



ENhanced understanding of Trade Impacts
on Climate, industries, and the Environment

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Understanding the Trade- Climate-Industry nexus in a fragmenting world

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E3Modelling *on behalf of the* ENTICE project



The ENTICE project has received funding
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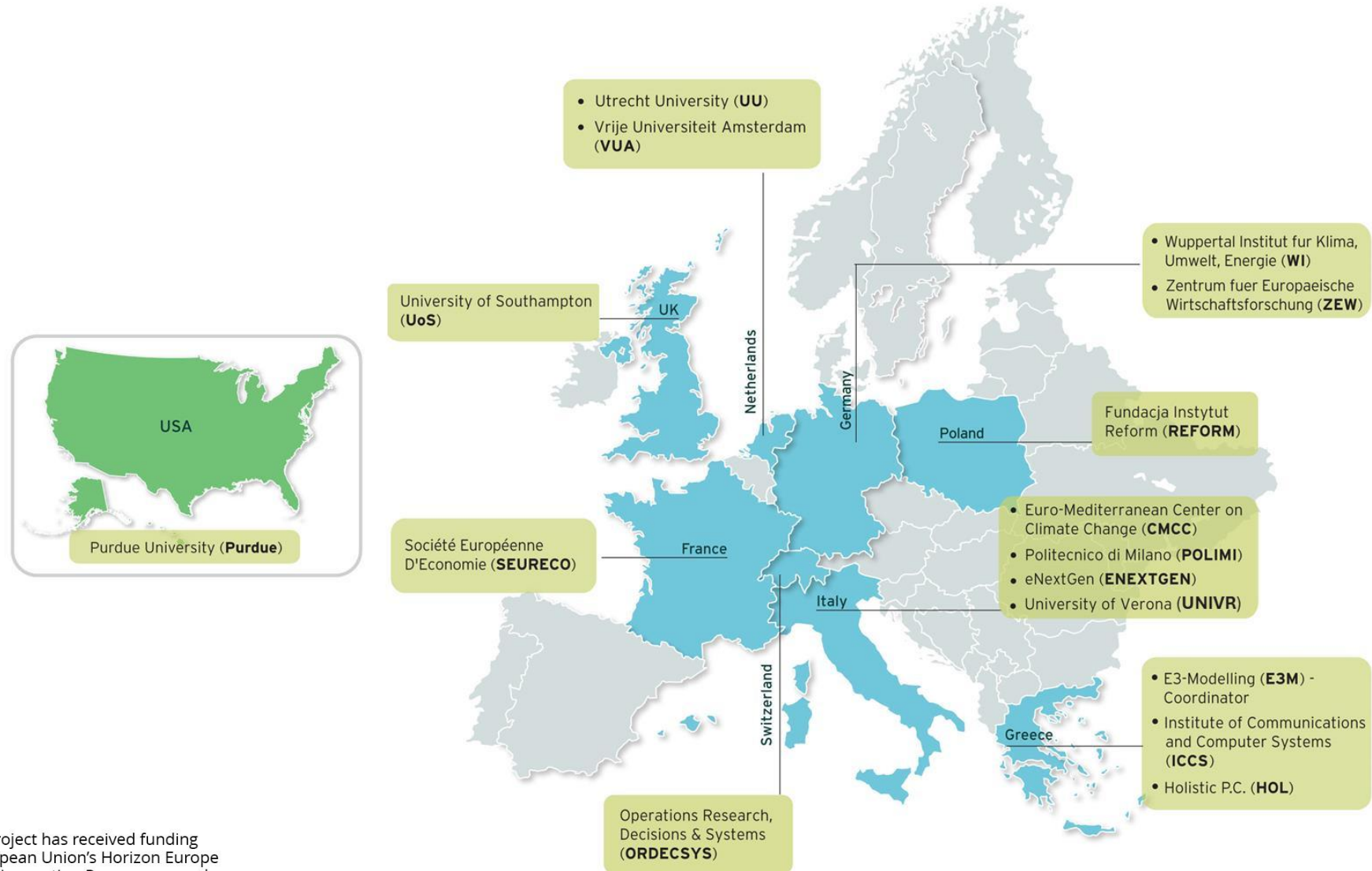
Project Overview

Title:	EN hanced understanding of T rade I mpacts on C limate, industries, and the E nvironment (ENTICE)
Funding:	European Union's Horizon Europe Research and Innovation Programme (HE)
Lifetime:	January 2025 - December 2028 (48 months)
Coordination:	E3-MODELLING AE (E3M)
Participants:	15 beneficiaries; 1 associated partner
Call/Grant:	HORIZON-CL5-2024-D1-01-04/101184775



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Consortium



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Objectives

- O₁. Enhance scientific knowledge and provide a new paradigm for **modelling of trade** and **trade policy on climate**
- O₂. Extend the **statistical and empirical data foundation** to support the study of the **effects of trade and trade policies on climate**.
- O₃. Develop a state-of-the-art **modelling toolbox** to provide insights on **climate and trade policy interactions**
- O₄. Improve our understanding on how **key trade characteristics** like scale, technique, and composition **affect the environment**
- O₅. Enhance understanding of the **environmental impacts of trade** in **agriculture, forestry, material resources, and (bio-) energy sectors** and the **interaction between trade liberalization** and **environmental regulations**
- O₆. Analyze the **impact and interplay** of existing and emerging **trade, climate, and industrial policies**
- O₇. **Implement research** and **develop tools** that directly respond to **stakeholder needs**
- O₈. Emphasize on **transparency, openness, and legitimacy**



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Trade-Climate-Industry Framework

**Scan the QR code to access the policy
brief on the TCI Framework**



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Purpose of the TCI Framework

Objective: Analyze the interplay between existing and emerging Trade, Climate, and Industrial (TCI) policies, and assess their economic and environmental impacts.

The TCI framework aims:

- › to **guide the qualitative analysis** of TCI policies and corresponding political narratives throughout the ENTICE project;
- › to provide the **foundations of a common language** enabling effective interdisciplinary collaboration among researchers with diverse backgrounds;
- › to provide a **canvas for constructive engagement with stakeholders** in the project's co-creation mechanism;
- › eventually to leverage this guidance for qualitative analysis, interdisciplinary collaboration, and co-creation towards facilitating/enabling scenario modelling to quantitatively underpin climate and trade policymaking.



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Key Elements of the TCI Framework

- › **Definitions** and **interactions** between the **three policy domains** (Trade – Climate – Industry)
- › **Economic foundations** and the **policy dimension**
- › **Policy classifications** or **taxonomies** → towards an integrated perspective
- › A view on **commodities**



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Definitions and Interactions

TRADE POLICY encompasses the set of laws, regulations, strategies, and actions adopted by governments, which affect a country's (or a group of countries') foreign trade.

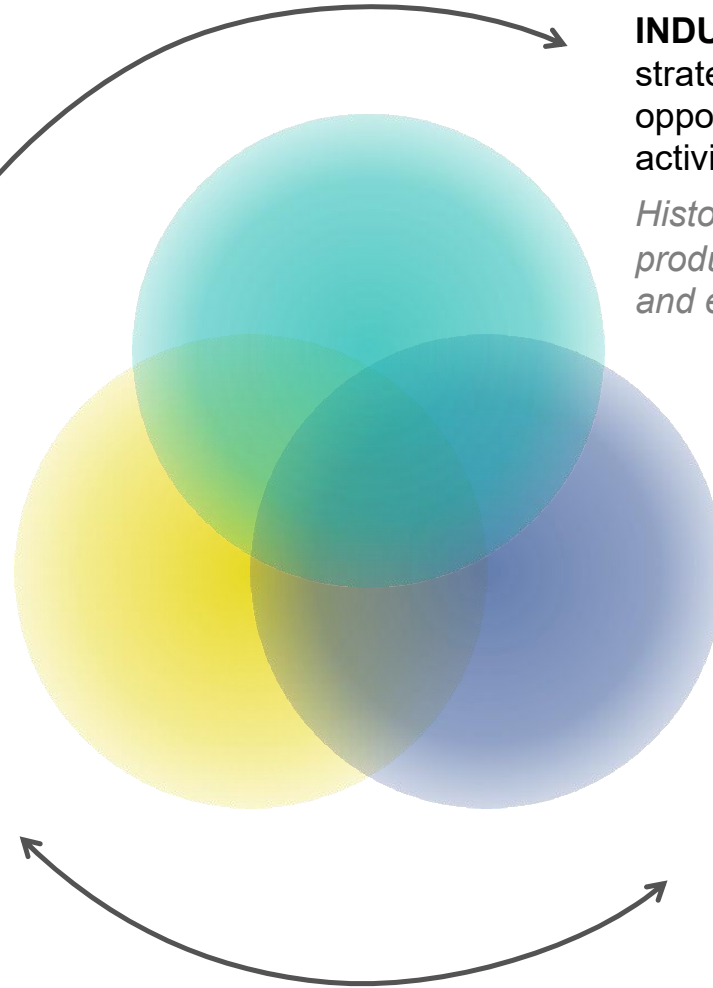
Historically, its objective has been to integrate a country in the global economy by strengthening the economic links among nations assuming that international trade is beneficial for everyone.

INDUSTRIAL POLICY comprises the set of laws, regulations, strategies, and actions adopted by governments that explicitly guide, oppose, or control the transformation of the structure of economic activity in pursuit of some public goal.

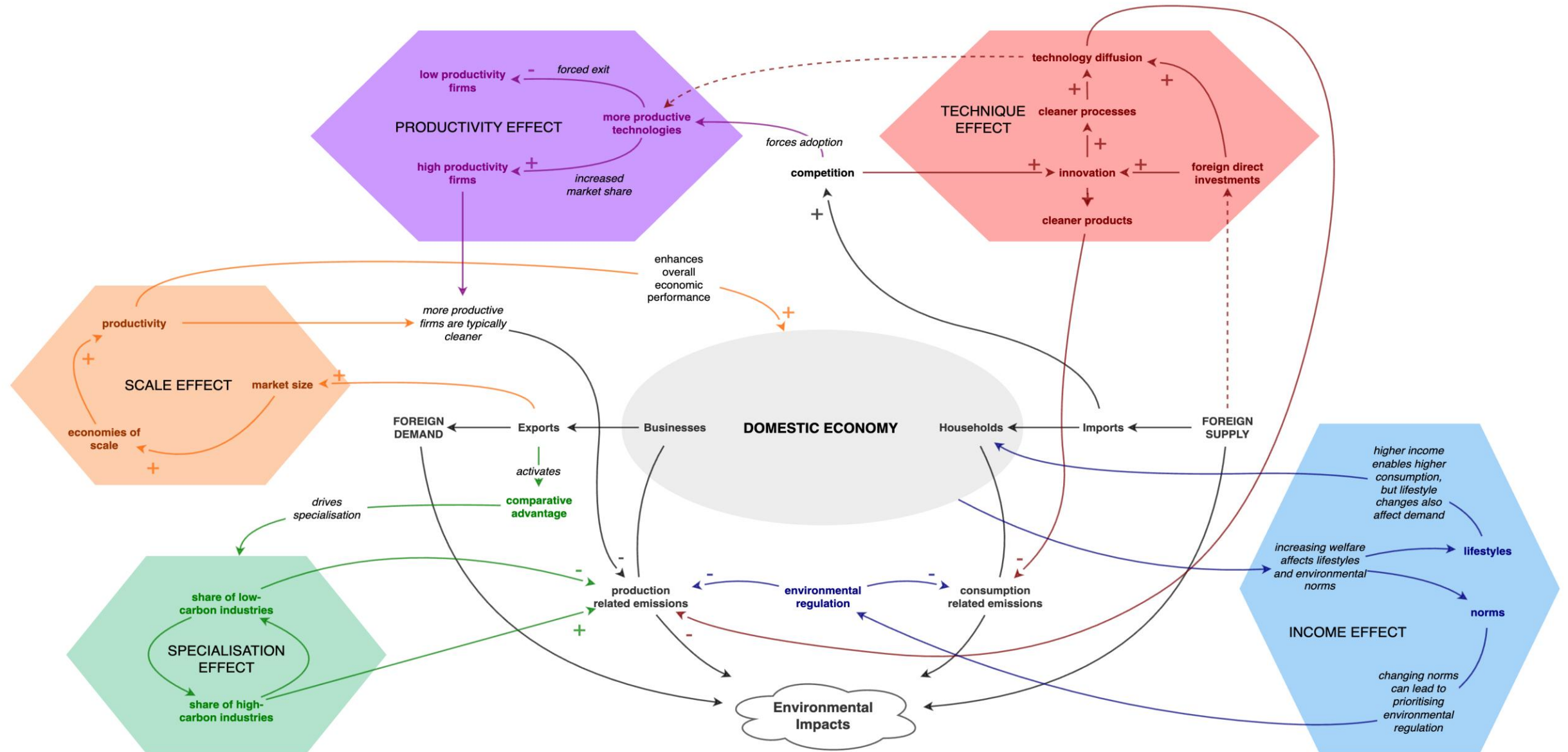
Historically, its primary goal has been to stimulate innovation, productivity and economic growth. Recently, economic resilience and environmental concerns are receiving increasing attention.

CLIMATE POLICY refers to the laws, regulations, strategies and actions taken by governments, organizations, and other entities to minimize anthropogenic greenhouse gas emissions (mitigation), prepare natural ecosystems and human systems – populations, economic activities, and infrastructure – for the impacts of unavoidable climate change (adaptation).

Its objective is to prevent dangerous anthropogenic interference with the climate system to enable economic development to proceed in a sustainable manner.



Economic Foundations – Environmental Footprint of Trade beyond Direct Emissions



Adding the Policy Dimension

Trade Policy:

- › Trade is at the core of all five economic mechanisms outlined previously.
- › The scale effect is not directly affected by import-related trade measures of a given country, but an exporting country will only be able to realize the scale and specialization effects if the importing country is not reciprocating with trade measures.

Industrial Policy:

- › By definition IP is focused on economic structure i.e. composition, specifically inter-industry composition. Hence industrial policy primarily affects the **specialization effect**.
- › The **productivity effect** (intra-industry composition) may also be affected for instance when industrial policy aims to establish “national champions” or to attract foreign direct investment.
- › In practice, the **causality is reversed**: industrial policy is motivated by unintended structural effects of trade.

Climate Policy:

- › Climate policies are predominantly interacting with the **technique and productivity effect**.
- › Climate policy (internalization of negative externalities) seeks to ensure that the more productive and profitable companies are also the cleanest (pollution reduction by rationalization hypothesis).
- › The internalization of externalities will also change incentives for innovation. Economic climate policies also interact with the technique effect.
- › Climate policies may also affect the inter-industry composition (**specialization effect**) of a given country, but this is typically an unintended consequence. > Free allocation and CBAM are supposed to correct for this effect.



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Overview of TCI – Taxonomy

CATEGORY	SUB-CATEGORY	
OVERARCHING	framework legislation	
	strategic planning	
ECONOMIC	carbon pricing	
	other market-based mechanisms	
	subsidies (OPEX)	
	subsidies (CAPEX)	
	direct investments	
	procurement	
	insurance	
	REGULATORY	codes & standards
COMPETITION	competitive markets	
	monopolistic measures	
TRADE	import-related	
	export-related	
	foreign direct investments	
	trade defence	

POLICY INSTRUMENT
feed-in tariffs or premiums
tax credits
price caps (e.g. electricity)
CfD
removal of inefficient subsidies
tariff rebates (e.g. grid tariffs)
other OPEX subsidies

POLICY INSTRUMENT
export tariffs, bans, quotas
export subsidies
export credit guarantees

CATEGORY	SUB-CATEGORY
MONETARY	currency manipulation
	monetary adjustments
INNOVATION	research programmes
	innovation systems
INFORMATION	company & product level
	consumer level
	societal level
EDUCATION & CAPACITY	labour
	administration
	individual
INFRASTRUCTURE	physical (e.g. power, H2, adaptation)



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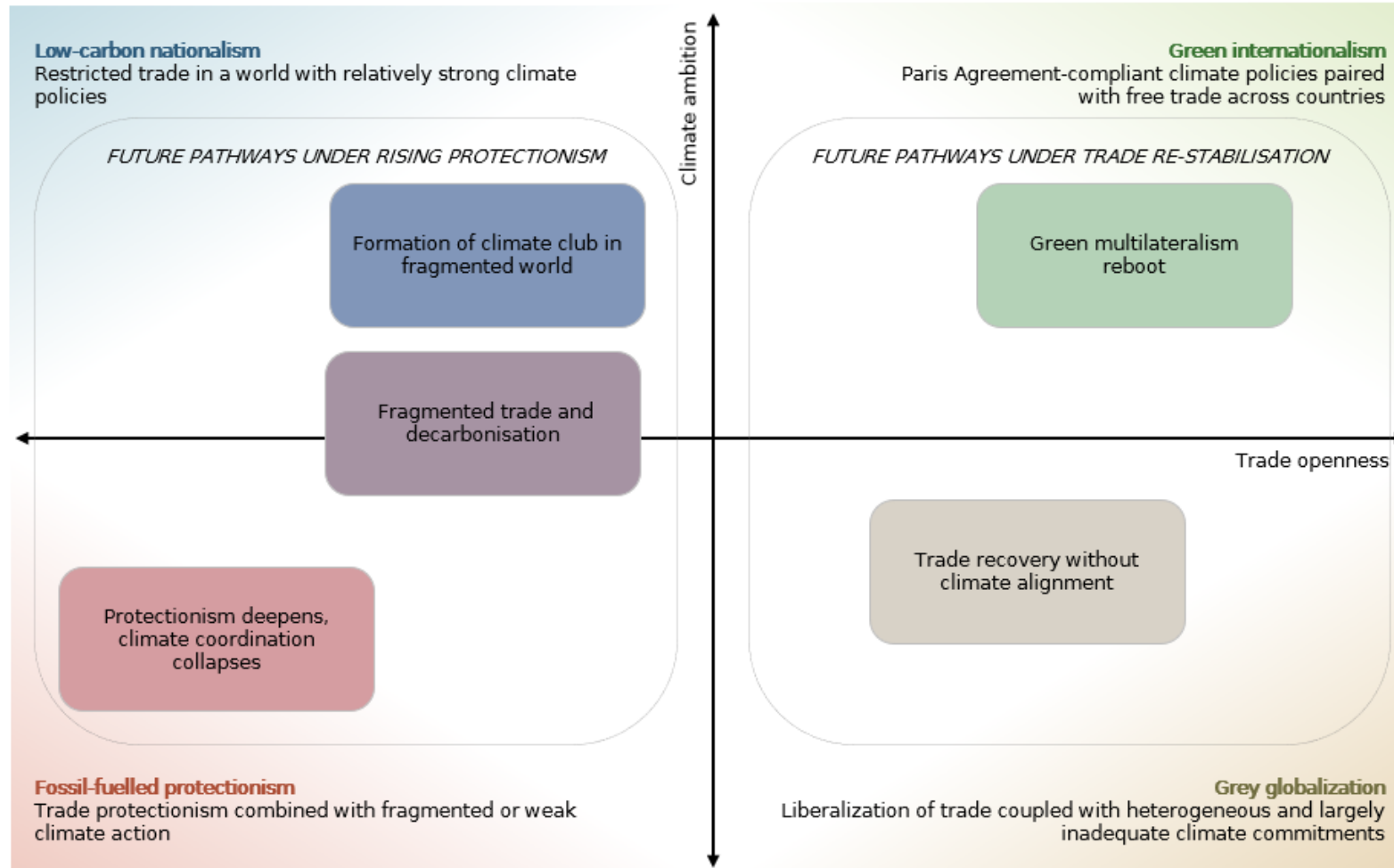
View on Commodities

Category	Upstream Emission Hotspots	Downstream Emission Hotspots	Key Environmental Impacts
Energy	Extraction, Processing, Inbound Transport (Fossil Fuels); Raw Material Mining, Manufacturing (Renewables)	Combustion (Fossil Fuels); Use Phase/Operation (Renewables)	GHG Emissions, Land Degradation, Water Contamination (Fossil Fuels); Resource Depletion (Renewables)
Raw Materials	Extraction, Initial Processing, Inbound Transport	Limited (often processed further by others)	Land Degradation, Habitat Loss, Water Contamination, Air Pollution, GHG Emissions, Biodiversity Loss
Basic Materials	Production of Feedstocks, Energy-Intensive Manufacturing, Inbound Transport	Limited (often intermediate products)	Direct GHG Emissions (process & combustion), Energy Consumption, Water Use
Food & Agriculture	Land Use Change (Deforestation), On-farm Production (Fertilizers, Livestock), Processing, Transport	Transport (perishable), Consumption, Waste	Deforestation, GHG Emissions (Methane, Nitrous Oxide), Water Scarcity/Pollution, Biodiversity Loss, Land Degradation
Manufacturing Equipment	Raw Material Extraction, Component Manufacturing, Assembly, Inbound Transport	Use Phase (Energy Consumption), End-of-Life Disposal	Embodied Carbon (GHG), Resource Depletion, Waste
Consumer Goods	Raw Material Extraction, Component Manufacturing, Assembly, Inbound Transport	Use Phase (Energy Consumption), End-of-Life Disposal/Waste	Embodied Carbon (GHG), Downstream Waste, Resource Depletion



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Illustrative Scenario Framework for Analyzing Climate Action and Trade Openness



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TCI Framework – Survey

We value your input! Please scan the QR code to share your feedback on the TCI Framework.



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Thank you!



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