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The Legal Objectives of the EU Emissions Trading System: An Evaluation Framework

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(First published online 27 August 2024)

Abstract

Climate policies are often evaluated using criteria that are heterogeneous and misaligned with the stated aims of these policies. By combining legal research methods with insights from economic theory, we systematically map and analyze the legal objectives of the European Union (EU) Emissions Trading System (ETS), a key climate policy instrument. We find that the EU ETS is shaped by a nuanced internal normative framework, the principal goal of which is emissions reduction, combined with three secondary goals of cost-effectiveness, economic efficiency and equity, and a meta-goal of coherence. Based on the contents and interrelations of these legal objectives, we formulate evaluation criteria that can be used to critically analyze and evaluate the EU ETS performance in a more comprehensive, transparent, and comparable manner. The resulting methodology is applicable to other environmental policies and jurisdictions.

Keywords: European Union Emissions Trading System (EU ETS); Legal goals; Hierarchy; Normative framework; Evaluation criteria

1. Introduction

The European Union (EU) Emissions Trading System (ETS) is often characterized as a cornerstone of EU climate policy. Since its establishment in 2005,¹ the scheme has undergone 17 revisions, progressively broadening its scope to encompass a variety of greenhouse gases (GHGs) and economic activities. The EU ETS covers emissions from power generation, heavy industry, and aviation within the European Economic Area.² The latest legislative revision of 2023 extended the scheme to maritime transport, while a separate emissions trading scheme will be established to cover fuel combustion in buildings, road vehicles and additional sectors.³ However, as the

¹ Art. 4 of Directive 2003/87/EC Establishing a Scheme for Greenhouse Gas Emission Allowance Trading within the Community and Amending Council Directive 96/61/EC [2003] OJ L 275/32 (EU ETS Directive).

² EU ETS Directive, Annex I.

³ Directive (EU) 2023/959 amending Directive 2003/87/EC Establishing a System for Greenhouse Gas Emission Allowance Trading within the Union and Decision (EU) 2015/1814 concerning the

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EU carbon market and the associated scholarly literature have expanded, less explicit attention has been paid to its core objectives: which goals does the EU ETS, along with its subsequent amendments and expansions, aim to achieve?

According to Article 1 of the EU ETS Directive, the ETS aims ‘to promote reductions of greenhouse gas emissions in a cost-effective and economically efficient manner’.⁴ Yet, what does the objective⁵ of ‘promoting’ GHG emissions reductions entail? What do ‘cost-effective’ and ‘economically efficient’ mean in this context? Does the scheme pursue additional (sub-)goals beyond those outlined in Article 1 and, if it does, is there a legal hierarchy among these objectives? These are not marginal theoretical considerations but constitute key questions with also practical implications. As Quemin and Pahle point out, clarifying the ambiguous scope of the objectives pursued by the EU ETS Directive is necessary for defining a normative benchmark for the functioning of the carbon market.⁶

This article aims to answer the aforementioned questions and develop a framework for evaluating the EU ETS and its amendments, based on a systematic analysis of the objectives of the scheme, as enshrined in EU law. In general, such objectives can either be purely ‘internal’ to a legal system, such as the goal of maintaining coherence with other legal norms, or can express non-legal considerations that have been ‘internalized’ into law by the legislators, such as the goal of economic efficiency.⁷ To our knowledge, the internal normative framework of the EU ETS Directive – namely, the framework of the internal(ized) goals it pursues – has not yet been mapped. By doing so, our analysis supports decision-making and climate policy evaluation in three ways. Firstly, it can facilitate future evaluations of the EU ETS to be more comprehensive and consistent by providing a set of criteria that capture the nuances of and relationships between the specific goals of the emissions trading legislation. Secondly, it can aid in mitigating bias in the selection and prioritization of evaluation criteria. Thirdly, it can improve transparency and comparability across different evaluations of the EU ETS, as explained below.

As evaluations are inherently normative, they require a set of explicit or implicit criteria as a basis for formulating assessments.⁸ Various publications have applied different (combinations of) criteria to evaluate amendments to the EU ETS.⁹ While

Establishment and Operation of a Market Stability Reserve for the Union Greenhouse Gas Emission Trading System [2023] OJ L 130/134.

⁴ EU ETS Directive, Art. 1.

⁵ In this article the terms ‘objectives’, ‘goals’, and ‘aims’ are used interchangeably.

⁶ S. Quemin & M. Pahle, ‘Financials Threaten to Undermine the Functioning of Emissions Markets’ (2023) 13 *Nature Climate Change*, pp. 22–31, at 28.

⁷ See S. Taekema, ‘Theoretical and Normative Frameworks for Legal Research: Putting Theory into Practice’ (2018) (Feb) *Law and Method*, pp. 6–8; L. Kestemont, *Handbook on Legal Methodology: From Objective to Method* (Intersentia, 2018), pp. 64–70.

⁸ P. Mickwitz, ‘A Framework for Evaluating Environmental Policy Instruments: Context and Key Concepts’ (2003) 9(4) *Evaluation*, pp. 415–36, at 425.

⁹ See, e.g., P. Konidari & D. Mavrakis, ‘A Multi-Criteria Evaluation Method for Climate Change Mitigation Policy Instruments’ (2007) 35(12) *Energy Policy*, pp. 6235–57, at 6241; M. Grubb, *Strengthening the EU ETS: Creating a Stable Platform for EU Energy Sector Investment* (Climate Strategies, 2012), p. 13; M.G. Pollitt & G.G. Dolphin, ‘Should the EU ETS Be Extended to Road Transport and Heating Fuels?’ (2022) 11(1) *Economics of Energy and Environmental Policy*, pp. 1–20, at 2.

certain aspects have been commonly examined, such as the level and costs of emissions abatement, there are nonetheless important variations, both in the objectives identified and in the formulation of the criteria.¹⁰ Even the European Commission has refrained from precisely defining the overall objectives of the EU ETS, and has instead used different formulations of the criteria in its impact assessments over the years.¹¹ This heterogeneity of normative frameworks across EU ETS evaluation studies poses challenges in comparing and synthesizing their findings. Moreover, many evaluations focus predominantly on economic criteria and disregard other relevant considerations of a legal or institutional nature.¹²

Such legal-institutional aspects have been addressed by earlier legal scholarship on emissions trading, upon which our article builds.¹³ This scholarship has, among others, shed light on the competing conceptual models that underlie the different designs of emissions trading systems.¹⁴ It has also reviewed certain policy objectives that emissions trading systems often pursue, highlighting that their simultaneous attainment necessitates compromises and trade-offs between different goals.¹⁵ Our contribution is a first endeavour to go beyond generic *policy* objectives and systematically analyze the specific *legal* objectives of the EU ETS, namely, the goals embedded in current EU emissions trading legislation.

The remainder of the article is organized as follows. Section 2 highlights the methodological value of using legal objectives as bases for evaluations and explains the document analysis method used to identify the goals enshrined in the EU ETS legislation. Section 3 presents the findings and employs the legal-dogmatic method to interpret and prioritize the identified objectives,¹⁶ taking into account primary and

¹⁰ E.g., Konidari & Mavrakis (n. 9 above) focused on ‘environmental performance’, ‘political acceptability’ and ‘feasibility of implementation’ because those criteria were commonly used in previous climate policy evaluations. Grubb (n. 9 above) makes policy recommendations on the premise that the scheme aims to (i) reduce GHG emissions efficiently, (ii) promote low carbon corporate investment, (iii) support the EU’s international commitments, and (iv) generate revenue. Pollitt & Dolphin (n. 9 above) evaluate a proposed ETS extension on the basis that climate policies should ‘(i) offer a credible and binding commitment to achieving the climate target, (ii) achieve it at least cost for society and (iii) adequately address their distributional consequences’.

¹¹ E.g., compare European Commission, Staff Working Document, 11 July 2007, SEC(2007) 52, pp. 9–17, with European Commission, Staff Working Document, 14 July 2021, SWD(2021) 601 final, pp. 27–9, 145–50. See also how the Commission’s narratives concerning the EU ETS developed over time in S. Bogojević, *Emissions Trading Schemes: Markets, States and Law* (Hart, 2013), pp. 89–112.

¹² L.H. Goulder & I.W.H. Parry, ‘Instrument Choice in Environmental Policy’ (2008) 2(2) *Review of Environmental Economics and Policy*, pp. 152–74, at 171. See also M. Howlett, *Designing Public Policies: Principles and Instruments* (Routledge, 2019), pp. 12–3.

¹³ E.g., M. Peeters & M.G. Faure (eds), *Climate Change and European Emissions Trading: Lessons for Theory and Practice* (Edward Elgar, 2008); Bogojević, n. 11 above; S.E. Weishaar, *Emissions Trading Design: A Critical Overview* (Edward Elgar, 2014).

¹⁴ Bogojević, n. 11 above.

¹⁵ Weishaar, n. 13 above, pp. 39–48. For an analysis of the policy goals of the EU ETS see A. Verbruggen, E. Laes & E. Woerdman, ‘Anatomy of Emissions Trading Systems: What is the EU ETS?’ (2019) 98 *Environmental Science & Policy*, pp. 11–9, at 12.

¹⁶ See J.M. Smits, ‘What is Legal Doctrine? On the Aims and Methods of Legal-Dogmatic Research’, in R. Van Gestel, H.W. Micklitz & E.L. Rubin (eds), *Rethinking Legal Scholarship: A Transatlantic Dialogue* (Cambridge University Press, 2017), pp. 207–28.

secondary EU law and case law of the Court of Justice of the EU (CJEU).¹⁷ Complementing the legal analysis, Section 4 draws insights from economic theory to appreciate the economic rationale of the EU ETS as a market-based mechanism. Section 5 combines the findings of the previous sections to formulate evaluation criteria that reflect the contents and interrelations of the different legal goals of the EU ETS. Section 6 concludes.

2. Methodology

Legal objectives are important for four reasons. Firstly, they can provide legitimate reference points for conducting evaluations, as they are the outcomes of established legislative procedures. The extent to which such procedures are participatory and deliberative influences the legitimacy of the legislation produced and the goals enshrined therein.¹⁸ Secondly, legal objectives result from a political balancing of various, often opposing, interests.¹⁹ Particularly in a jurisdiction such as the EU, the ordinary legislative procedure of which requires broad agreement among political groups in the European Parliament and among Member States' ministers in the Council of the EU, the objectives embedded in the law are likely to reflect a comprehensive set of considerations, balanced in the pursuit of political compromise.²⁰ Thirdly, legal goals provide a framework that is universally applicable within a jurisdiction and that remains stable until revised by the legislature. This is an advantage compared with policy goals, which can be ephemeral and divergent between different institutions and policy actors. Lastly, goals enshrined in legislation have an objective normative significance, as they drive the implementation of the law, being at the core of the teleological (purpose-driven) method of interpretation applied by courts. Particularly the CJEU has given priority to teleological interpretation over other methods.²¹

Analyzing the objectives and priorities of the law can be valuable in understanding, evaluating, and improving climate policies. Law is an essential tool for mitigating the climate crisis. Making its internal logic explicit and accessible to a non-legal audience can provide a common ground for social dialogue and for regulatory collaboration among various disciplines. Our contribution identifies and analyzes the legal objectives of the EU ETS, by combining legal research methods with complementary insights from economic theory, and subsequently transposes those objectives into evaluation criteria.

¹⁷ Primary EU law refers to the treaties agreed between EU Member States that establish the legal framework of the EU. Primary EU law is hierarchically superior to secondary EU law, which refers to the various legal acts of the EU institutions, such as regulations, directives and decisions. For more details see P. Craig & G. de Búrca, *EU Law: Text, Cases, and Materials* (Oxford University Press, 6th edn, 2015), pp. 110–22.

¹⁸ See J. Habermas, *Between Facts and Norms: Contributions to a Discourse Theory of Law and Democracy* (The MIT Press, 1996); J.S. Dryzek & S. Niemeyer, 'Legitimacy', in J.S. Dryzek (ed.), *Foundations and Frontiers of Deliberative Governance* (Oxford University Press, 2010), pp. 21–41.

¹⁹ See R.W. Hahn, 'The Political Economy of Environmental Regulation: Towards a Unifying Framework' (1990) 65(1) *Public Choice*, pp. 21–47.

²⁰ See S. Novak, O. Rozenberg & S. Bendjaballah, 'Enduring Consensus: Why the EU Legislative Process Stays the Same' (2021) 43(4) *Journal of European Integration*, pp. 475–93.

²¹ K. Lenaerts & J.A. Gutiérrez-Fons, 'To Say What the Law of the EU Is: Methods of Interpretation and the European Court of Justice' (2014) 20(2) *Columbia Journal of European Law*, pp. 3–61, at 31–2.

The resulting framework can be used by lawmakers, policymakers, and researchers at all stages of the policy cycle.²² It can help them (i) to evaluate the effectiveness of the EU ETS, namely, its ability to achieve its legal goals; (ii) to critically analyze different proposals to amend the EU ETS; (iii) to highlight possible trade-offs between specific design options; and (iv) to formulate regulatory amendments that align with the legal objectives of the scheme. Moreover, our methodological approach to develop an evaluation framework based on a systematic analysis of goals in the law can be applied to other regulations or jurisdictions, and can guide the selection, definition, and ranking of criteria in decision-making techniques used in policy evaluation, such as multi-criteria analysis.²³

Using legal objectives as a normative basis for policy evaluations does not prevent the inclusion of additional criteria that are not found in law when they are deemed to be relevant.²⁴ However, by requiring additions of such external criteria to be made explicit, the normative basis of formulated assessments becomes more transparent and thus easier to criticize and compare. Similarly, it is entirely acceptable to conduct more focused evaluations that concentrate on a limited set of criteria, provided that the normative foundation and scope of these evaluations are clearly defined.²⁵

Our methodological approach can be characterized as ‘law first’, as it prioritizes an analysis of the objectives in the law over other sources of evaluation criteria. It departs from previous endeavours in the emissions trading literature to set evaluation criteria based on guidelines by the Intergovernmental Panel on Climate Change (IPCC).²⁶ Interestingly, in these guidelines the IPCC acknowledges that the economic and political science literature ‘does not provide much guidance in terms of determining which evaluation criteria are the most appropriate for an analysis of environmental policy’.²⁷ Our approach also departs from formulating criteria based on a general understanding by social scientists, including economists, of ‘how climate mitigation instruments should work’.²⁸ Such approaches seem to assume that all jurisdictions share the same objectives, which is not necessarily true.²⁹ For example, evaluating the EU ETS

²² The cycle consists of the creation, implementation, monitoring, and review of policy; see C. McGrath, ‘The Role Played by Policy Objectives in Environmental Law’, in D. Fisher (ed.), *Research Handbook on Fundamental Concepts of Environmental Law* (Edward Elgar, 2022), pp. 369–90, at 382.

²³ See A. Crabb & P. Leroy, *The Handbook of Environmental Policy Evaluation* (Routledge, 2015), pp. 115–8.

²⁴ The opposite would imply that there are no acceptable normative standards besides those embedded in law, which would be an extremely restrictive assertion.

²⁵ See Taekema, n. 7 above, p. 8.

²⁶ See, e.g., F. Venmans, ‘A Literature-Based Multi-Criteria Evaluation of the EU ETS’ (2012) 16(8) *Renewable and Sustainable Energy Reviews*, pp. 5493–510, at 5495–6.

²⁷ S. Gupta et al., ‘Policies, Instruments and Co-operative Agreements’, in IPCC (B. Metz et al. (eds)), *Climate Change 2007: Mitigation of Climate Change. Working Group III Contribution to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press, 2007), pp. 745–807, at 751, para. 13.1.2.

²⁸ See criteria employed in past evaluations of climate mitigation instruments, as presented by Konidari & Mavrakis, n. 9 above, p. 6236.

²⁹ This point was highlighted by Bogojević, n. 11 above, pp. 10–2; Weishaar, n. 13 above, p. 39; I. Giesen, ‘The Use and Incorporation of Extralegal Insights in Legal Reasoning’ (2015) 11(1) *Utrecht Law Review*, pp. 1–18, at 14.

and the Chinese National ETS under the same set of criteria would fail to take into account the different climate mitigation goals and priorities of the EU and China, as well as their different institutional and regulatory landscapes. Evaluation frameworks that are tailor-made to the specific objectives of each jurisdiction more closely reflect the bottom-up architecture of international climate law, in which countries set nationally determined contributions (NDCs) in the light of their self-perceived common but differentiated responsibilities and capabilities, as well as development priorities.³⁰

To identify the legal objectives of the EU ETS, the first step is to locate provisions in the legislation that set out EU ETS goals. We conduct this exercise with the legal research method of document analysis, a systematic process for reviewing legislative documents to extract information, which can then be organized into categories.³¹ The scope of our analysis includes both the operative provisions and the recitals of the EU ETS Directive – namely, Directive 2003/87/EC and all 17 legal acts that have amended it up to March 2024.³²

The goals outlined in the legislation are expressed with varying degrees of explicitness.³³ Depending on the context, terms such as ‘aim’, ‘goal’, ‘objective’, ‘purpose’, and ‘in order to’ may indicate an expression of goals. However, goals may also be formulated in less explicit ways, such as ‘in an economically efficient manner’, which may not be captured by a set of pre-defined keywords. For this reason, it is necessary to go beyond the linguistic formulation and examine the meaning of each provision. We define a goal-expressing provision as a provision that expresses a specific intended outcome in relation to the EU ETS. Thus, we exclude provisions that express generic intended outcomes or refer to instruments other than the EU ETS. Finally, we categorize relevant provisions based on the goal(s) they express. Additional methodological details and a comprehensive list of the sentences identified as expressing goals are available in the [Supplementary Material](#) to this article.

3. Legal Analysis of EU ETS Objectives

3.1. Identification of EU ETS Objectives

We have identified 16 EU ETS goals in total, which are presented in a non-structured manner in [Figure 1](#).

Three of these goals are found within the first sentence of Article 1 of the EU ETS Directive: (a) to promote reductions of GHG emissions (‘emissions

³⁰ Arts 4(2), 4(3) and Preamble to the Paris Agreement, Paris (France), 12 Dec. 2015, in force 4 Nov. 2016, available at: http://unfccc.int/paris_agreement/items/9485.php.

³¹ G.A. Bowen, ‘Document Analysis as a Qualitative Research Method’ (2009) 9(2) *Qualitative Research Journal*, pp. 27–40, at 27–8; P. Cane & H.M. Kritzer (eds), *Oxford Handbook Empirical Legal Research* (Oxford University Press, 2010), pp. 5, 938–9.

³² Details are available in the [Supplementary Material](#) to this article. Although not legally binding in their own right, recitals can be useful for interpreting objectives enshrined in operative provisions. See Case 215/88, *Casa Fleischhandels-GmbH v. Bundesanstalt für landwirtschaftliche Marktordnung*, ECLI:EU:C:1989:331, para. 31. See also Taekema, n. 7 above, p. 7.

³³ See Case C-344/04, *The Queen, on the application of International Air Transport Association, European Low Fares Airline Association v. Department for Transport*, ECLI:EU:C:2006:10, para. 83.

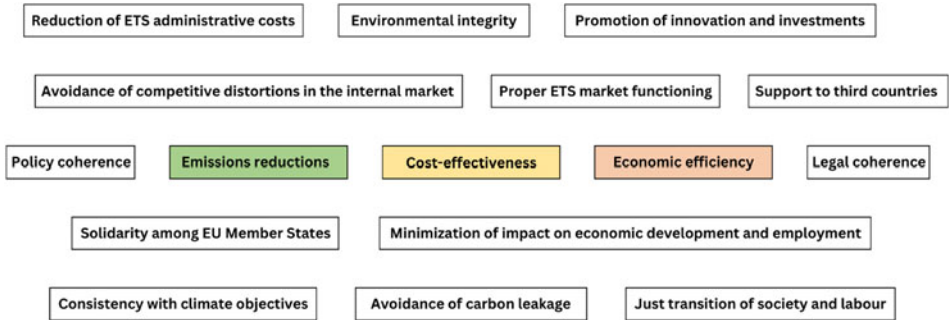


Figure 1. Identified EU ETS Objectives

reductions’), (b) to do so in a cost-effective manner (‘cost-effectiveness’), and (c) to do so in an economically efficient manner (‘economic efficiency’). These are complemented by 13 goals, each of which may be either (i) additional to the Article 1 objectives, or (ii) constituent, thus serving as a sub-objective, of the Article 1 objectives or of other goals. In Table 1 (in Section 5 below) we classify the identified goals accordingly, based on the findings of our legal and economic analysis.

The Supplementary Material to this article lists the legal sources corresponding to each identified objective, facilitating the location of specific provisions of the EU ETS Directive based on expressed goals. Moreover, it aids in tracking the evolution of these goals over time. For instance, the goal of avoiding carbon leakage was not part of the initial Directive 2003/87/EC but was introduced later by Directive 2008/101/EC and subsequent acts.³⁴ The fact that goals have not remained static over the years is not surprising as legal changes may reflect not only evolving political priorities and a developing policy environment, but also empirical data and practical experience accumulated from the operation of the EU ETS.

3.2. Interpretation of EU ETS Objectives

A legal interpretation of the objectives enshrined in EU ETS legislation can offer insights into their content and interaction. As in any endeavour to interpret EU law, due care should be given to the interpretive methods of the CJEU:³⁵ literal, contextual, and teleological interpretation.³⁶ Below we explain each of these methods and apply

³⁴ See Directive 2008/101/EC amending Directive 2003/87/EC so as to Include Aviation Activities in the Scheme for Greenhouse Gas Emission Allowance Trading within the Community [2009] OJ L 8/3, Recital 25.

³⁵ Under the EU treaties, the CJEU is the institution ultimately responsible for ensuring that the law is observed in the interpretation and application of the treaties, for interpreting EU legal acts and for reviewing their legality. See Art. 19(1) of the Treaty on European Union (TEU), Lisbon (Portugal), 13 Dec. 2007, in force 1 Dec. 2009, available at: <http://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX%3A12012M%2FTXT>; and Arts 263(1) and 267 of the Treaty on the Functioning of the European Union (TFEU), Lisbon (Portugal), 13 Dec. 2007, in force 1 Dec. 2009 [2012] OJ C 326/47, available at: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2012:326:FULL:EN:PDF>.

³⁶ See Lenaerts & Gutiérrez-Fons, n. 21 above; Case T-374/04, *Federal Republic of Germany v. Commission of the European Communities*, ECLI:EU:T:2007:332 (*Germany v. Commission*), para. 92.

Table 1. EU ETS Objectives Arranged Based on Their Interrelations

Objectives	Sub-objectives
I. Emissions reductions (principal objective)	(i) Consistency with climate objectives
	(ii) Environmental integrity
	(iii) Avoidance of carbon leakage
II. Cost-effectiveness (secondary objective)	(i) Proper ETS market functioning
	(ii) Reduction of ETS administrative costs
III. Economic efficiency (secondary objective)	(i) Minimization of impact on economic development and employment
	(ii) Avoidance of competitive distortions in the internal market
	(iii) Promotion of innovation and investments
IV. Equity (secondary objective)	(i) Just transition of society and labour
	(ii) Solidarity among EU Member States
	(iii) Support to third countries
V. Coherence (meta-objective)	(i) Legal coherence
	(ii) Policy coherence

them to the three goals found in the introductory provision of the EU ETS Directive – emissions reductions, cost-effectiveness, and economic efficiency – while seeking to obtain insights into their relationship with the other identified goals.

Our decision to focus on a limited set of three objectives, rather than all 16 goals, was based on the hypothesis that many of the remaining goals are constituent (sub-goals) of these three objectives enshrined in Article 1 of the EU ETS Directive. This hypothesis was later confirmed by our findings, while two additional objectives were identified: equity and coherence.

Literal interpretation

The starting point of the CJEU methodology is literal interpretation, which focuses on the meaning of words in a text.³⁷ Article 1 of the EU ETS Directive reads: ‘This Directive establishes a system for greenhouse gas emission allowance trading within the Union (hereinafter referred to as the ‘EU ETS’) in order to promote reductions of greenhouse gas emissions in a cost-effective and economically efficient manner’. Regarding the emissions reductions objective, it is unclear whether the use of the verb ‘promote’ signals an obligation of conduct or an obligation of result. At first glance, the choice of this verb over a more determinate one like ‘ensure’, which

³⁷ As noted above, the CJEU places particular weight on teleological interpretation. However, if the language of an EU law provision is unambiguous and precise, the Court may not interpret that provision in a way that challenges its literal meaning, as that would be in tension with the principles of legal certainty and inter-institutional balance. See Lenaerts & Gutiérrez-Fons, n. 21 above, pp. 8–9; Case C-263/06, *Carboni e derivati Srl v. Ministero dell’Economia e delle Finanze and Riunione Adriatica di Sicurtà SpA*, ECLI:EU:C:2008:128, para. 48.

would have clearly indicated an obligation of result, may suggest a degree of uncertainty in relation to the achievement of emissions reductions. Regarding the objectives of cost-effectiveness and economic efficiency, the literal interpretation method offers little guidance. The terms ‘cost-effective’ and ‘economically efficient’ are economic in nature and are not defined in the Directive.

As all different language versions of EU legislation carry equal authenticity,³⁸ a literal interpretation also entails a comparison of the English text with other linguistic versions of the EU ETS Directive.³⁹ This comparison is crucial to ensure a uniform interpretation of EU law.⁴⁰ Nuances can be observed with regard to the word ‘promote’.⁴¹ In some language versions the wording is quite similar to the English (‘favoriser’ in French, ‘promuovere’ in Italian, or ‘fomentar’ in Spanish). However, in certain cases, it appears to lean more towards an obligation of conduct (‘work towards’, ‘hinzuwirken’ in German). In others, it leans more towards an obligation of result (‘with a view to / with the aim to reduce’, ‘teneinde ... te verminderen’ in Dutch or ‘syftar till ... minska’ in Swedish).

Important variations are also noticeable with regard to the sentence ‘in a cost-effective and economically efficient manner’. Different terms are encountered, from ‘cost-efficient’ in German and in Greek (‘kostoneffiziente’ and ‘αποδοτικό από πλευράς κόστους’, respectively) to ‘economically effective’ in Swedish and in French (‘ekonomiskt effektivt’ and ‘économiquement efficaces’, respectively). A more divergent formulation can be found in Slovak, namely, ‘in a financially and economically advantageous manner’ (‘finančne a ekonomicky výhodným spôsobom’). The existence of deviations among the various official language versions of the provision requires resorting to two complementary legal methods of interpretation related to its context and purpose: contextual and teleological interpretation.⁴²

Contextual interpretation

Contextual interpretation involves the examination of the legislative process that led to the adoption of the provision in question, based on the relevant legislative documents (so-called ‘travaux préparatoires’).⁴³ Although the role of *travaux préparatoires* is more limited compared with other interpretative methods, the CJEU has shown increasing interest in the drafting history of secondary EU legal acts in recent years.⁴⁴

³⁸ Regulation No 1 Determining the Languages to be Used by the European Economic Community [1958] OJ 17/385.

³⁹ Case 283/81, *Srl CILFIT and Lanificio di Gavardo SpA v. Ministry of Health*, ECLI:EU:C:1982:335 (*Cilfit*), paras 18–20; Case 30/77, *Régina v. Pierre Bouchereau*, ECLI:EU:C:1977:172 (*Bouchereau*), paras 13–14.

⁴⁰ Lenaerts & Gutiérrez-Fons, n. 21 above, pp. 12–3.

⁴¹ All language versions of the EU ETS Directive are available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32003L0087>.

⁴² *Bouchereau*, n. 39 above, para. 14; *Cilfit*, n. 39 above, para. 20; Lenaerts & Gutiérrez-Fons, n. 21 above, pp. 13–7.

⁴³ Lenaerts & Gutiérrez-Fons, n. 21 above, pp. 16–7.

⁴⁴ *Ibid.*, pp. 23–31.

In the initial Commission proposal for the EU ETS, Article 1 did not mention economic efficiency but only cost-effectiveness.⁴⁵ The European Economic and Social Committee (EESC) adopted an opinion on the proposal, in which it submitted its disagreement with the proposed Article 1:

The purpose of this Directive should not be to 'promote reductions of greenhouse gas emissions in a cost-effective manner' but to ensure that greenhouse gas emissions are reduced in a manner that is cost-effective *and minimises the impact on competitiveness and overall employment* in the European Union.⁴⁶

These considerations were reflected in the subsequent position of the European Parliament in proposing the following addition to Article 1:

This Directive establishes a Community greenhouse gas emission allowance trading scheme in order to promote reductions of greenhouse gas emissions in a cost-effective manner. *It contributes to fulfilling the commitments of the EU and its Member States more effectively, with the least possible diminution of economic development and employment.*⁴⁷

In its amended proposal for the EU ETS Directive, the Commission agreed in principle with the Parliament's amendment but noted that, because of its explanatory nature, a text on minimizing impacts on economic development and employment should be transferred to the recitals.⁴⁸ On that basis, the Council of the EU moved the Parliament's sentence to Recital 5 and replaced it with the concise reference to economic efficiency.⁴⁹ That change was subsequently accepted by the Parliament and has remained in Article 1 ever since: 'in a cost-effective and economically efficient manner'. Therefore, the drafting history of the Directive shows that the term 'economically efficient' in Article 1 is a product of inter-institutional compromise and that it encapsulates the need to minimize impacts on competitiveness, economic development, and employment from the operation of the EU ETS.

Contextual interpretation also examines internally the consistency of the provision in question with other provisions in the legal system (systematic interpretation).⁵⁰ As our analysis focuses on objectives, we follow the Court's frequent practice and intertwine systematic interpretation with teleological interpretation below.⁵¹

⁴⁵ European Commission, 'Proposal for a Directive Establishing a Scheme for Greenhouse Gas Emission Allowance Trading within the Community and Amending Council Directive 96/61/EC', 23 Oct. 2001, COM(2001) 581 final.

⁴⁶ EESC, 'Opinion on the Proposal', 29 May 2002 [2002] OJ C221/27, para. 2.3 (emphasis added).

⁴⁷ European Parliament, 'Legislative Resolution on the Proposal', 10 Oct. 2002, P5_TA(2002)0461, amendment 15 (emphasis in original).

⁴⁸ European Commission, 'Amended Proposal for a Directive Establishing a Scheme for Greenhouse Gas Emission Allowance Trading within the Community and Amending Council Directive 96/61/EC', 27 Nov. 2002, COM(2002) 680 final, p. 4.

⁴⁹ Council of the EU, 'Common Position', 13 Mar. 2003, 15792/02; Council of the EU, 'Statement of the Council's Reasons', 18 Mar. 2003, 15792/1/02 REV 1 ADD 1, p. 4.

⁵⁰ Lenaerts & Gutiérrez-Fons, n. 21 above, pp. 16–7.

⁵¹ *Ibid.*, p. 32.

Teleological interpretation

Teleological interpretation examines the provision in question in the light of the relevant overarching objectives that primary EU law pursues.⁵² Articles 11 and 191 to 193 of the Treaty on the Functioning of the European Union (TFEU)⁵³ establish the main objectives and principles of EU environmental policy.⁵⁴ The EU ETS Directive and its amending acts have all been adopted based on Article 192(1) TFEU. Legislative action on that basis should aim at a high level of environmental protection, including the promotion of international measures to combat climate change, based on the precautionary, preventive, and polluter pays principles.⁵⁵

Relying on the same legal basis, the EU concluded the Paris Agreement,⁵⁶ the central target of which is to enhance implementation of the United Nations Framework Convention on Climate Change (UNFCCC)⁵⁷ by limiting the increase in global average temperature to well below 2°C and preferably 1.5°C.⁵⁸ In pursuit of this international goal, Regulation (EU) 2021/1119 (European Climate Law) established specific binding emissions reduction targets and a framework to ensure that EU legislation is aligned with a trajectory towards climate neutrality by 2050.⁵⁹

Accordingly, in 2023 many provisions of the EU ETS Directive were amended to achieve the more ambitious target of 62% emissions reductions from ETS sectors by 2030 compared to 2005.⁶⁰ With the addition of an explicit reference to the European Climate Law and Paris Agreement targets in Article 1 of the EU ETS Directive, specific values were provided as to ‘the levels of reductions that are considered scientifically necessary to avoid dangerous climate change’.⁶¹ Therefore, within this structure of goal-oriented obligations, it appears that the linguistically ambiguous verb ‘promote’ in Article 1 of the EU ETS Directive should be interpreted

⁵² *Ibid.*, pp. 31–2.

⁵³ N. 35 above.

⁵⁴ Environmental objectives are also enshrined in other EU treaty provisions, such as Art. 3(3) TEU; Arts 114, 194(1) TFEU; and Art. 37 of the Charter of Fundamental Rights of the European Union, Nice (France), 7 Dec. 2000, available at: http://www.europarl.europa.eu/charter/pdf/text_en.pdf.

⁵⁵ Art. 191(1)–(2) TFEU; Case C-127/07, *Société Arcelor Atlantique et Lorraine and Others v. Premier ministre and Others*, ECLI:EU:C:2008:728 (*Arcelor*), para. 30.

⁵⁶ Council Decision (EU) 2016/1841 on the Conclusion, on behalf of the European Union, of the Paris Agreement adopted under the United Nations Framework Convention on Climate Change [2016] OJ L 282/1, Recitals 10 and 12; Art. 216(2) TFEU. Paris Agreement, n. 30 above.

⁵⁷ New York, NY (United States), 9 May 1992, in force 21 Mar. 1994, available at: <https://unfccc.int>.

⁵⁸ Paris Agreement, n. 30 above, Art. 2(1). For a more detailed analysis of the normative elements of international climate law see F. Green, ‘The Normative Foundations of Climate Legislation’, in A. Averchenkova, S. Fankhauser & M. Nachmany (eds), *Trends in Climate Change Legislation* (Edward Elgar, 2017), pp. 85–107, at 93–6.

⁵⁹ Arts 1–2 and 4 of Regulation (EU) 2021/1119 Establishing the Framework for Achieving Climate Neutrality and Amending Regulations (EC) No 401/2009 and (EU) 2018/1999 [2021] OJ L243/1 (European Climate Law). The EU aims to reduce its net GHG emissions (emissions after deduction of removals) by at least 55% in 2030 and 100% by 2050 compared with 1990.

⁶⁰ Directive 2023/959/EC, n. 3 above, Recital 39.

⁶¹ See EU ETS Directive, Art. 1, second (unnumbered) paragraph, as amended by Directive 2023/959/EC, n. 3 above. See also, in relation to the previous target for 2020, Case C-461/15, *E.ON Kraftwerke GmbH v. Bundesrepublik Deutschland*, ECLI:EU:C:2016:648 (*E.ON Kraftwerke*), para. 23; Case C-58/17, *INEOS Köln GmbH v. Bundesrepublik Deutschland*, ECLI:EU:C:2018:19 (*INEOS*), paras 22–24.

as an obligation of result rather than as an obligation of conduct, as it aims for a concrete outcome that contributes to the achievement of the EU's domestic and international emissions reduction commitments.⁶²

While primary EU law does not provide definitions for cost-effectiveness or economic efficiency, it does require the preparation of EU environmental policy to take into account the potential costs and benefits of action or the lack thereof.⁶³ Additional criteria that must be considered are the available scientific-technical data and the environmental conditions across the EU, the economic and social development of the Union as a whole, as well as the balanced development of its different regions.⁶⁴ EU primary law thus establishes high environmental standards but also requires the consideration of economic, social and other equity-related objectives. This multitude of overarching goals is reflected both in the European Climate Law⁶⁵ and in the EU ETS Directive, as shown in Figure 1. The questions of whether there is a legal hierarchy between the various objectives, and how possible tensions and trade-offs among them should be administered, are examined in the following section.

3.3. Hierarchy of EU ETS Objectives

Typically, each secondary EU legal act is characterized by one main or predominant purpose.⁶⁶ The CJEU confirms that the 'principal and ultimate' objective of the EU ETS Directive is the substantial reduction of GHG emissions in the Union as a whole, in line with the EU's international climate commitments.⁶⁷ At the same time, the Court points out that the principal objective must be achieved in compliance with certain secondary (sub-)objectives.⁶⁸ These secondary (sub-)goals include,

⁶² See O. Quirico, 'Towards a Peremptory Duty to Curb Greenhouse Gas Emissions?' (2021) 44(4) *Fordham International Law Journal*, pp. 923–65, at 950–2; A.-J. Saiger, 'Domestic Courts and the Paris Agreement's Climate Goals: The Need for a Comparative Approach' (2020) 9(1) *Transnational Environmental Law*, pp. 37–54, at 52.

⁶³ Art. 191(3) TFEU. See S. Garben, 'Article 191 TFEU', in M. Kellerbauer, M. Klamert & J. Tomkin (eds), *The EU Treaties and the Charter of Fundamental Rights: A Commentary* (Oxford University Press, 2019), pp. 1516–25, at 1522–3.

⁶⁴ *Ibid.* The criteria correspond to respective objectives enshrined in other EU treaty provisions. See, e.g., Arts 119 and 151 TFEU on economic and social development, and Arts 174, 107(3) and 122 TFEU on regional cohesion and solidarity. The broader Art. 3(3) TEU encompasses all objectives above, including environmental.

⁶⁵ See European Climate Law, n. 59 above, Arts 4(5) and 9; Recitals 2, 4 and 34.

⁶⁶ Case C-137/12, *European Commission v. Council of the European Union*, ECLI:EU:C:2013:675, paras 52–3; Case C-300/89, *Commission of the European Communities v. Council of the European Communities*, ECLI:EU:C:1991:244, paras 8–17.

⁶⁷ *Germany v. Commission*, n. 36 above, paras 124–32; *Arcelor*, n. 55 above, para. 31; Case C-504/09 P, *European Commission v. Republic of Poland*, ECLI:EU:C:2012:178, para. 77; *INEOS*, n. 61 above, para. 22; Case C-320/19, *Ingredion Germany GmbH v. Bundesrepublik Deutschland*, ECLI:EU:C:2020:983 (*Ingredion*), para. 76.

⁶⁸ The Court exclusively employs the term 'sub-objectives' to denote goals beyond the principal one, refraining from using 'secondary objectives'. However, in this article we intentionally distinguish between these two terms. When we use the term 'secondary', we refer to an objective that holds a lower hierarchical position than the principal objective. In contrast, when we use the term 'sub-objective', we signify that the objective serves as a constituent, essentially a 'subcomponent', of another.

among others, cost-effectiveness and economic efficiency, protecting economic development and employment, preserving the integrity of the internal market and competition, as well as promoting technological improvements.⁶⁹ While the Court accepts that the principal aim of reducing GHG emissions ‘as a whole’ should not be harmed as a result of pursuing secondary goals, it also emphasizes the need to reconcile the former with the latter.⁷⁰

CJEU case law also shows that certain secondary objectives can be more relevant than others, depending on the context and issue at stake. For example, in *Germany v. Commission*, the Court considered that, in relation to distributing allowances through national allocation plans, the goal of avoiding competitive distortions in the internal market was ‘of particular importance’.⁷¹ Conversely, in *Arcelor*, priority was given to the goal of reducing the administrative burden, as it was deemed that the inclusion of an excessive number of installations at the initial stage of the EU ETS could jeopardize its proper implementation.⁷² Thus, while it clearly follows from CJEU case law that emissions reduction is the principal goal of the EU ETS, no fixed legal hierarchy can be established between the various secondary sub-goals.

Generally, when a legal act pursues multiple objectives and a conflict arises between them, or between respective rights or interests, the CJEU applies the general principle of proportionality to strike a balance between mutually contradictory goals.⁷³ When reviewing the proportionality of EU acts, the CJEU limits itself to examining whether the measure in question is manifestly inappropriate or disproportionate – namely, whether the legislators made manifest errors, misused their powers or clearly exceeded the bounds of their discretion.⁷⁴ This relatively lenient standard of review stems from the premise that the EU legislature enjoys broad discretion in determining its course of action, particularly when the balancing of complex political, economic, and social considerations is at stake.⁷⁵

⁶⁹ *Germany v. Commission*, n. 36 above, para. 124; Case T-370/11, *Republic of Poland v. European Commission*, ECLI:EU:T:2013:113, para. 69. The phrase ‘inter alia’ used by the Court denotes that the secondary (sub-)goals of the EU ETS are not exhaustively limited to those mentioned in the judgment.

⁷⁰ *Ingredient*, n. 67 above, paras 76–7; *Germany v. Commission*, n. 36 above, paras 134–5.

⁷¹ *Germany v. Commission*, n. 36 above, para. 125.

⁷² *Arcelor*, n. 55 above, paras 60–5.

⁷³ Art. 5(4) TFEU and Protocol (No 2) on the Application of the Principles of Subsidiarity and Proportionality, available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A12008E%2FPRO%2F02>. See Lenaerts & Gutiérrez-Fons, n. 21 above, p. 33; T. Harbo, ‘The Function of the Proportionality Principle in EU Law’ (2010) 16(2) *European Law Journal*, pp. 158–85, at 164–5.

⁷⁴ See, e.g., Joined Cases C-27/00 and C-122/00, *The Queen v. Secretary of State for the Environment, Transport and the Regions, ex parte Omega Air Ltd and Others*, ECLI:EU:C:2002:161 (*Omega Air*), para. 64; Case C-189/01, *H. Jippes and Others v. Minister van Landbouw, Natuurbeheer en Visserij*, ECLI:EU:C:2001:420, para. 80; Case T-180/00, *Astipesca SL v. Commission of the European Communities*, ECLI:EU:T:2002:249, para. 79. P. Craig, *EU Administrative Law* (Oxford University Press, 2018), pp. 646–55; Harbo, n. 73 above, p. 172; W. Sauter, ‘Proportionality in EU Law: A Balancing Act?’ (2013) 15 *Cambridge Yearbook of European Legal Studies*, pp. 439–66, at 449–50.

⁷⁵ See Case C-331/88, *The Queen v. Minister of Agriculture, Fisheries and Food and Secretary of State for Health, ex parte Fedesa and Others*, ECLI:EU:C:1990:391, para. 14; *Omega Air*, n. 74 above, para. 65; Case C-343/09, *Afton Chemical Ltd v. Secretary of State for Transport*, ECLI:EU:C:2010:419 (*Afton Chemical*), para. 46. The Court’s self-restriction signals its adherence to the system of separation of

In *Arcelor*, the Court recognized the legislature's broad discretion with regard to the EU ETS amendments in question.⁷⁶ It then delineated the boundaries of that discretion, requiring the legislators to balance conflicting goals on the basis of appropriate objective criteria and by 'taking into account all the facts and the technical and scientific data available at the time'.⁷⁷ Moreover, the Court asserted that even if the importance of an objective can justify trade-offs with other goals – in that case emissions reductions over economic impacts on certain operators – the legislators are obliged to 'fully take into account all the interests involved'.⁷⁸ The adopted measure 'must not produce results that are manifestly less appropriate than those that would be produced by other measures that were also suitable'.⁷⁹

The uncontested primacy of emissions reductions does not mean that EU lawmakers are obliged to prioritize their maximization over any secondary objectives involved when amending the EU ETS.⁸⁰ The legislators are nonetheless procedurally obliged to formulate their choices based on objective criteria, while taking into consideration all relevant interests, facts, and data. Substantively, they may not undermine the principal objective but must also refrain from choices that are manifestly less appropriate (such as vis-à-vis secondary goals) compared with other options that are also suitable for attaining the emissions reductions targets.

4. Economic Analysis of EU ETS Objectives

Legal methods were useful for identifying the goals embedded in the law and for understanding more about their content and interrelationships. Nevertheless, in our 'law first' approach, some important aspects remain unclear. The EU ETS Directive does not legally specify *how* the EU ETS aims to 'promote' emissions reductions. Moreover, legal interpretation did not sufficiently delineate the differences between 'cost-effectiveness' and 'economic efficiency'. In fact, the lack of legal definitions for these economic terms has led legal scholars to the assumption that both objectives refer to the same concept of realizing emissions reduction at the lowest cost.⁸¹ Economists, in contrast, have treated cost-effectiveness as a component of economic efficiency, but without examining the legal context and purpose of the two terms.⁸²

powers, pursuant to Art. 13(2) TEU. See also criticism of this less rigorous review standard for EU measures compared with Member State measures by Harbo, n. 73 above, pp. 181–4, and response by Sauter, n. 74 above, pp. 464–6.

⁷⁶ *Arcelor*, n. 55 above, para. 57.

⁷⁷ *Ibid.*, para. 58.

⁷⁸ *Ibid.*, para. 59.

⁷⁹ *Ibid.*

⁸⁰ See, by analogy, R. Fleming, 'The "Trias": A New Methodology for Energy Law' (2019) 28(5) *European Energy and Environmental Law Review*, pp. 164–75, at 169.

⁸¹ See L. Squintani, M. Holwerda & K. de Graaf, 'Regulating Greenhouse Gas Emissions from EU ETS Installations: What Room Is Left for the Member States', in M. Peeters, M. Stallworthy & J. de Cendra de Larragán (eds), *Climate Law in EU Member States: Towards National Legislation for Climate Protection* (Edward Elgar, 2012), pp. 67–88, at 83.

⁸² See Venmans, n. 26 above, pp. 5501–2. See also Goulder & Parry, n. 12 above, p. 171.

The above makes clear that our ‘law first’ approach cannot remain limited to a ‘law only’ approach. In the light of the economic conceptual origins of the EU ETS, the legislators decided to internalize economic goals in the EU ETS Directive.⁸³ Accordingly, the CJEU has repeatedly examined and taken into consideration the economic logic of the scheme while confronted with questions of a legal nature.⁸⁴ Thus, we also use insights from economic theory to complement our legal findings and map the internal normative framework of the EU ETS.

4.1. Promotion of Emissions Reductions

Our legal findings suggest that the principal objective of the EU ETS Directive to ‘promote’ emissions reductions refers to the achievement of a 62% reduction in the emissions of the covered sectors by 2030. This target aims to attain the EU climate targets and contribute to the Paris Agreement goals. How can the EU ETS achieve the required emissions reductions?

From an economic perspective, the EU ETS is essentially a cap-and-trade instrument that promotes GHG emissions reductions in two ways. Firstly, it requires companies to cover their emissions with emission certificates, so-called ‘allowances’. By maintaining an absolute and declining cap on the overall supply of allowances, it imposes an absolute and declining limit on the total amount of emissions from the activities that it covers.⁸⁵ Secondly, since allowances are scarce and freely tradeable, the economic externality of GHG emissions is partly or wholly internalized at a price determined by the supply and demand of allowances in the market. This makes emissions-intensive activities more expensive, creating an economic incentive to switch towards less emitting technologies and practices.⁸⁶

However, empirical evidence suggests that carbon pricing does not necessarily induce the technological change needed for deep decarbonization, for instance, as a result of relatively low carbon prices, myopic behaviour by market participants, and technological lock-in.⁸⁷ The principal emissions reduction function of the EU ETS is thus undertaken by the progressive decline of the emissions cap, which strengthens

⁸³ European Commission, ‘Green Paper on Greenhouse Gas Emissions Trading within the European Union’, 8 Mar. 2000, COM(2000) 87 final, pp. 7–8. See D.H. Cole, ‘Origins of Emissions Trading in Theory and Early Practice’, in S. Weishaar (ed.), *Research Handbook on Emissions Trading* (Edward Elgar, 2016), pp. 9–26, at 10.

⁸⁴ See, e.g., *Arcelor*, n. 55 above, para. 32; *E.ON Kraftwerke*, n. 61 above, para. 23; *Ingredion*, n. 67 above, para. 39.

⁸⁵ E. Woerdman, ‘Emissions Trading’, in A. Marciano & G.B. Ramello (eds), *Encyclopedia of Law and Economics* (Springer, 2021), available at: https://doi.org/10.1007/978-1-4614-7883-6_61-2. Pursuant to Art. 2(1) of the EU ETS Directive, the activities and GHG emissions covered by the scheme are listed in Annexes I and II of that Directive.

⁸⁶ Verbruggen, Laes & Woerdman, n. 15 above, p. 15.

⁸⁷ See J. Lilliestam, A. Patt & G. Bersalli, ‘The Effect of Carbon Pricing on Technological Change for Full Energy Decarbonization: A Review of Empirical Ex-post Evidence’ (2021) 12(1) *Wiley Interdisciplinary Reviews: Climate Change*, p. 3, available at: <https://doi.org/10.1002/wcc.681>; W. Acworth et al., ‘Emissions Trading and the Role of a Long Run Carbon Price Signal: Achieving Cost-Effective Emission Reductions under an Emissions Trading System’, International Carbon Action Partnership, June 2017, pp. 5–6.

the price signal as allowances in the market become more scarce.⁸⁸ Accordingly, a significant allowance surplus, like the one that accumulated in the EU ETS, not only depresses the allowance price but could also jeopardize the timely achievement of the emissions reduction target, if not addressed.⁸⁹ Since 2019, a Market Stability Reserve has operated within the EU ETS to automatically reduce the allowance auction volume in the event of an allowance surplus and invalidate a share of these excess allowances.⁹⁰

Therefore, the economic logic of the EU ETS Directive suggests that the ‘promotion’ of GHG emissions reductions refers to an *aggregate* reduction of emissions from covered activities because of a progressive decrease of allowances available in the market. Similar to a waterbed, certain companies or sectors under the EU ETS can emit more as long as other covered companies or sectors emit less.⁹¹ As a consequence, the inclusion of a new sector in the EU ETS does not ensure that emissions within that particular sector will be reduced in the short to medium term. Nevertheless, certain in-sector emissions reductions may still be incentivized by the carbon price, and all sectors will eventually need to decarbonize in the long run, as the cap will be gradually tightened to zero. Outside its covered sectors, the EU ETS may also ‘promote’ emissions reductions in a broader sense. Examples include the use of auctioning revenues for financing climate actions within and beyond the EU,⁹² as well as the propagation of ETS-induced technological innovations and the diffusion of carbon pricing policies in third countries.⁹³

4.2. Cost-effectiveness and Economic Efficiency

Although our legal analysis showed that cost-effectiveness and economic efficiency are among the secondary objectives of the EU ETS Directive, these terms are not defined in the law. In economics, a general definition of cost-effectiveness is ‘the achievement of results in the most economical way’, while economic efficiency can be understood as a ‘general term for making the maximum use of available resources’.⁹⁴ Economic

⁸⁸ See P. Bayer and M. Aklin, ‘The European Union Emissions Trading System Reduced CO₂ Emissions Despite Low Prices’ (2020) 117(16) *Proceedings of the National Academy of Sciences*, pp. 8804–12.

⁸⁹ See C. de Perthuis & R. Trotignon, ‘Allowance “Surplus” and Governance Implications’, in Weishaar, n. 83 above, pp. 287–306; F.C. Matthes, ‘The Revision of the European Union Emissions Trading System Directive: Assessing Cap and Market Stability Reserve Reform Options’, Öko-Institut, 9 May 2022, p. 38.

⁹⁰ Decision (EU) 2015/1814 concerning the Establishment and Operation of a Market Stability Reserve for the Union Greenhouse Gas Emission Trading Scheme and Amending Directive 2003/87/EC [2015] OJ L 264/1.

⁹¹ See K.E. Rosendahl, ‘EU ETS and the Waterbed Effect’ (2019) 9 *Nature Climate Change*, pp. 734–5.

⁹² EU ETS Directive, Art. 10(3).

⁹³ See P. Raghoo & K.U. Shah, ‘A Global Empirical Analysis on the Diffusion & Innovation of Carbon Pricing Policies’ (2022) 362(4) *Journal of Cleaner Production*, article 132329; M. Linsenmeier, A. Mohommad & G. Schwerhoff, ‘Global Benefits of the International Diffusion of Carbon Pricing Policies’ (2023) 13 *Nature Climate Change*, pp. 679–84.

⁹⁴ ‘Cost-effectiveness’ and ‘Economic efficiency’, in N. Hashimzade, G. Myles & J. Black (eds), *A Dictionary of Economics* (Oxford University Press, 2017), available at: <https://www.oxfordreference.com/display/10.1093/acref/9780198759430.001.0001/acref-9780198759430>.

efficiency can broadly be distinguished between productive efficiency and allocative efficiency.⁹⁵ Productive (or technical) efficiency is achieved when an organization produces its outputs at minimum average cost.⁹⁶ Allocative efficiency refers more broadly to the optimal allocation of resources in a society, such as in a manner that maximizes utility for consumers.⁹⁷

In the context of environmental policy instruments, Mickwitz makes a similar distinction between economic efficiency interpreted as cost-effectiveness and economic efficiency with the meaning of a cost-benefit analysis (CBA).⁹⁸ On the one hand, cost-effectiveness focuses on whether the same environmental result could have been achieved with fewer economic resources, similarly to productive efficiency.⁹⁹ On the other hand, the CBA variation of economic efficiency requires a comparison between the overall benefits and costs of an environmental instrument, resembling the notion of allocative efficiency.¹⁰⁰

In the light of the above, cost-effectiveness in the EU ETS can be perceived as the realization of its emissions reduction target at the lowest possible cost. Cost-effectiveness is attained by the tradeable nature of emissions allowances, which equalizes marginal abatement costs across emissions sources covered by the scheme, as the market discovers the cheapest options for reducing each additional ton of emissions.¹⁰¹ Under theoretical perfect market conditions, the allowance price equals these marginal abatement costs.¹⁰² However, in reality, various market or regulatory imperfections can distort the price signal and have a negative impact on cost-effectiveness.¹⁰³ Moreover, the actual cost of realizing the emissions target under the EU ETS is increased on account of transaction costs.¹⁰⁴ These include additional costs incurred by companies in complying with the scheme, such as reporting their emissions and organizing allowance transactions, as well as costs incurred by government agencies in administering it, such as maintaining the allowance registry and monitoring compliance.¹⁰⁵ An assessment of the cost-effectiveness of the

⁹⁵ H.J. ter Bogt, 'Efficiency, Types of', in A. Marciano & G.B. Ramello (eds), *Encyclopedia of Law and Economics* (Springer, 2019), pp. 675–80, at 676–7.

⁹⁶ *Ibid.*

⁹⁷ *Ibid.*

⁹⁸ Mickwitz, n. 8 above, pp. 426–7; Venmans, n. 26 above, p. 5501.

⁹⁹ Mickwitz, n. 8 above, pp. 426–7.

¹⁰⁰ *Ibid.*

¹⁰¹ See W.D. Montgomery, 'Markets in Licenses and Efficient Pollution Control Programs' (1972) 5(3) *Journal of Economic Theory*, pp. 395–418; Acworth et al., n. 87 above, p. 4.

¹⁰² P. Koutstaal, 'Tradable Permits in Economic Theory', in J.C.J.M. van den Bergh (ed.), *Handbook of Environmental and Resource Economics* (Edward Elgar, 1999), pp. 265–74, at 266.

¹⁰³ Such imperfections can range from high market concentration or manipulation strategies, on the one hand, to sub-optimal ETS rules or parallel policies, on the other; see, e.g., R.N. Stavins, 'Transaction Costs and Tradeable Permits' (1995) 29(2) *Journal of Environmental Economics and Management*, pp. 133–48, at 134; Acworth et al., n. 87 above, p. 5.

¹⁰⁴ Stavins, n. 103 above.

¹⁰⁵ *Ibid.*, p. 134–5. J. Jaraitė-Kažukauskė & A. Kažukauskas, 'Do Transaction Costs Influence Firm Trading Behaviour in the European Emissions Trading System?' (2015) 62 *Environmental and Resource Economics*, pp. 583–613; Venmans, n. 26 above, p. 5503; Venmans distinguishes between administrative transaction costs (borne by governments) and compliance transaction costs (borne by ETS companies). However, the Commission does not adopt this distinction and refers to all transaction costs as

EU ETS should thus include the sum of the above-mentioned abatement and transaction costs in a given period. This sum can be labelled as ‘partial equilibrium’ costs, as the scope of a relevant economic assessment is limited to the emissions trading market without extending to other parts of the economy.¹⁰⁶

Conversely, economic efficiency implies an assessment of the overall benefits and costs that the EU ETS entails for society. The scope of this exercise is broader compared with assessing cost-effectiveness, as it is not limited to the emissions trading market (partial equilibrium) but also encompasses the interaction of the ETS with other markets in the economy (general equilibrium).¹⁰⁷ The main societal benefits of the EU ETS stem from the reduction of GHG emissions, and thus from the avoidance of the damage that the abated emissions would have imposed on society. The quantification of these types of damage and their corresponding abatement benefits remains controversial, as different methodological choices and assumptions have led to widely divergent, albeit increasing, estimates of the social cost of carbon.¹⁰⁸ Additional ETS benefits can potentially arise from the use of allowance auctioning revenues, positive effects of carbon pricing on innovation, and co-benefits for the environment, public health, energy security, and employment.¹⁰⁹ On the other side of the equation, the costs of the EU ETS consist of partial equilibrium costs, as discussed above, as well as general equilibrium costs. The latter encompass potential economy-wide effects, such as competitive distortions and impacts on production levels, employment or international competitiveness in emissions-intensive sectors, which could eventually have a negative influence on gross domestic product (GDP).¹¹⁰

Several references in the European Commission’s impact assessments are aligned with the distinction of the terms presented above – namely, cost-effectiveness as the minimization of the costs of meeting the declining emissions cap of the EU ETS (partial equilibrium), and economic efficiency as the maximization of the net benefits of the EU ETS to society (general equilibrium).¹¹¹ Our legal interpretation that the term ‘economic

‘administrative costs’; see, e.g., Commission SEC(2007), n. 11 above, p. 16; Commission SWD(2021), n. 11 above, pp. 103, 122.

¹⁰⁶ P. Söderholm, ‘Modeling the Economic Costs of Climate Policy: An Overview’ (2012) 1(1) *American Journal of Climate Change*, pp. 14–32, at 17.

¹⁰⁷ Ibid. See also Quemin & Pahle, n. 6 above, p. 28.

¹⁰⁸ See Verbruggen, Laes & Woerdman, n. 15 above, p. 14; N. Kaufman et al., ‘A Near-Term to Net Zero Alternative to the Social Cost of Carbon for Setting Carbon Prices’ (2020) 10 *Nature Climate Change*, pp. 1010–4; K. Rennert, ‘Comprehensive Evidence Implies a Higher Social Cost of CO₂’ (2022) 610 *Nature*, pp. 687–92.

¹⁰⁹ Examples of such co-benefits include improved air quality or growth of the renewable energy sector; see A. Eden et al., ‘Benefits of Emissions Trading: Taking Stock of the Impacts of Emissions Trading Systems Worldwide’, International Carbon Action Partnership, Aug. 2018, pp. 16–22; I. Parry, C. Veung & D. Heine, ‘How Much Carbon Pricing is in Countries’ Own Interests? The Critical Role of Co-Benefits’ (2015) 6(4) *Climate Change Economics*, article 1550019.

¹¹⁰ Söderholm, n. 106 above, pp. 17–9; W.A. Knudson, ‘The Environment, Energy, and the Tinbergen Rule’ (2009) 29(4) *Bulletin of Science, Technology & Society*, pp. 308–12, at 310.

¹¹¹ See, e.g., European Commission, Staff Working Document, 27 Sept. 2005, SEC(2005) 1184, pp. 27, 38; European Commission, Staff Working Document, 20 Dec. 2006, SEC(2006) 1684, p. 66; Commission SWD(2021), n. 11 above, p. 148. In other instances, however, vague wording conflates the two terms; see, e.g., Commission SEC(2007), n. 11 above, p. 16; European Commission, Staff Working Document, 3 Feb. 2017, SWD(2017) 31 final, p. 62.

efficiency’ was aimed at minimizing potential impacts on competitiveness, economic development, and employment also fits this definition. With all other factors held constant, a reduction of such impacts increases the net benefits of the EU ETS to society.

5. Transposition of EU ETS Objectives into Evaluation Criteria

To make the EU ETS goals usable for evaluation, they need to take the form of specific criteria. The first step is to arrange the identified goals in a manner that expresses their interrelations – namely, their legal hierarchy and their functional relationships. The second step is to formulate evaluation criteria and sub-criteria that encapsulate the legal contents of the resulting goals and sub-goals.

Based on the findings of our law and economics analysis, [Table 1](#) structures the goals that were presented in [Figure 1](#) into sets of objectives and sub-objectives. Following the basic-level categorization approach, we form categories by grouping goals according to their functional similarities and differences.¹¹² Specifically, each objective in [Table 1](#) is expressed as a category which includes sub-objectives that share the highest degree of common functions within that category and, at the same time, the lowest degree of common functions with sub-objectives from other categories.¹¹³ This categorization approach can cater for the fact that, in many cases, EU ETS goals are not functionally distinct and independent from each other.¹¹⁴ Some sub-objectives are linked to more than one objective: carbon leakage, for instance, can affect both emissions reduction and economic efficiency. It is beyond the scope of the present analysis to provide exhaustive definitions of the identified goals and their interlinkages. Below we explain the functional relationship between each objective and its sub-objectives, while highlighting some indicative examples of interaction between different goals.

From the 16 EU ETS goals identified in the law, five main objectives are deduced: (i) emissions reductions, (ii) cost-effectiveness, (iii) economic efficiency, (iv) equity, and (v) coherence. The reduction of emissions is the principal objective of the scheme, while no fixed legal hierarchy is established among the secondary goals of cost-effectiveness, economic efficiency, and equity. As explained below, we use the term ‘equity’ to describe the secondary goal that comprises three identified sub-objectives, which pertain to distributional aspects of the EU ETS – namely, just transition, solidarity among Member States, and support for third countries.¹¹⁵ Coherence is

¹¹² See E. Rosch et al., ‘Basic Objects in Natural Categories’ (1976) 8(3) *Cognitive Psychology*, pp. 382–439, at 383–5; W. Croft & D.A. Cruse, *Cognitive Linguistics* (Cambridge University Press, 2004), pp. 77–82; M. Zeifert, ‘Basic Level Categorisation and the Law’ (2023) 36 *International Journal for the Semiotics of Law*, pp. 227–48, at 228–30.

¹¹³ Zeifert, n. 112 above, p. 229.

¹¹⁴ This is why this approach was preferred to the classical-Aristotelian model of category structure, according to which each category (here, goal) would consist of objects (here, sub-goals) that share a list of necessary and sufficient features, categories should have clear boundaries, and all members of a category should have equal status; see Croft & Cruse, n. 112 above, pp. 76–7; J.W. Hamilton, ‘Theories of Categorization: A Case Study of Cheques’ (2002) 17(1) *Canadian Journal of Law and Society*, pp. 115–38.

¹¹⁵ Regarding the term ‘equity’ in this context see J.K. Boyce, ‘Carbon Pricing: Effectiveness and Equity’ (2018) 150 *Ecological Economics*, pp. 52–61; R.J. Heffron, *Achieving a Just Transition to a Low-Carbon Economy* (Palgrave Macmillan, 2022).

hereby labelled as a ‘meta-objective’, meaning that it is not part of the hierarchy of objectives but refers to the interaction between objectives, on the one hand, and other norms of the legal system and other policies, on the other.¹¹⁶ Below we highlight that the extent to which an EU ETS objective should be aligned with another norm or policy depends on the nature of the norm or policy in question.

Emissions reductions by the EU ETS must be (i) consistent with the broader EU and international climate objectives. This sub-objective refers to the consistency of the EU ETS cap and its reduction trajectory with the emissions targets set by the European Climate Law and the Paris Agreement goals. Consideration should also be given to the parallel sectoral targets and processes for international aviation and shipping at the International Civil Aviation Organization (ICAO) and the International Maritime Organization (IMO), respectively.¹¹⁷ A precondition for achieving the required emissions reductions is (ii) environmental integrity, which encompasses the need for accurate emissions accounting and prevention of non-compliance and abuse.¹¹⁸ Finally, the emissions reductions objective of the EU ETS can be compromised if companies circumvent its emissions cap by relocating to third jurisdictions with laxer climate policies, referred to as carbon leakage.¹¹⁹ This risk also raises considerations of economic efficiency, in so far as the relocation of companies can have an impact on economic development and employment in the EU.¹²⁰ The sub-goal of (iii) avoiding carbon leakage has so far been pursued mainly with the free allocation of allowances to support the competitiveness of companies highly exposed to that risk and, recently, with the gradual introduction of the EU Carbon Border Adjustment Mechanism (CBAM).¹²¹

From a strictly economic perspective, cost-effectiveness could be categorized as a sub-objective of the broader notion of economic efficiency. Nevertheless, it follows from CJEU case law that where the co-legislators ‘have departed from the proposal of the Commission, the resulting EU act may not be interpreted in a way which runs counter to such departure’.¹²² Therefore, cost-effectiveness and economic efficiency are categorized in the internal normative framework as separate secondary objectives, as the latter was not included in the initial Commission proposal but was introduced by

¹¹⁶ See, by analogy, D. Overgaauw, ‘A Polyphony of Principles: The Application and Classification of the Principles of European Union Law’ (Ph.D. thesis, University of Groningen (The Netherlands), Feb. 2022, available at: <https://doi.org/10.33612/diss.201194567>), pp. 52, 109; Fleming, n. 80 above, p. 167.

¹¹⁷ See EU ETS Directive, Arts 28b and 3gg, respectively. This also overlaps with the objective of coherence, but it is categorised as a sub-objective of emissions reductions, in the light of EU ETS Directive, Art. 1, second (unnumbered) paragraph.

¹¹⁸ This is also related to the economic efficiency and equity objectives, as non-compliance or abuse by some participants can create competitive distortions and unfair outcomes.

¹¹⁹ See Directive 2009/29/EC Amending Directive 2003/87/EC so as to Improve and Extend the Greenhouse Gas Emission Allowance Trading Scheme of the Community [2009] OJ L 140/63, Recital 24.

¹²⁰ See Verbruggen, Laes & Woerdman, n. 15 above, p. 12.

¹²¹ EU ETS Directive, Art. 10b; Regulation (EU) 2023/956 Establishing a Carbon Border Adjustment Mechanism [2023] OJ L 130/52.

¹²² Lenaerts & Gutiérrez-Fons, n. 21 above, p. 30. See Case C-17/96, *Badische Erfrischungs-Getränke GmbH & Co. KG v. Land Baden-Württemberg*, ECLI:EU:C:1997:381, para. 16; Case C-86/03, *Hellenic Republic v. Commission of the European Communities*, ECLI:EU:C:2005:769, para. 59.

the co-legislators. Cost-effectiveness, on the one hand, encompasses the ‘partial equilibrium’ sub-objectives of (i) ensuring the proper functioning (namely, the transparency, liquidity and predictability) of the emissions trading market, and (ii) reducing ETS administrative (transaction) costs.¹²³ On the other hand, economic efficiency encompasses the ‘general equilibrium’ sub-objectives of (i) minimizing the impact on economic development and employment, (ii) avoiding competitive distortions (ensuring a level playing field) in the EU internal market, and (iii) promoting innovation and investments.¹²⁴ The latter sub-objective is also intertwined with cost-effectiveness, as the dynamic incentives created by the EU ETS can induce the development and deployment of technologies that can subsequently lower the cost of meeting the emissions reduction target.¹²⁵

The secondary objective of equity pertains to the fact that even when the overall economic benefits of a regulation exceed its costs, the distribution of these benefits and costs is typically uneven among different parts of society or different countries.¹²⁶ Such distributional consequences can be evaluated and addressed on the normative basis of various equity theories, as developed by political philosophers and economists among others, to gauge which inequalities are unfair.¹²⁷ The EU ETS Directive enshrines three sub-goals in relation to three different governance levels of equity: (i) just transition of society and labour (national level), (ii) solidarity among EU Member States (EU level), and (iii) support for third countries beyond the EU (extra-EU level).¹²⁸ The use of ETS auctioning revenues is an instrument for addressing such distributional aspects.¹²⁹

Lastly, the (meta-)objective of coherence consists of the (i) ‘inward-looking’ sub-objective of maintaining coherence between the norms of the legal system, and the (ii) ‘outward-looking’ sub-objective of optimizing interaction between policies. On the one hand, legal coherence essentially means that the legal system should function as a consistent whole and that the hierarchy of norms must be observed.¹³⁰

¹²³ The former also encompasses the goal of tackling structural supply-demand imbalances (see Decision 2015/1814, n. 90 above, recital 5). The latter is also related to the equity objective, as far as disproportionate administrative burdens for smaller emitters are concerned.

¹²⁴ Investments include both technology-based and nature-based solutions; see EU ETS Directive, Art. 10(3), points (b)–(h).

¹²⁵ See A. Endres, *Environmental Economics: Theory and Policy* (Cambridge University Press, 2011), pp. 130–40; Acworth et al., n. 87 above.

¹²⁶ See K.J. Arrow et al., ‘Is There a Role for Benefit-Cost Analysis in Environmental, Health, and Safety Regulation?’ (1996) 272(5259) *Science*, pp. 221–2; Söderholm, n. 106 above, p. 15. See also Commission SWD(2021), n. 11 above, pp. 124–9.

¹²⁷ D. Meuret, ‘Equity Theory’, in A.C. Michalos (ed.), *Encyclopedia of Quality of Life and Well-Being Research* (Springer, 2014), pp. 1959–63, at 1959; Green, n. 58 above, p. 85.

¹²⁸ Under the objective of just transition, we also categorize connectivity-territorial cohesion considerations (see TEU, Art. 3(3); TFEU, Art. 191(3); EU ETS Directive, Arts 3c(6), point (c) and 3gg(3)), as well as references to fair burden-sharing among sectors (see Directive (EU) 2023/959, n. 3 above, recital 20). See also Heffron, n. 115 above, pp. 9–19.

¹²⁹ EU ETS Directive, Arts 10(2), 10(3). See also Boyce, n. 115 above, pp. 58–9.

¹³⁰ See G. Battista Ratti & J.L. Rodríguez, ‘On Coherence as a Formal Property of Normative Systems’ (2015) 27 *Revus*, pp. 131–46; Lenaerts & Gutiérrez-Fons, n. 21 above, pp. 16–7; Overgaauw, n. 116 above, pp. 109–11.

The systematic and teleological methods of interpretation introduced in Section 3 are founded upon this meta-objective.¹³¹ Accordingly, as secondary EU legislation, the EU ETS Directive and its objectives must avoid conflicting with other norms of secondary EU law and conform with hierarchically superior norms of primary EU law and international law.¹³² As explained in Section 3.3, the principle of proportionality is applied by the CJEU as a balancing tool for resolving conflicts between objectives, thereby contributing to legal coherence.

On the other hand, policy coherence is attained by avoiding conflicts or undesirable effects,¹³³ and by pursuing synergies¹³⁴ between the EU ETS and other policies.¹³⁵ Relevant policies may be implemented at Member State level (such as national carbon taxes),¹³⁶ at the EU level (such as energy security or broader environmental policies),¹³⁷ or at an extra-EU level (such as policies adopted by other jurisdictions beyond the EU or by international organizations).¹³⁸ The difference between legal and policy coherence is that the former concerns legal norms whereas the latter refers to actual effects from policy interaction. As policies are often implemented through law, the two sub-goals can overlap to the extent that policies also create norms that become part of the EU legal order.

In Figure 2 we formulate evaluation criteria and sub-criteria that reflect the respective objectives and sub-objectives of the EU ETS. The formulation of criteria as questions facilitates their practical application in evaluations of the EU ETS and its amendments.¹³⁹

6. Conclusion

The EU ETS carries a substantial and increasing share of the EU's effort to become climate neutral by 2050. Criteria that align with the objectives embedded in the EU ETS legislation are essential for enabling more effective evaluations and reforms of the scheme in the crucial years ahead. By systematically mapping and analyzing

¹³¹ Lenaerts & Gutiérrez-Fons, n. 21 above, pp. 16–7, 31–4.

¹³² See Craig & de Búrca, n. 17 above, pp. 110–22; Overgaauw, n. 116 above, pp. 52–4, 121–33.

¹³³ E.g., double-counting, implementation barriers or significant double burden; see EU ETS Directive, Arts 24a(1), 3gg(1).

¹³⁴ E.g., by linking the EU ETS with other emissions trading systems; see EU ETS Directive, Art. 25.

¹³⁵ Such interaction can give rise to multi-dimensional effects, which do not solely concern (one of) the EU ETS objectives, but also those of other policies; see Art. 7 TFEU. See also M.S. Righettini & R. Lizzi, 'How Scholars Break Down "Policy Coherence": The Impact of Sustainable Development Global Agendas on Academic Literature' (2022) 32(2) *Environmental Policy and Governance*, pp. 98–109; Organisation for Economic Co-operation and Development (OECD), *Applying Evaluation Criteria Thoughtfully* (OECD Publishing, 2021), pp. 45–7.

¹³⁶ See EU ETS Directive, Art. 30e(3).

¹³⁷ *Ibid.*, Art. 10d(1). All European Commission proposals need to include an explanatory memorandum which, among others, should describe their consistency with existing measures in the area and other EU policies. See European Commission, "'Better Regulation" Toolbox: July 2023 Edition', pp. 343–4, available at: https://commission.europa.eu/law/law-making-process/planning-and-proposing-law/better-regulation_en.

¹³⁸ See n. 117 above. See also EU ETS Directive, Recital 26 (expressing a need for 'balance between the Community scheme and other types of Community, domestic and international action').

¹³⁹ The same approach was followed in OECD, n. 135 above, pp. 23–7.

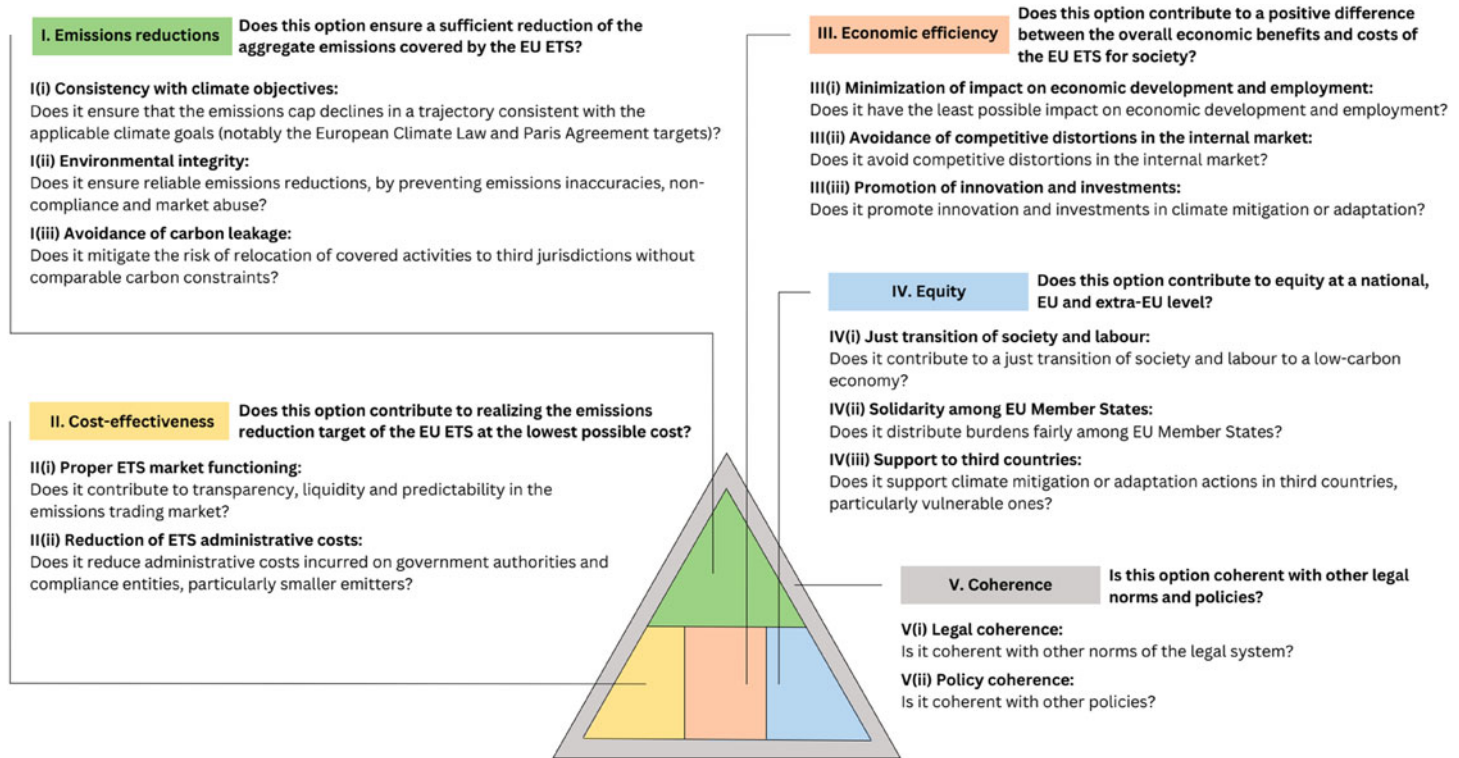


Figure 2. Evaluation Criteria Based on the EU ETS Objectives

its multiple legal goals, we made a first attempt to map the internal normative framework of the EU ETS and formulate evaluation criteria that reflect the content and interrelations of these internal objectives. This process has also helped to shed light on persisting ambiguities about the fundamentals of the EU ETS.

Our analysis shows that the scheme pursues a diverse and nuanced set of objectives that go beyond those outlined in Article 1 of the EU ETS Directive. The principal goal among them is the reduction of the aggregate GHG emissions covered by the scheme, which needs to be balanced with the three secondary objectives of cost-effectiveness, economic efficiency, and equity. The EU legislators enjoy a broad but limited margin of political discretion in this balancing process, subject to a high-threshold proportionality check by the CJEU. They also need to ensure that their legislative choices are coherent with other applicable legal norms and relevant policies.

Policy evaluations often assign different weights to selected criteria, based on a perception of their normative ranking. For instance, Konidari and Mavrakis determine weight coefficients based on the expressed preferences of certain stakeholder groups.¹⁴⁰ Our article does not follow that approach because the internal normative framework of the EU ETS classifies emissions reduction as its principal objective but does not establish a fixed ranking between the rest of its goals. Users of our evaluation framework can complement its criteria with weighting factors while making clear that these weights constitute external normative elements. Likewise, they may complement it with additional external criteria, such as that of ‘political feasibility’, which is commonly encountered in past evaluations.¹⁴¹

Our contribution lays the foundations for further research into the internal normative framework of the EU ETS and the legal interpretation of its multiple (sub-)goals. In particular, the objectives of equity and coherence have received relatively limited attention so far, but are becoming increasingly relevant. As the emissions cap declines further, allowance prices are projected to rise,¹⁴² which can amplify negative distributional impacts. At the same time, the expanding scope of the EU ETS is accompanied by an increasing need to maintain consistency with other applicable norms and policies. Researchers and policymakers could refine the qualitative evaluation criteria developed in this article, and transpose them into quantitative metrics suitable for conducting economic modelling exercises. Future research can also apply the interdisciplinary methodology of our contribution to construct evaluation frameworks for other policy instruments or jurisdictions, based on analyses of the objectives enshrined in their respective laws.

¹⁴⁰ Konidari & Mavrakis, n. 9 above, p. 6241.

¹⁴¹ *Ibid.*, pp. 6238–9; Venmans, n. 26 above, pp. 5495–6. Some caution is warranted with the criterion of ‘political feasibility’, as it could confine the assessment within arbitrary boundaries under the guise of political pragmatism, as hinted by Verbruggen, Laes & Woerdman, n. 15 above, p. 17.

¹⁴² R.C. Pietzcker, S. Osorio & R. Rodrigues, ‘Tightening EU ETS Targets in Line with the European Green Deal: Impacts on the Decarbonization of the EU Power Sector’ (2021) 293 *Applied Energy*, article 116914.

Supplementary material: The supplementary material for this article can be found at <https://doi.org/10.1017/S2047102524000153>.

Acknowledgements: We wish to thank the attendees of the 14th Annual Meeting of the Society for Environmental Law and Economics (SELE) at the University of Cambridge (Cambridge, United Kingdom) for their feedback on our paper presentation, especially Arden Rowell. We are also grateful to our colleagues at the Groningen Centre of Energy Law and Sustainability (GCELS), Groningen (The Netherlands), for their suggestions and for helping us to translate different language versions of the EU ETS Directive. Moreover, we wish to thank Frans Nelissen and Lorenzo Squintani for their comments on an earlier version of the manuscript. Lastly, our article has been improved thanks to the excellent remarks of three anonymous *TEL* reviewers.

Funding statement: Not applicable.

Competing interests: The authors declare none.

Cite this article: M. Kotzampasakis & E. Woerdman, 'The Legal Objectives of the EU Emissions Trading System: An Evaluation Framework' (2024) 13(2) *Transnational Environmental Law*, pp. 312–336. <https://doi.org/10.1017/S2047102524000153>