Task Force 4
Refuelling Growth: Clean Energy and Green Transitions

A G20 COMPACT TO ACCELERATE GREEN PUBLIC AND PRIVATE PROCUREMENT OF NET-ZERO STEEL

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Abstract

Steel accounts for around 7 percent of global greenhouse gas emissions and 11 percent of global carbon dioxide emissions,[1] and use of low-emission steel will decarbonise the sector. Green procurement of low-emission steel by public and private entities can help stimulate demand in favour of large-scale production of net-zero steel. The G20 nations produce 90 percent of the world's steel, significantly influencing its value chains.[2] Therefore, the G20 can play a catalytic role in driving mechanisms for the global decarbonisation of steel. This Policy Brief aims to underscore the potential of green procurement for creating demand for net-zero steel. It identifies policies and near-term actions that the G20 can deploy.

The Challenge and the Opportunity

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Steel is the most commonly used metal in the world; it is a pillar of modern global economy. It features in a wide range of applications, from construction, transportation, and heavy equipment to consumer goods and durables. Nine out of the 10 top steel-producing nations are G20 countries and together are responsible for 80 percent of the world's steel production.[3] Accounting for 85 percent of the world's GDP, over 75 percent of its trade, and about two-thirds of the world population, the G20 nations will continue to demand and produce massive amounts of steel to underpin the growth of their economies.[4]

The global steel production amounted to 1,950 million metric tonnes in 2021[5] – it has more than doubled in the last two decades. The demand for steel is expected to increase to 2,500 million metric tonnes by 2050.[6] Steel accounts for around 7 percent of global greenhouse gas (GHG) emissions and 11 percent of global carbon dioxide (CO_2) emissions.[7] While the steel sector emitted around 3.6 billion tonnes of CO_2 in 2019,[8] the G20 nations contributed to over 80 percent of these steel-related CO_2 emissions.[9,10]

The transition to clean technology will be challenging since a substantial share of the high-emission steel capacity installed is now locked-in in big steel-producing nations. In the absence of a policy to incentivise a capital-heavy sector such as steel, producers will continue operating legacy steel plants that are typically energy- and carbon-intensive. Moreover, the intensity of CO_2 emissions varies for each country because of various factors, such as the share of electric arc furnaces in the country's production capacity, type of fuel and feedstock, use of best available technologies, age of the plants, and grid emission aspects. This makes it even more difficult for countries to align with a mutually agreed global target for steel decarbonisation.

The common thread though is that governments across the world procure steel for infrastructure, defence, transportation, and utilities.[11] The large-scale purchase of goods and services of this nature by public agencies results in huge amounts of steel being procured directly or indirectly.[12] Governments can leverage their purchasing power to procure goods with low embodied carbon. The procurement, in turn, will reward businesses that are choosing

low-emission products, setting off a virtuous cycle that accelerates decarbonisation.

Green Public Procurement (GPP): This refers to a deliberate approach adopted by governments to purchase goods with a lower environmental impact.[13] The environmental benefit or carbon reduction through green procurement mechanisms is typically evaluated throughout the life cycle of the goods relative to similar goods or services that offer the same value and function.[14,15] With regard to meeting the nationally determined climate targets, GPP can be a useful instrument for countries. National governments, sub-national governments including states and regions, and multilateral agencies are devising policy frameworks to reduce carbon footprints and support adoption of low-emission products.[16,17]

Public procurement of all goods and services globally costs governments a total of US$11 trillion each year, which is 13 percent of the global GDP.[18] It is responsible for the emission of 7.5 billion tonnes of CO_2 into the atmosphere every year, which is 15 percent of the total global GHG emissions.[19] Governments, globally, earmark substantial shares of their exchequers for public expenditure.[20] Their ability to purchase on a year-over-year basis provides them with a knowing leverage to push markets in favour of low-carbon products. GPP can have real impact on reducing emissions from steel used in developing public infrastructure, construction, defence, and utility projects. However, steel has not been a large part of green public procurement programmes, except in a few countries.

In India alone, infrastructure projects, which include the development of such key segments as roads, highways, and railways, contributed to approximately 23 percent of the total share of steel consumed in the country in 2022.[21] Steel procured by governments constitutes 90 percent of the total infrastructure-related steel demand in India while the remaining 10 percent involves private procurement.[22] The trend is similar in many countries, where infrastructure is propelled by public procurement instead of demand from the private sector.[23] Therefore, public procurement can be a strong demand driver for net-zero

steel.[a] Some government-led initiatives are promoting green procurement for steel, such as the Industrial Deep Decarbonisation Initiative (IDDI),[b] the Federal Buy Clean Initiative,[c] and the Big Buyers for Climate and Environment Initiative.[d]

Green Corporate Procurement: While the emission reduction potential from public procurement will be significant, its implementation, along with that of green corporate procurement (GCP) as either a voluntary or a mandatory measure, has the ability to catalyse more demand. This is particularly true of companies that are big consumers of steel—like construction and automotive—and want to reduce their emissions caused by the purchase of steel for their operations, which is counted as a Scope 3 emission.[e] Such steel consuming companies can probably be early movers insofar as addressing embodied emissions in their supply chains is concerned. Both consumers and investors are increasingly becoming conscious of the products they use and the environmental impact of businesses. GCP like GPP has the potential to stimulate the green economy and simultaneously drive a systemic change to enable the transition to industrial decarbonisation. Today, 36 global companies that are members of SteelZero, a global initiative, have pledged to buy and use 100 percent net-zero steel by 2050, supported by an interim action of a public commitment to procuring, specifying or stocking 50 percent of the steel requirement by 2030.[24]

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a Net-zero steel: For the purpose of this Policy Brief, it is reasonable to assume that 'net-zero steel' is any practical benchmark, which is being considered or accepted by a country or by a recognised authority. It is sometimes referred to as 'low-carbon', 'low-emission', 'near-zero' or 'green' steel and is contextual. While the Policy Brief does not approve of or prescribe a definition as such, it does acknowledge that definitional aspects are important to converge since steel is a globally traded material. The focus of this Policy Brief is on accelerating green procurement policies and not as much on identifying the deficiencies in the taxonomy of net-zero steel, which is, however, still important.

b IDDI: https://www.unido.org/IDDI.

c Federal Buy Clean Initiative, California: https://www.sustainability.gov/buyclean/.

d European Commission, Big Buyers Initiative: https://bigbuyers.eu/.

e Scope 3 emissions are attributed to the upstream and downstream supply chain of a company's operations and typically include the purchase of raw materials, production of fuels, and distribution and use of products. The intensity of Scope 3 emission for a company from steel depends on the industry's type (such as infrastructure, construction, automotive, defence, or capital goods) and therefore the amount of steel consumed.

About 64 percent of the demand for steel in India came from the construction, automobile, and capital goods sectors in 2022.[25] These industry sectors typically tend to have a higher share of private procurement than government-funded public projects, and this trend is observed universally. There is, therefore, reason to believe that procurement in these sectors can be influenced by private actors. In India, the automobile, construction, and capital goods sectors are likely to drive most of the new demand for steel until 2050.[26] While the demand for steel is expected to increase to 430 million metric tonnes in India by 2050, low-emission steel can contribute to 25 percent of this demand only if the top five companies in the automobile, construction, and capital goods sectors remain committed to the SteelZero targets.[27]

Apart from government and corporate-centric efforts for pushing a demand signal, several steel producers, associations, and organisations are leading in developing supportive action. The Net-Zero Steel Initiative, which includes more than 50 percent of the top 10 steel producers and over 30 percent of global production, has committed to achieving net-zero emissions by 2050 or even earlier, with a specific target for reducing carbon footprint.[28] Similarly, organisations such as ResponsibleSteel,[f] WorldSteel Sustainability Charter,[g] and ISO 20915[h] offer standards and guidelines for reporting to encourage better transparency.

Governments as well as the private sector procure services of contractors or source finished goods from manufacturers. Mandating or specifying green procurement in projects will signal a clear demand to the market, which in turn will encourage steel producers and companies to start delivering services with lower emissions and environmental impact. The large-scale sourcing of low-emission steel through GPP will lower the cost of development, making

f ResponsibleSteel: https://www.responsiblesteel.org/standard/

g Worldsteel Sustainability Charter: https://worldsteel.org/steel-topics/sustainability/steel-recognitions/sustainability-charter/

h ISO 20915: https://www.iso.org/standard/69447.html

green steel gradually cost-effective as the demand rises. This Policy Brief endorses the implementation of GPP and GCP as a synchronised measure, which will have a direct bearing on the downstream value chain of steel production.

The Role of the G20

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The steel sector's inextricable link with high energy use, climate impact, sustainable industrial development, and trade and cooperation explains the outsized influence that the G20 can have on accelerating the dialogue on decarbonisation. The G20, which strives for economic cooperation among its member countries, can be instrumental in shaping fundamental reforms in steel production and therefore, trade.

The G20 can initiate urgent and time-bound efforts for building agreement between nations to set off the implementation of GPP and GCP. Its adoption will leverage the tremendous purchasing power of governments and corporations. It will develop a market for net-zero steel by stimulating a shift to new technologies and encouraging material circularity and efficiency.

However, implementation of green procurement is a massive challenge and is not as straightforward as it is understood. Some key structural challenges to its implementation, along with other implications of green procurement, are recorded in several studies; they are explained in the following paragraphs.[29, 30,31,32,33]

- **The absence of emissions data and standards:** To compare the 'greenness' of products and services in terms of positive environmental impact, comprehensive emissions data disclosure and reporting standards are required. This will necessitate the convergence to a singular format for reporting, which includes use of environmental product declarations that are consistent across the steel value chain, defining system boundaries, and ensuring reliability and accuracy of emissions data. Also, the data received may not be available if certain segments of the supply chain do not report their emissions.

- **The lack of a common definition of low-emission steel:** A global alignment on a definition for a common understanding of low-emission steel is as critical as having data, reporting, and standards. Definitions will set a yardstick to gauge investment support, qualify the level of financing and reward, and meet the minimum obligated technical requirements. It will be the guiding framework for governments, industry, and investors regarding their decarbonisation targets. Although steel-making and

concomitant emissions are characteristically different in each country, a timely political convergence on a shared definition of net-zero steel is necessary.

- **Adopting targets to incentivise innovation:** An ambitious target is vital for the steel sector to decarbonise rapidly. While data, standards, and definition will form the bedrock of implementation, the real impact of GPP and GCP will emerge from deploying clear targets that are ambitious enough to inspire innovation in low-emission steel without compromising on the industry's domestic and international competitiveness. Therefore, what is needed is a collaborative approach adopted by the G20 countries to set the level of ambition and targets, and establish funding and finance to support this transition.

- **Plugging carbon leakage due to green procurement:** It refers to the increase in emissions in jurisdictions with laxer emission control because of stringent climate policies in other jurisdictions. This is, typically, a result of avoiding low-carbon innovation in steel production and selling such high-emission steel to less restrictive jurisdictions. Such a leakage may be witnessed between countries or even between states of a country, where sub-national green procurement policies are implemented. Carbon leakages are likely to occur in the early stages of green procurement when policies (including standards and definitions) are not completely uniform, and are likely to hamper their effectiveness. It will also affect the market shares of steel makers, putting some at a disadvantage. To support a level playing field and continually drive innovation, green procurement policy must be paired with policies that address carbon leakage.

- **Hedging the added costs of adopting green policies:** A green procurement policy is likely to cost more for both governments and companies sourcing net-zero steel, at least in the near term. An estimate suggests that if governments across the world are to reach net-zero, then procurement costs will go up by three to six percent.[34] Without an incentive or a green premium to produce net-zero steel, the cost

will frustrate steel producers, who are trading in a highly competitive market with thin margins. Some estimates place the cost of net-zero steel at 20 percent to 30 percent higher than that of primary steel.[35] The matter of green budgeting, premiums or transition finance to support GPP and GCP is an open question.

- **Navigating complications of decentralised governance**: Public procurement is an intricate and distributed practice the world over, involving national and state governments. Even while procurement policies are developed at the federal or the state level, actual sourcing is likely to be executed by a number of public agencies at different levels. It is even more complex in the case of a significant scale of procurement at the sub-national level, wherein capacity can be an issue. Moreover, fragmented sub-national GPP adds to the complexity and makes national synchronisation even tougher. Moreover, GCP will require the supply chains of micro, small and medium enterprises (MSME) to improve their capacities and adjust to the new realities of supply and sourcing.

- **The conundrum of competing priorities:** While the need for green premiums or viability gap funding will decrease with economies of scale and technological progress, these are additional costs that will have to be bankrolled. In the case of governments, such added costs will compete with critical public priorities such as health, education, sanitation, and social security. In the case of the private sector, the high cost will probably be borne by users or absorbed by producers, thereby affecting their margins. Apart from assessing reduction in emissions, the higher fiscal costs should be evaluated along with the socioeconomic co-benefits of better air quality, green jobs, increased investments in clean energy, and future-proofing local steel markets in a globally competitive market.

Recommendations to the G20

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In terms of playing a key role in strengthening global economic and financial systems, one of the accomplishments of the G20 involved building cooperation between nations to address the 2008 global financial crisis.[36] Worsening climate change is another such crisis that the world faces; in this regard, the G20 can play a catalytic role in building consensus among governments for implementing high-impact policy levers for decarbonising steel.

While the potential of green procurement and the role that the G20 can play in accelerating net-zero steel markets are indisputable, this Policy Brief recommends that the G20 adopt a jointly ratified resolution for the implementation of GPP and GCP. Some key recommendations and initial steps for the G20 towards building such a multiparty agreement are explained in the following paragraphs.[37,38,39,40]

- The G20 must gather political support for green public and corporate procurement policies to accelerate development of net-zero steel. It will be complex to find common ground, especially for the challenges and the gaps (stated earlier), including the lack of ambition and a target, the absence of a common definition and standards, added costs, and inadequate administrative capacity, all of which hinder implementation. Moreover, countries with experience in green procurement will have an advantage over those who do not. The role of the G20 must be to ensure market competitiveness and offer a level playing field for all participating nations. Furthermore, coordinate existing global efforts for developing convergence on emissions reporting, standardisation, and environmental product declarations, in addition to definitions and standards.

- The G20 must constitute a high-level group of government and industry representatives from each member nation. To begin with, the group should be tasked with examining the existing landscape of all current intergovernmental and industry initiatives, such as the IDDI, the Leadership Group for Lead Industry Transition (LEADIT),[i] the SteelZero,[j]

i LEADIT: https://www.industrytransition.org/.

j Climate Group, SteelZero: https://www.theclimategroup.org/steelzero.

the First Movers Coalition,[k] and the Net-Zero Steel Initiative.[l] The idea should be to not only identify key gaps and opportunities for the G20 to scale up efforts instead of duplicating, but to also empower the ongoing work and encourage international cooperation. Ideally, the constituent representatives of this group should be people from governments who can coordinate among the cross-cutting themes of the Sherpa Track, the Finance Track, and the Engagement Groups related to energy, climate, sustainability, and the industry. This group will be responsible for defining the vision, the mission and the level of ambition for the G20 with regard to green procurement policies.

- The G20 must empower the high-level working group to prepare an actionable steel decarbonisation roadmap to commission tangible actions for advancing GPP and GCP policies. It should factor in considerations that each nation has regarding its own circumstances and a roadmap for new technology innovation and adoption. It should be enabling and supportive of industry constraints as well. The roadmap should provide a near- to long-term view of the role the G20 will play in developing cooperation and building political support. It should provide an outlook on key areas of work that require immediate attention, including identifying capacity requirements at both national and sub-national levels for implementation. It should offer visibility for the institutionalisation of a charter for deploying implementation support for GPP and GCP in the G20 nations.

- While the inceptive architecture and governance for this process are crucial, the G20's steel decarbonisation roadmap must consider increased support to demand-side 'pull initiatives' for scaling up buyer groups through global and local industry engagement. It should explore models that pool purchase

k World Economic Forum, First Movers Coalition: https://www.weforum.org/first-movers-coalition.

l Mission Possible Partnership: https://missionpossiblepartnership.org/action-sectors/steel/.

commitments (both public and private), which can be advantageous for generating demand for net-zero steel. It should provision critical funding for research, development, and demonstration projects in countries that are ready for GPP and GCP. The roadmap may also put in place an intergovernmental/ministerial coordination mechanism to share best practices and promote cross-learning through existing or identified channels.

A 'pull mechanism', such as green procurement, will help in securing demand and incentivise first movers, and can demonstrate a business case for investment. However, for an accelerated uptake, an ecosystem-wide effort in support of global steel decarbonisation is needed. It can be intensified through 'push mechanisms' such as funding for demonstration projects, support for early-stage technology innovation, and access to transitional and international finance that can help ensure that the capital is available.

A G20 compact on net-zero steel requires not only immediate political will, but also implementation of an ambitious roadmap for global cooperation on green procurement before 2025. Any such process shepherded by the G20 should not be viewed as interference in the ongoing intergovernmental, industry, and civil society initiatives—rather, it should be seen as a process that complements such efforts. An institutionalised effort made by the G20 can help in ensuring continuity between rotating presidencies and serve as checks and balances for recalibrating strategies and policies.

Attribution: Atul Mudaliar and Suresh Kotla, "A G20 Compact to Accelerate Green Public and Private Procurement of Net-Zero Steel," *T20 Policy Brief*, June 2023.

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