Universidad de La Laguna

Qué hemos conseguido con la fiscalidad Ambiental?

Reflexiones tras tres décadas de investigación y aplicaciones

Xavier Labandeira

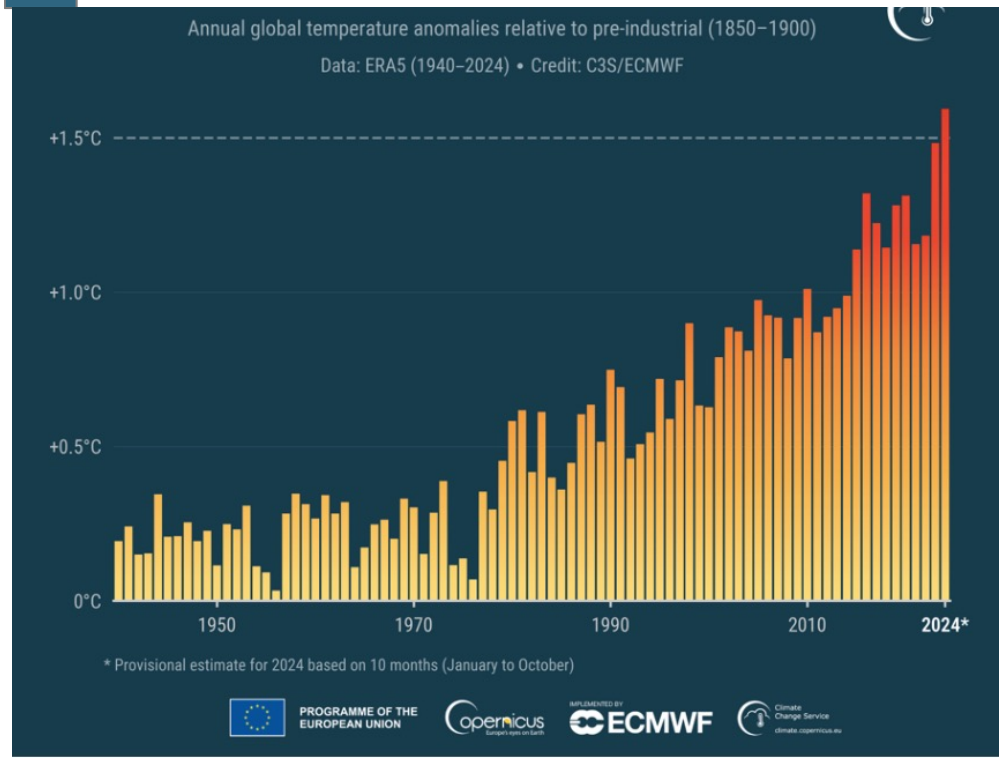
Universidade Vigo

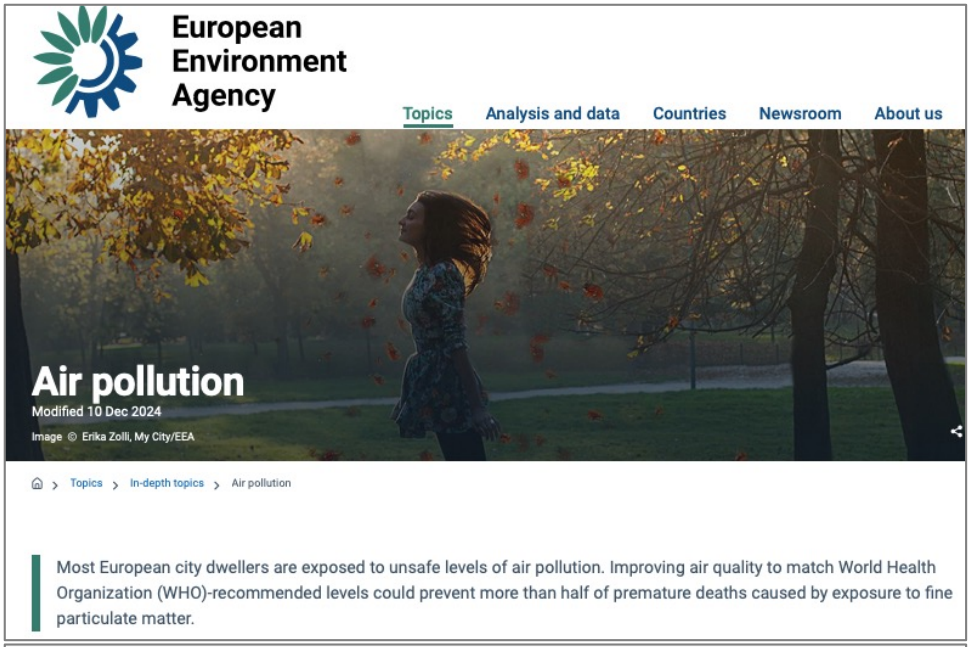
ECOBAS
Economics and Business Administration for Society

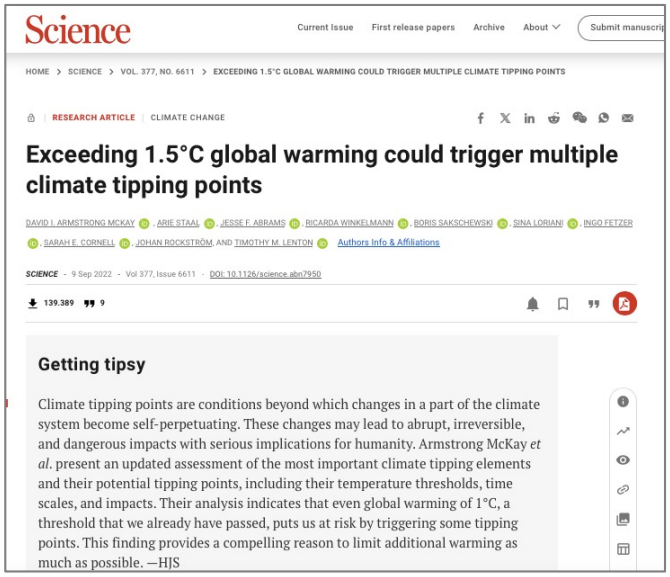
Tenerife, 27 marzo 2025

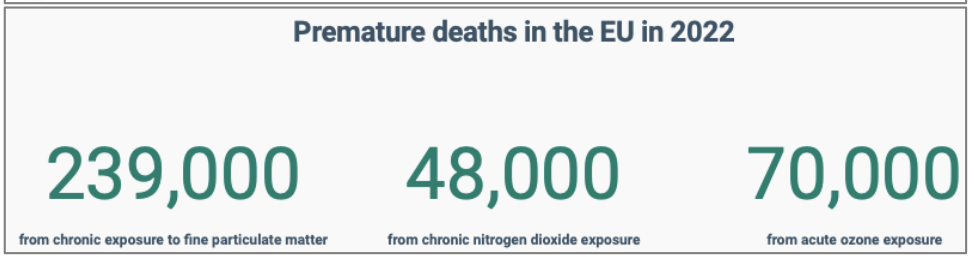
- **Por qué este seminario?**
- **Teoría y práctica de la fiscalidad Ambiental**
- **Expectativas no cumplidas**
- **Qué esperar del futuro?**
- **Algunas reflexiones para España**

Environmental Taxation









The Economic Journal, 101 (July 1991), 938–948
Printed in Great Britain

THE ROLE OF CARBON TAXES IN ADJUSTING TO GLOBAL WARMING

David Pearce

I. INTRODUCTION

In August 1990, Working Group 1 of the United Nations Intergovernmental Panel on Climate Change (IPCC) published its assessment of the scientific evidence on global warming (Houghton, Jenkins and Ephraums, 1990). Referring to the greenhouse effect as a natural phenomenon, the Working Group was none the less of the opinion that:

> emissions resulting from human activities are substantially increasing the atmospheric concentrations of the greenhouse gases: carbon dioxide, methane, chlorofluorocarbons (CFCs) and nitrous oxide. These emissions will enhance the greenhouse effect, resulting on average in an additional warming of the Earth's surface. The main greenhouse gas, water vapour, will increase in response to global warming and further enhance it.

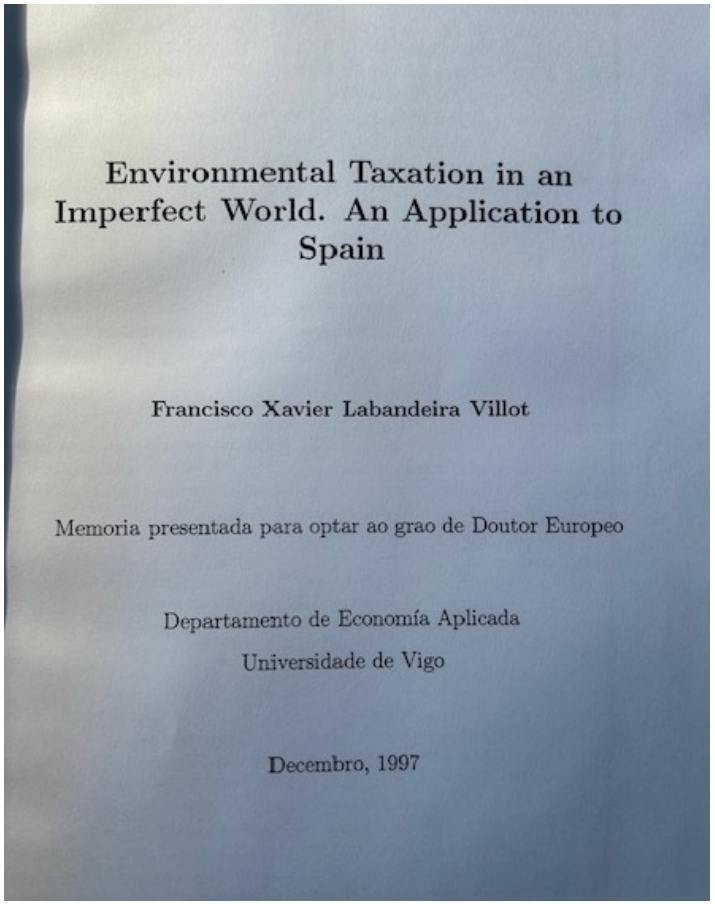
Scientific opinion continues to differ on the extent to which global warming is 'real', although the IPCC report poses a formidable challenge for anyone choosing not to believe it.[1] From the economic standpoint, the uncertainty is unlikely to alter the appropriate policy stance, provided certain conditions are met. These are:

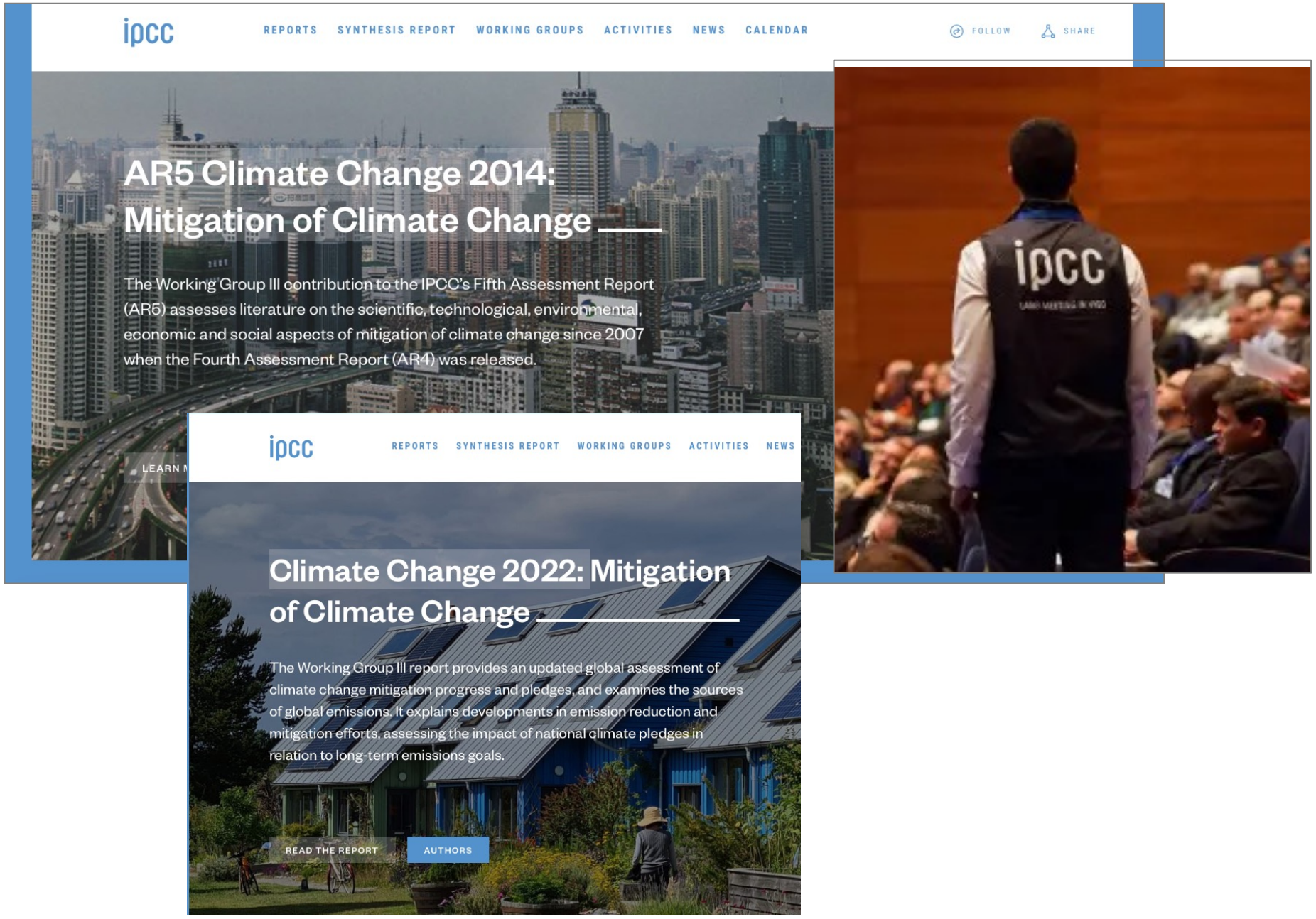
(*a*) That if warming occurs it will impose significant damage;
(*b*) that the damage is irreversible;
(*c*) that the *initial* costs of controlling greenhouse gas emissions are low,
(*d*) that greenhouse gas controls bring incidental or joint benefits besides the containment of global warming.

As the previous two papers have shown, the evidence about these conditions is itself disputed. However, even the central projections of global warming in the IPCC scenarios take the world into *rates* of warming, and, eventually, *levels* of warming outside the known tolerances of ecosystems in which mankind has a stake. If so, there is genuine uncertainty which alone should dictate a cautious stance in policy terms.[2]

Moreover to all intents and purposes, global warming is irreversible. Damages ought therefore to attract a higher weighting than comparable costs, either (*a*) through the inclusion of damage costs over very long time horizons (technically, to infinity) – in which case the issue of the choice of the appropriate discount rate arises, or (*b*) through some premium on costs for

[1] The main challenge to IPCC has come from the George C. Marshall Institute, *Scientific Perspectives on the Greenhouse Problem*, George C. Marshall Institute, Washington D.C., 1990. For a severe critique of this report see J. Gribbin, 'An Assault on the Climate Consensus'. *New Scientist*, 15 December 1990, 26–31.
[2] For a discussion, see Pearce (1990).

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EL PAÍS

Clima y Medio Ambiente

EMERGENCIA CLIMÁTICA > | OPINIÓN

Fiscalidad ambiental: se agotan las excusas y el tiempo para actuar

El Congreso bloquea una medida necesaria para conseguir la reducción y eliminación del uso de los combustibles fósiles, causa principal del cambio climático

Vista gener

XAVIER LABANDEIRA

28 NOV 2024 - 13:29 CET

- **A very rich setting**
  - Environmental rationale
  - A tax: Public economics
  - Crucial role of energy in most environmental problems
  - A simple definition: Budget revenue side, tax rates and bases should lead to environmental gains (counterfactual)
  - Good to consider for description/analysis

$$t^*TB(-E)=R$$

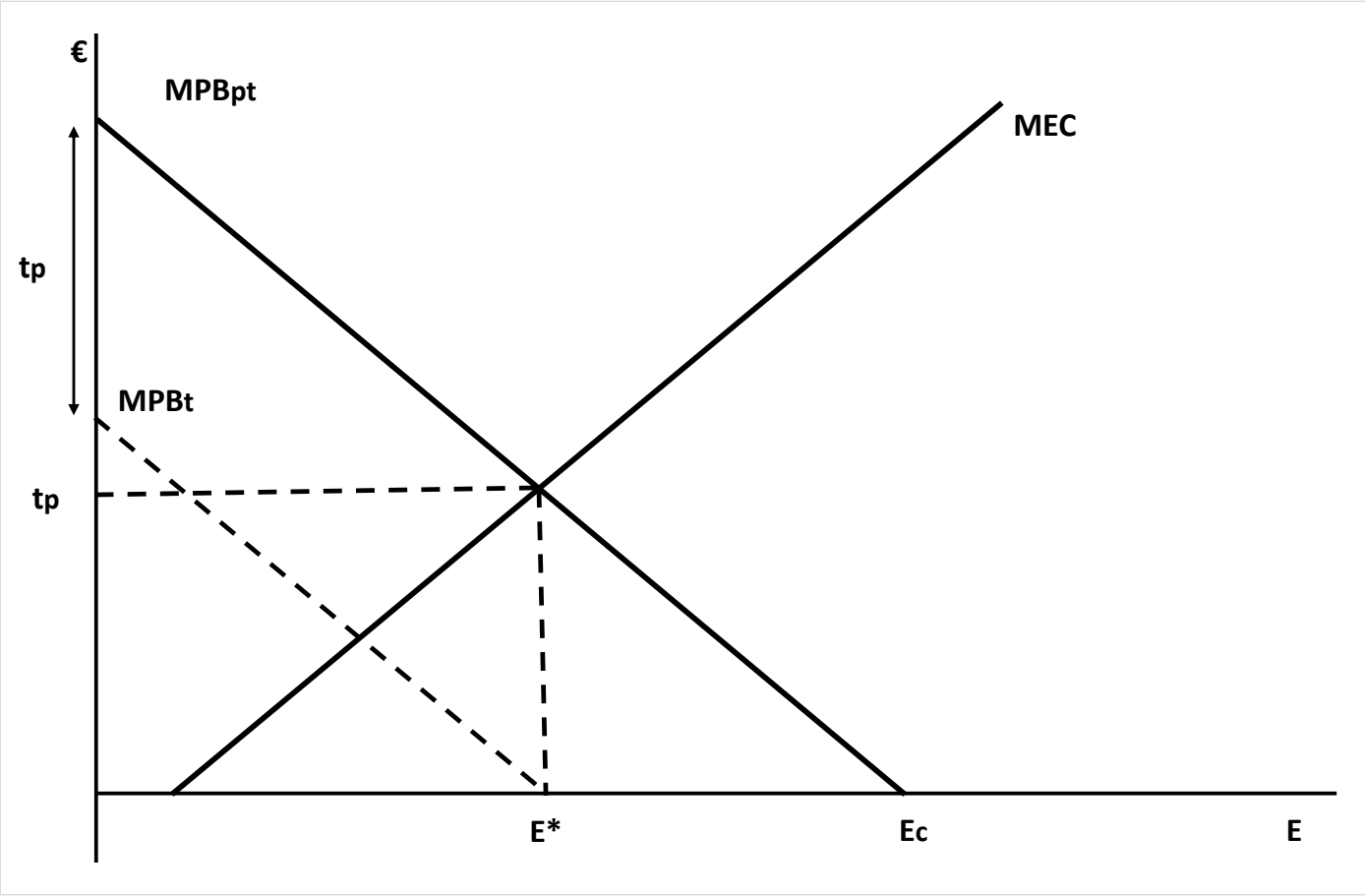
  - Normative and positive approaches

- **Essential questions to consider**
  - Environmental effects
  - Socio-economic impacts
    - Distribution
      - Households
      - Sectors
      - Regions
    - Competitiveness
    - Revenues
  - Administrative Feasibility

- **"Invented" by economists**
  - Environmental Economics
    - A young discipline: an issue of scarcity
    - Externality (1): Why do we have environmental problems?
    - Externality (2): How to valuate?
    - Externality (3): Environmental Policy options
  - and natural resources management?
    - Related, but not the same: fees, charges

Social costs, benefits and public intervention

- The problems of first-best: environmental valuation; other imperfections



Second-best approaches

- Baumol and Oates, "theory of environmental policy"
- Exogenous environmental quality or objective (eg those set by the Paris agreement; international commitments on emissions reductions, etc.)
- (or more discretionary environmental tax rate, approaching the damage: eg non-optimal assessments of externalities)
- Taxes keep efficient properties:
  - Cost-effectiveness (static)
  - Dynamic efficiency

Table 1. Spanish Environmental Commitments and Current Situation

Environmental Problem / Reference Year	Target	Latest data
1. Greenhouse Gas Emissions (GHG) / 1990	-23% in 2030	+8,5% (2019)
1b. GHG emissions diffuse sectors/2005	-26% in 2030 (-37.7% in 2030, *Fit for 55*)	-15,1% (2019)
2. Emissions of Nitrogen Oxides (NOx) / 2005	-41% between 2020-2029 -62% from 2030	-50,3% (2019)
3. Emissions of Volatile Organic Compounds other than Methane (NMVOC) / 2005	-22% between 2020-2029 -39% from 2030	-23,3% (2019)
4. Ammonia (NH3) Emissions / 2005	-3% between 2020-2029 -16% from 2030	-2,8% (2019)
5. Particulate Matter 2.5 ($PM_{2,5}$) Emissions / 2005	-15% between 2020-2029 -50% from 2030	-8,6% (2019)
6. Energy efficiency (Mtoe)	Primary energy: 122.6 (2020); 98.5 (2030) Final Energy: 87.23 (2020); 73.60 (2030)	Primary energy: 120.75 (2019) Final energy: 86,30 (2019)
7. Weight of waste produced / 2010	-10% in 2020 -15% by 2030	-8,1%* (2018) -6,9%** (2018)
8. Household and similar wastes destined for preparation for reuse and recycling.	50% by 2020	35%*** (2018)
9. Non-hazardous construction wastes destined for preparation for reuse and recycling.	70% in 2020	47%**** (2018)
10. Recovery of the costs of water-related services.	100%	67,9%

Data sources: MITECO, *Inventario Nacional de Emisiones a la Atmósfera*; INE, *Estadísticas sobre Recogida y Tratamiento de Residuos*; MITECO, *Memoria Anual de Generación y Gestión de Residuos*; European Commission, *Commission Assessment for Spain's NECP*; Eurostat, Energy Efficiency; MITECO, *Síntesis de los Planes Hidrológicos Españoles. WFD Second Cycle (2015-2021)*

Notes: * Amount of non-hazardous and hazardous waste managed; ** Amount of municipal waste collected; *** Weight of waste recycled and composted out of total municipal waste collected; **** Weight of waste destined for recovery and backfilling operations out of total non-hazardous waste.

Marginal external costs of vehicle use

Externality	Fuel	Type of road	MEC (€ct/vkm)
Congestion	All	Motorway (metropolitan)	26.8-61.5
		Main (metropolitan)	141.3-181.3
		Other (metropolitan)	159.3-242.6
		Main (urban)	48.7-75.8
		Other (urban)	139.4-230.5
		Motorway (rural)	13.4-30.8
		Main (rural)	18.3-60.7
		Other (rural)	42.0-139.2
Local pollution	Diesel	Urban	0.7-10.3
		Sub-urban	0.3-3.4
		Rural	0.2-1.2
		Motorway	0.2-1.3
	Gasoline	Urban	0.4-3.8
		Sub-urban	0.1-3.5
		Rural	0.1-2.8
		Motorway	0.1-3.5
	Electricity	Urban	0.72
		Rural	0.99
Global pollution	Diesel	Urban	1.6-3.0
		Rural	1.1-2.3
		Motorway	1.2-2.7
	Gasoline	Urban	2.4-3.9
		Rural	1.4-2.3
		Motorway	1.5-2.3
	Electricity	Average	1.7
Accidents	All	Motorway	0.1
		Uban	0.3
		Other	0.2
Noise	Conventional	Urban (day)	0.88-2.14
		Urban (night)	1.61-3.89
		Rural (day)	0.01-0.02
		Rural (night)	0.01-0.04
	Electricity	Urban (day)	0.88-2.14
		Urban (night)	0.80-1.95
		Rural (day)	0.01-0.02
		Rural (night)	0.01-0.03

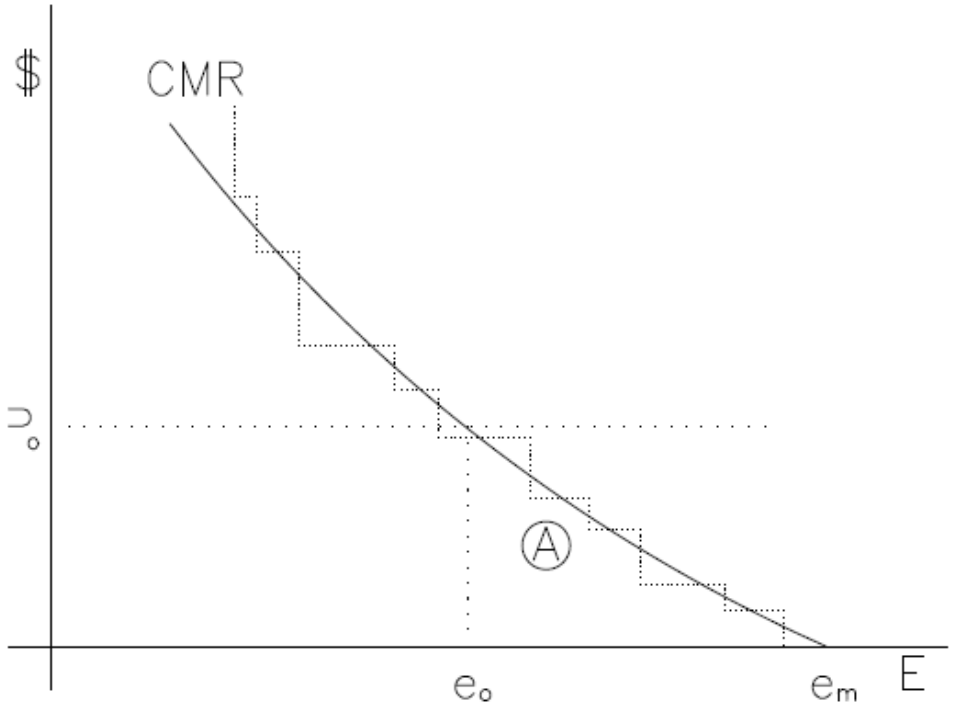
Korzhenevych et al., 2014; Jochem et al., 2016

- **Taxonomy of environmental policies**
  - Command and control
    - Emission limits
    - Technologies
    - Products
  - Market-based
    - Taxes
    - Emissions trading
    - Subsidies
  - [Information provision; voluntary approaches]

The power of prices in environmental policies

- Asymmetric information between regulator and regulated on the possibility of reducing emissions
- Prices promote disclosure of emissions abatement costs
- As a consequence, total costs are minimized with respect to other alternatives. Scarce resources are therefore saved and can be used elsewhere (particularly important in sizeable environmental problems)

- **Cost-effectiveness**
  - Particularly larger when there are many heterogeneous polluters due to different:
    - Sectors/technologies
    - Vintage



[Taxes (prices) and trade (quantities)]

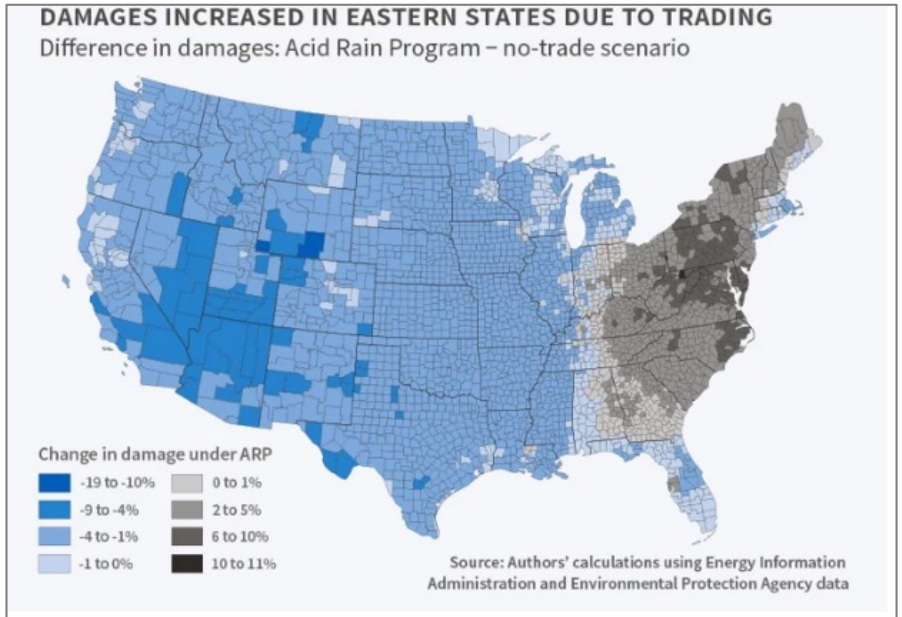
- Control on respectively costs and environmental outcomes
- Continuous adjustments (trial and error) might make systems converge
- Otherwise, share the same market-based beneficial properties
- Carbon markets are increasingly important at world level
- Positive and negative interactions among both approaches might exist if jointly implemented
- EU ETS, core of EU climate policy

Salience as a plus of environmental taxes

- Tax salience, ie simplicity to observe and calculate prices inclusive of taxes, is very relevant for demand (Chetty et al., 2009)
- Consumers pay especial attention when tax rates, price elasticities and expenditure share are large
- Salient taxes may induce larger-than-expected behavioral changes (conventional price elasticities would have a limited validity for policy assessment)
- Another reason to support the use of environmental taxation in energy transitions
- Tax salience should, in any case, be actively pursued
- More or less salient instruments would have clear revenue and acceptability consequences

More complexities

- What if non-uniform pollutants?
  - Varying tax rates/prices
  - Second best of second-best solutions, but:



The Acid Rain Program led to higher levels of premature mortality than would have occurred under a hypothetical no-trade counterfactual with the same overall sulfur dioxide emissions.

Source: Chan et al. (2017)

Jurisdictional allocation

- Discussion within Fiscal Federalism
- Basic rule: Allocate the environmental tax to the jurisdiction that corresponds to the geographical scope of the environmental problem
  - Climate change vs local pollution, acid rain…
- Conflicting impacts for subnational jurisdictions: feasibility of administration (less resources but simpler—see before– efficient taxes?), knowledge of local preferences, welfare enhancing competition (for cleaner outcomes) or race to the bottom?

Competitiveness concerns

- Particularly important in supra-national environmental problems and divergence of tax policies
  - Limited environmental effectiveness (emissions leakage)
  - Negative socio-economic impacts due to the migration of activities to "pollution havens"
- Empirical evidence indicates limited impacts of environmental taxes in this domain
  - Might be related to the presence of exemptions or tariff adjustments; or to low levels of environmental taxation (Venmans et al., 2020)
- Adverse effects are likely but small with respect to general trends of production. Innovation effects are not big enough to offset them, though (Dchezlepretre and Sato, 2017)

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8 JANUARY 2025

Carbon Border Adjustment Mechanism

A detour (1): simultaneous rationales

- Some environmental taxes might have other relevant objectives (one instrument with several purposes, vs one purpose with several instruments—see later)
- This is particularly the case in taxes on energy products
  - Environmental component
  - Pure revenue raising (Ramsey)
  - Energy dependence (to keep part of the resource rent)
- It has obvious implications in sub-optimal tax rates and design.

- **Revenue use**
  - Sizable revenue potentials even with only environmental objectives
  - It raises the debate of revenue use
    - Environmental Earmarking
      - Social acceptance; political marketing
    - Ecological transition: RE, EE, etc.
    - Distributional compensations
    - (Green) Tax reform
      - Theory of double dividend
        - Strong and weak (interactions effects)

Green tax reforms

- The application of the double dividend ideas
- Also, a sub-model within the general tax reform trends
- Three generations
  - Scandinavian 1990s reforms
    - Carbon taxes + reducing income tax rates
  - Central European early 2000s
    - Energy taxes + reducing labor taxes (SSC)
  - Post-great recession
    - Energy/environmental taxes with limited tax compensations
    - Allocation of revenues for distributional and transition purposes

Journal of Environmental Policy & Planning
J. Environ. Policy Plann. **2**: 25–37 (2000)

Towards a Green Tax Reform Model

ALBERTO GAGO AND **XAVIER LABANDEIRA***
Departamento de Economía Aplicada, Universidade de Vigo, Vigo, Spain

ABSTRACT This paper is concerned with the role of environmental taxes in contemporary tax reform processes. It uses the theories of taxation, tax reform and environmental policy to explore the relationship between real-world environmental taxation and applied tax reforms, establishing an almost perfect integration of environmental taxes in contemporary tax reforms. This defines a 'green' variant of the universal hybrid-extensive reform model, clearly related to the ideas on double dividends from environmental taxes, which indicates the likely importance of environmental taxation in future fiscal and environmental policies. Copyright © 2000 John Wiley & Sons, Ltd.

Key words: environmental taxation; extensive tax model; tax reform

Introduction

Although in recent years the use of environmental taxes has been repeatedly advocated by economists, the actual application of such instruments has been rather scarce, limited to a few environmental problems and to a small number of countries (see e.g. Baumol & Oates, 1988; OECD, 1994). However, things are changing as environmental taxation is increasingly thought to be consistent with the current fiscal trends. This paper follows an interdisciplinary approach in order to investigate the current significance and foreseeable future of environmental taxes in the developed world. [illegible] of environmental taxation, it subsequently explores the almost perfect integration of environmental taxes in contemporary tax reforms. Finally, the main conclusions are drawn.

Characterizing tax reforms

Almost all developed countries have recently witnessed, or are in the process of witnessing, a reform of their tax systems. As these reforms have an effect on most individuals, they are obviously generating a large socio-political and academic interest.

A detour (2): What about other conventional taxes?

- Is it sensible to "environmentalise" conventional taxes such as property, income corporate or wealth taxes?
- Likely trade-offs of the environmental component and the revenue raising and nature (economic capacity) of those taxes
- It might be useful in case of subsidies for clean technology development and adoption (just a way to transfer funds to agents)
- Therefore, little sense to include or demand these adjustments as part of "green tax reforms"

Seleccione: ESPAÑA

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TRIBUNA

Cambio climático, impuestos y equidad: instrucciones de uso

No tenemos que inventar nada nuevo ni generar confusión innecesaria, simplemente emplear desde ya los impuestos existentes

Un grupo de residentes lleva sus pertenencias en la provincia de Punjab durante las inundaciones de Pakistán del verano pasado.
SHAHID SAEED MIRZA (AFP)

XAVIER LABANDEIRA
10 FEB 2023 - 12:27 CET

(Climate change, taxes and equity: Instructions for use)

https://n9.cl/ozpkc

- **Distribution**
  - Tax revenues (and abatement costs) are distributed across households, sectors, regions, etc.
  - Need of proper tax incidence analysis
  - However, discussions should focus beyond environmental taxes:
    - The costs of doing nothing
    - The costs of sub-optimal policies
    - Compensations with pricing approaches
  - More on this, in reflections for Spain

Viernes 18 de junio de 2021 ELPAÍS 13

OPINIÓN

Una compensación justa en la transición verde

XAVIER LABANDEIRA

Para proteger los avances hacia la sostenibilidad se debe minimizar la desigualdad en el reparto de costes de la política climática, dando ayudas no en general, sino de manera selectiva a los más afectados

En las últimas semanas ha quedado claro que el camino a la descarbonización de nuestras economías no será fácil. A pesar de que la población de los países avanzados declara una preocupación creciente por los problemas del cambio climático, se multiplican las protestas ante el aumento de los precios energéticos causados por las políticas climáticas y en algunos lugares empieza a discutirse la acelerada expansión de las renovables. El fenómeno, que empieza a sentirse con fuerza en España, es generalizado; como botón de muestra, el resultado negativo del referéndum suizo del pasado domingo sobre la ley de cambio climático, avalada por casi todas las fuerzas políticas. En la disparidad entre deseos y praxis de la población, sin duda las cuestiones distributivas (quiénes, aparentemente, se benefician y quiénes asumen los costes de la transición) representan un papel fundamental.

No deja de sorprender que la solución a un problema esencialmente distributivo como el cambio climático, causado por las mayores emisiones de los más pudientes y

tuación correctora de la política climática; deben concentrarse exclusivamente sobre los más vulnerables (territorios, sectores y grupos de renta); y deben ser capaces de revertir íntegramente los efectos negativos en el corto plazo y de resolver el problema distributivo en el medio plazo.

No tiene sentido, por ello, retrasar el progreso de la transición manteniendo artificialmente bajos los precios de los productos energéticos, en particular los combustibles fósiles, para proteger a los que menos tienen. Primeramente, porque esto evita que se adopten los cambios de comportamiento e inversión necesarios para la corrección climática, engordando aún más la bola de nieve a la que me referí antes. Por si fuera poco, estas medidas tan burdas acaban beneficiando, con la excusa de proteger a ciertas capas sociales, a los que más tienen por sus elevados consumos energéticos. Precisamente, por eso no tienen sentido estrategias compensatorias generalizadas, de *café para todos*, y urge ser muy selectivo en su aplicación. Entre ellas destaca lo que podríamos denominar *cheque verde*, una cantidad monetaria que sirva para

https://n9.cl/aumbl

Policy interactions

- Recall that there are several environmental policy instruments
- When they are present to fulfill the same objective, policy interactions between them appear:
  - Market based without full potential due to C&C except if they are complementary (unleaded petrol)
  - Voluntary approaches and market-based might complement well
  - Environmental taxes and ETS might complement (with partial coverages) or lead to double costs.

Academic evidence

- Increasing body of empirical literature worldwide
  - Different methodologies
  - Ex-post and ex-ante
- Limited socio-economic negative effects (GDP, employment, etc), particularly for green tax reforms (with recycling of revenues)
- Positive environmental impacts, associated to environmental tax levels
- Limited effects on competitiveness and innovation
- Distributional impacts depend on the type of taxed product and revenue use option

Academic evidence (carbon taxes)

DOI: 10.1111/joes.12531

ARTICLE

WILEY

Carbon taxation: A review of the empirical literature

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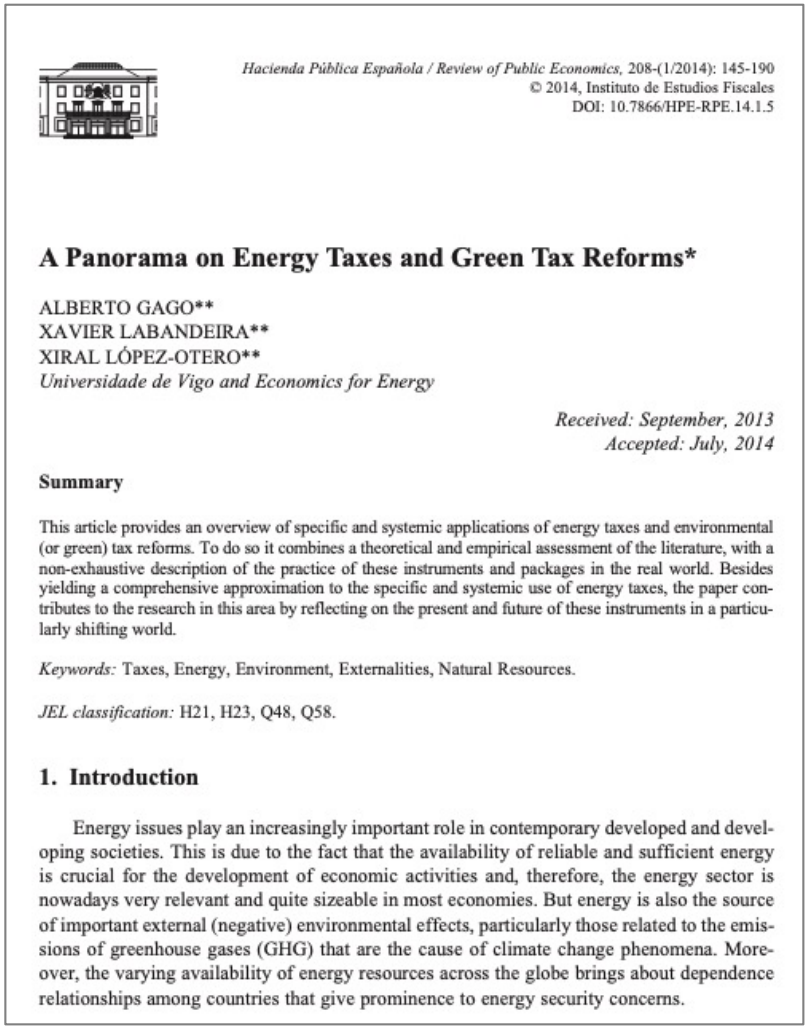
Abstract

In view of the challenges posed by climate change and the increasingly ambitious climate targets around the world, the search for effective climate policy instruments is gaining momentum. Carbon pricing, for example, in the form of a carbon tax, and its effects are therefore attracting increasing attention in academic as well as policy discussions. We review the empirical effects of carbon taxes with regard to several impact dimensions commonly studied in the literature: environmental effectiveness, macroeconomic effects, impacts on competitiveness and innovation, distributional implications, and public acceptance. An increasing body of empirical studies shows that carbon taxes can effectively reduce carbon emissions or at least dampen their growth while not negatively affecting economic growth, employment, and competitiveness. The existing empirical evidence suggests that the distributional impact of carbon taxes depends on the type of energy use and the indicators to capture distributional effects, as well as on household characteristics. Lump-sum transfers are shown to be better suited to mitigate regressive effects for lower incomes, while higher incomes benefit more from a reduction of labor taxes. Public acceptance of carbon

Academic evidence (and meta-analysis)



Hacienda Pública Española / Review of Public Economics, 208-(1/2014): 145-190

DOI: 10.7866/HPE-RPE.14.1.5

A Panorama on Energy Taxes and Green Tax Reforms*

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Received: September, 2013
Accepted: July, 2014

Summary

This article provides an overview of specific and systemic applications of energy taxes and environmental (or green) tax reforms. To do so it combines a theoretical and empirical assessment of the literature, with a non-exhaustive description of the practice of these instruments and packages in the real world. Besides yielding a comprehensive approximation to the specific and systemic use of energy taxes, the paper contributes to the research in this area by reflecting on the present and future of these instruments in a particularly shifting world.

Keywords: Taxes, Energy, Environment, Externalities, Natural Resources.

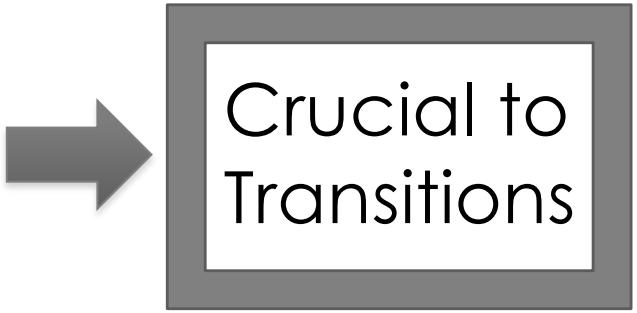
JEL classification: H21, H23, Q48, Q58.

1. Introduction

Energy issues play an increasingly important role in contemporary developed and developing societies. This is due to the fact that the availability of reliable and sufficient energy is crucial for the development of economic activities and, therefore, the energy sector is nowadays very relevant and quite sizeable in most economies. But energy is also the source of important external (negative) environmental effects, particularly those related to the emissions of greenhouse gases (GHG) that are the cause of climate change phenomena. Moreover, the varying availability of energy resources across the globe brings about dependence relationships among countries that give prominence to energy security concerns.

Why prices for environmental policies?

- Account for social costs ("set prices well")
- Cost-effectiveness
- Salience
- Promote innovation
- Raise revenues for:
  - Distributional compensations
  - Fund the transitions (Energy efficiency, etc.)
- Necessary (not sufficient) for the vast transformations associated to sustainable societies



THE WALL STREET JOURNAL.
THURSDAY, JANUARY 17, 2019

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2 Former Secretaries of the U.S. Department of Treasury

Economists' Sign-On Form

ECONOMISTS' STATEMENT ON CARBON DIVIDENDS

Global climate change is a serious problem calling for immediate national action. Guided by sound economic principles, we are united in the following policy recommendations.

I. A carbon tax offers the most cost-effective lever to reduce carbon emissions at the scale and speed that is necessary. By correcting a well-known market failure, a carbon tax will send a powerful price signal that harnesses the invisible hand of the marketplace to steer economic actors towards a low-carbon future.

II. A carbon tax should increase every year until emissions reductions goals are met and be revenue neutral to avoid debates over the size of government. A consistently rising carbon price will encourage technological innovation and large-scale infrastructure development. It will also accelerate the diffusion of carbon-efficient goods and services.

III. A sufficiently robust and gradually rising carbon tax will replace the need for various carbon regulations that are less efficient. Substituting a price signal for cumbersome regulations will promote economic growth and provide the regulatory certainty companies need for long- term investment in clean-energy alternatives.

IV. To prevent carbon leakage and to protect U.S. competitiveness, a border carbon adjustment system should be established. This system would enhance the competitiveness of American firms that are more energy-efficient than their global competitors. It would also create an incentive for other nations to adopt similar carbon pricing.

V. To maximize the fairness and political viability of a rising carbon tax, all the revenue should be returned directly to U.S. citizens through equal lump-sum rebates. The majority of American families, including the most vulnerable, will benefit financially by receiving more in "carbon dividends" than they pay in increased energy prices.

ORIGINAL CO-SIGNATORIES

George Akerlof Nobel Laureate Economist	**Alan Greenspan** Former Chair, Federal Reserve Former Chair, CEA	**Eric Maskin** Nobel Laureate Economist	**William Sharpe** Nobel Laureate Economist
Robert Aumann Nobel Laureate Economist	**Lars Peter Hansen** Nobel Laureate Economist	**Daniel McFadden** Nobel Laureate Economist	**Robert Shiller** Nobel Laureate Economist
Martin Baily Former Chair, CEA	**Oliver Hart** Nobel Laureate Economist	**Robert Merton** Nobel Laureate Economist	**George Shultz** Former Treasury Secretary
Ben Bernanke Former Chair, Federal Reserve Former Chair, CEA	**Bengt Holmström** Nobel Laureate Economist	**Roger Myerson** Nobel Laureate Economist	**Christopher Sims** Nobel Laureate Economist
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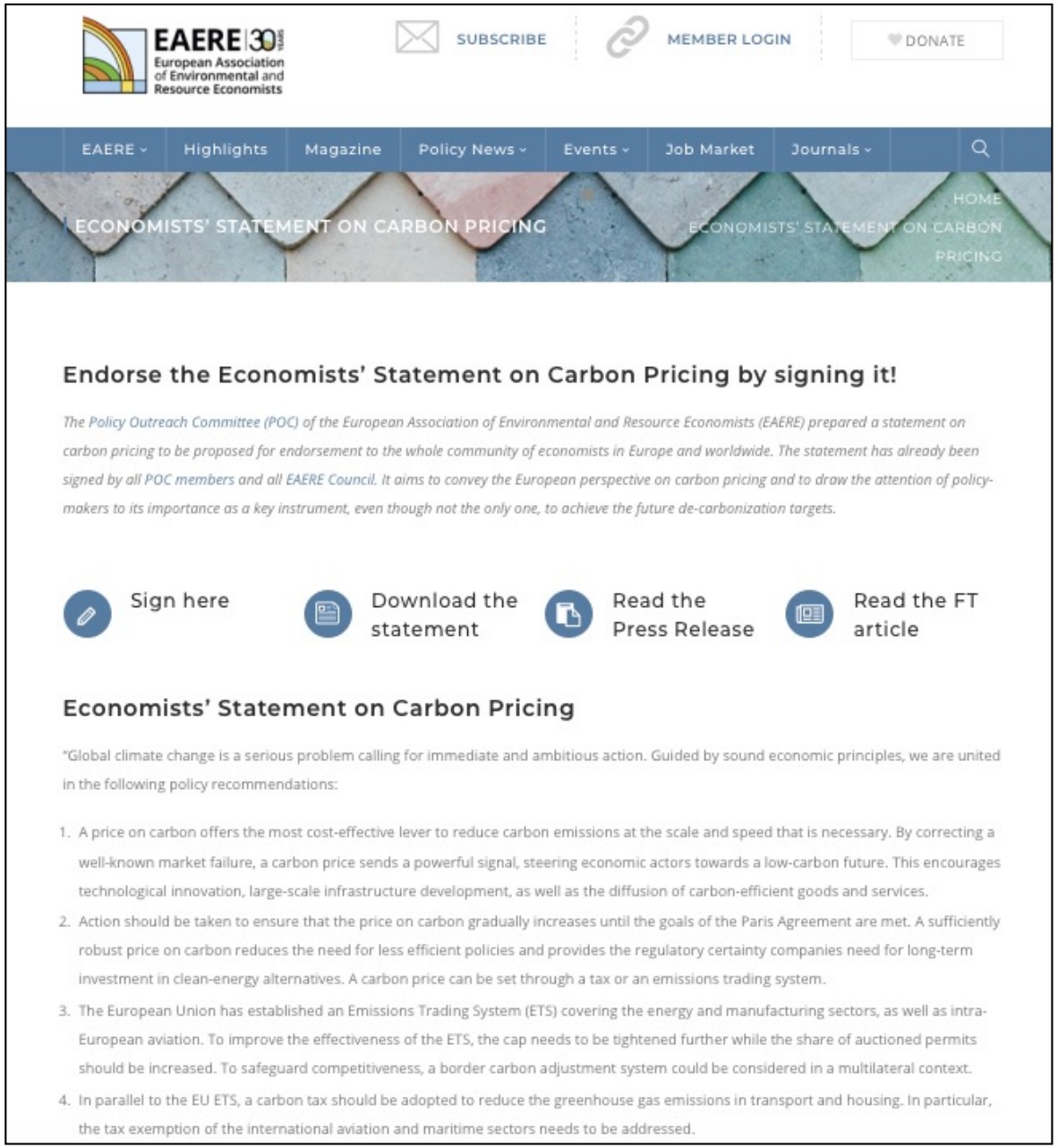
Angus Deaton Nobel Laureate Economist	**Daniel Kahneman** Nobel Laureate Economist	**Christina Romer** Former Chair, CEA	**Michael Spence** Nobel Laureate Economist
Peter Diamond Nobel Laureate Economist	**Alan Krueger** Former Chair, CEA	**Harvey Rosen** Former Chair, CEA	**Lawrence Summers** Former Treasury Secretary
Robert Engle Nobel Laureate Economist	**Finn Kydland** Nobel Laureate Economist	**Alvin Roth** Nobel Laureate Economist	**Richard Thaler** Nobel Laureate Economist
Eugene Fama Nobel Laureate Economist	**Edward Lazear** Former Chair, CEA	**Thomas Sargent** Nobel Laureate Economist	**Laura Tyson** Former Chair, CEA
Martin Feldstein Former Chair, CEA	**Robert Lucas** Nobel Laureate Economist	**Myron Scholes** Nobel Laureate Economist	**Paul Volcker** Former Chair, Federal Reserve
Jason Furman	**N. Gregory Mankiw**	**Amartya Sen**	**Janet Yellen**



EAERE 30 years
European Association of Environmental and Resource Economists

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ECONOMISTS' STATEMENT ON CARBON PRICING

HOME
ECONOMISTS' STATEMENT ON CARBON PRICING

Endorse the Economists' Statement on Carbon Pricing by signing it!

The Policy Outreach Committee (POC) of the European Association of Environmental and Resource Economists (EAERE) prepared a statement on carbon pricing to be proposed for endorsement to the whole community of economists in Europe and worldwide. The statement has already been signed by all POC members and all EAERE Council. It aims to convey the European perspective on carbon pricing and to draw the attention of policy-makers to its importance as a key instrument, even though not the only one, to achieve the future de-carbonization targets.

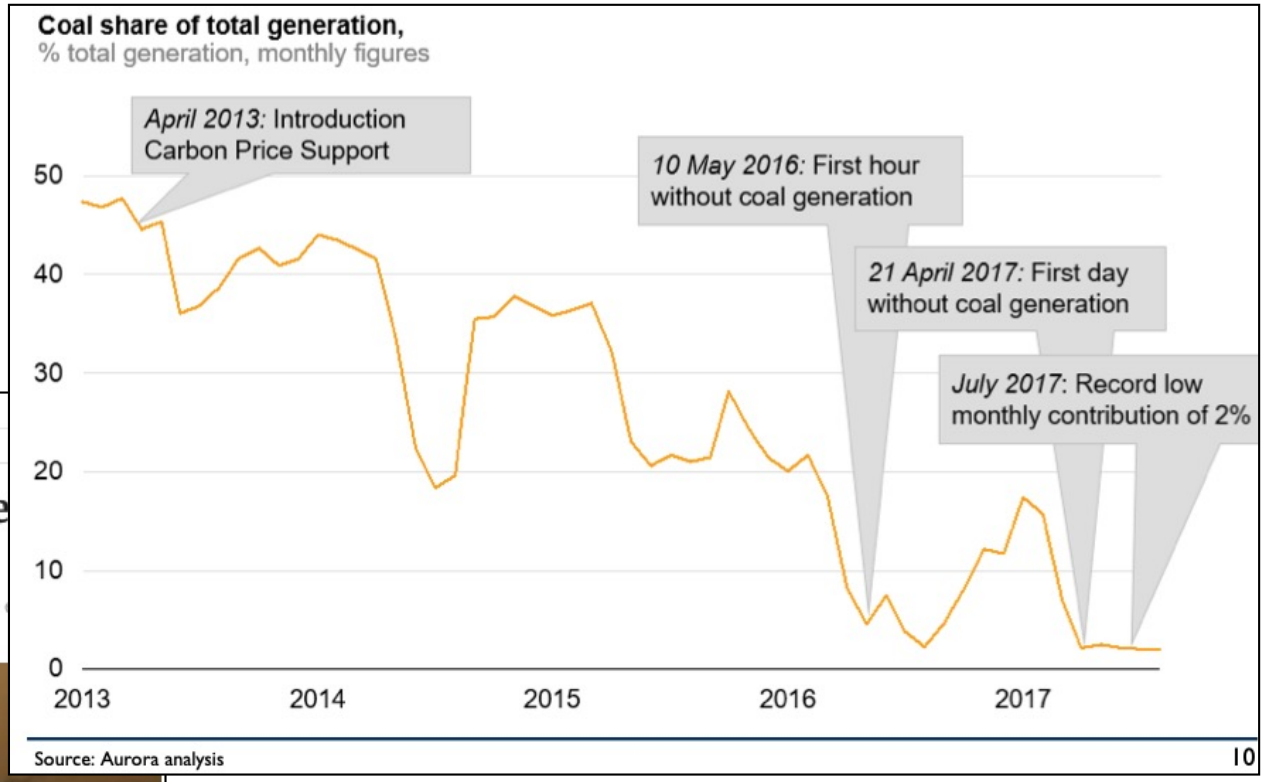
Sign here | Download the statement | Read the Press Release | Read the FT article

Economists' Statement on Carbon Pricing

"Global climate change is a serious problem calling for immediate and ambitious action. Guided by sound economic principles, we are united in the following policy recommendations:

1. A price on carbon offers the most cost-effective lever to reduce carbon emissions at the scale and speed that is necessary. By correcting a well-known market failure, a carbon price sends a powerful signal, steering economic actors towards a low-carbon future. This encourages technological innovation, large-scale infrastructure development, as well as the diffusion of carbon-efficient goods and services.
2. Action should be taken to ensure that the price on carbon gradually increases until the goals of the Paris Agreement are met. A sufficiently robust price on carbon reduces the need for less efficient policies and provides the regulatory certainty companies need for long-term investment in clean-energy alternatives. A carbon price can be set through a tax or an emissions trading system.
3. The European Union has established an Emissions Trading System (ETS) covering the energy and manufacturing sectors, as well as intra-European aviation. To improve the effectiveness of the ETS, the cap needs to be tightened further while the share of auctioned permits should be increased. To safeguard competitiveness, a border carbon adjustment system could be considered in a multilateral context.
4. In parallel to the EU ETS, a carbon tax should be adopted to reduce the greenhouse gas emissions in transport and housing. In particular, the tax exemption of the international aviation and maritime sectors needs to be addressed.

And they do work!



La Voz de Galicia

ECONOMÍA

El precio del CO2 apaga las centrales de gallegas

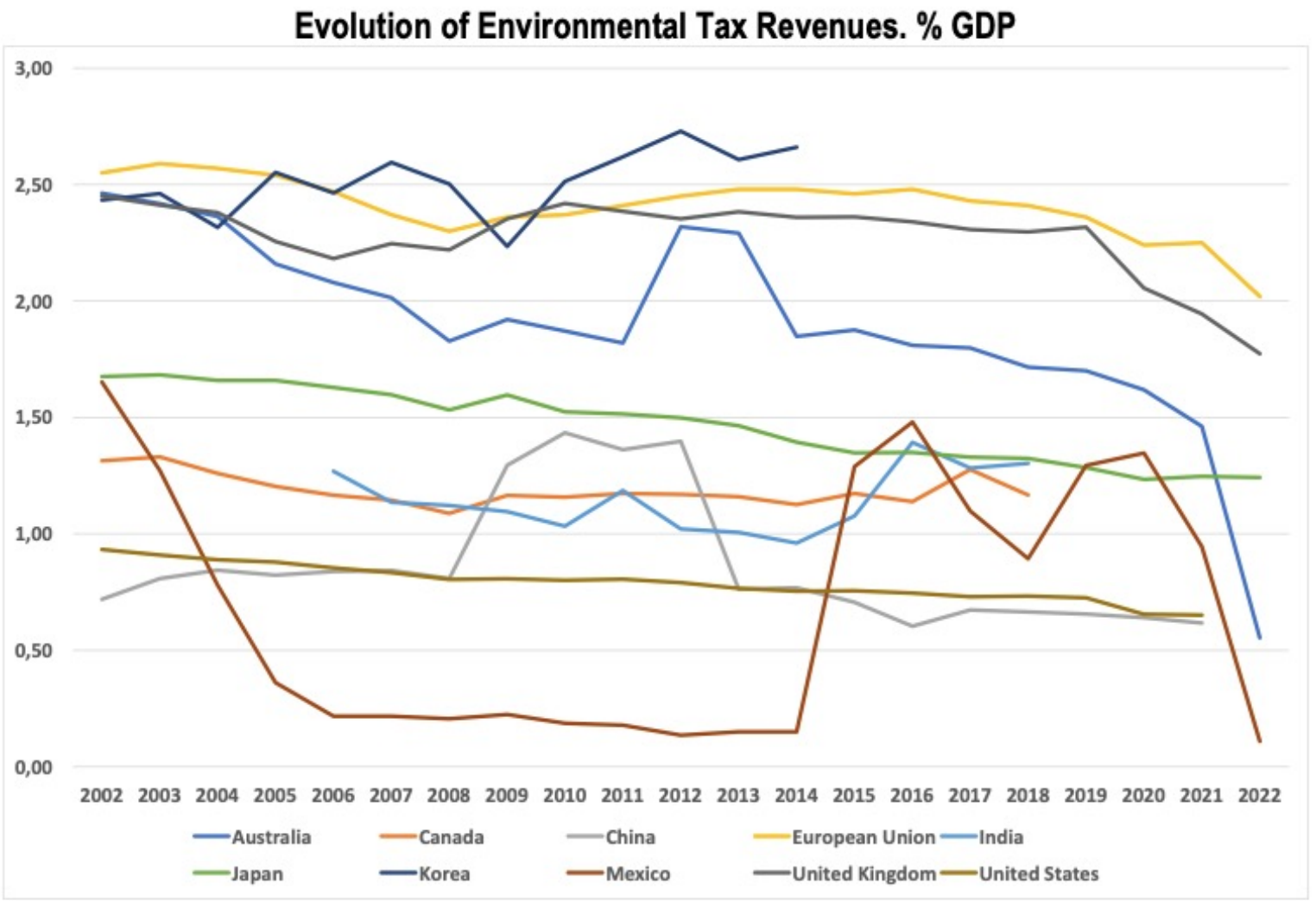
El alcalde pontés analiza denunciar la intervención de especuladores en emisiones

ANGEL MANSO

B. C. / F. F.

LA VOZ 20/06/2019 05:00 H

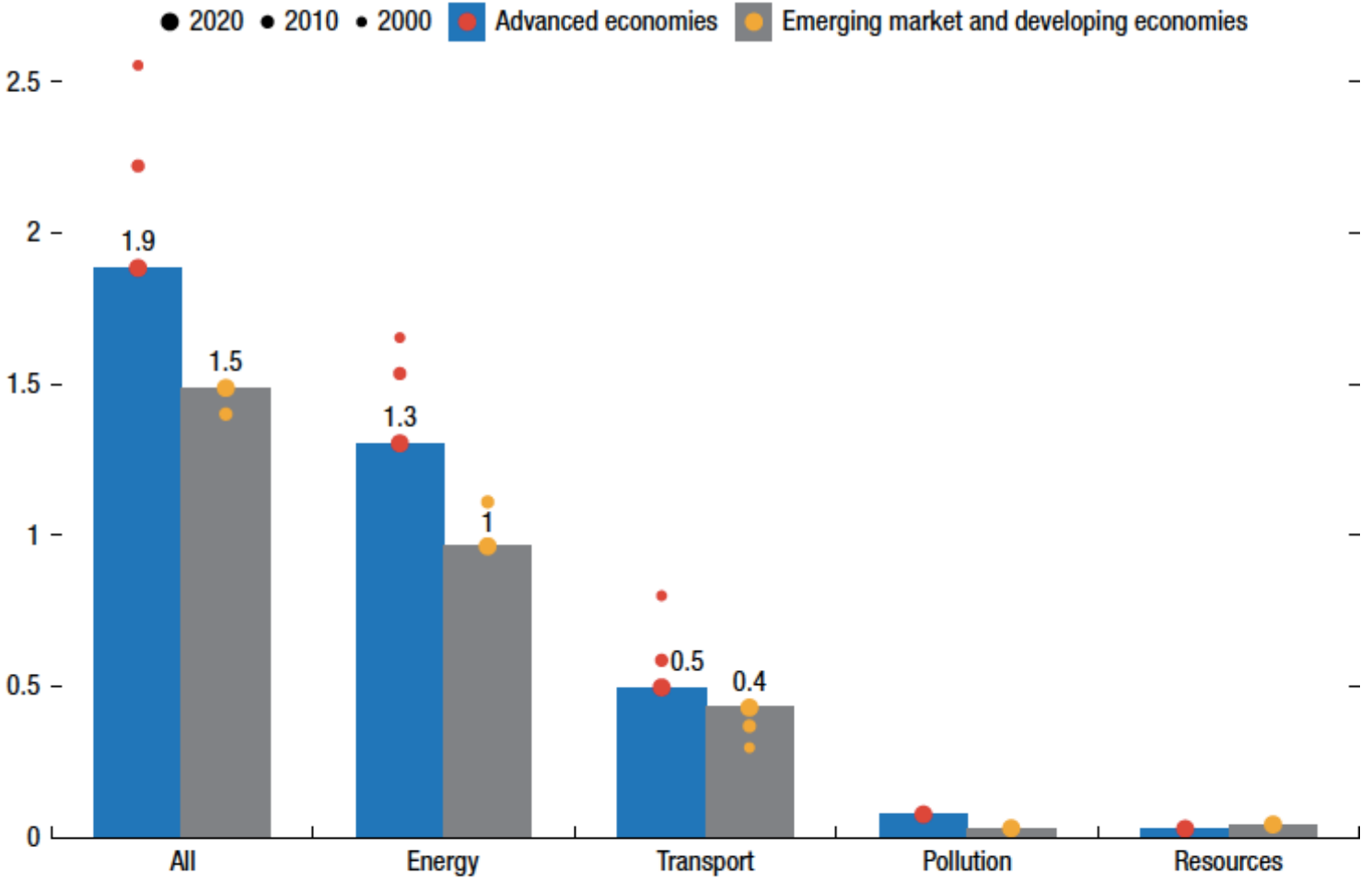
BUT...



Sources: OECD, 2025. OECD data explorer. Environmentally related tax revenue
European Commission, 2025. Taxation and customs union. Data on taxation. Tax revenue by economic function.

Data

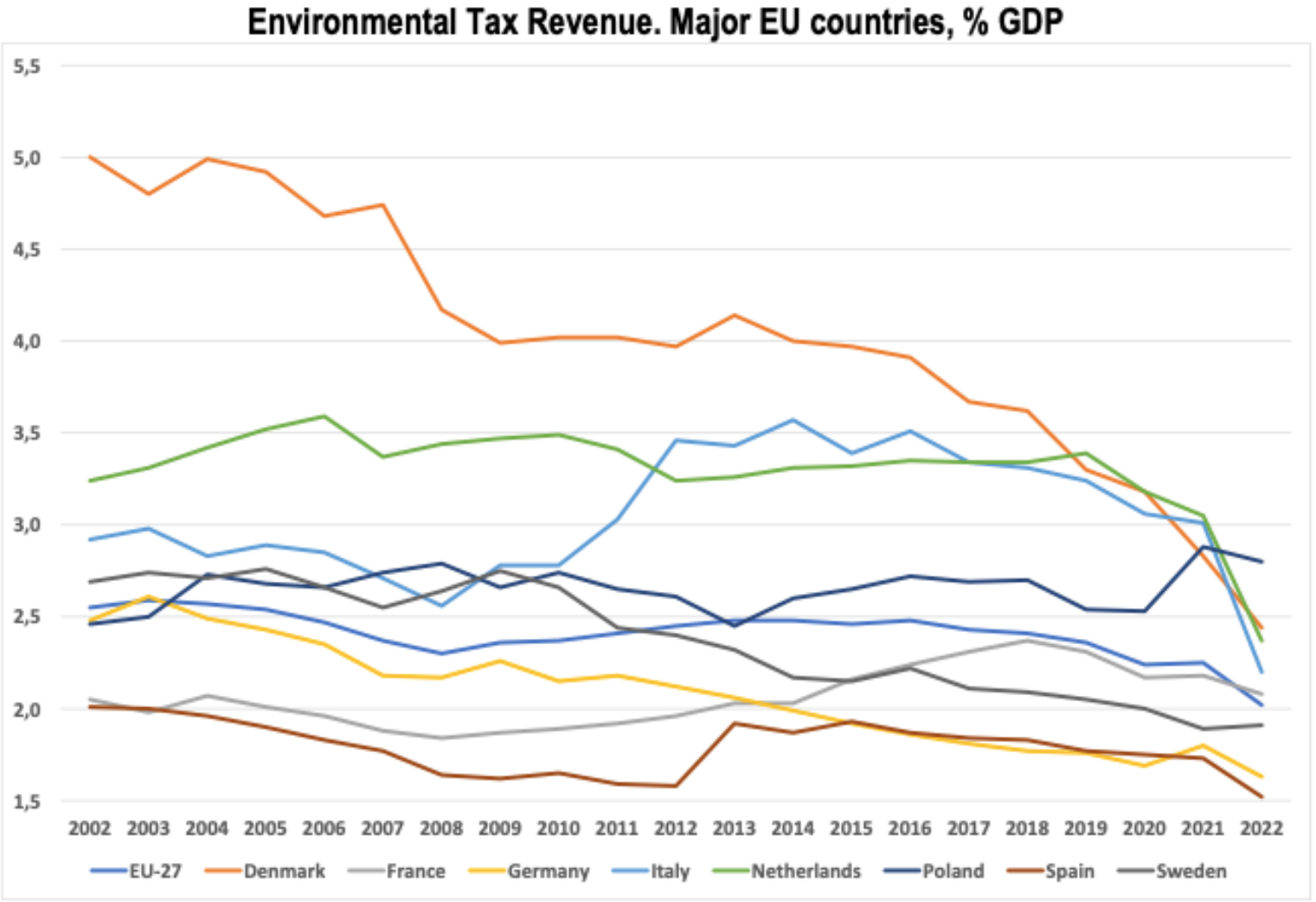
Figure 3.2. Environmental Tax Revenue as a Percentage of GDP in Emerging Market and Developing Economies versus Advanced Economies, 2000, 2010, and 2020
(By tax base category, GDP per capita-weighted average)



Source: Authors' calculations using Organisation for Economic Co-operation and Development (2022c).

Source: Khan et al. (2023)

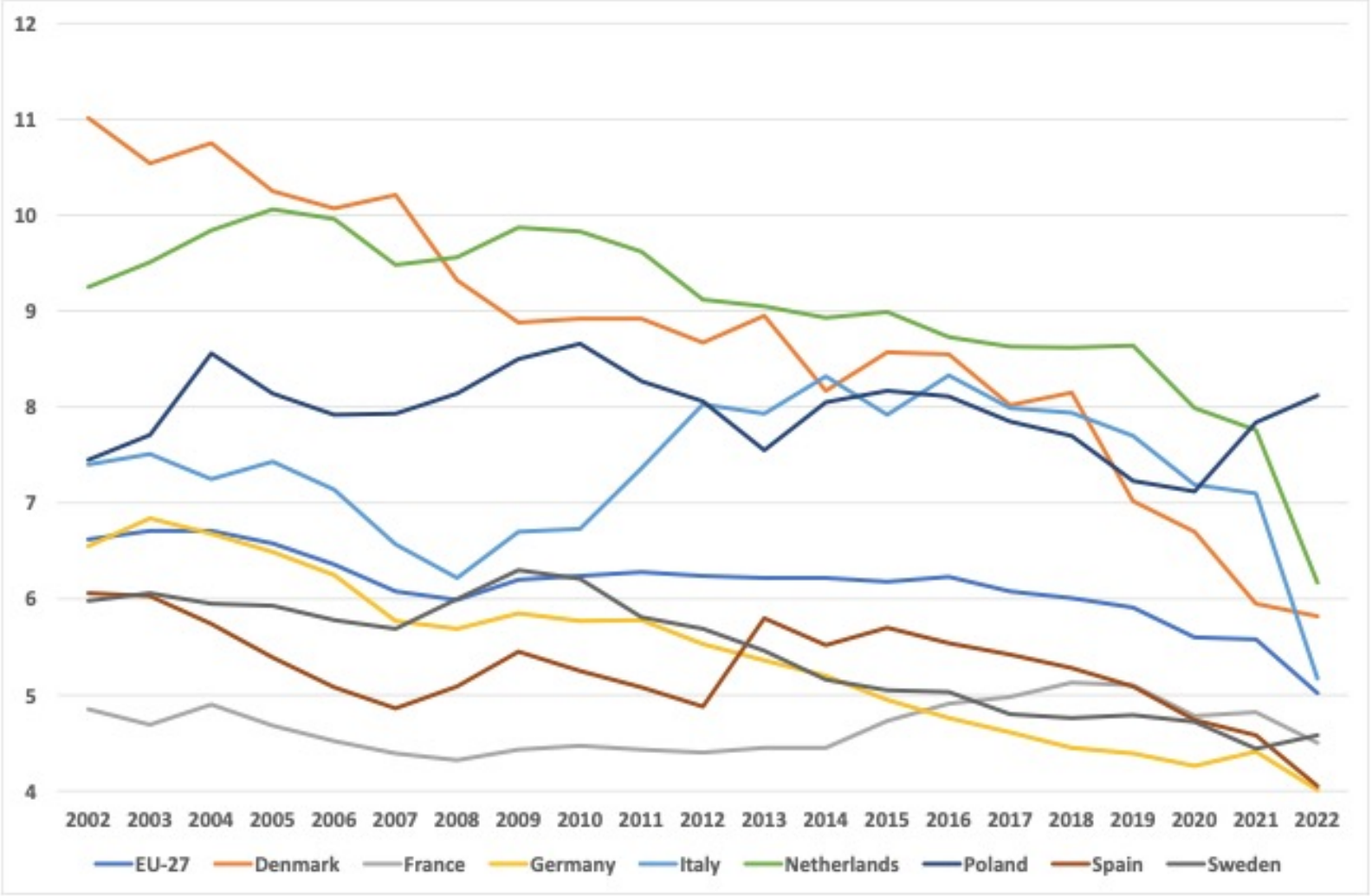
Data



Source: European Commission, 2025. Taxation and customs union. Data on taxation. Tax revenue by economic function.

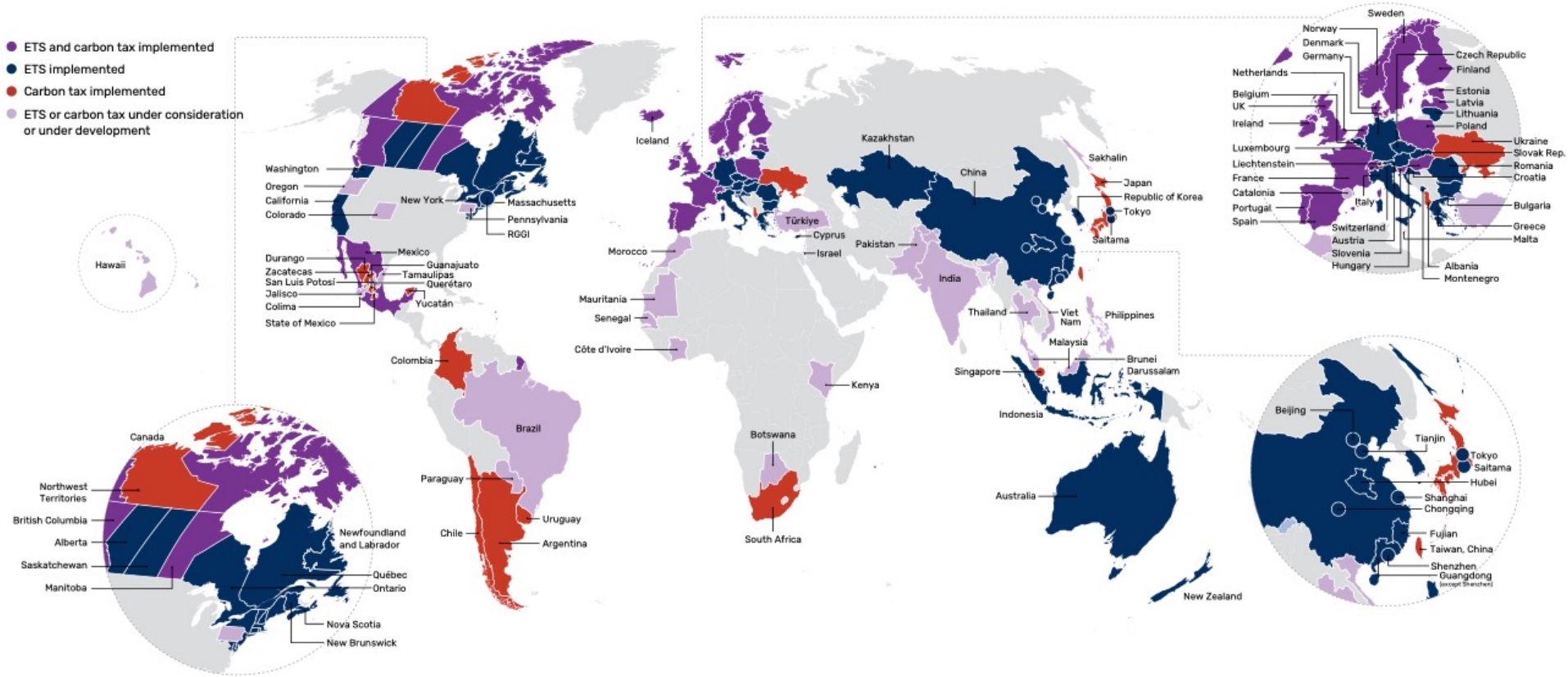
Data

Environmental Tax Revenue. Major EU countries, % total revenue



Source: European Commission, 2025. Taxation and customs union. Data on taxation. Tax revenue by economic function.

Carbon pricing across the world



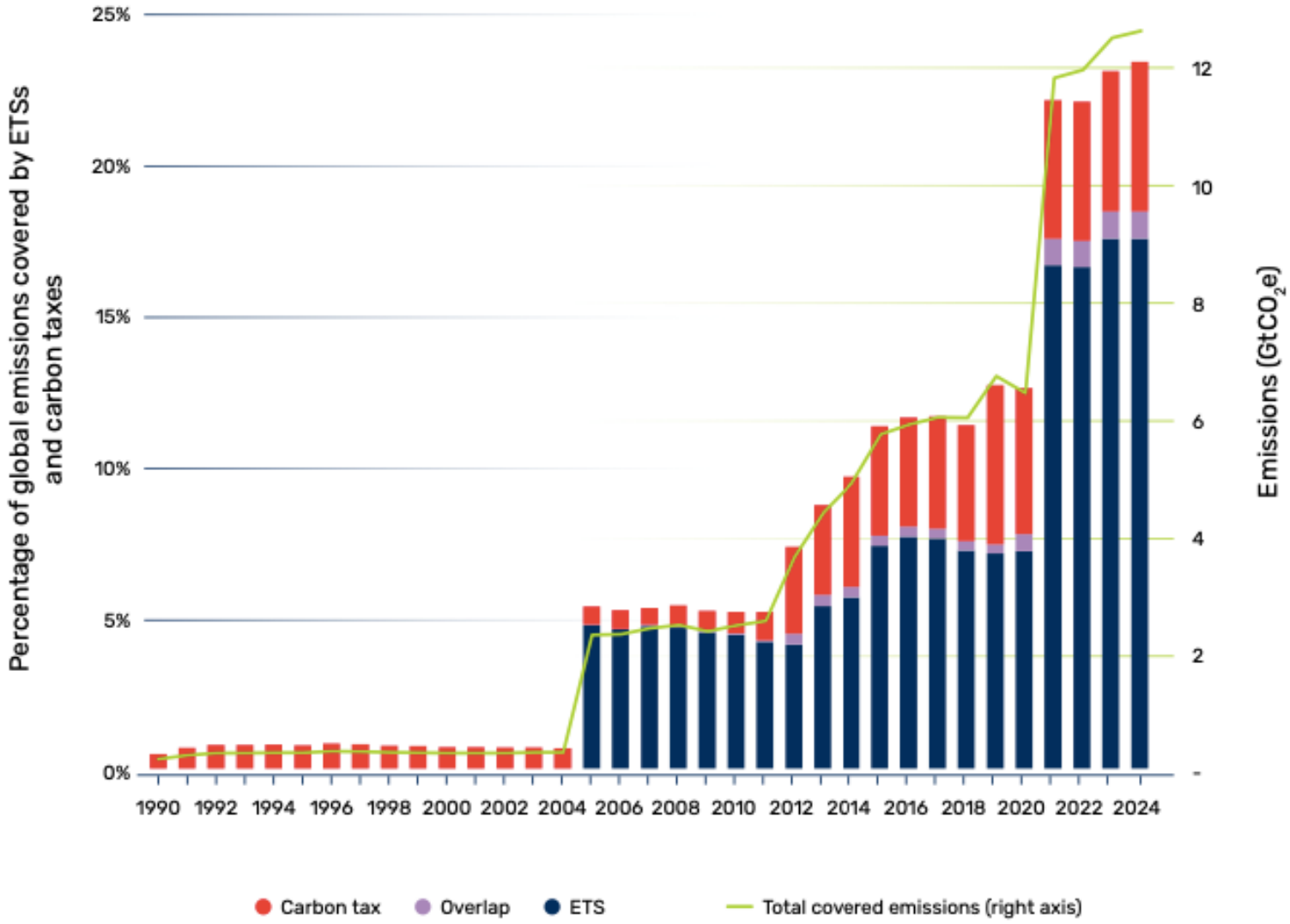
Source: World Bank

Carbon pricing across the world

Mecanismo	Tipo	Porcentaje de emisiones globales en 2024 (%)	Cobertura en jurisdiction en 2024 (%)	Precio en 2024 (US$/tCO2e)	Ingresos en 2023 (US$ millones)
China national ETS	ETS	9,3%	32%	12,6	-
EU ETS	**ETS**	2,6%	38%	61,3	47 369
Japan carbon tax	Carbon tax	1,5%	80%	1,9	1 673
Korea ETS	ETS	1,2%	89%	6,3	65
South Africa carbon tax	Carbon tax	0,8%	82%	10,1	127
Indonesia ETS	ETS	0,6%	26%	0,6	-
Germany ETS	ETS	0,6%	39%	48,4	11 680
California CaT	ETS	0,6%	76%	38,6	4 721
Guangdong pilot ETS	ETS	0,5%	40%	8,9	-
Taiwan carbon fee	Carbon tax	0,5%	80%	9,1	-
Mexico carbon tax	Carbon tax	0,4%	29%	4,3	437
Canada federal fuel charge	Carbon tax	0,4%	31%	58,9	5 719
France carbon tax	Carbon tax	0,3%	40%	47,9	8 374
Alberta TIER	ETS	0,3%	62%	58,9	638
Mexico pilot ETS	ETS	0,3%	40%	0,0	-
Kazakhstan ETS	ETS	0,3%	47%	1,1	-
Fujian pilot ETS	ETS	0,3%	51%	3,7	-
Australia Safeguard Mechanism	ETS	0,3%	26%	21,9	-
Argentina carbon tax	Carbon tax	0,3%	38%	0,8	198
Poland carbon tax	Carbon tax	0,2%	24%		1
Chongqing pilot ETS	ETS	0,2%	51%	6,0	-
Hubei pilot ETS	ETS	0,2%	27%	5,6	7
RGGI	ETS	0,2%	14%	17,6	1 265
Shanghai pilot ETS	ETS	0,2%	36%	10,1	28
Chile carbon tax	Carbon tax	0,1%	55%	5,0	0
Ukraine carbon tax	Carbon tax	0,1%	32%	0,8	86
Tianjin pilot ETS	ETS	0,1%	35%	4,7	-
Quebec CaT	ETS	0,1%	79%	38,6	1 049
Washington CCA	ETS	0,1%	70%	25,8	1 825
Singapore carbon tax	Carbon tax	0,1%	79%	18,5	162
UK Carbon Price Support	Carbon tax	0,1%	13%	22,6	994
State of Mexico carbon tax	Carbon tax	0,1%	47%	3,5	5
BC carbon tax	Carbon tax	0,1%	80%	58,9	1 958
Norway carbon tax	Carbon tax	0,1%	65%	107,8	1 508
Colombia carbon tax	Carbon tax	0,1%	20%	6,7	124
New Zealand ETS	ETS	0,1%	48%	35,1	22
Ontario EPS	ETS	0,1%	26%	58,9	-
Beijing pilot ETS	ETS	0,1%	24%	14,5	23
Austria ETS	ETS	0,1%	40%	48,4	917
Saskatchewan OBPS	ETS	0,1%	43%	58,9	22
Finland carbon tax	Carbon tax	0,0%	45%	100,0	1 419
Sweden carbon tax	Carbon tax	0,0%	40%	127,3	2 173
Portugal carbon tax	Carbon tax	0,0%	40%		487
Denmark carbon tax	Carbon tax	0,0%	48%	28,2	479
Hungary Carbon tax	Carbon tax	0,0%	32%	38,2	115
Ireland carbon tax	Carbon tax	0,0%	34%	60,2	1 017
Guanajuato carbon tax	Carbon tax	0,0%	43%	2,7	1
UK ETS	ETS	0,0%	28%	45,9	5 201
Switzerland carbon tax	Carbon tax	0,0%	35%	132,1	1 166
Shenzhen pilot ETS	ETS	0,0%	36%	9,0	-

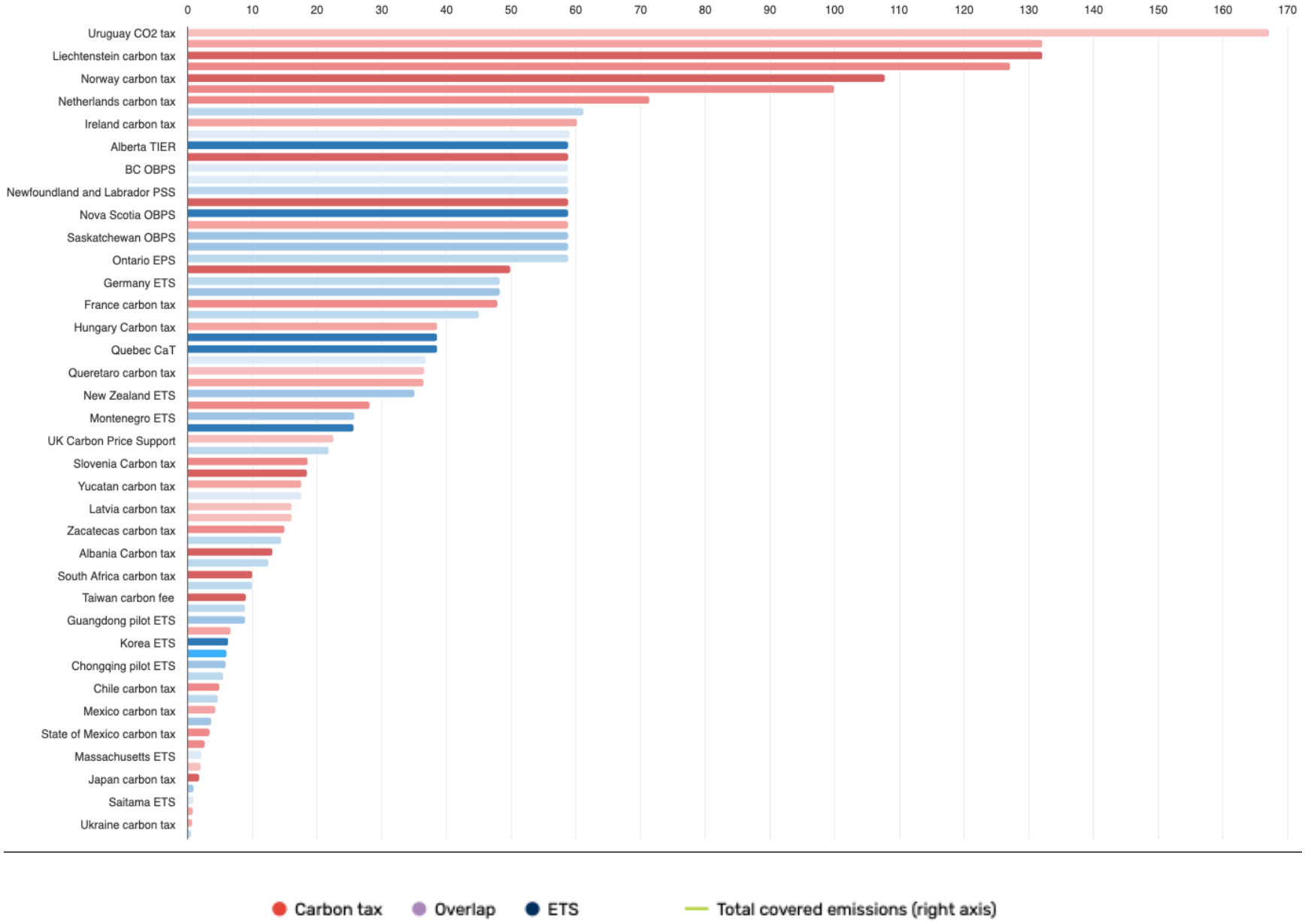
Source: World Bank

Carbon pricing across the world



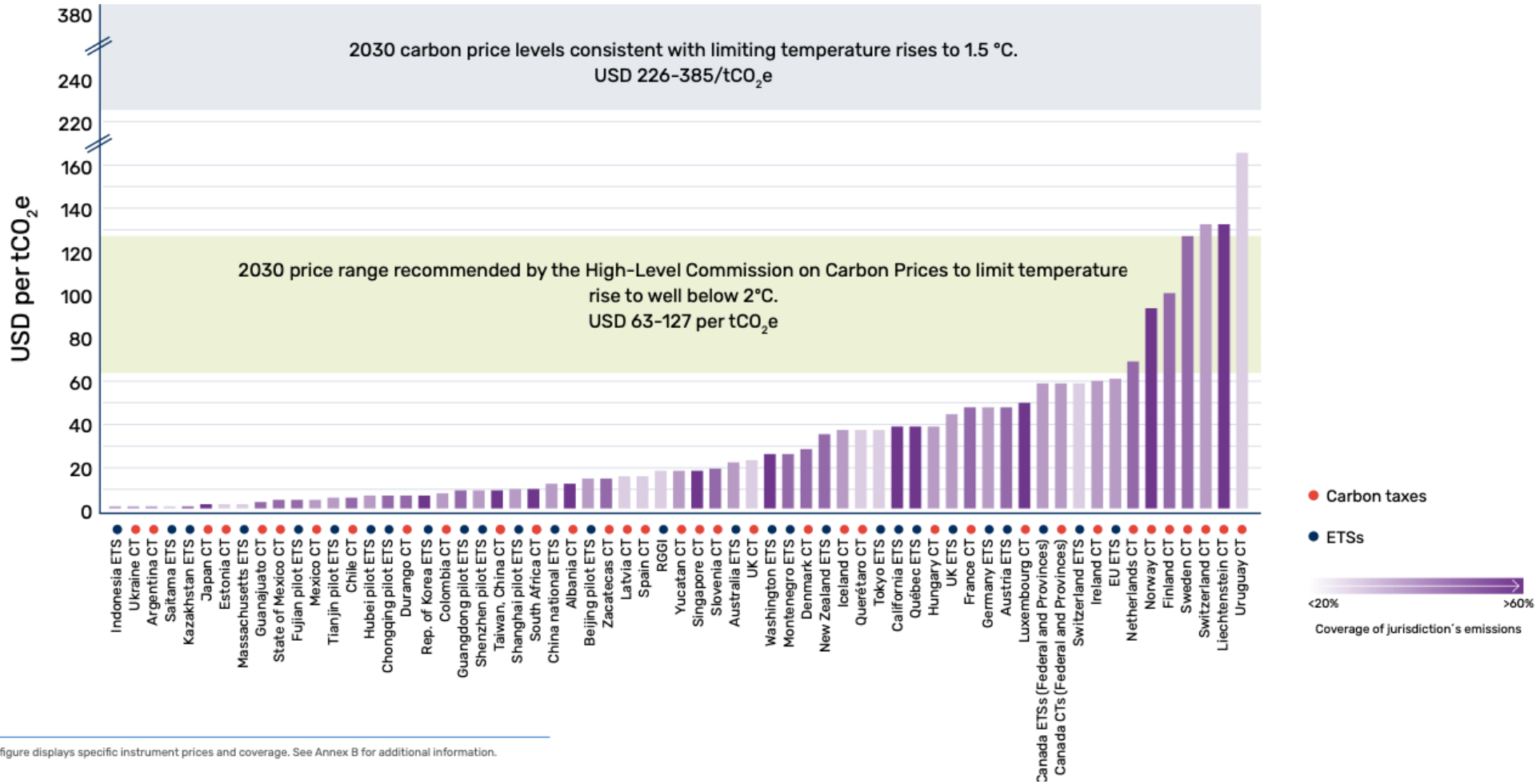
Source: World Bank

Carbon pricing across the world



Source: World Bank

Carbon pricing across the world



The figure displays specific instrument prices and coverage. See Annex B for additional information.

Source: World Bank

- **Why such unfulfilled expectations?**
  - Emphasis on efficiency?
  - Too optimistic double dividend ideas
  - Limited coverage: Substitution by ETS
  - Pervasive Barriers
    - Distributional concerns
    - Competitiveness issues
    - Lobbyism and opposition
  - Low tax rates and large exemptions

On lobbyism

- Three main narratives (Errichiello et al. 2025)
  - International setting
  - Innovation
  - Taxation and competitveness
- Evidence on lobbying activities and success against carbon pricing in the US (Meng and Rode,2019)

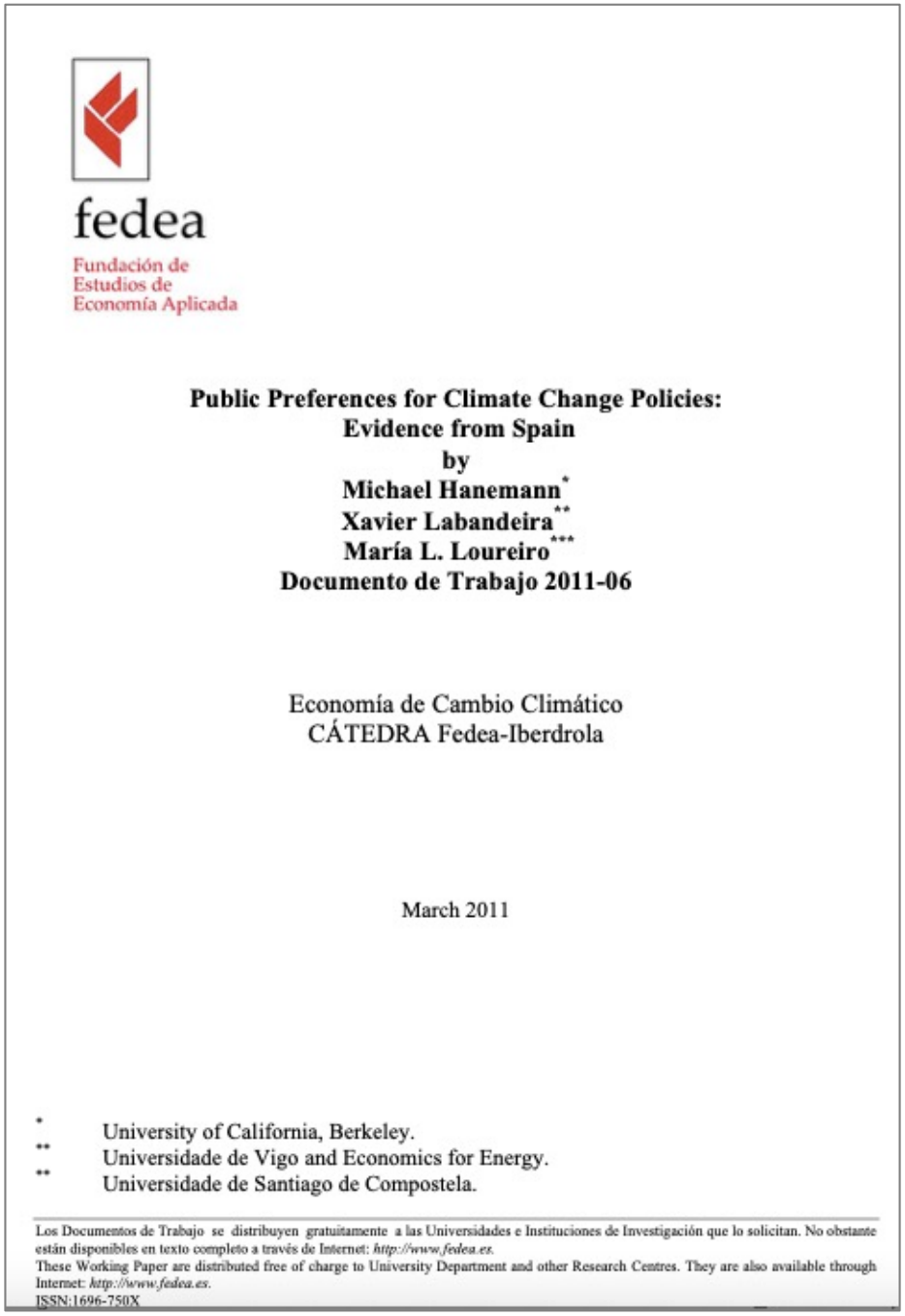
Table 1
Number of organizations engaging in positive and negative lobbying on EU climate policies. *Source: own elaboration based on LobbyMap.*

Policy	Positive	Negative
Carbon Border Adjustment Mechanisms (CBAM)	30	36
Carbon Tax	12	7
CO2 target	13	6
Delegated Act on Renewable Fuels of Non-Biological Origin (RFNBOs)	8	10
Eco-Design for Sustainable Products Regulation,	0	1
Emission reduction target (GHG)	68	27
Emissions Trading Scheme (ETS)	109	71
Energy Efficiency Directive	15	13
Energy Taxation Directive	15	10
EU CO2 emissions standards for cars and vans	3	1
EU Hydrogen and Gas Market Decarbonization Package	3	7
EU kerosene tax for intra-EEA flights	2	7
EU Methane Regulation for the energy sector	4	15
EU Sustainable Aviation Fuels (SAF)	16	7
EU Sustainable Finance Taxonomy	2	12
EU's 2030 Gas Demand Reduction Target	0	1
EU's Climate Law	8	0
EU's Net Zero Industry Act (NZIA)	5	4
EU's RePowerEU policy	7	1
Fit for 55 packages	33	5
Frequent flyer levy	0	2
Green Deal	47	4
Net-zero emissions for European aviation by 2050	2	0
Paris Agreement	110	1
Renewable Energy Directive	41	21
Renovation Wave, and Energy Performance of Buildings Directive (EPBD)	24	5
Strengthened Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA)	8	2
UNFCCC-COP	25	0

Errichiello et al. (2025)

On acceptability

- Public support to environmental policies depend on perceptions on (Dechezlepretre et al., 2022)
  - Effectiveness of the instrument
  - Distributional impacts on low income households
  - Impacts on the own household
- And information (Pyddoke et al. 2024)
  - Agents tend to over-estimate costs and understimate positive effects of policies
  - Concern on distributional impacts is not always related to advocation of compensatory devices (use of revenue)
- Other important issues (Timoner and Alarcón, 2024)
  - Transparent redistribution
  - Investment in public investment with revenues
  - Polarised societies demand heterogeneous solutions (environmental earmarking and universal transfers)



fedea

Fundación de
Estudios de
Economía Aplicada

Public Preferences for Climate Change Policies:
Evidence from Spain
by
Michael Hanemann*
Xavier Labandeira**
María L. Loureiro***
Documento de Trabajo 2011-06

Economía de Cambio Climático
CÁTEDRA Fedea-Iberdrola

March 2011

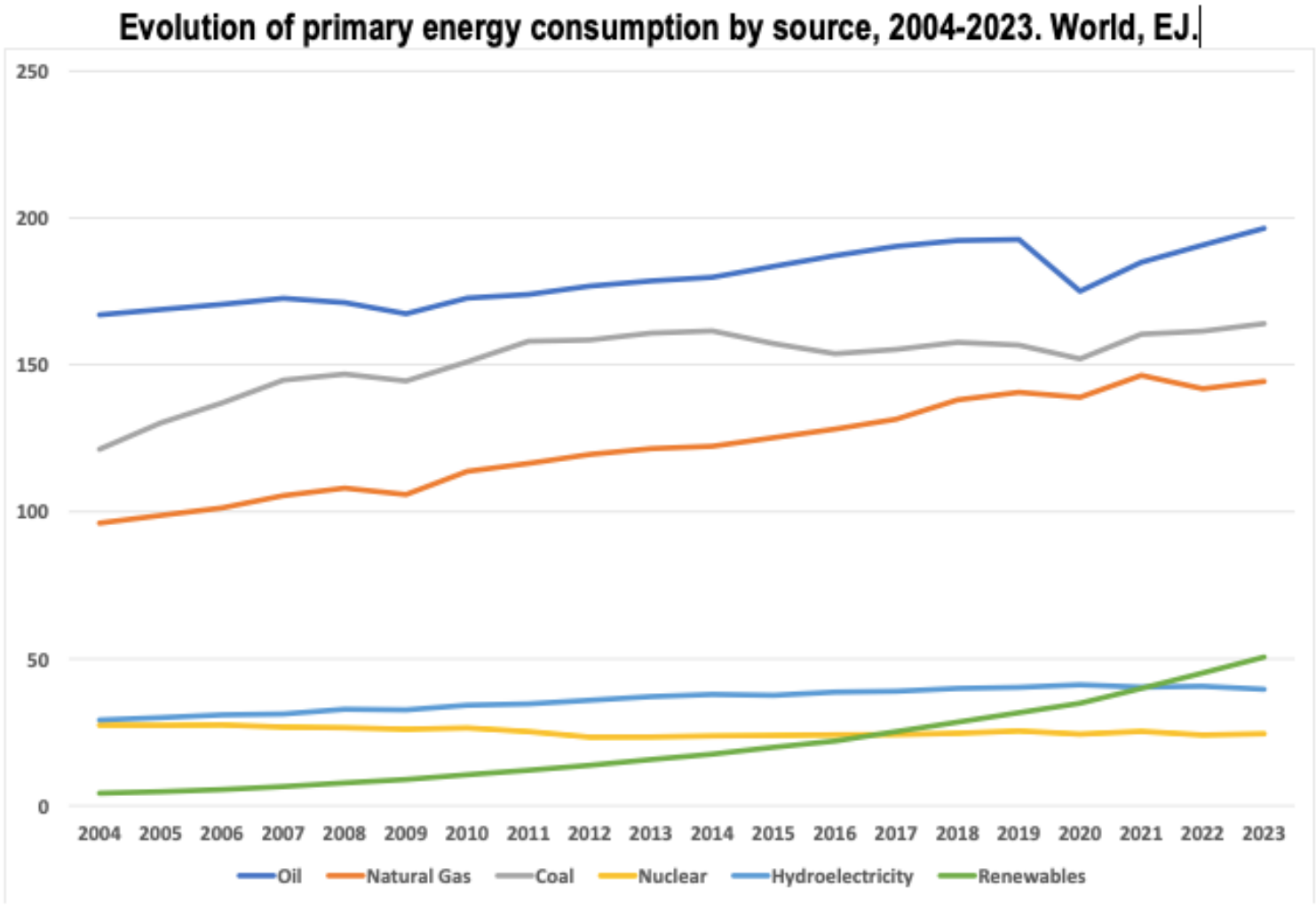
* University of California, Berkeley.
** Universidade de Vigo and Economics for Energy.
** Universidade de Santiago de Compostela.

ISSN:1696-750X

A change of mood?

- Geopolitical shifts
  - Less fossil-fuel dependence
  - More tax revenues needed
  - Competitiveness and tariffs
- How much time left for flexible approaches?
- Sizeable room for expansion in transport

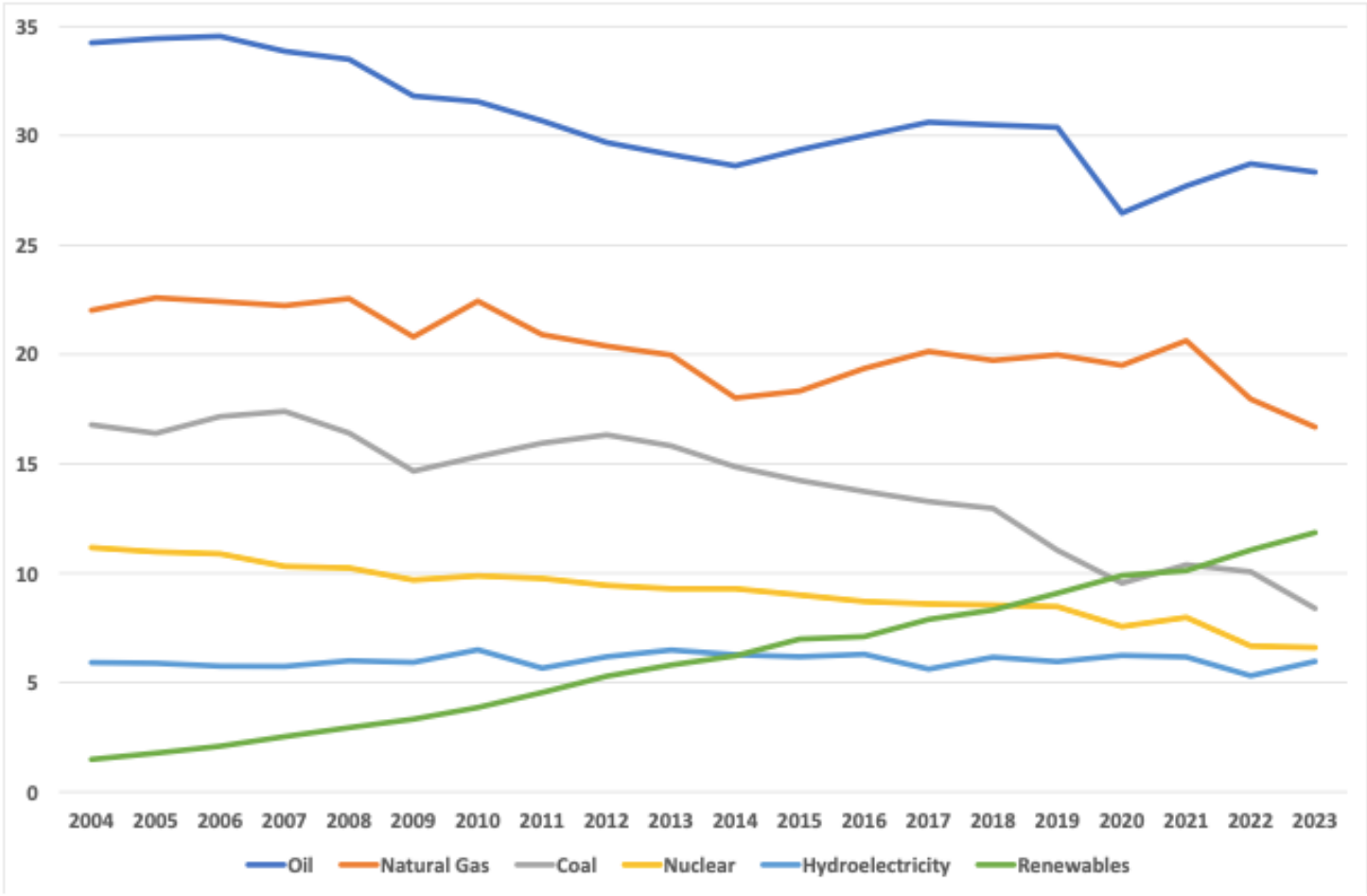
Fossil fuels keep growing



Source: Energy Institute – Statistical Review of World Energy

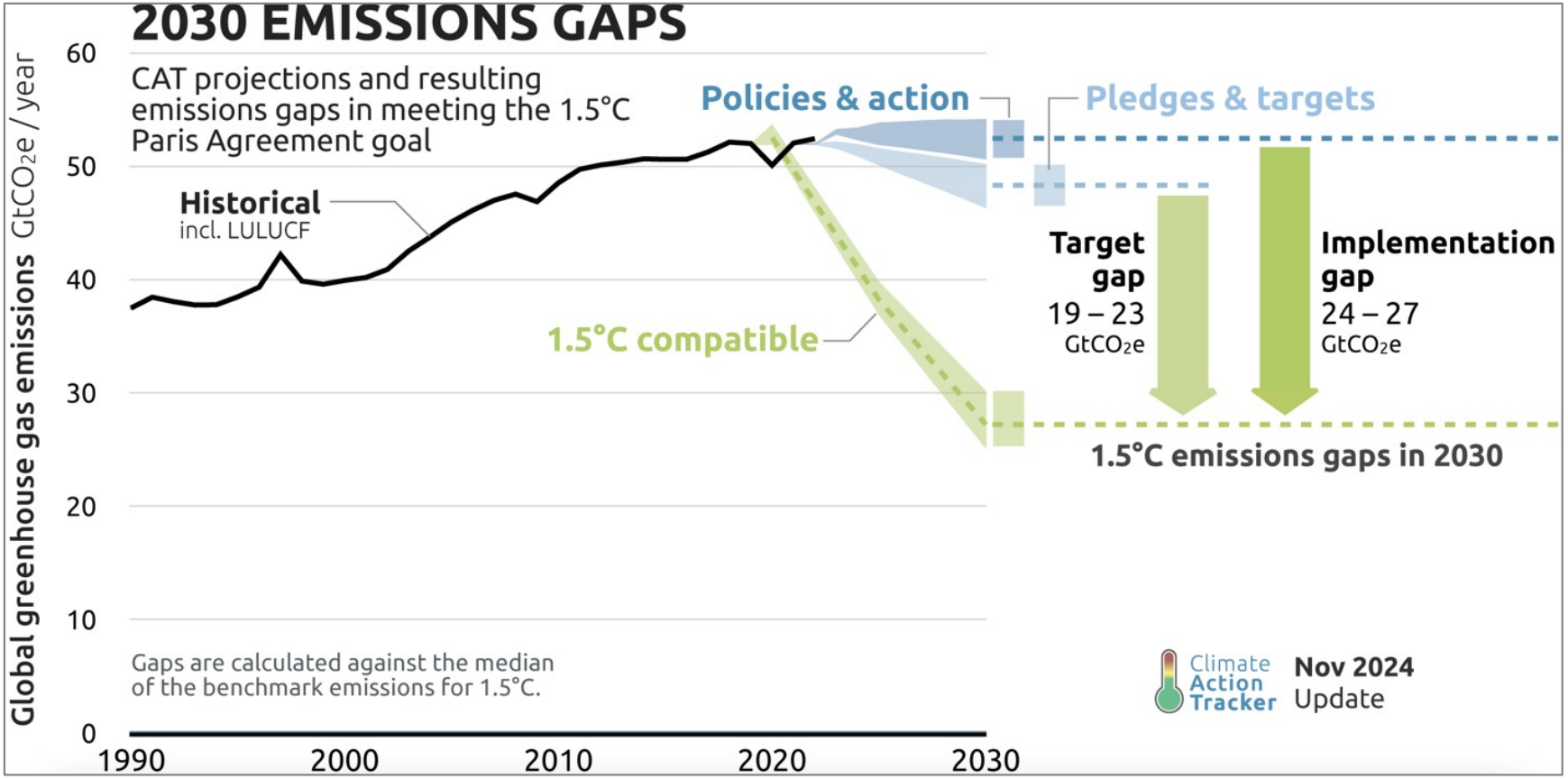
And reigning in the EU

Evolution of primary energy consumption by source, 2004-2023. EU, EJ.



Source: Energy Institute – Statistical Review of World Energy

Decreasing capacity to act



Source: Climate Action Tracker (2024)

noticias

El Confidencial

Tribuna

Por **Xavier Labandeira**

Cambio climático: nuestro margen de maniobra se agota

¿Cómo podemos afrontar el cambio climático? Además de adaptarnos a él de la mejor manera posible, nuestra variable de control fundamental son las emisiones de gases de efecto invernadero

El movimiento Fridays se manifiesta a favor del clima. (

Por **Xavier Labandeira**

13/05/2019 - 05:00 Actualizado: 15/05/2019 - 20:24

17

Última hora

Alcaraz fi

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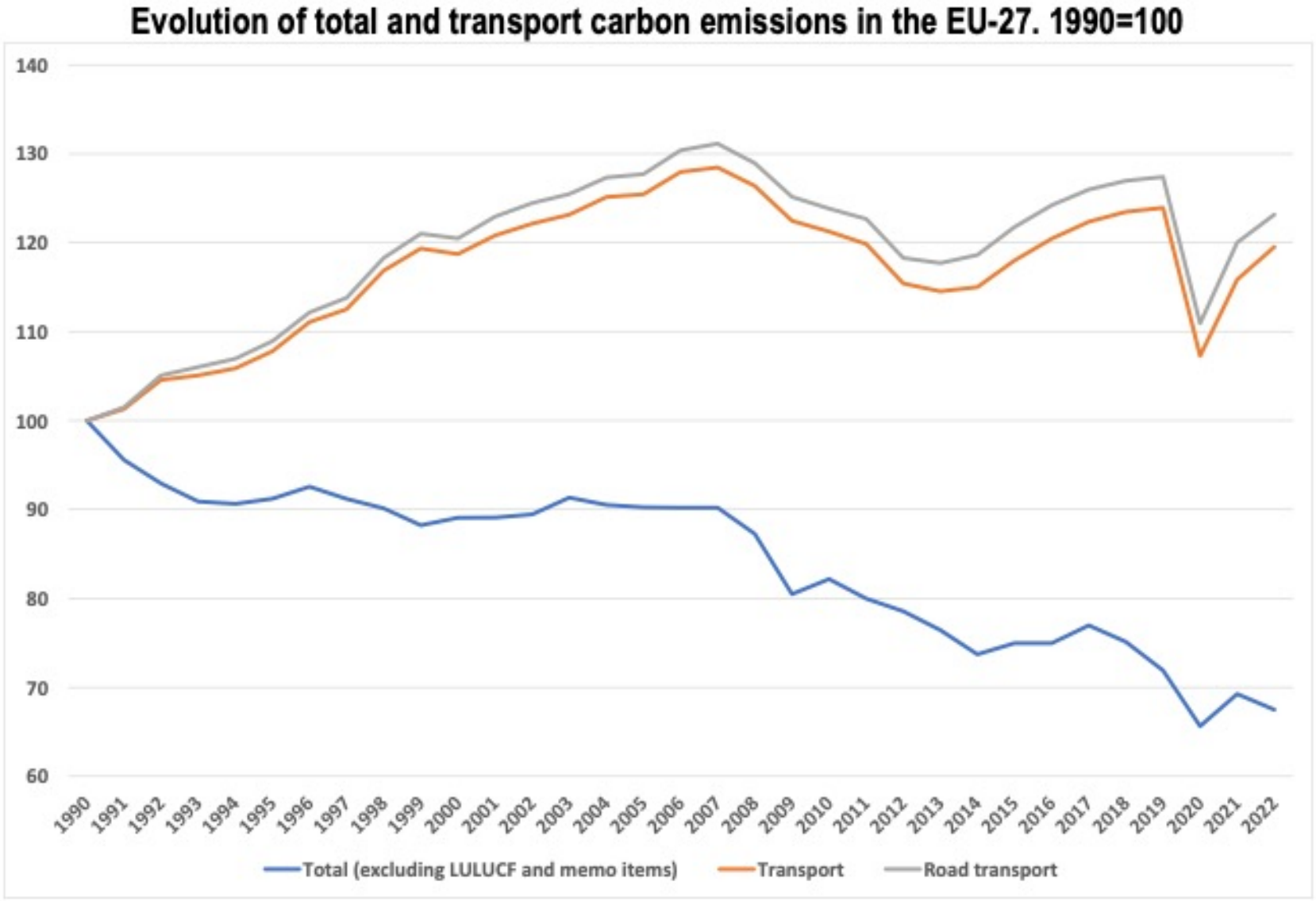
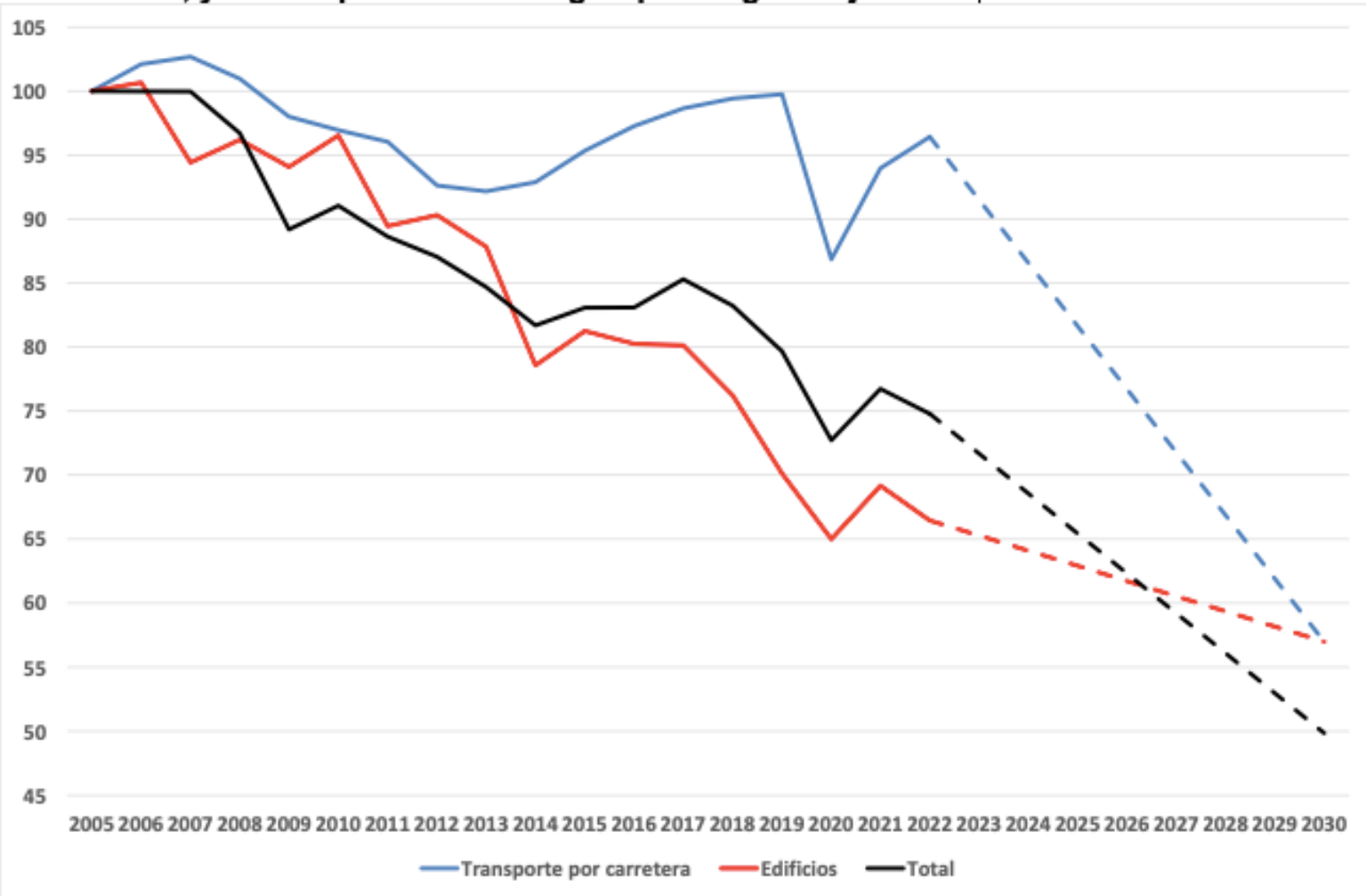


Source: Eurostat

ETS-2

Evolución (2005-2022) de las emisiones de GEI totales, del transporte por carretera y de los edificios, y senda que deberían seguir para lograr objetivos a 2030. UE-27. 2005=100



Fuente: EEA (2024a, 2024b) y elaboración propia

Nota: En el caso de las emisiones totales, se consideran las emisiones netas, una vez deducidas las absorciones. El objetivo de reducción del 55% de las emisiones totales netas de GEI con respecto a 1990 se traduce en una reducción del 50,1% con respecto a 2005.


economics for energy
WP 01/2018
Road Transport Taxation: Crisis and Reform
Alberto Gago
Xavier Labandeira
Xiral López-Otero

Transport taxation: conventional approach

- Revenue Raising (Ramsey)
- Externality correction
  - Global and local environmental problems
  - Congestion
  - Accidents, etc.
- Energy dependence

Taxes on registration, circulation, fuels + congestion charges

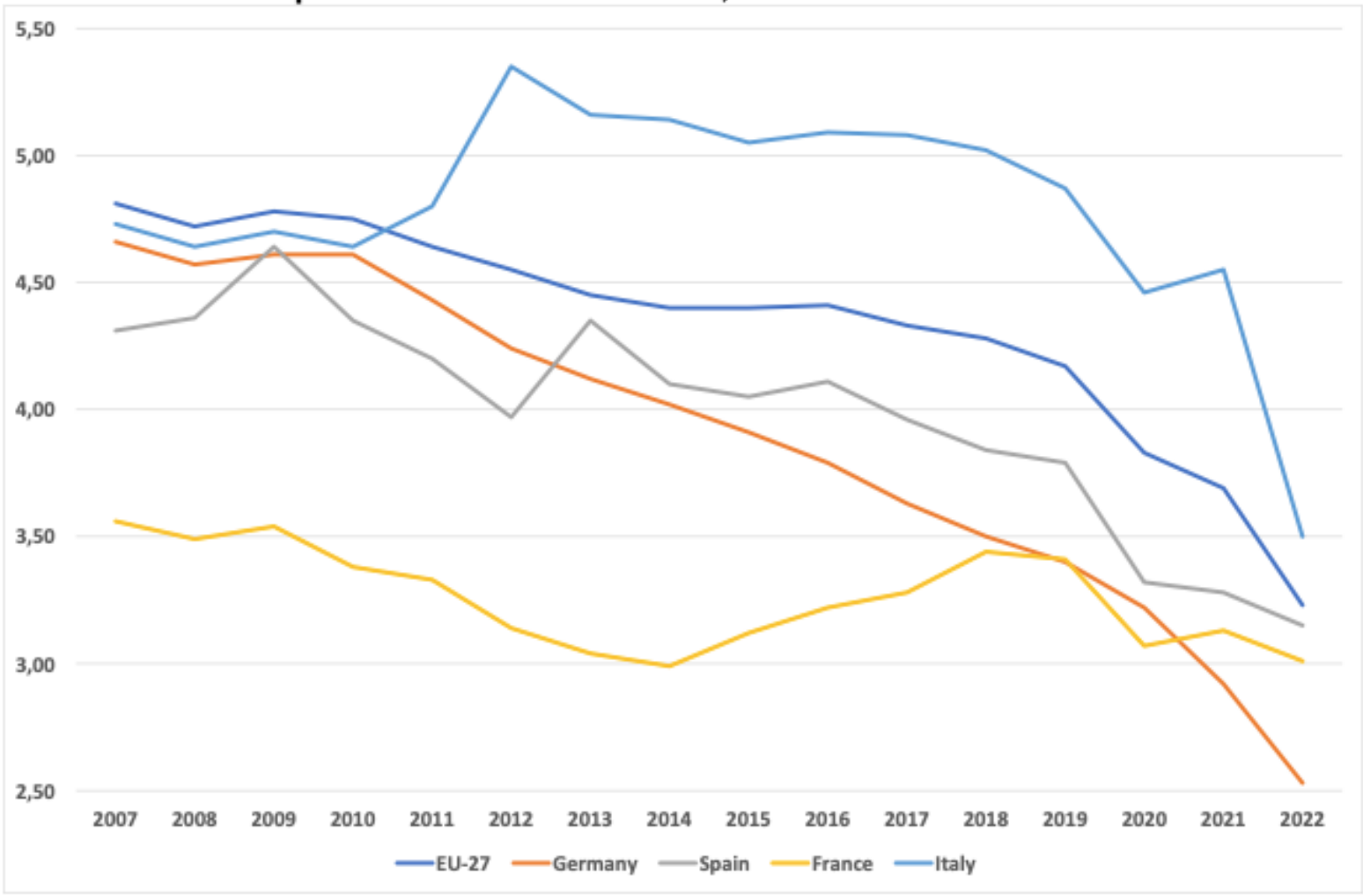
Externalities and tax correction

- How to combine different tax instruments?
- Which tax levels?
- New proposals on access and congestion
- Distributional effects
  - Are they relevant?
  - How to compensate them?
- Taxes in a wider context:
  - Subsidies
  - Standards: synergies?
  - Plate-access; bans

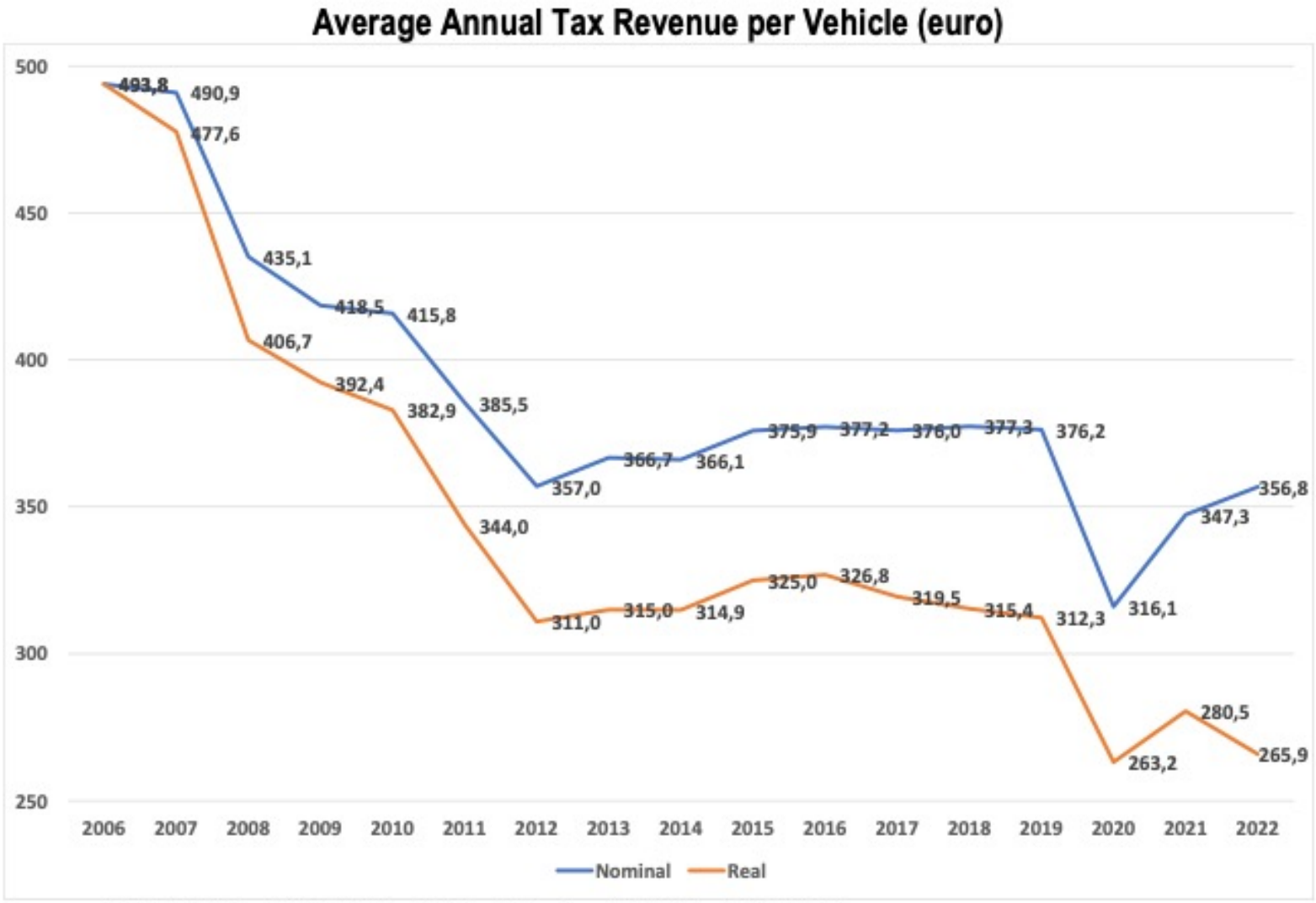
Changes in transport

- Energy efficiency remarkable improvements (and potentials)
- Alternative technologies (EV, etc.)
- Less interest in property?
- Digitalization and new transport alternatives:
  - Car sharing
  - Self-driving cars

Crisis



Source: European Commission, 2025. Taxation and customs union. Data on taxation. Tax revenue by economic function.



Sources: AEAT (2025a, 2025b), Ministerio de Hacienda (2025), DGT (2025)

External costs of transport

Type		Paper	Year	Country	% GDP
Congestion		Delucchi (1997)	1991	U.S.	0.55-**2.36**
		Winston and Langer (2006)	1996	U.S.	0.32
		Van Essen et al. (2011)	2008	EU, Norway and Switzerland	1.10-1.80
		Cravioto et al. (2013)	2006	Mexico	1.04-1.05
		BITRE (2015)	2010	Australia	0.94
		BITRE (2015)	2015	Australia	1.13
		Schrank et al. (2015)	1982	U.S.	0.59
		Schrank et al. (2015)	2014	U.S.	0.92
		Keller (2018)	2015	Switzerland	**0.29**
Air Pollution	**Local**	DMT (2004)	2000	Denmark	**0.15**
		Fisher et al. (2007)	2001	New Zealand	0.24
		Van Essen et al. (2011)	2008	EU, Norway and Switzerland	0.39
		Cravioto et al. (2013)	2006	Mexico	0.61-0.62
		OECD (2014)	2010	OECD	**1.97**
		Guo et al. (2010)	2004	China	0.52
		Guo et al. (2010)	2008	China	0.58
	Global	DMT (2004)	2000	Denmark	**0.11**
		Van Essen et al. (2011)	2008	EU, Norway and Switzerland	0.97
		Cravioto et al. (2013)	2006	Mexico	0.99-**1.00**
		Ivkovic et al. (2018)	2013	Serbia	0.20
	Total	GEA (2018)	2008	Germany	**1.93**
		GEA (2018)	2014	Germany	**1.78**
Accidents		López et al. (2004)	1997	Spain	1.35
		DMT (2004)	2000	Denmark	**0.49**
		Van Essen et al. (2011)	2008	EU, Norway and Switzerland	**1.75**
		Cravioto et al. (2013)	2006	Mexico	1.32-1.34
Noise		DMT (2004)	2000	Denmark	**0.65**
		Van Essen et al. (2011)	2008	EU, Norway and Switzerland	**0.13**
		Cravioto et al. (2013)	2006	Mexico	0.42-0.43

How to proceed?

- (1) Giving up
- (2) Trying to fix the current system
  - Adjusting fuel taxes to all pollutants
  - Salience through registration tax? Feebates?
  - Extending congestion charges
- Still, not an easy task: Spain these days…
  - Low tax levels but…
  - Diesel taxes seen as unfair, sometimes on 'clean' cars
  - Huge exemptions advanced
  - Revenue effects?

How to proceed?

- (3) A new system for taxing road transport
  - Heavily based on vehicle characteristics
  - Able to discriminate in time and location
  - Able to act as a km tax
  - Able to keep revenues
- Not writing on a blank sheet:
  - Singapore (1975): Technical feasibility
  - Stockholm (2006): How to get public support
  - Oregon (2015): The importance of testing and transition

Marginal external costs of vehicle use

Externality	Fuel	Type of road	MEC (€ct/vkm)
Congestion	All	Motorway (metropolitan)	26.8-61.5
		Main (metropolitan)	141.3-181.3
		Other (metropolitan)	159.3-242.6
		Main (urban)	48.7-75.8
		Other (urban)	139.4-230.5
		Motorway (rural)	13.4-30.8
		Main (rural)	18.3-60.7
		Other (rural)	42.0-139.2
Local pollution	Diesel	Urban	0.7-10.3
		Sub-urban	0.3-3.4
		Rural	0.2-1.2
		Motorway	0.2-1.3
	Gasoline	Urban	0.4-3.8
		Sub-urban	0.1-3.5
		Rural	0.1-2.8
		Motorway	0.1-3.5
	Electricity	Urban	0.72
		Rural	0.99
Global pollution	Diesel	Urban	1.6-3.0
		Rural	1.1-2.3
		Motorway	1.2-2.7
	Gasoline	Urban	2.4-3.9
		Rural	1.4-2.3
		Motorway	1.5-2.3
	Electricity	Average	1.7
Accidents	All	Motorway	0.1
		Uban	0.3
		Other	0.2
Noise	Conventional	Urban (day)	0.88-2.14
		Urban (night)	1.61-3.89
		Rural (day)	0.01-0.02
		Rural (night)	0.01-0.04
	Electricity	Urban (day)	0.88-2.14
		Urban (night)	0.80-1.95
		Rural (day)	0.01-0.02
		Rural (night)	0.01-0.03

Korzhenevych et al., 2014; Jochem et al., 2016

Comprehensive and Automated Vehicle Tax (CAVT)

	Zone 1 (urban)	Zone 2 (semi-urban)	Zone 3 (non-urban)
Vehicle type A	*Peak* Access charge 1 Time charge 1a (...) km charge	*Peak* Time charge 2a (...) km charge	km charge
	Non-peak km charge	*Non-peak* km charge	
Vehicle type B	(...)	(...)	(...)

Vehicle type A	Payment					
		Congestion	Local P/ noise	Global P	Accidents	Infrastructures
Access charge	Euros	X	-	-	-	-
Time charge 1a	Euros/hour	X	X	-	-	-
km tax	Euros/km	-	X	X	X	X

Some comments

- Benefits
  - Better internalization, also applicable to old vehicles
  - Revenue potentials (different government levels)
  - From energy to vehicle-customized taxation (electricity)
- Sub-optimal (feasibility)
  - How to aggregate vehicle types?
  - How to approximate external costs?
  - Rebound effects?
- Interesting to combine with purchase taxation (VAT + registration)
  - Salience
  - 'Ability to pay'

Some comments (2)

- Transition
  - 1st phase: Conventional tax reform + pilot experiences
  - 2nd phase: General application and tax substitution. Compensations
- Viable?
  - Privacy
  - Distributional impacts? Able to define precise compensations
  - International issues
  - Only for developed countries?
- Need of a comprehensive assessment and experimental approaches:

The White House
@WhiteHouse · **Seguir**

"CONGESTION PRICING IS DEAD. Manhattan, and all of New York, is SAVED. LONG LIVE THE KING!"
–President Donald J. Trump

8:31 p. m. · 19 feb. 2025

- **WB principles and guidelines**
  - Environmental Rationale →
  - Consideration of regulatory setting:
    - '*Fit for 55*'
    - Spanish jurisdictional framework

Table 1. Spanish Environmental Commitments and Current Situation

Environmental Problem / Reference Year	Target	Latest data
1. Greenhouse Gas Emissions (GHG) / 1990	-23% in 2030	+8,5% (2019)
1b. GHG emissions diffuse sectors/2005	-26% in 2030 (-37.7% in 2030, *Fit for 55*)	-15,1% (2019)
2. Emissions of Nitrogen Oxides (NOx) / 2005	-41% between 2020-2029 -62% from 2030	-50,3% (2019)
3. Emissions of Volatile Organic Compounds other than Methane (NMVOC) / 2005	-22% between 2020-2029 -39% from 2030	-23,3% (2019)
4. Ammonia (NH3) Emissions / 2005	-3% between 2020-2029 -16% from 2030	-2,8% (2019)
5. Particulate Matter 2.5 ($PM_{2,5}$) Emissions / 2005	-15% between 2020-2029 -50% from 2030	-8,6% (2019)
6. Energy efficiency (Mtoe)	Primary energy: 122.6 (2020); 98.5 (2030) Final Energy: 87.23 (2020); 73.60 (2030)	Primary energy: 120.75 (2019) Final energy: 86,30 (2019)
7. Weight of waste produced / 2010	-10% in 2020 -15% by 2030	-8,1%* (2018) -6,9%** (2018)
8. Household and similar wastes destined for preparation for reuse and recycling.	50% by 2020	35%*** (2018)
9. Non-hazardous construction wastes destined for preparation for reuse and recycling.	70% in 2020	47%**** (2018)
10. Recovery of the costs of water-related services.	100%	67,9%

Data sources: MITECO, *Inventario Nacional de Emisiones a la Atmósfera*; INE, *Estadísticas sobre Recogida y Tratamiento de Residuos*; MITECO, *Memoria Anual de Generación y Gestión de Residuos*; European Commission, *Commission Assessment for Spain's NECP*; Eurostat, Energy Efficiency; MITECO, *Síntesis de los Planes Hidrológicos Españoles. WFD Second Cycle (2015-2021)*

Notes: * Amount of non-hazardous and hazardous waste managed; ** Amount of municipal waste collected; *** Weight of waste recycled and composted out of total municipal waste collected; **** Weight of waste destined for recovery and backfilling operations out of total non-hazardous waste.

- Effectiveness: good praxis in tax design
- Priority Areas:
  - 'Sustainable Electrification'
  - 'Mobility compatible with ecological transition'
  - 'Increase in circularity'
  - 'Recognition of environmental costs associated to water use'

- Distributional and competitiveness compensatory packages
- *Ad hoc* or derived assessment→
- (Actions in other conventional taxes)

ECONOMÍA >

Bruselas congelará fondos europeos si no se aprueba antes de marzo la subida fiscal al diésel

La Comisión aprueba una nueva adenda con retrasos y cambios en el plan de recuperación

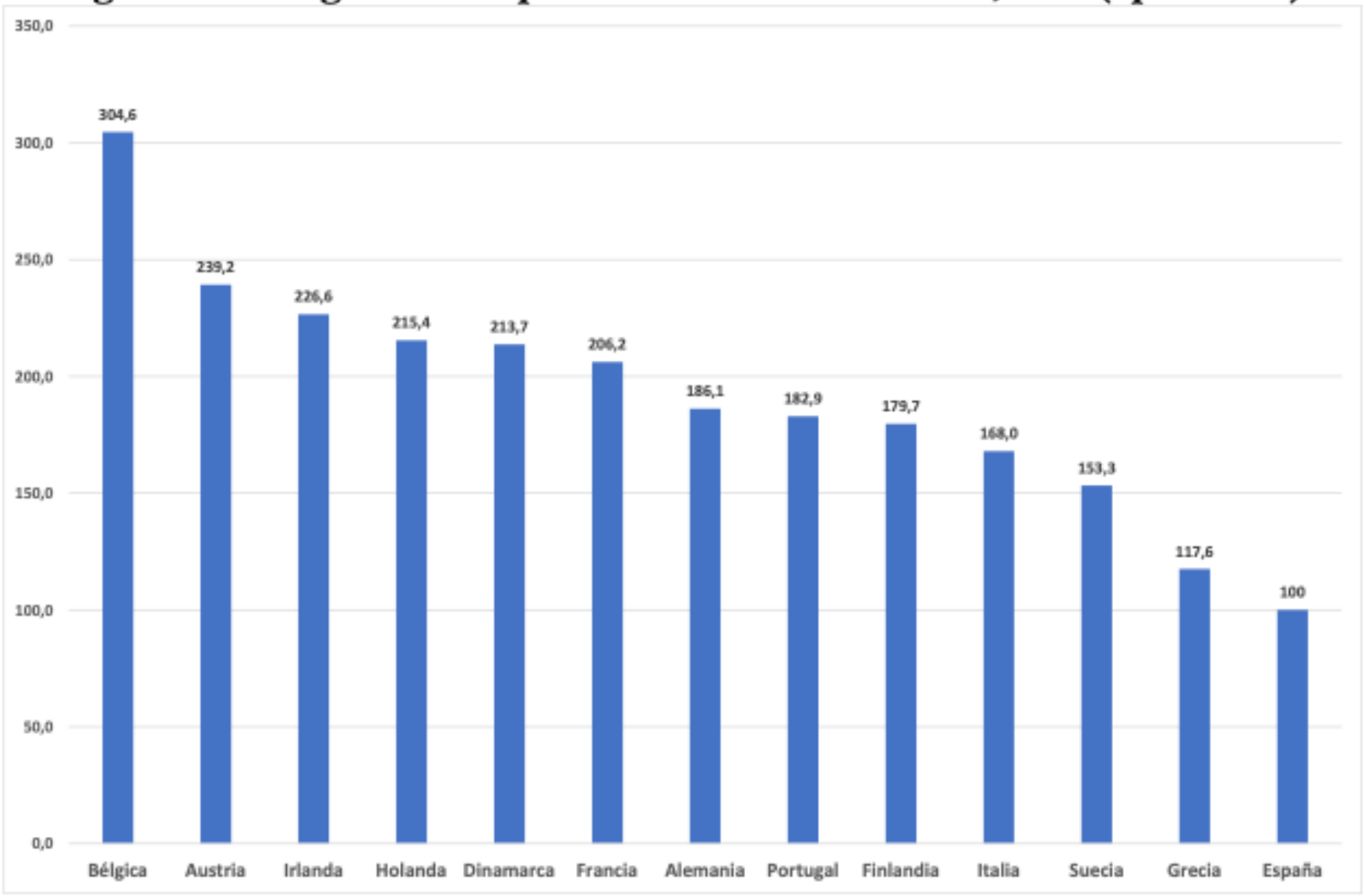
Una gasolinera en Madrid, el 2 de septiembre de 2024.
CLAUDIO ÁLVAREZ

ANTONIO MAQUEDA

Madrid - 20 DIC 2024 - 05:45 | Actualizado: 20 DIC 2024 - 17:22 CET

18

Figure 4. Average revenue per vehicle in EU countries, 2019 (Spain=100)



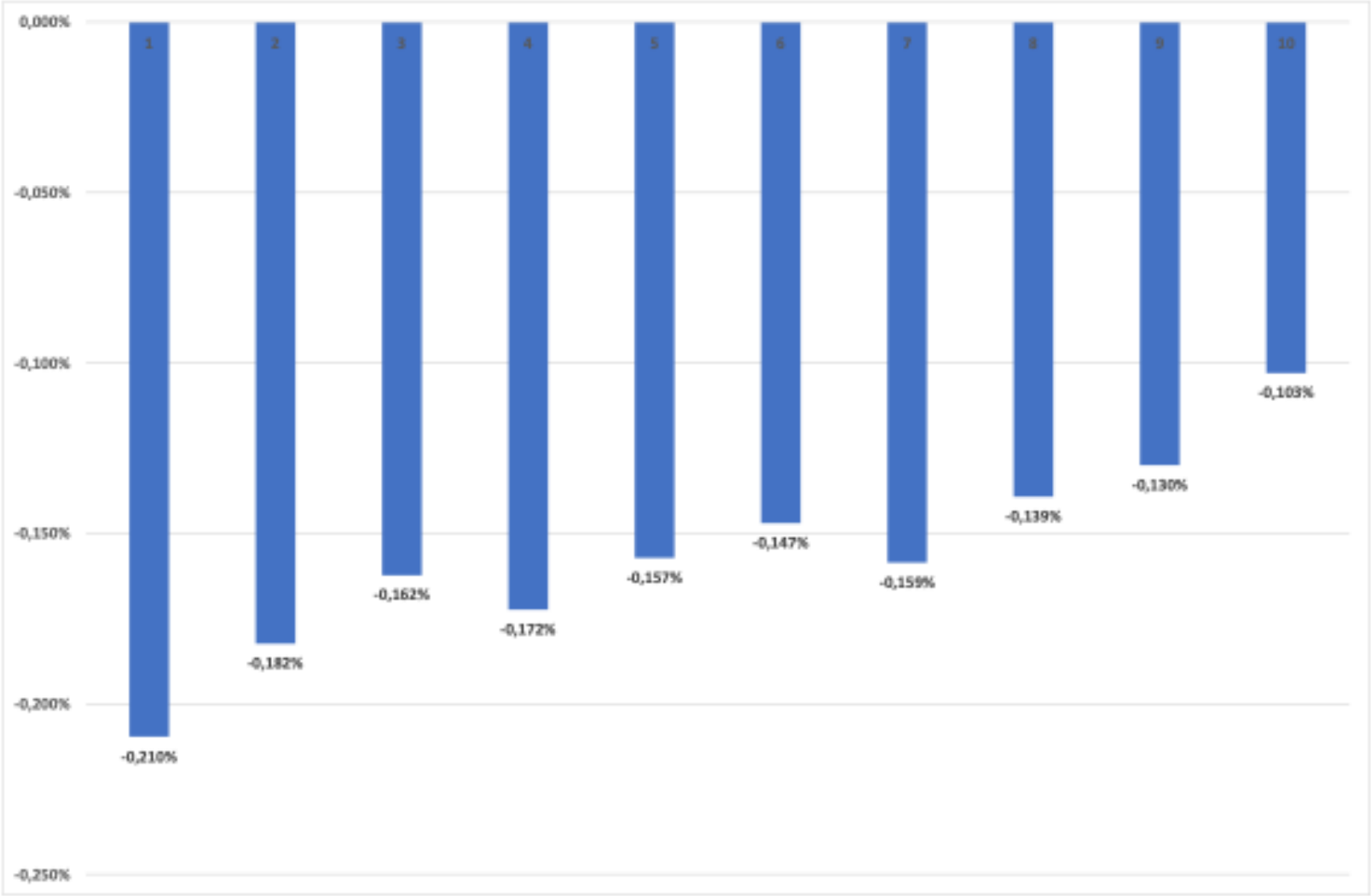
Sources: Revenue from motor vehicles (VAT on sales, services and repairs, sales and registration taxes, road taxes, fuel taxes, and others) from ACEA (2021a) divided by vehicle stock from Eurostat (2021d).

Table 8. Impacts on prices, demand, emissions and revenues of P5

	Final price (%)	Consumption (%)	CO_2 emissions (%)	Additional revenues (Millions of euros)		
				I.E.H	VAT	Total
Residential diesel	9,34%	-1,88%	-1,88%	1.471	266,24	1.737,24 (17,0%)
Non-residential diesel	9,82%	-1,97%	-1,97%	884,08	-	884,08 (25,9%)
Total	-	-1,65%	-1,60%	2.355,09	266,24	2.621,33 (14,5%)

Source: Spanish WB on Tax Reform (2022)

Figure 7. Distributional impact by income deciles of equivalent income of P5



Note: Average percentage change in equivalent income by income deciles.

Source: Spanish WB on Tax Reform (2022)

Accisas sobre los carburantes de automoción y los combustibles para calefacción en los países europeos y diferencia con las accisas mínimas. Sector residencial. 2025

	Gasolina (€/1000 l)	Diésel (€/1000 l)	Gas Natural Calefacción (€/GJ)	Gasóleo Calefacción (€/1000l)	Diferencia con la accisa mínima			
					Gasolina (€/1000 l)	Diésel (€/1000 l)	Gas Natural Calefacción (€/GJ)	Gasóleo Calefacción (€/1000l)
Accisa mínima	**359,00**	**330,00**	**0,3**	**21**	-	-	-	-
Alemania	654,50	470,40	1,53	61,35	295,50	140,40	1,23	40,35
Austria	482,00	397,00	0,30	98,00	123,00	67,00	0,00	77,00
Bélgica	600,16	600,16	0,77	17,26	241,16	270,16	0,47	-3,74
Bulgaria	363,02	330,30	0,00	330,30	4,02	0,30	-0,30	309,30
Chipre	429,00	400,00	2,60	74,73	70,00	70,00	2,30	53,73
Croacia	512,31	406,13	1,08	56,14	153,31	76,13	0,78	35,14
Dinamarca	626,53	410,54	9,23	331,03	267,53	80,54	8,93	310,03
Eslovaquia	514,00	368,00	0,37	368,00	155,00	38,00	0,07	347,00
Eslovenia	496,93	458,78	2,01	195,22	137,93	128,78	1,71	174,22
España	472,69	379,00	0,65	96,71	113,69	49,00	0,35	75,71
Estonia	563,00	399,00	1,41	399,00	204,00	69,00	1,11	378,00
Finlandia	685,40	503,80	5,85	265,10	326,40	173,80	5,55	244,10
Francia	682,90	594,00	2,35	156,20	323,90	264,00	2,05	135,20
Grecia	700,00	410,00	0,30	280,00	341,00	80,00	0,00	259,00
Hungría	399,17	373,93	0,00	373,93	40,17	43,93	-0,30	352,93
Irlanda	541,84	425,72	2,81	47,36	182,84	95,72	2,51	26,36
Italia	728,40	617,40	1,19	403,21	369,40	287,40	0,89	382,21
Letonia	532,00	440,50	1,06	108,50	173,00	110,50	0,76	87,50
Lituania	466,00	466,00	0,30	60,00	107,00	136,00	0,00	39,00
Luxemburgo	559,08	452,55	2,53	116,96	200,08	122,55	2,23	95,96
Malta	359,00	330,00	0,84	172,09	0,00	0,00	0,54	151,09
Países Bajos	789,10	516,25	16,58	516,25	430,10	186,25	16,28	495,25
Polonia	422,65	391,12	0,32	54,14	63,65	61,12	0,02	33,14
Portugal	481,26	337,21	0,31	337,21	122,26	7,21	0,01	316,21
R. Checa	508,07	393,72	0,34	26,12	149,07	63,72	0,04	5,12
Rumanía	508,20	465,76	0,47	465,76	149,20	135,76	0,17	444,76
Suecia	451,63	378,36	9,93	378,28	92,63	48,36	9,63	357,28

Fuente: European Commission (2025) y elaboración propia

Table 14. Current IEDMT tax rates and proposals 7A and 7B

Current (gCO/km_2)	Current tax rate	Proposal (gCO/km_2)	Tax rate P7A	Tax rate P7B
≤ 120	0%	≤ 55	0%	0%
> 120-≤ 160	4,75%	>55-≤ 127	0%	5%
> 160-≤ 200	9,75%	>127-≤ 152	5%	10%
>200	14,75%	>152-≤ 175	10%	15%
		>175	15%	20%
		Vehicle weight	**Type**	
		>1800 kg	10 €/kg additional	

Table 15. IEMDT as a unitary tax on expected emissions (P7C)

Emissions (g/km)	Tax rate (euros per g/km)
0	-
1-86	0,33
87-111	20
112-155	44
156-172	72
≥173	144
Car weight	**Tax rate**
> 1800 kg	10 €/kg additional

Source: Spanish WB on Tax Reform (2022)

LA VANGUARDIA

LOS EXPERTOS DE HACIENDA LO RECOMIENDAN

Las aerolíneas presionan para frenar el impuesto de 7,85 euros por billete

• Garamendi defiende la ampliación de El Prat y reclama un impulso decidido al Perte del sector

Las aerolíneas presionan para frenar el impuesto de 7,85 euros por billete (Dani Duch)

FERNANDO H. VALLS
26/09/2022 15:04 | Actualizado a 26/09/2022 15:26

ANFAC
La Movilidad del Futuro

ACTUALIDAD VEHÍCULO ELÉC

MARTES, 5 DE ABRIL DE 2022

Tribuna de opinión firmada por José López-Tafall, director general de ANFAC; ejecutiva de Faconauto; José Portilla, director general de Sernauto; José Ma Anesdor y Jaime Barea, director corporativo de Ganvam publicada en Expansión

Imagen diseñada por Freepik

La ciudadanía está viviendo un claro proceso de cambio en sus opciones para ejercer el derec cambio nace vinculado a dos elementos fundamentales: **el desarrollo tecnológico y la tr**

En este contexto, donde la reflexión y el análisis riguroso deben adquirir un protagonism contenido del **"Libro Blanco para la Reforma del Sistema Tributario"**, elaborado p por el Gobierno de España. En lo que respecta a nuestro sector, la puesta en marcha de esta aportar certidumbre y definir unas nuevas bases sobre las que avanzar hacia la descarbonización de la movilidad, que es el objetivo compartido por todos. Sin embargo, consideramos que no ha sido así.

Desde nuestro punto de vista, **la reforma fiscal planteada por el comité de expertos parte de una lectura equivocada del proceso y, en consecuencia, ofrece un diagnóstico erróneo y una solución inconveniente, al menos para España**. Se propone una fiscalidad que se limita a incrementar todos los costes de la movilidad para los ciudadanos y compromete la hoja de ruta de la descarbonización asumida por España y la Unión Europea. Más aún, creemos que pone en riesgo el futuro desarrollo de la automoción, un sector que hoy es estratégico para la economía y el empleo de nuestro país.

«La reforma fiscal planteada por el comité de expertos pone en riesgo el futuro desarrollo de la automoción, un sector que hoy es estratégico para la economía y el empleo de nuestro país»

Change in household income by decile from clean vehicle subsidies in Spain, 2023

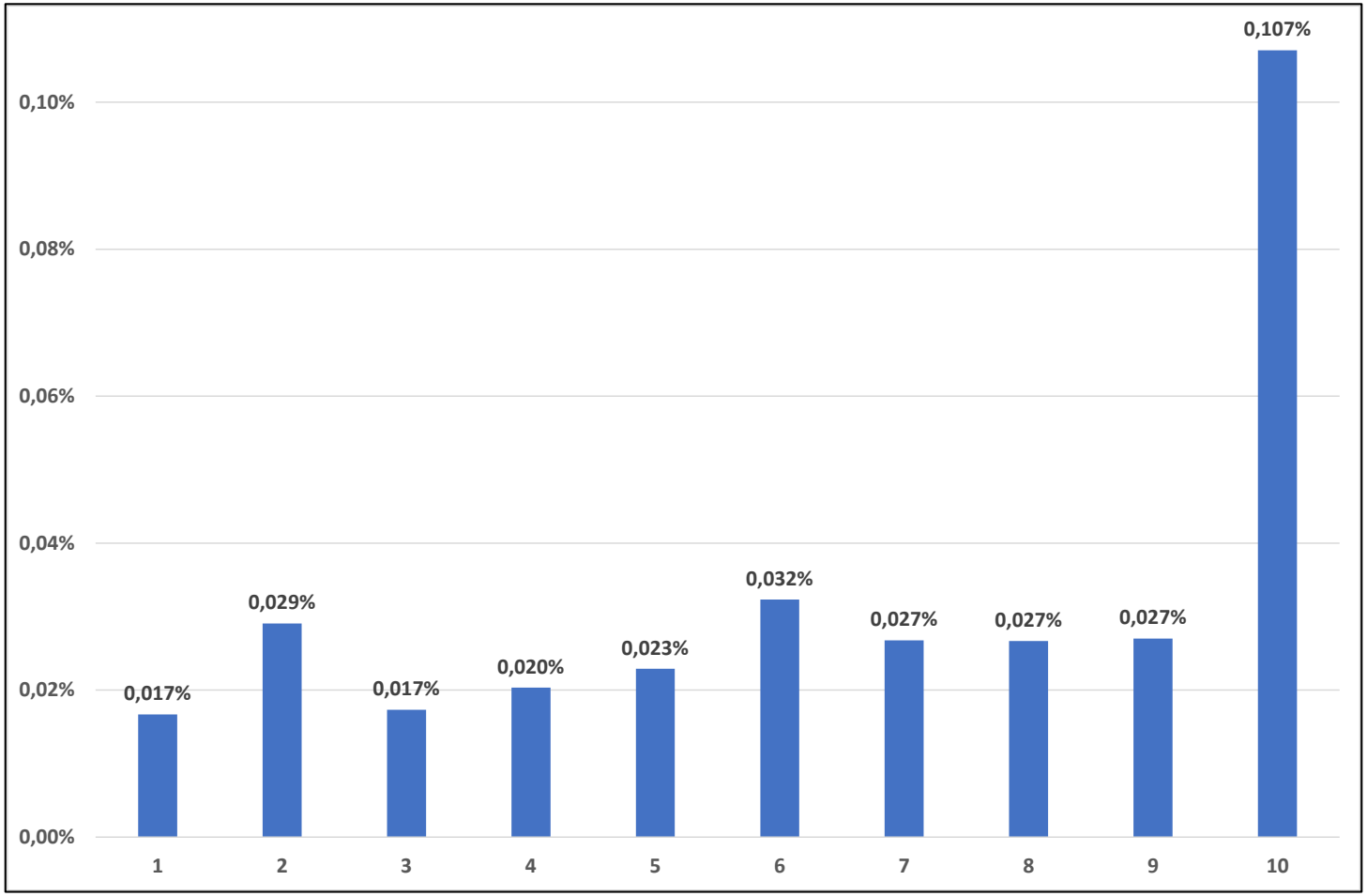


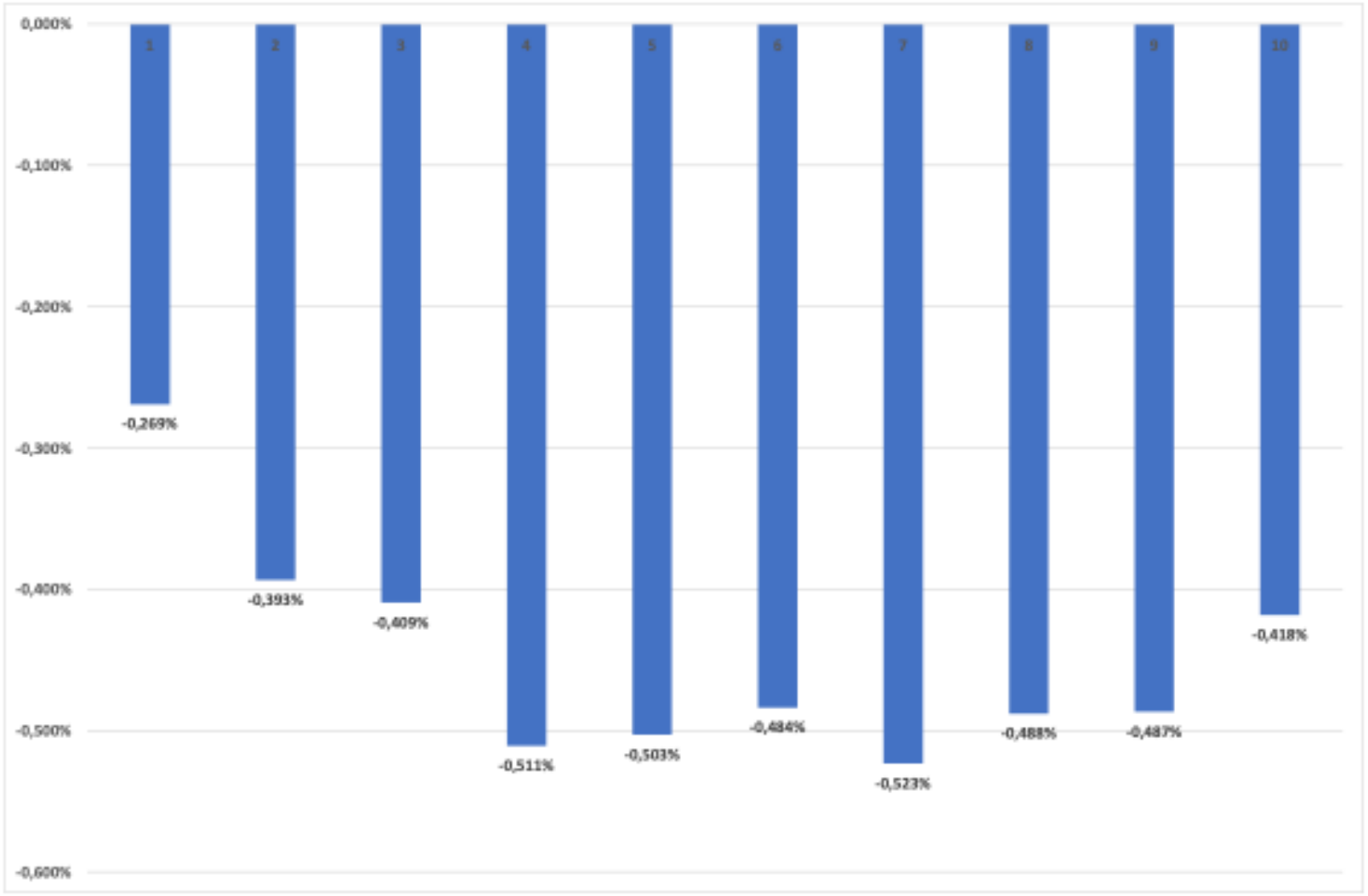
Table 13. Impacts on prices, demand/emissions and revenues of P1, P3 and P6

	Final price (%)	Consumption and CO_2 emissions (%)	Additional revenues (Millions of euros)					
			IVPEE	I.EE	I. CO_2	FNSSE	VAT	Total
Residential electricity	-11,63%	2,36%	-372,31	-731,47	--	-912,12	-318,47	-1.422,25 (-31,7%)
Non-residential non-electro-intensive electricity	-17,37%	3,53%	-468,88	-583,69	--	-1.255,29	--	-1.052,57 (-94,8%)
Non-residential electro-intensive electricity	-14,18%	2,88%	-286,86	-53,60	--	-762,46	--	-340,45 (-98,5%)
Gasoline 95	15,47%	-3,91%	--	-116,63	692,87	311,42	155,37	1.043,03 (23,7%)
Residential diesel	27,76%	-5,58%	--	1.167,48	2.183,67	841,72	753,69	4.946,57 (48,4%)
Non-residential diesel	29,19%	-5,87%	--	713,21	1.300,58	501,32	--	2.515,11 (73,6%)
Residential natural gas	21,81%	-5,28%	--	42,58	503,48	276,64	129,76	952,45 (97,2%)
Non-residential natural gas Non-EU ETS sectors	48,55%	-11,75%	--	218,05	755,03	414,85	--	1.387,94 (2.733,8%)
Non-residential natural gas EU-ETS sectors	22,25%	-5,39%	--	311,72	--	583,91	--	895,63 (1.343,7%)
Total	--	-3,07% -3,90%*	-1.128,04	967,66	5. 435,63	--	720,34	8.925,47 (35,6%)

Note: *Change in CO_2

Source: Spanish WB on Tax Reform (2022)

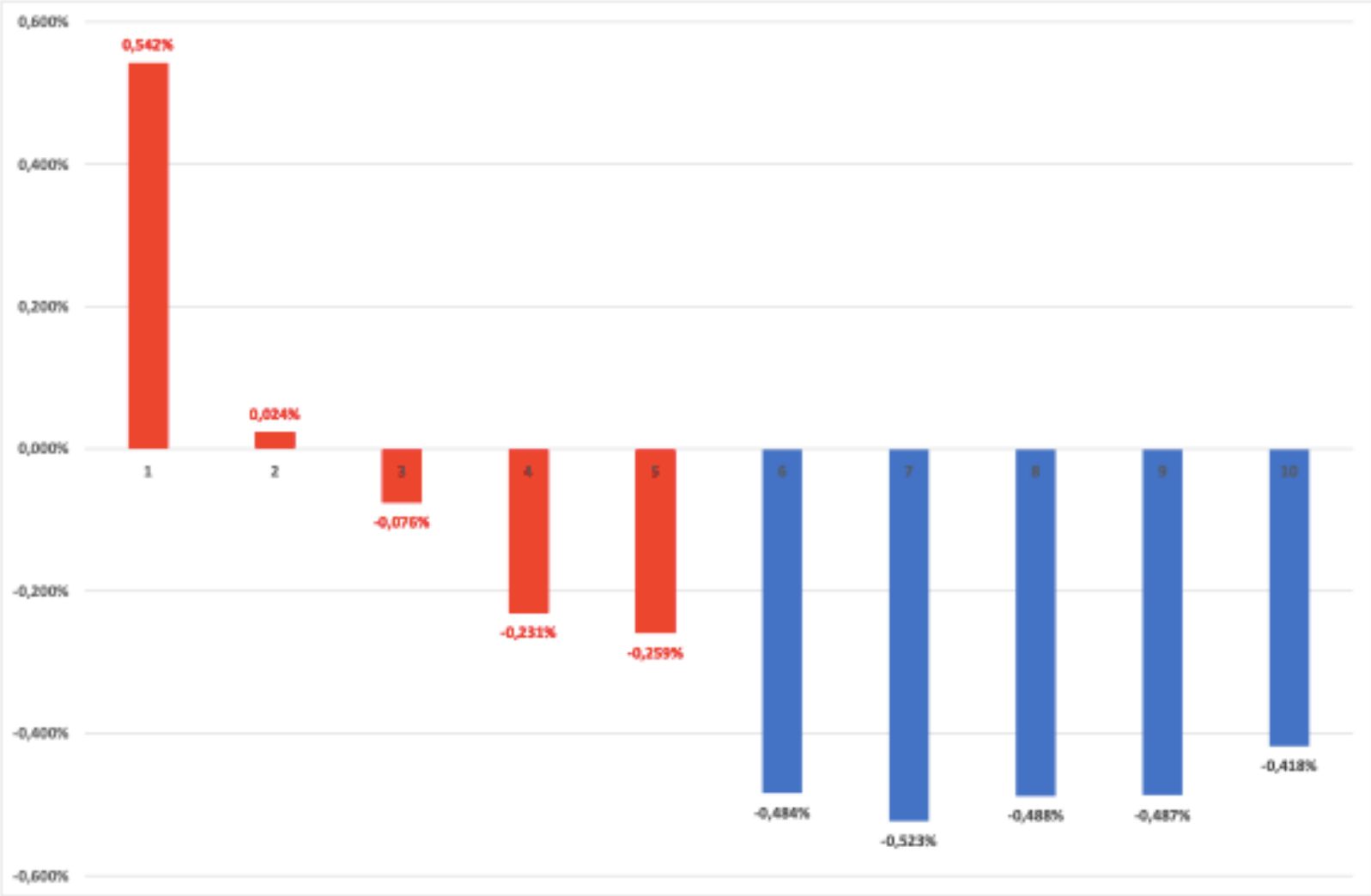
Figure 15. Distributional impacts by equivalent income deciles of P1, P3 and P6



Note: Average percentage change in equivalent income by income deciles.

Source: Spanish WB on Tax Reform (2022)

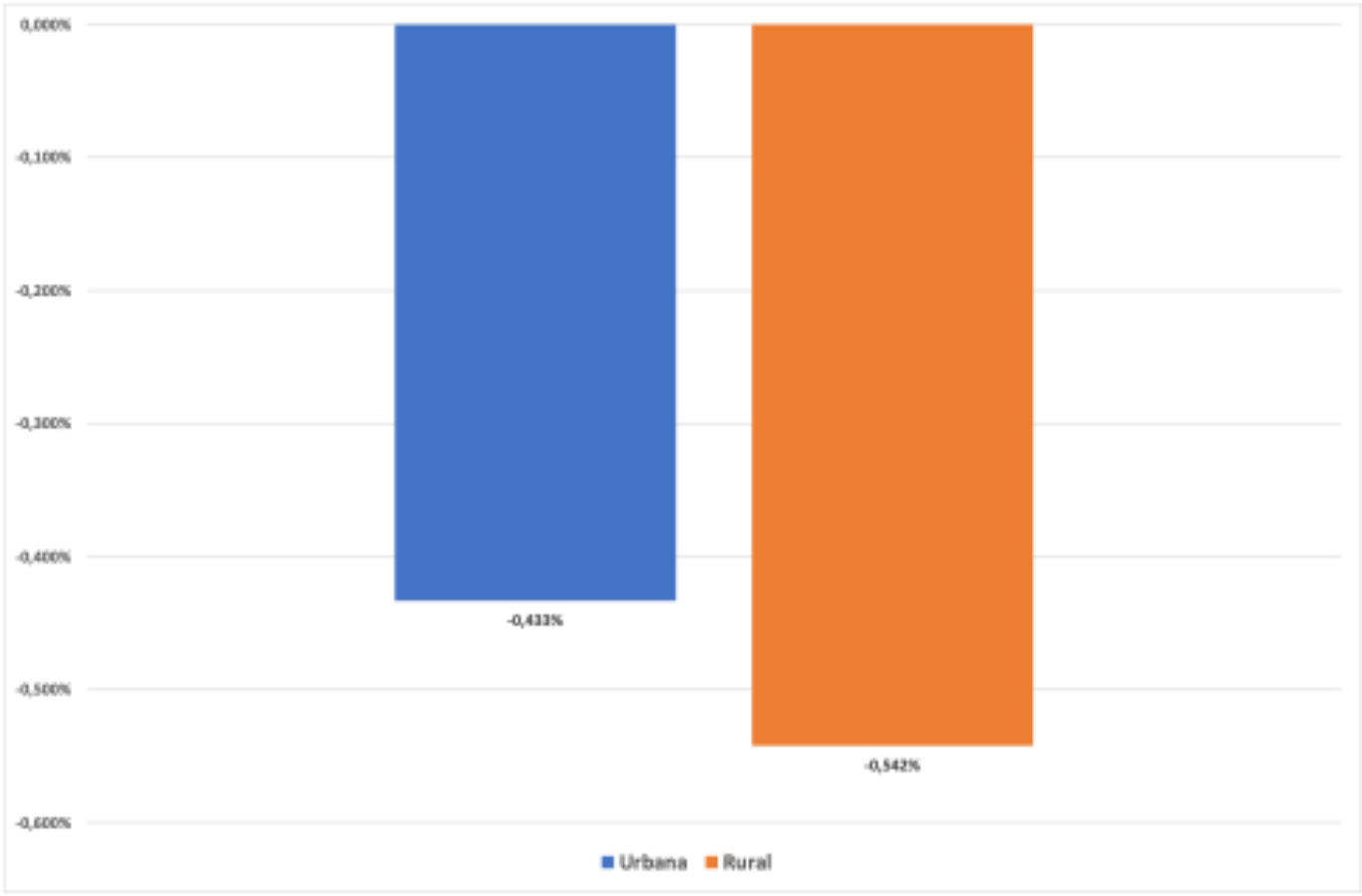
Figure 16. Impacts with compensation by equivalent income deciles of P1, P3 and P6



Note: In red the deciles in which there is variation because of the compensatory scheme.

Source: Spanish WB on Tax Reform (2022)

Figure 17. Impact on the equivalent income of rural/urban areas of P1, P3 and P6



Note: Average percentage change in equivalent income by income deciles.

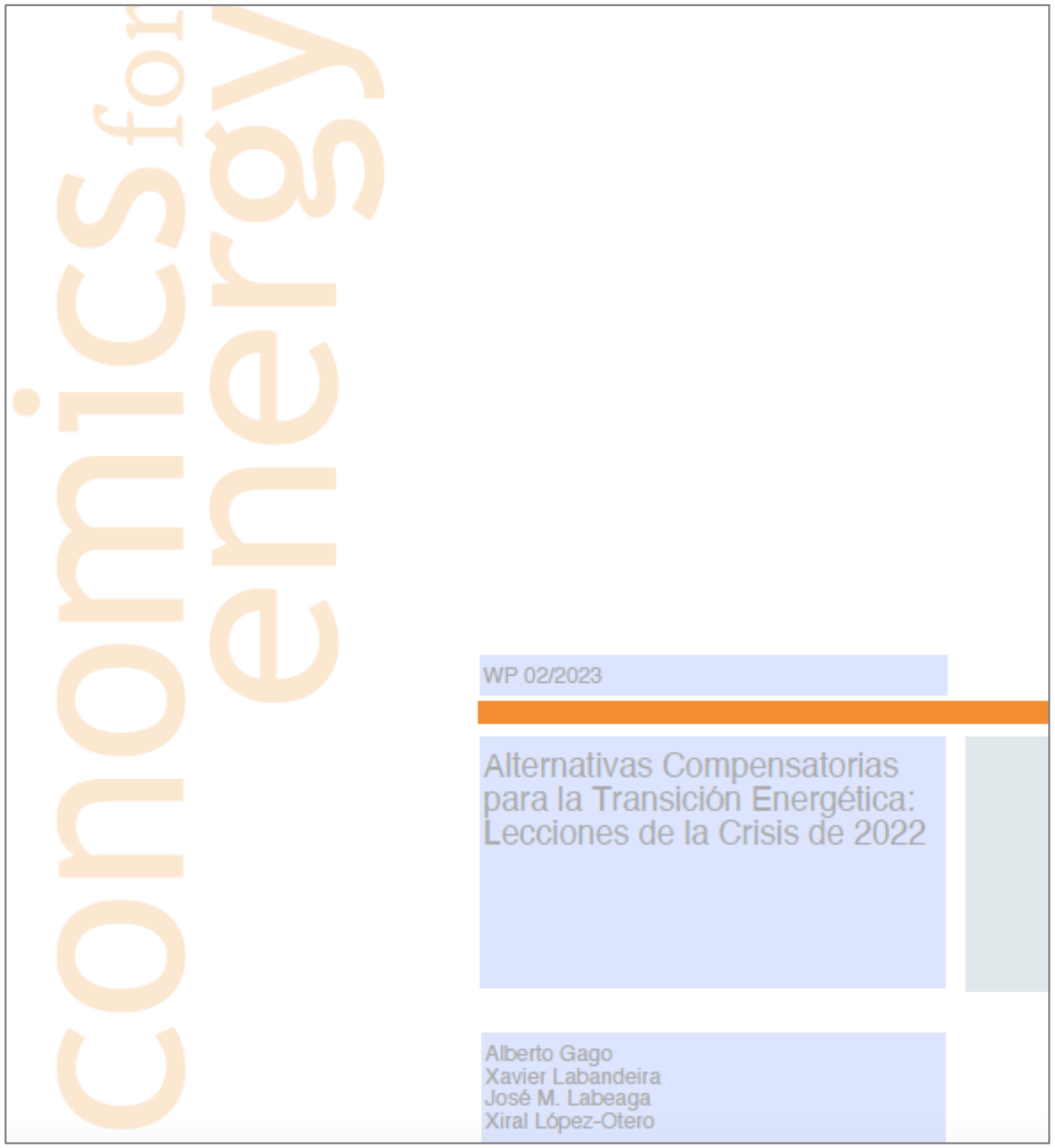
Source: Spanish WB on Tax Reform (2022)

Constraints in practice…

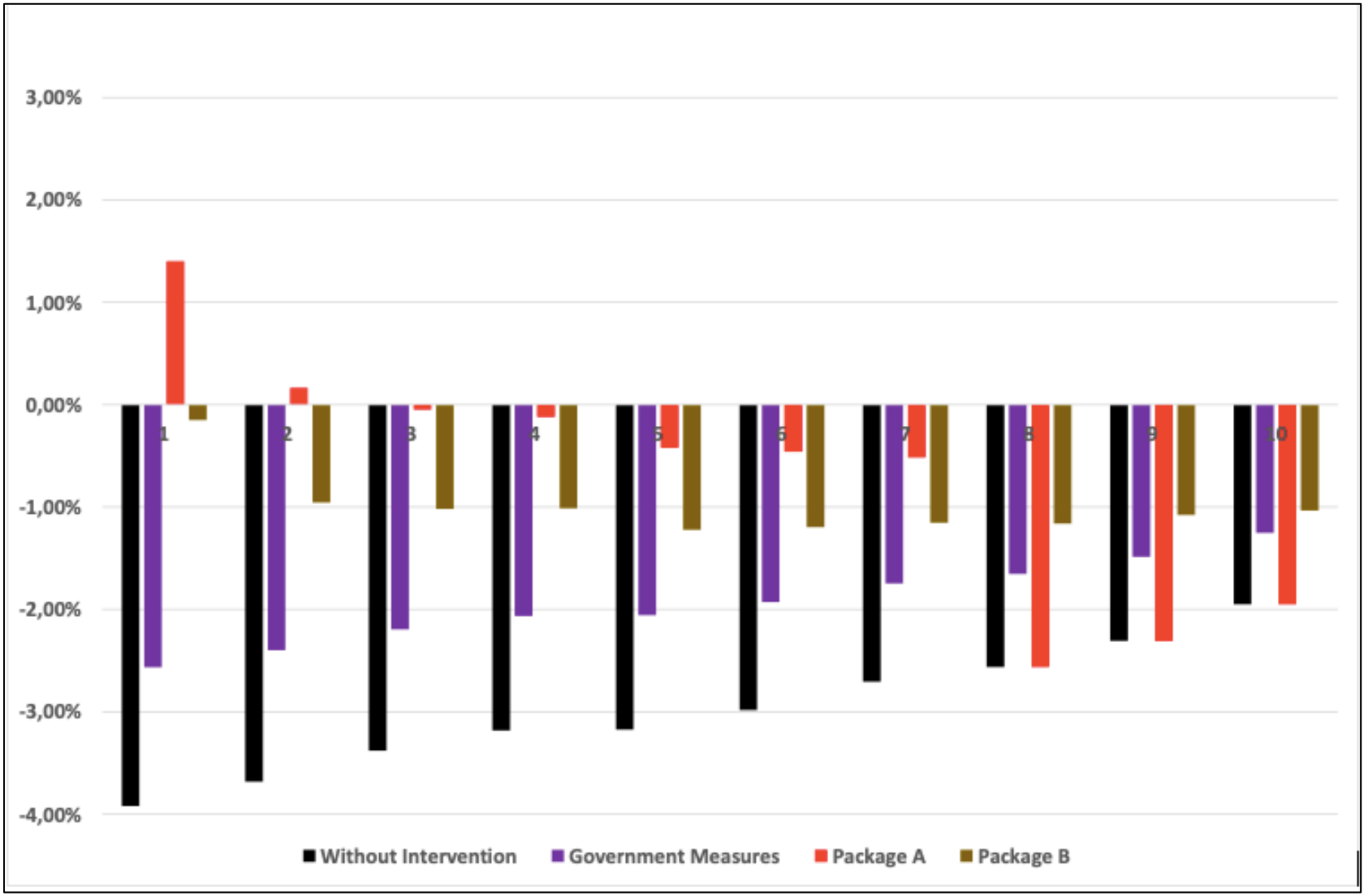
Measures implemented by European countries to tackle the 2022 energy crisis and expenses

	Reduced energy tax/VAT	Retail price regulation	Wholesale price regulation	Transfers vulnerable groups	Mandates to state-owned firms	Windfall profits tax/regulation	Business support	Other	Expenses (% GDP)
Austria	X	X		X			X	X	2.6
Belgium	X	X		X			X	X	0.8
Bulgaria	X	X		X		X	X		5.3
Croatia	X			X			X		4.2
Cyprus	X			X	X				0.8
Czech R.	X	X		X			X	X	3.4
Denmark	X	X		X					2.1
Estonia	X	X		X			X		1.0
Finland	X			X			X	X	0.5
France	X	X	X	X	X		X	X	2.8
Germany	X	X		X			X		7.4
Greece	X			X	X		X		5.7
Hungary	X	X				X	X		-
Ireland	X			X		X	X	X	0.9
Italy	X			X		X	X		5.1
Latvia	X			X			X		3.2
Lithuania				X			X	X	6.6
Luxemburg	X	X		X			X		3.3
Malta			X		X				7.0
Netherlands	X	X		X					5.1
Norway	X			X			X		2.0
Poland	X	X		X		X			2.2
Portugal	X		X	X	X		X		3.3
Romania	X	X		X		X	X		3.5
Slovakia		X		X	X		X		3.7
Slovenia	X			X			X		1.0
Spain	X	X	X	X			X		3.2
Sweden	X			X		X		X	0.3
United Kingdom	X	X		X			X	X	3.5

Source: Sgaravatti *et al.* (2022)


conomics for energy
WP 02/2023
Alternativas Compensatorias para la Transición Energética: Lecciones de la Crisis de 2022
Alberto Gago
Xavier Labandeira
José M. Labeaga
Xiral López-Otero

Comparison of distributional outcomes



- **Fiscalidad Ambiental: necesaria para una transición exitosa**
- **No se han cumplido expectativas, por varias razones**
- **El tiempo para soluciones flexibles puede agotarse**
- **Grandes necesidades en el ámbito del transporte**
- **Nuevas realidades geopolíticas pueden hacerla más viable en ciertos territorios**

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