VIRTUAL TRADE DIALOGUES WITH BUSINESS – TRADE 4 CLIMATE, 26 OCTOBER 2021, 14.00-17.00

Background Note

MAPPING PAPER: TRADE POLICIES ADOPTED TO ADDRESS CLIMATE CHANGE[1]

Key points

- WTO Members have increasingly adopted trade-related measures as part of their overall policies to achieve climate objectives. From 2009 to 2019, 4,355 measures to address climate change were notified to the WTO, increasing from 220 measures in 2010 to 580 measures in 2019. Most climate-related measures were submitted under the Agreement on Subsidies and Countervailing Measures and the Agreement on Technical Barriers to Trade, followed by the Agreements on Agriculture and Import Licensing Procedures.

- Although data on trade measures adopted for climate-related purposes is already captured through the different WTO notification requirements and the Environmental Database (EDB), which allows for some basic analysis, there are limitations. Data presented in this note nevertheless shows that climate change-related trade measures are increasingly being adopted by Members. This provides relevant and useful insights on the evolving interaction between trade and climate policies.

1 GROWING CLIMATE AMBITION AND THE ROLE OF TRADE

1.1. In 2021, the Intergovernmental Panel on Climate Change (IPCC) released the Working Group I contribution to the IPCC Sixth Assessment Report[2], which concluded that humans activities are unequivocally the main cause of climate change. It noted that human-induced climate change is already affecting many weather and climate extremes in every region across the globe, such as heatwaves, heavy precipitation, droughts, and tropical cyclones. Notably, the Report concluded that the objective of the Paris Agreement on climate Change (Paris Agreement) to limit global warming to 1.5°C and – at most – "well below" 2°C – will not be met still during the 21st century unless deep reductions in carbon dioxide (CO2) and other greenhouse gas emissions occur in the coming decades.

1.2. In the face of the climate urgency, support for more proactive climate action has grown in recent years. In 2015, the United Nations Framework Convention on Climate Change (UNFCCC) held its 21st Conference of the Parties (COP21) in Paris, which saw the conclusion of the Paris Agreement giving rise to a more ambitious set of international rules to address climate change and established a new framework for the adoption of climate policies based on Nationally Determined Contributions (NDCs). Importantly, unlike the previous framework for climate action under the UNFCCC – the Kyoto Protocol –, the Paris Agreement requires all parties – whether developed or developing countries – to take action and contribute to climate change mitigation and adaptation.

1.3. Recently, a growing number of governments have announced medium and long-term climate ambitions to align their pledges to the Paris Agreement goals. To achieve their ambition, these economies must adopt a host of climate-smart policies in support of a "just transition" to low-carbon economies.[3] International, regional and national financing institutions have continued to firm up

[1] This is an information note which represents research in progress. It provides background information for the Trade for Climate Change Dialogues. The opinions expressed in this paper are those of its authors. They are not intended to represent the positions or opinions of the WTO or its members and are without prejudice to members' rights and obligations under the WTO. Any errors are attributable to the authors. The note has been written by Daniel Ramos, Marisol Dar Ali, Michael Kolie and Roy Santana.

[2] The Working Group I contribution to the Sixth Assessment Report addresses the most up-to-date physical understanding of the climate system and climate change, bringing together the latest advances in climate science, and combining multiple lines of evidence from paleoclimate, observations, process understanding, and global and regional climate simulations.

[3] "Just transition of the workforce" refers to the fact that the transition to low-carbon economies must support those most impacted not only by climate change itself but by the actions taken to decarbonize the

their support for climate action. For example, the African Development Bank, the Asian Development Bank, the European Bank for Reconstruction and Development, the European Investment Bank, the Inter-American Development Bank, and the World Bank Group have all demonstrated their commitment to the Paris goals by pledging to shift a significant share of their portfolios toward financing for climate mitigation and adaptation.[4]

1.4. International trade is similarly a key element in these efforts and trade policy has increasingly been used as an important tool to support climate mitigation and adaptation.

1.1 Trade and related measures are highly relevant for climate ambitions

1.5. On several occasions, the international community – including the WTO, the United Nations Environment Programme (UNEP)[5] and various multilateral environmental agreements (MEAs)[6] – have highlighted the role that trade can play in the realisation of environmental and climate goals.[7]

1.6. As an engine for GDP growth, and with related increases in international transport, trade liberalization without proper policies to address environmental externalities can lead to more resource use and pollution.[8] In 2017 for example, the European Commission conducted an assessment of the impact of the Transatlantic Trade and Investment Partnership on climate change—concluding that the growth in output and trade will lead to a rise in emissions, due to increases in the scale of economic activity, increased emissions from transportation, and by changing the composition of industries and trading partners.[9] Conversely, trade can build value chains that lead to a more efficient use of resources globally and access to effective low-carbon technologies. In the presence of sound environmental policies, lower barriers (e.g. by removing tariffs and non-tariffs barriers on climate-friendly products and services) and well-functioning institutions, international trade can be a powerful climate change mitigation and adaptation tool.[10]

1.7. International trade as such does not feature in the Paris Agreement. However, parties to this Agreement have discussed numerous trade-related elements as part of their cooperation under several technical bodies, including: the Improved Forum on Response Measures and the Katowice Committee of Experts (KCI); the Nairobi Work Programme on Adaptation; and the Koronivia Joint Work on Agriculture. In such discussions, the potential role of trade to support Parties in their climate efforts has often been highlighted, including on how to ensure economic diversification (i.e. how to help countries diversify their economies away from reliance on carbon intensive sectors) and just transition of workforce.[11] Trade will similarly have a role to play in the implementation of Article 6 of the Paris Agreement establishing rules for "global carbon markets". It has been estimated that

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global economy (e.g. workforce in carbon-intensive industries). See UNFCCC, "Just Transition of the Workforce, and the Creation of Decent Work and Quality Jobs", *UNFCCC Technical Paper*, available at https://unfccc.int/sites/default/files/resource/Just%20transition.pdf.

[4] The European Investment Bank, *Delivering Climate Change Action at Scale: Our Commitment to Implementation*, viewed at https://www.eib.org/attachments/press/joint-mdb-statement-climate_nov-28_final.pdf

[5] See WTO-UNEP, *Trade and Climate Change*, viewed at https://www.wto.org/english/res_e/booksp_e/trade_climate_change_e.pdf

[6] The WTO MEA Matrix compiles a number of MEAs that include trade provisions as part of their tools to reach their objectives. See https://www.wto.org/english/tratop_e/envir_e/envir_matrix_e.htm.

[7] It is worth noting that Goal 17 of the Sustainable Development Goals (SDGs) highlights trade as one of the "means of implementation" of all SDGs, including Goal 13 on climate action. See https://sdgs.un.org/goals/goal17.

[8] See WTO, *The impact of trade opening on climate change*, viewed at https://www.wto.org/english/tratop_e/envir_e/climate_impact_e.htm.

[9] EC, *SIA in support of the negotiations on a Transatlantic Trade and Investment Partnership (TTIP)*, viewed at https://trade.ec.europa.eu/doclib/docs/2017/april/tradoc_155464.pdf

[10] WTO-UNEP, *Making trade work for the environment, prosperity and resilience*, viewed at https://www.wto.org/english/res_e/publications_e/unereport2018_e.htm. See also WTO-UNEP, Trade and Climate Change, viewed at https://www.unep.org/resources/report/trade-and-climate-change; and WTO, Short Answers to Big Questions on the WTO and the Environment, viewed at https://www.wto.org/english/res_e/publications_e/envirqapublication_e.htm

[11] See UNFCCC, "The concept of economic diversification in the context of response measures", *UNFCCC Technical Paper*, available at https://unfccc.int/files/cooperation_support/response_measures/application/pdf/technical_paper_economic_diversification.pdf; and UNFCCC, "Just Transition of the Workforce, and the Creation of Decent Work and Quality Jobs", *UNFCCC Technical Paper*, available at https://unfccc.int/sites/default/files/resource/Just%20transition.pdf.

carbon trading could save $250 billion per year by 2030 in climate mitigation in the energy sector alone.

1.2 Governments resort to various trade measures to address climate change

1.8. International trade is also an integral part of many Paris Agreement parties' plans to achieve their climate mitigation goals. According to a 2017 study commissioned by UNCTAD mapping the initial 163 NDCs submitted by Parties to the UNFCCC, international trade measures were "pervasive" in almost all NDCs, indicating the often "overlooked" importance of trade for climate action.

1.9. A study and ongoing tracker developed by the Klimalog project of the German Development Institute (DIE) confirms this intersection. According to DIE's "NDCs explorer", 53 NDCs submitted in the context of COP21 include a direct reference to trade or trade elements, 33 include specific trade elements that are geared towards fostering mitigation, while 71 do not mention trade specifically. Still, as pointed out by UNCTAD and others, NDCs – and climate policies more broadly – do not seem to integrate trade strategies and perspectives in a systematic manner, indicating the potential for further development and coherence.

1.10. Various other databases on specific countries' climate actions show a significant number of trade-related measures in the current climate change mitigation and adaptation policies**.** The Policy Instruments for the Environment (PINE) provides information on taxes, fees and charges, tradable permit systems, deposit refund systems, subsidies and voluntary approaches used to address environmental concerns. The International Energy Agency Policies and Measures Database provides access to information on past, existing or planned government policies and measures to reduce GHG emissions**.** It includes information on taxes, fees and charges; tax credits and exemptions; grants; payments and transfers; performance-based payments; payment, finance and taxation; regulations; and codes and standards.

1.11. The information submitted by WTO Members as part of their current notification obligations also reflect this trend. As described below, these notifications clearly confirm that governments have increasingly adopted trade-related measures as part of their overall policies to achieve climate objectives. The examination of these measures and trends provides important insights into the interaction between trade and climate policies and where WTO Members see trade could support their climate ambitions.

2 GROWING NUMBER OF TRADE-RELATED MEASURES NOTIFIED TO ADDRESS CLIMATE CHANGE

2.1. In response to a recommendation in the 1996 Report of the Committee on Trade and Environment (WT/CTE/1), the WTO Secretariat annually updates and compiles all environment-related notifications made by Members to the WTO in an Environmental Database (EDB). This database, which is freely available for the public, contains all environment-related notifications submitted by WTO Members as well as environmental measures and policies mentioned in the Trade Policy Reviews of WTO members. It provides a wealth of information that sheds light on how WTO Members are using trade policy in pursuit of environmental objectives.

2.2. Each WTO notification can make reference to one or more specific environment-related measures. For example, G/MA/QR/N/SGP/4 has a total of 4 climate-related measures. From 2009 to 2019, the accumulated 6,660 notifications in the EDB contain a total of 14,119 environment-related measures. The database also includes environment-related entries identified in the Trade Policy Reviews (TPR) of WTO Members. Since 2009, more than 8,700 TPR entries were included in the database. Since 1997, annual environment-related notifications have more than quadrupled, reaching 672 notifications in 2019. Their importance also seems to be increasing relative to other policies reflected in the notifications: while in 1997 they accounted for 8% of all the notifications their share has steadily increased to around 15% in recent years.

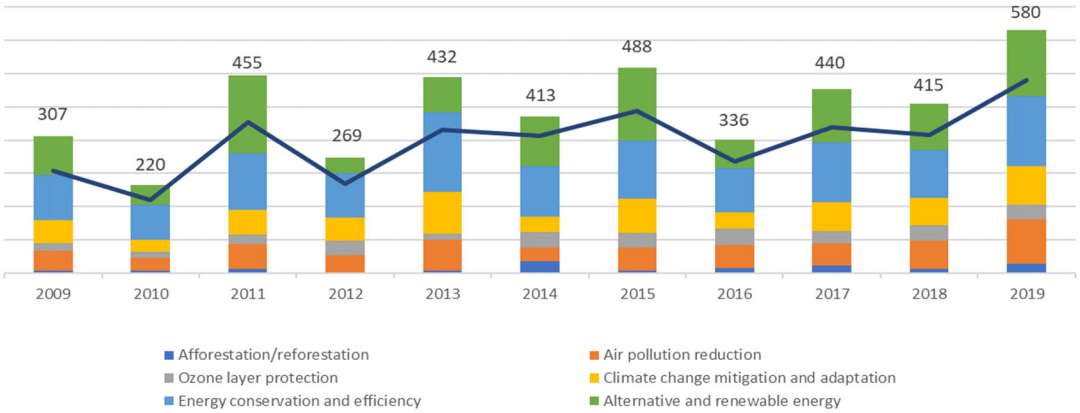
2.3. Besides providing a general overview of the type of information contained in these notifications, this note examines in detail different dimensions of the EDB data, such as the types of products covered by the environmental measures, the WTO Agreement under which they were notified, and the type of trade-related measure used by the Member.

2.1 Climate-related measures and TPR entries in the EDB

2.1.1 Definition and dataset

2.4. The EDB contains information on different environmental objectives, many of which are directly or indirectly linked to climate change, including: afforestation/reforestation; air pollution reduction; ozone layer protection; climate change mitigation and adaptation; energy conservation and efficiency; or alternative and renewable energy. Using the aggregate of these categories as a basis, the EDB currently contains a total of 2360 notifications that reflect 4,355 measures to address climate change notified to the WTO between 2009 and 2019 (32% of all EDB measures).[12] The number of climate-related measures notified has steadily increased in recent years (Figure 1), increasing from 220 measures in 2010 to 580 measures notified in 2019 (the latest year available).

Figure 1. Climate-related measures by environmental objectives (2009-2019)



Source: WTO Secretariat based on the WTO's Environmental Database (EDB).

2.1.2 Type of environment-related objectives

2.5. The objective "Climate change mitigation and adaptation" was specifically identified in 858 of these measures for the overall period 2009-2019. These included, for instance, new regulatory requirements notified by Japan to reduce the use of fluorocarbons (a potent GHG and ozone depleting substance) and promote alternative chemicals with low global warming potential (G/TBT/N/JPN/628) or the support notified by Argentina to increase the adaptability and resilience of small agricultural family farmers against the impacts of climate change (G/AG/N/ARG/43).

2.6. However, "energy conservation and efficiency" and "alternative and renewable energy" are the two main objectives pursued by Members, accounting for 76% of all climate-related measures. For instance, preferential tax treatment for energy-saving and new energy vehicles and vessels (G/SCM/N/343/CHN) and the use of import licences to regulate lighting with Minimum Energy Performance Standards (G/LIC/N/3/AUS/12) are some of the domestic measures implemented by Members to promote energy conservation. Annex II provides more details on the harmonized categories used in the EDB.

[12] The EDB classifies measures based on 25 different "harmonized objectives". The same measure can be assigned more than one harmonized objective. See Annex II for details on the EDB harmonized categories.

2.1.3 WTO Agreements and provisions under which notifications were made

2.7. At least one climate-related measure was notified under almost every WTO Agreement since 2009, which suggests that climate change topics are increasingly relevant for trade officials and experts in different areas. Most of these measures were submitted under the WTO Agreement on Subsidies and Countervailing Measures (45%) and Agreement on Technical Barriers to Trade (TBT) (36%), potentially highlighting the importance of discussions in the Committees responsible for these Agreements (Table 1).

Table 1. Climate-related measures notified per WTO Agreement or provision (2009-2019)

Agreement	Number of measures	Share (%)
Subsidies and Countervailing Measures	1961	45.0%
Technical Barriers to Trade (TBT)	1576	36.2%
Agriculture	331	7.6%
Import Licensing Procedures	266	6.1%
Quantitative Restrictions (GATT Art. XI)	141	3.2%
Government Procurement	34	0.8%
Trade Facilitation	10	0.23%
State Trading	9	0.21%
General Agreement on Trade in Services	8	0.18%
Safeguards	8	0.18%
Customs Valuation	3	0.07%
Trade-Related Aspects of Intellectual Property Rights	3	0.07%
Sanitary and Phytosanitary Measures (SPS)	2	0.05%
Regional Trade Agreements	2	0.05%
GATT Article XVIII, Section C	1	0.02%

Source: WTO Secretariat based on the WTO's Environmental Database (EDB).

2.1.4 WTO Members who notified climate-related measures

2.8. Since 2009, over 100 WTO Members have notified at least one climate-related measure. While developed Members were responsible for around 58% of these measures, it is notable that developing (1,588 measures) and least-developed Members (81) also notified a significant number of climate-related measures, with a marked increase in the past few years. For example, while climate-related measures notified yearly by developed Members increased by around 60% between 2009 to 2019, those notified by developing Members increased about 150% in the same period. However, there is a high concentration in terms of the Members that have submitted these notifications, as ten Members account for approximately 70% of the climate-related measures. United States, (1,124), followed by the European Union (779), China (316), Australia (184), Canada (150), Japan (146), Chinese Taipei (89), Chile (79), Thailand (72) and Ecuador (69) are the Members who most notified climate-related measures.

2.1.5 Types of measures

2.9. The EDB data also shows that Members use a wide variety of trade policy instruments to address climate-related issues.[13] Technical regulation or specifications, followed by grants and direct payments were the most common types of measures or instruments notified by Members, followed by conformity assessment procedures and tax concessions (Table 2).

[13] The EDB classifies measures based on 30 different "harmonized types of measures". The same measure can be assigned more than one type of harmonized measure. For instance, a conditional ban can be assigned the categories of both "Ban/Prohibition" and "Technical regulation or specification".

Table 2. Top 10 types of climate-related measures notified by Members

Harmonized types of measures EDB	Number of measures	Share (%)
Technical regulation or specifications	1463	33.6%
Grants and direct payments	1170	26.9%
Conformity assessment procedures	607	13.9%
Tax concessions	585	13.4%
Import licences	295	6.8%
Loans and financing	278	6.4%
Countervailing measure / investigation	201	4.6%
Ban/Prohibition	173	4.0%
Non-monetary support	143	3.3%
Export licences	77	1.8%

Source: WTO Secretariat based on the WTO's Environmental Database (EDB).

2.10. A deeper look at these measures provides interesting examples on the use of these different trade policies. For instance, Iceland notified that public tenders might include the "cost of releasing greenhouse gasses […] and other costs involved in reducing climate change" in the calculation of 'life-cycle costs" (GPA/144). Other WTO Members have notified various conformity assessment procedures to certify energy efficiency and emission standards (e.g. G/TBT/N/CAN/551, G/TBT/N/EGY/178 or G/TBT/N/NZL/79). By providing a systematized way to identify and compare trade policies adopted for similar climate-related objectives, it is possible not only to promote peer-learning and best practices, but also to facilitate the identification of potential unnecessary or counterproductive regulatory divergences.

2.11. When grouped and analysed based on the 2019 International Classification of NTMs[14], which is commonly used by international organizations to study trade-related measures, the data shows that 53% of the notified climate-related measures fall under the category Subsidies and other forms of support (Chapter L), followed by 36% Technical Barriers to Trade (under Chapter B), and 9% Non-automatic import licensing, quotas, prohibitions, quantity-control measures and other restrictions (Chapter E). Annex I provides a more detailed analysis of these categories.

2.1.6 Types of sectors and products covered

2.12. In terms of the types of sectors affected by these notifications, all the harmonized sectors covered by the EDB were affected by at least a few dozen climate-related measures. Most measures contained actions to address climate-related objectives within the Manufacturing sector (48%) and the Energy sector (32%), followed by Chemicals (10%) and Agriculture (9%).[15] The least affected sectors were Fisheries (28 measures) and Mining (100 measures). In terms of types of products covered by these measures[16], Harmonized System (HS) chapters relevant to affected sectors were identified; around 2000 measures covered manufacturing goods under chapters 84 and 85 of the HS, which include nuclear reactors, boilers, machinery, mechanical appliances, and electrical machinery and equipment. Several other measures are associated to HS chapters 73, 87 and 90 (Table 3).

[14] For this analysis, an effort was made by the authors to establish a link with UNCTAD's International Classification of Non-tariff Measures (NTMs)- 2019 version, which provides a taxonomy of all measures considered relevant in today's international trade.

[15] The EDB classifies measures based on 11 different "harmonized types of sectors" affected. The same measure can "affect" more than one sector and/or HS chapters.

[16] The analysis of the types of products is based on the Harmonized Commodity Description and Coding System (HS), which is a standard nomenclature used by Members to identify covered products in most of these notifications and to implement the measures in practice. Each measure in the EDB data was linked to relevant Chapters of the HS, including an assumption for those measures that did not clearly indicate a specific product coverage.

Table 3. Top-5 HS Chapters linked to climate-related measures that have been notified

HS Chapter	Measures	Description HS Chapter	Share
84	2019	Nuclear reactors, boilers, machinery, and mechanical appliances	23%
85	1868	Electrical machinery and equipment	21%
73	967	Articles of iron or steel	11%
87	574	Vehicles other than railway or tramway rolling stock	6%
90	464	Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus	5%
38	215	Miscellaneous chemical products	2%

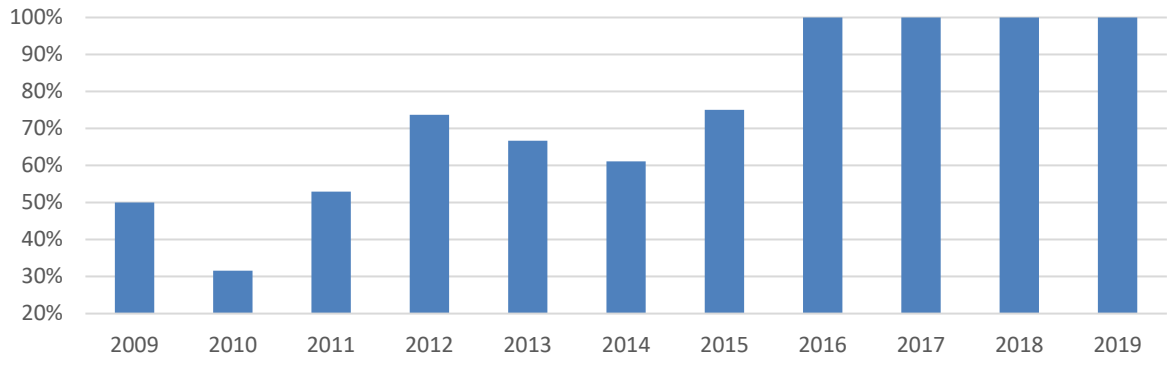
Source: WTO Secretariat based on the WTO's Environmental Database (EDB).

2.1.7 Trade Policy Reviews

2.13. The Trade Policy Reviews (TPRs) periodically analyse the trade policies and practices of all WTO Members. The reviews are undertaken by WTO Members and are based on two documents: an independent factual report by the WTO Secretariat, and a report by the government (policy statement). The concluding remarks by the Chair of the WTO's Trade Policy Review Body read at the end of the meeting summarizes the main points and areas raised by Members.

2.14. There have been 190 TPRs between 2009 and 2019. Based on a keyword search analysis, on average, 70% of these TPRs have included references to climate change related policies.[17] However, here as well there is a clear growing trend towards more TPRs including at least one reference to climate change: since 2016, 100% of WTO TPRs have included at least one climate-related entry (Figure 2). For example, the 2019 Secretariat TPR of Bangladesh (WT/TPR/S/385/Rev.1) notes how "Bangladesh's climate-sensitive agricultural sector continues to make a significant, albeit steadily declining, contribution to the economy (13.7% of GDP in 2017/18), and accounts for a large portion of employment and rural income, and the expansion of exports", while the 2017 Government TPR of Mexico (WT/TPR/G/352/Rev.1) noted how a "tax was introduced on fossil fuel consumption in line with the carbon content of the fuel."

Figure 2. Share of TPRs that included climate-related entries



Source: WTO Secretariat based on the WTO's Environmental Database.

2.15. Data presented in this note shows that climate change-related trade measures are increasingly being adopted by Members. This provides relevant and useful insights on the evolving interaction between trade and climate policies.

[17] The keywords used to filter climate-related TPRs were: greenhouse, climate, GHG, emission, carbon, renewable.

ANNEX I

EDB MEASURES CATEGORIZED UNDER INTERNATIONAL CLASSIFICATION OF NON-TARIFF MEASURES

Harmonized chapter UNCTAD (non-tariff measures)	Number of measures
L: Subsidies and other forms of support	2296
B: Technical Barriers to Trade	1576
E: Non-automatic import licensing, quotas, prohibitions, quantity-control….	412
M: Government procurement restrictions	34
D: Contingent trade-protective measures	8
H: Measures affecting competition	8
B: Technical Barriers to Trade	4
N: Intellectual property	3
J: Distribution restrictions	3
A: Sanitary and phytosanitary measures	2
C: Pre-shipment inspection and other formalities	2
F: Price-control measures, including additional taxes and charges	2
I: Trade-related investment measures	1

ANNEX II

EDB HARMONIZED CATEGORIES

EDB Harmonized categories of environment-related objectives (25)

Afforestation/reforestation
Air pollution reduction
Alternative and renewable energy
Animal protection
Biodiversity and ecosystem
Chemical, toxic and hazardous substances management
Climate change mitigation and adaptation
Energy conservation and efficiency
Environmental goods and services promotion
Environmental protection from pests and diseases
Environmentally friendly consumption
General environmental protection
MEAs implementation and compliance
Natural resources conservation
Other environmental risks mitigation
Ozone layer protection
Plant protection
Soil management and conservation
Sustainable agriculture management
Sustainable and environmentally friendly production
Sustainable fisheries management
Sustainable forestry management
Sustainable mining management
Waste management and recycling
Water management and conservation

EDB Harmonized categories of type of measures (31)

Anti-dumping measure / investigation
Ban/Prohibition
Conformity assessment procedures
Countervailing measure / investigation
Environmental provisions in trade agreements
Export licences
Export quotas
Export tariffs

General environmental reference[18]
Grants and direct payments
Import licences
Import quotas
Import tariffs
Income or price support
Intellectual property measures
Internal taxes
Investment measures
Loans and financing
Non-monetary support
Not specified
Other environmental requirements
Other measures
Other price and market based measures
Other support measures
Public procurement
Quarantine requirements
Regulation affecting movement or transit
Risk assessment
Safeguard measure / investigation
Tax concessions
Technical regulation or specifications

EDB Harmonized categories of sectors subject to the measure (11)

Agriculture
All products/economic activities
Chemicals
Energy
Fisheries
Forestry
Manufacturing
Mining
Not specified
Other
Services

[18] "General environmental reference" is a harmonized category that was introduced for EDB TPR entries from 2016 onwards.