussion" on trade-related climate measures among WTO members and external stakeholders. Originally involving 50 countries, TESSD has since held 18 meetings in either informal working groups or plenary sessions. At the 13th Ministerial Conference in February 2024, the TESSD participants released a document outlining best practices for designing subsidies that support the environment without significantly distorting trade.[14] In addition, the WTO has also focused on reducing "harmful" subsidies through initiatives like the Fossil Fuel Subsidy Reform (FFSR), which seeks to rationalize and phase out inefficient fossil fuel subsidies that encourage wasteful consumption.

These initiatives have been supported, to varying degrees, by the WTO Secretariat's Environmental Database (EDB), which catalogs and makes available information on all environment-related measures notified by WTO members as well as those measures mentioned in Trade Policy Reviews (TPRs). A key objective of TPRs is to increase transparency and understanding of countries' trade policies and practices through regular monitoring. These "peer reviews" encourage members to align more closely with WTO rules and to fulfill their commitments. Together, the EDB and TPR serve as mechanisms to track the environmental progress of members at the WTO.

This document provides an overview of the WTO's potential role in addressing the challenges raised by the growth of green subsidies. It addresses two key points: 1) the rules applicable to subsidies and how they could be revisited to include climate change considerations, and 2) the need for transparency around green subsidy practices worldwide. The goal is to provide an overview of current debates, highlight some of the challenges, and make suggestions to inform the development of more effective trade policies.

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8 Charnovitz, S. (2014). *Green subsidies and the WTO* (EUI Working Paper RSCAS 2014/93). European University Institute, Robert Schuman Centre for Advanced Studies, Global Governance Programme. *https://scholarship.law.gwu.edu/cgi/viewcontent.cgi?article=2341&context=faculty_publications#:~:text=A%20%22green%20subsidy%22%20is%20the,otherwise%20occur%20via%20the%20market*. P. 1.

9 Signoret, J., & Cieszkowsky, M. (2024, June 4). *To tackle climate change, governments increasingly turn to green subsidies*. World Bank Blogs. *https://blogs.worldbank.org/en/trade/to-tackle-climate-change--governments-increasingly-turn-to-green*

10 *See id.*

11 See *supra* note 9.

12 George Gibson et. al., *Japan's Hydrogen Subsidies Kicking-Off in Summer 2024*, Norton Rose Fulbright (June 20, 2024) https://connections.nortonrosefulbright.com/post/102jamv/japans-hydrogen-subsidies-kicking-off-in-summer-2024

13 *Id.*

14 Compilation of experiences and considerations regarding subsidy design - WT/MIN(24)/11/Add.5

SUBSIDY DISCIPLINES

a. WTO Rules

The Agreement on Subsidies and Countervailing Measures (SCM Agreement), which governs the treatment of subsidies within the WTO, applies only to specific types of measures: a financial contribution by a government or any public body within the territory of a member that confers a benefit. All three elements—financial contribution, government involvement, and benefit—must be satisfied for a measure to qualify as a subsidy. A subsidy can take several forms, including: a direct transfer of funds (e.g., a grant or loan); a potential transfer of funds or liabilities (e.g., a loan guarantee); government revenue that is forgone (e.g., a tax credit); the purchase of goods or provision of goods or services (excluding general infrastructure). The SCM Agreement stipulates that actions can only be taken against "specific" subsidies. A specific subsidy is one that is only given to one company or to a special group of companies.

The Agreement categorizes subsidies into two main types: prohibited and actionable. A subsidy conferred by a member is prohibited if it is contingent, whether in law or in practice, on export performance or on the use of domestic goods over imported goods. These subsidies are perceived as particularly harmful and are therefore banned under WTO rules (special rules apply to agricultural subsidies under the WTO Agreement on Agriculture). Actionable subsidies, while not prohibited, can be challenged if they cause adverse effects such as injury to a domestic industry, serious prejudice to another member's interests, or nullification of benefits (with certain exceptions made for agricultural subsidies). To counteract the harmful effects of these subsidies, the SCM Agreement permits members to impose countervailing measures, provided they demonstrate that the subsidized imports have caused injury to their domestic industry and establish a causal link between the subsidy and the injury. Serious prejudice occurs where a subsidy either: hinders or displaces another country's exports in the market of the country providing the subsidy; hinders or displaces another country's exports to other markets; significantly undercuts the price of a "like" good, or; increases the subsidizing country's share of the global market for a specific primary product/commodity.

WTO rules do not specifically address green subsidies beyond this general framework. While the General Agreement on Tariffs and Trade (GATT) and the General Agreement on Trade in Services (GATS) contain provisions that allow for exceptions to the rules for reasons related to the environment, the SCM Agreement does not contain such exceptions. Hence, subsidies that promote renewable energy or green technologies are often constrained by WTO rules, either being categorized as prohibited or subject to countervailing measures. The current rules do not clearly distinguish between "good" and "bad" subsidies, nor do they adequately consider whether certain climate-related subsidies should be exempt from the rules. Consequently, the existing framework appears misaligned with global climate objectives and does not effectively address the unique nature of green subsidies.

When the SCM Agreement was initially established, it included provisions on "non-actionable" subsidies, permitting members to maintain certain programs without the threat of dispute settlement or countervailing duties. This third category was temporary, lasting only the first five years of the SCM Agreement's existence. Since then, WTO members have been unable to reach an agreement on extending these provisions, and no subsidy programs have since been explicitly designated as non-actionable. Part of the challenge is the potential for too narrow or too broad a scope for this category of subsidies, which could either limit their impact, or provide a degree of flexibility that is ripe for abuse.

Meanwhile, many countries are advancing programs that provide financial support for renewable energy and green technologies. For example, the United States' IRA offers tax credits for the purchase of electric vehicles and for homeowners who invest in energy-efficient upgrades, such as installing solar panels or replacing HVAC systems with heat pumps.15 It also allocates funding for renewable energy projects, electric vehicle infrastructure, and public transportation.16 Similarly, the EU Green Deal has enhanced support for the green transition by reducing bureaucratic hurdles, increasing flexibility in state aid, and facilitating states' funding for renewable energy, energy storage, and the decarbonization of industrial production processes.17

However, since GATT/GATS exceptions are not generally considered applicable and these subsidies are also not currently classified as "non-actionable," they remain generally subject to scrutiny and are at risk of facing countervailing measures, or inviting retaliation. Recently, China challenged several IRA tax credits at the WTO, arguing they discriminate against Chinese products, highlighting these risks. However, without a fully functioning dispute settlement mechanism, members have little recourse for reining in actionable or prohibited subsidies, since panel rulings can be appealed into the void. One unfortunate reality, is that this invites members to pursue subsidies of their own, potentially contributing to a global subsidies race.

b. Areas for improvement

One way to better align the WTO's subsidy rules with contemporary climate goals, could be to revive the SCM Agreement's category of "non-actionable" subsidies to specifically exempt green subsidies. This does not necessarily entail a broad redrafting of Article 8, but instead could advance the concept of non-actionable subsidies to achieve specific climate objectives. Drawing inspiration from the Agreement on Agriculture's "traffic light" system, a mechanism for classifying subsidies into distinct "boxes" could be used, as suggested by Hillman and Manak.[18] An "amber box" would encompass trade-distorting subsidies subject to caps on total spending, while a "green box" would include minimally trade-distorting subsidies, such as those for research and development, exempt from spending caps but subject to conditions on subsidy limits.[19] The "blue box" could house subsidies exempt from both caps and limits, such as those advancing the UN Sustainable Development Goals (SDGs). The blue box could provide a safe harbor for incentivizing climate-critical products, like solar panels and renewable technologies. Such subsidies could mitigate the high costs of renewable energy development, making these technologies more competitive and accelerating the transition to cleaner energy sources.[20]

Two main pathways could be pursued to implement these changes. One approach is a plurilateral agreement on green subsidies. This method could expedite progress but may face difficulties due to resistance from some countries, such as India and South Africa, which might challenge the agreement's legiti-

15 Action for Climate Emergency (2022, December 1), The Inflation Reduction Act Explained. https://acespace.org/blog/2022/12/01/inflation-reduction-act-explained/
16 *Id.*
17 European Commission. (2023, March 9). State aid: Commission amends General Block Exemption rules to further facilitate and speed up green and digital transition [Press release]. Brussels. European Commission. (2023, March 9). State aid: Commission adopts Temporary Crisis and Transition Framework to further support transition towards net-zero economy [Press release]. Brussels.
18 Hillman, J. A., & Manak, I. (2023, September 13). *Rethinking International Subsidies Could Cool Trade Tensions.* Council on Foreign Relations. https://www.cfr.org/blog/rethinking-international-subsidies-could-cool-trade-tensions
19 *Id.*
20 *Id.*

macy and inclusiveness due to a lack of full consensus. Alternatively, members could amend the SCM Agreement itself. Although this would require a lengthier and more complex negotiation process with all WTO members, it would ensure that the new rules are universally applicable and integrate climate goals more effectively into the global subsidy framework. There are trade-offs with either approach. A compromise that may be preferable is to pursue a standalone agreement that sunsets, providing members a time-limited experiment on new rules, giving enough time to assess whether a new approach achieves the stated objectives. Such an agreement could also provide more data on existing subsidies and allow members opportunities to coordinate their approaches and avoid the duplication of efforts.

Other experts have proposed different strategies to modernize the outdated WTO rules. Muzikarova and Busch agree that the SCM Agreement could be reformed in line with the Agreement on Agriculture. They further argue that the OECD is well-positioned to assist in the measurement and calculation of trade-distorting subsidies.[21] Additionally, they propose that developed countries have lower spending caps under the amber box, compared to developing countries.[22]

Charnovitz suggests not only reviving but also expanding the original "non-actionable" category of the SCM Agreement (Article 8) by introducing a positive illustrative list of environmentally beneficial subsidies.[23] He further proposes creating a carve-out under SCM Agreement Article 6.3(a) to shield these subsidies from being classified as illegal.[24] Another key recommendation involves modernizing countervailing duty (CVD) disciplines, mandating that governments consider the interests of domestic consumers before imposing CVDs on green imports.[25] Lastly, he advocates for the inclusion of a GATT Article XX defense for green subsidies, allowing countries to support environmental initiatives without breaching trade rules.[26]

The Villars Framework 2.0 argues that WTO members should revise the GATT, the SCM Agreement, and the Agreement on Agriculture, emphasizing their alignment with sustainable development and trade impact under WTO law.[27] Subsidies that promote sustainable development with minimal trade distortion should be considered compliant with WTO rules and non-countervailable. Despite causing significant trade disruption, those subsidies that yield positive sustainable development outcomes could be allowed under specific conditions. Conversely, subsidies that both significantly distort trade and negatively impact sustainable development should be deemed inconsistent with WTO rules, as should those that harm sustainable development even if their trade impact is minimal.

TRANSPARENCY

a. The subsidy notification process

Pursuant to Article 25.2 of the SCM Agreement, members must provide annual notifications of the subsidies they are granting or maintaining within their

21 Muzikarova, S., & Busch, S. (2024, January 16). *Navigating subsidy reform at the WTO*. Atlantic Council. https://www.atlanticcouncil.org/wp-content/uploads/2024/01/Muzikarova-and-Busch-Navigating-Subsidy-Reform-at-the-WTO.pdf P. 8.
22 *Id.*
23 See *supra* note 8 at 37.
24 *Id.*
25 *Id.*
26 *Id.*
27 Trachtman, J. P., Remy, J. Y., Esty, D., & Sutton, T. (2024, January). *Villars framework for a sustainable global trade system* (Version 2.0). https://remakingtradeproject.org/villars-framework. P. 49

territory to the WTO. In practice, members submit comprehensive notifications by June 30 every two years, effectively filing a full notification biennially, while using the intervening year to review the notifications submitted by other members.[28] In 2003, the SCM Committee adopted a questionnaire format for these notifications,[29] requiring members to provide specific details about their subsidy programs, including the policy objective and/or purpose of the subsidy, the recipients and method of subsidy provision, the duration and any associated time limits, and statistical data permitting an assessment of the trade effects of the subsidy.[30]

The WTO is not the only international body that requires notification of subsidies. The European Union (EU) has its own notification requirements governing the "state aid" provided by EU governments to certain companies or goods.[31] When state aid is given, EU rules mandate that all new aid measures be notified to the European Commission prior to implementation, with member states required to await the Commission's decision before proceeding with the measures. This notification process is similar to that of the WTO, requiring states to submit information through a questionnaire explaining the aid and its intended purpose. The chart below compares the WTO subsidy notification requirements with the EU State Aid requirements, highlighting what countries must disclose in their notifications.

REQUIREMENTS	WTO SUBSIDY NOTIFICATION	EU STATE AID NOTIFICATION
Title of the program	X	X
Period of time covered by notification	X	X
General policy objective and/or purpose	X	X
"Checkboxes" to identify *specific* policy objectives		X
Legislation/legal basis	X	X
Form of subsidy	X	X
Recipient/beneficiary	X	X
Type of recipient/beneficiary		X
Sector affected by the measure		X
Location of the recipient/beneficiary or of the project		X
Total amount of the subsidy	X	X
Duration	X	X
Trade effects	X	X
Outstanding recovery orders*		X

**Whether the recipient is a beneficiary of aid that was previously declared to be incompatible with the rules*

28 *Technical Cooperation Handbook on Notification Requirements: Agreement on Subsidies and Countervailing Measures*, WTO 3 (June 30, 2022) https://www.wto.org/english/tratop_e/scm_e/scm_notification_handbook_e.pdf
29 *Id.* at 4.
30 World Trade Organization (2023, November 11), *Questionnaire Format for Subsidy Notifications Under Article 25 of the Agreement on Subsidies and Countervailing Measures and Under Article XVI of GATT 1994 - Revision*, G/SCM/6/Rev.1
31 European Commission. *State Aid Procedures*. https://competition-policy.ec.europa.eu/state-aid/procedures_en

While many basic requirements are similar, such as the title, duration, and amount of the subsidy,[32] there are important differences. The EU State Aid requirements demand more detailed information about the objectives of the subsidies. For example, while the WTO asks for the purpose of the subsidy, affording members considerable discretion in how they respond, the EU State Aid form requires countries to select a specific primary objective from a list of predefined categories, with an option to select a secondary objective.[33] These "checkbox" categories include objectives such as energy efficiency, renewable energy, and environmental protection.[34] Furthermore, EU member states must explain the need for the aid, why it is the appropriate tool to achieve the objective, whether the aid has an incentive effect, and any potential negative effects on competition and trade.[35] This comparison indicates that the WTO provides more leeway to countries in reporting their subsidies and does not impose strict parameters for identifying the impacts of their programs. The WTO also does not currently ask members to identify subsidies on the basis of their potential beneficial impact, only to generally describe their intended goals.

b. Areas for improvement

Notifications are vital for keeping WTO members informed about the subsidies other members grant or maintain. This transparency mechanism helps members better understand subsidy programs and evaluate the potential negative impacts on their economies. A larger volume and more specific notifications, especially regarding green subsidies, would support more informed decision-making and help assess these policies' effectiveness. In contrast, a lack of notifications makes it difficult to evaluate subsidy programs and, as a result, limits the breadth of discussions between members and ultimately stalls progress on climate issues.[36] Effective transparency can also help in setting the agenda on climate change. By increasing the visibility of other members' green subsidy programs and their proliferation across the globe, it can help countries learn from the experiences of others. Importantly, it can avoid wasteful spending as countries race to match subsidy programs without a clear understanding of the costs and the degree of contribution to achieving environmental objectives.

Although the SCM Agreement mandates the notification of subsidies, compliance is often poor, with infrequent notifications. The chair of the SCM Committee noted that more than half of WTO members did not submit their 2021 subsidy notifications by the mid-2021 deadline and many were months or even years behind.[37] Today, a majority of members fail to meet their notification requirements;[38] when notifications are submitted, they typically only specify the product receiving the subsidy rather than its intended purpose.

32 European Commission. (2015, November 15). C*ommission Regulation (EU) 2015/2282 of 27 November 2015 amending Regulation (EC) No 794/2004 as regards the notification forms and information sheets*. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L_.2015.325.01.0001.01.ENG&toc=OJ%3AL%3A2015%3A325%3ATOC

33 *Id.*

34 *Id.*

35 *Id.*

36 Hillman, J. A., & Manak, I. (2023). *Rethinking international rules on subsidies* (Council Special Report No. 96). Council on Foreign Relations. https://cdn.cfr.org/sites/default/files/report_pdf/Rethinking%20International%20Rules%20on%20Subsidies_0.pdf P. 13

37 *Id.* ("The chair of the WTO's Committee on Subsidies and Countervailing Measures has noted that more than half of WTO members did not submit their 2021 subsidy notifications by the mid-2021 deadline, seventy-six members were more than eighteen months behind, and sixty-five members had not submitted notifications in more than three years").

38 *Id.*

One of the reasons for the lackluster rate of notifications is that members only notify a subsidy when they consider it to be a measure covered by the SCM Agreement. However, the scope of the agreement is highly contested. Countries differ on the breadth of their reporting in part due to the inherent indeterminacy of the WTO's own definition of a subsidy. Given that these notifications are self-reported, members have significant discretion over what they choose to report. For example, China has argued that some of its programs do not qualify and, accordingly, does not report them to the WTO.[39]

Introducing a system that allows members to self-declare the subsidies they consider to be aimed at climate mitigation or adaptation could significantly enhance the notification process. The WTO Secretariat could add a space in its questionnaire, similar to the EU State Aid process, where countries identify a subsidy as primarily aimed at fighting climate change. If the WTO Secretariat were to add checkboxes for identifying green subsidies, countries would likely be incentivized to disclose them, as it would signal progress on climate change. While such designations would not create a formal safe harbor under the SCM Agreement—as the act of notification does not prejudge the legal status of the subsidy—specific notifications would serve to put other countries on notice that the subsidizing member considers the subsidies to be green subsidies, helping both with the notification process and in providing clarity on the type of programs countries consider legitimate.

Additional improvements to enhance transparency could include stronger enforcement mechanisms to ensure timely and complete notifications from member states.[40] This could include introducing penalties for non-compliance or persistent underreporting.[41] Additionally, increased technical assistance and capacity-building support for developing countries could help them meet notification requirements.[42] Another recommendation is to establish a more user-friendly and accessible database for subsidy information to improve monitoring and analysis.[43] This could include a process whereby members subsidizing a particular product are notified when another member is subsidizing the same product. Some progress has already been made on this front, with the WTO, IMF, World Bank, and OECD collaborating on a subsidy platform to collect a variety of information on subsidies throughout the world and across major sectors like fossil fuels and industrial policy.[44] However, within the WTO, more could be done to standardize reporting templates and to clarify information requirements, which would improve the quality and consistency of the data provided.[45] Leveraging domestic third-party organizations as a check on member notifications could also help address underreporting.

39 Meeting - Council Special Report: Rethinking International Rules on Subsidies, Council on Foreign Relations (Sept. 7, 2023) https://www.cfr.org/event/council-special-report-rethinking-international-rules-subsidies
40 See *supra* note 36, at 26–28.
41 *Id.*
42 *Id.*
43 *Id.*
44 Subsidy Platform: Information on Subsidies Collected by IMF, OECD, World Bank and the WTO, https://www.subsidydata.org/en/subsidydata/home
45 *Id.*

CONCLUSION

While current WTO rules fall short of adequately addressing the intricacies of subsidies intended to promote environmental sustainability, there is an increasing recognition of the need to align trade policies with global climate objectives. A key aspect of any reform will involve developing a clear definition of green subsidies. Recommendations for improvement of the WTO rules have been made in both procedural and substantive matters. On the procedural front, enhancing transparency and refining the notification processes under the WTO's SCM Agreement are essential steps toward greater accountability and more accurate differentiation of subsidies. Substantively, revisiting and potentially reinstating the provisions for non-actionable subsidies, alongside the creation of specific exemptions for green subsidies, could play a role in accelerating the global adoption of green technologies and avoiding trade frictions.