

Sustainable Competition Policy

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1. Introduction

We are seeing a disaster in slow motion in human terms, but one that is frighteningly fast from a geological point of view. Revelle and Suess wrote as early as 1957 that “*Human beings are now carrying out a large-scale geophysical experiment of a kind that could not have happened in the past nor be reproduced in the future. Within a few centuries we are returning to the atmosphere and oceans the concentrated organic carbon stored in sedimentary rocks over hundreds of millions of years.*”²

Indeed, greenhouse gasses in the atmosphere are surging. The Intergovernmental Panel on Climate Change (“IPCC”) found a 43% increase in CO₂, methane and NO_x.³ The concentration of CO₂ in the atmosphere is now 407.8 ppm – above the 400 ppm critical benchmark established in 2015.⁴ CO₂ is expected to increase by 0.6% in 2019.⁵ As a result, extreme weather events are more frequent: floods in England and Venice; wildfires in Portugal, Greece, Australia, Brazil, and California; heatwaves in Europe and Korea; fiercer-than-ever hurricanes in the United States; and severe droughts and poor harvests in southern Africa. Even the Arctic is on fire.

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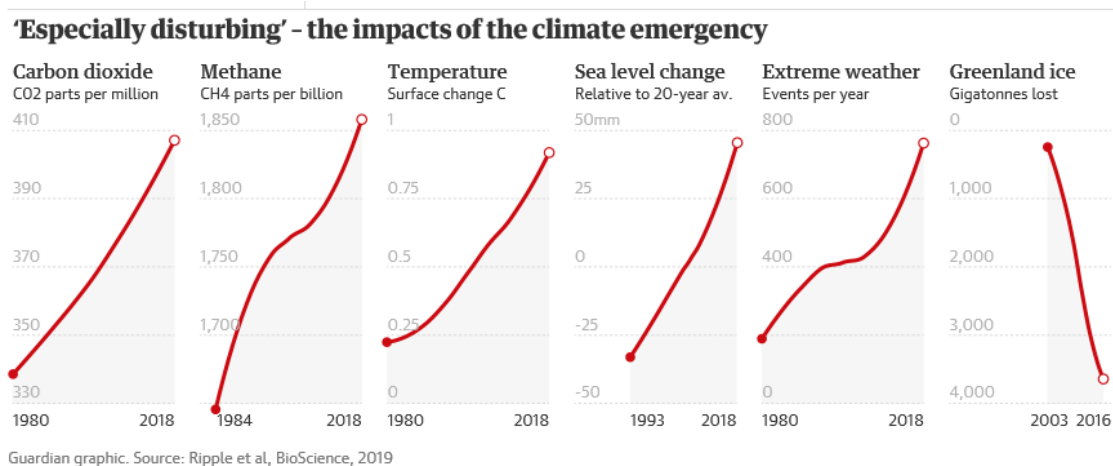
² Revelle and Suess, “Carbon Dioxide Exchange Between Atmosphere and Ocean and the Question of an Increase of Atmospheric Increase of CO₂, During the Past Decades”, Tellus IX (1957) 1, at <http://www.rescuethatfrog.com/wp-content/uploads/2017/01/Revelle-and-Suess-1957.pdf>. Nor were they the first. In 1864, US congressman George Perkins Marsh wrote a book, *Man and Nature: Or, Physical Geography as Modified by Human Action*, and predicted: “*The Earth is fast becoming an unfit home for its noblest inhabitant, and another era of equal human crime and human improvidence ... would reduce it to such a condition of impoverished productiveness, of shattered surface, of climactic excess, as to threaten the depavation, barbarism, and perhaps even extinction of the species ... The world cannot afford to wait till the slow and sure progress of exact science has taught it a better economy.*” See also “Rescue that Frog!” Blog, at <http://www.rescuethatfrog.com/beginnings/>

³ Intergovernmental Panel on Climate Change (2018). *Climate Change: The IPCC Scientific Assessment*, at: https://www.ipcc.ch/site/assets/uploads/2018/03/ipcc_far_wg_I_full_report.pdf.

⁴ World Meteorological Organisation (2019). *Greenhouse gas concentrations in atmosphere reach yet another high*, at: <https://public.wmo.int/en/media/press-release/greenhouse-gas-concentrations-atmosphere-reach-yet-another-high>. As much as 414.7 ppm was measured in Mauna Loa observatory in Hawaii in 2019.

⁵ Global Carbon Budget 2019, table 7, <https://www.earth-syst-sci-data.net/11/1783/2019/essd-11-1783-2019.pdf>

Figure 1



11,000 scientists from around the world recently clearly and unequivocally declared “a climate emergency.”⁶ According to the UN Environment Programme, based on current emissions, we will within 8 years exhaust our “carbon budget”, the level of emissions that would allow us to keep the increase of global temperatures within 1.5 degrees (the “safe” limit of climate change).⁷ And yet, global emissions show no sign of peaking. Based on current pledges, the world is headed towards a 3.5C rise – countries would have to increase their climate pledges more than fivefold, and halve global CO₂ emissions by 2030, to maintain the 1.5C goal.⁸ The UN Environmental Programme finds that if the emissions gap is not closed by 2030, we will fail in limiting a temperature increase to 2C.⁹ In fact, it expects global warming of 3 degrees by 2100, “continuing afterwards.” This is a matter of grave concern given that 4 degrees will cut out 40% of food yield.

It is suggested that the climate may be reaching a cascade of tipping points, a “Jenga tower” effect. See figure 2 below. We can pull out individual blocks with the tower remaining standing, but the removal of one more block could cause sudden collapse. This thesis is not universally accepted, but we can’t afford to find out by experience. If it is correct, our survival is at stake. Even if it is not correct, the crisis in Syria shows that even the current level of loss of food and water security is an important contributing factor leading to war and societal collapse.¹⁰

⁶ “World Scientists’ Warning of a Climate Emergency,” November 5, 2019, at <https://academic.oup.com/bioscience/advance-article/doi/10.1093/biosci/biz088/5610806>

⁷ Hausfather, Z. (2019), “UNEP: 1.5 Climate Target Slipping Out of Reach”, *Carbon Brief: Clear on Climate*, at: <https://www.carbonbrief.org/unep-1-5c-climate-target-slipping-out-of-reach>.

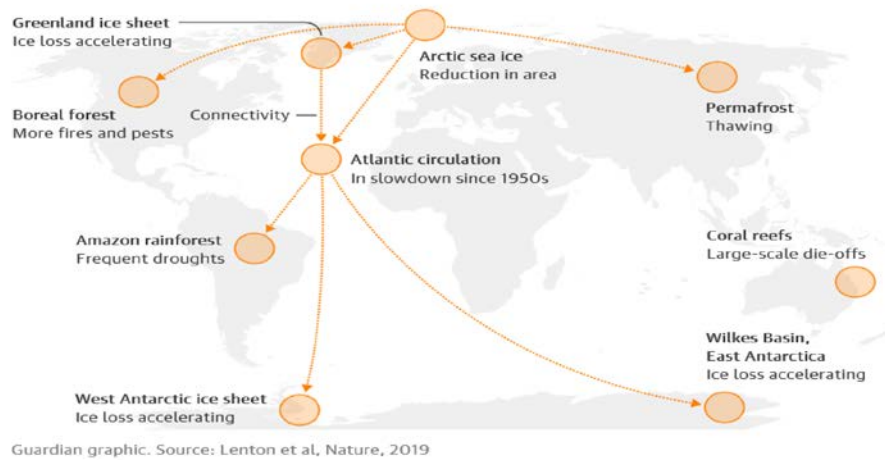
⁸ Based on the IPCC figure, “global GHG emissions in 2030 need to be approximately 25% and 55% lower than in 2017 to put the world on a least-cost pathway to limiting global warming to 2 degrees and 1.5 degrees respectively.” UN Environment Programme (2019), *Emissions Gap 2019*, at: <https://wedocs.unep.org/bitstream/handle/20.500.11822/30798/EGR19ESEN.pdf?sequence=13>.

⁹ UNEP Emissions Gap Report, <https://www.slideshare.net/wyakab/unep-emission-gap-report-2018-full-version>.

¹⁰ See Meyer, R. (2018), “Does Climate Change Cause More War?” *The Atlantic*, at: <https://www.theatlantic.com/science/archive/2018/02/does-climate-change-cause-more-war/553040/> and Selby, J., Dahi, O., Fröhlich, C. and Hulme, M. (2017), “Climate change and the Syrian civil war revisited,” *Political Geography*, 60, pp.232-244. See Abraham, J. (2018) “Study finds that global warming exacerbates refugee crisis,” *The Guardian*, at: <https://www.theguardian.com/environment/climate-consensus-97-per-cent/2018/jan/15/study-finds-that-global-warming-exacerbates-refugee-crisis>. See also Johnson, (2014), “Three

Figure 2¹¹

Scientists' warning: a cascade of climate tipping points is possible



Fortunately, we can do something about it. Each of us personally,¹² we as a worldwide society,¹³ and EU-wide. Indeed, there is a legal obligation for the EU and its Member States to act. Article 11 TFEU provides that “*Environmental protection requirements must be integrated into the definition and interpretation of the Union policies and activities, in particular with a view to promoting sustainable development.*”¹⁴

International Water Conflicts to Watch”, *Situation Reports*, at: <https://www.geopoliticalmonitor.com/three-international-water-conflicts-watch/>.

¹¹ Carrington, D. “Climate emergency: world ‘may have crossed tipping points’”, *Guardian*, 27 November 2019, at <https://www.theguardian.com/environment/2019/nov/27/climate-emergency-world-may-have-crossed-tipping-points>.

¹² See figure 8 at the end of this article for the most effective private actions. For a reliable personal carbon footprint calculator, providing personalized recommendations, see <https://coolclimate.berkeley.edu/calculator>. For an app, see <https://www.ducky.eco/en/> (“Ducky combines established behavioral science, fun and technology to mobilize individuals and organizations to take direct action.”)

¹³ UN Sustainable Development Goals, at <https://www.un.org/sustainabledevelopment/sustainable-development-goals/>.

¹⁴ Legal obligations also flow from the EU Charter on Human Rights (Article 37: “A high level of environmental protection and improvement of the quality of the environment must be integrated into the policies of the Union and ensured in accordance with the principle of sustainable development”) and the European Convention on Human Rights (“ECHR”). In *The Netherlands v Urgenda*, the Dutch Supreme Court on December 20, 2019, held that the Dutch Government has a legal obligation to reduce greenhouse gas emission by the end of 2020 by “at least 25% compared to 1990”. The Court relies on Articles 2 and 8 ECHR (the State’s “positive obligation” “to take appropriate steps to safeguard the lives of those within its jurisdiction” in view of a “real and immediate risk”, and the State’s duty to take “reasonable and appropriate measures” to protect individuals against “serious damage to their environment”). It held that “States have (...) the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.” See *The Netherlands v Urgenda*, Hoge Raad, 20 December 2019, ECLI:NL:HR:2019:2006, at <https://uitspraken.rechtspraak.nl/inziendocument?id=ECLI:NL:HR:2019:2006>. For a similar action in Belgium, see *VZW Klimaatzaak v. Kingdom of Belgium & Others*, at <http://climatecasechart.com/non-us-case/vzw-klimaatzaak-v-kingdom-of-belgium-et-al/>. British courts have also been emphatic about enforcing EU environmental law: See, for instance, *Client Earth v SoS for the Environment* [2015] UKSC 28, 2016 EWHC 2740 (Admin), and [2018] EWHC 315 (Admin) (finding the UK’s 2017 Air Quality Plan inadequate, and requiring the Government to comply with the UK’s obligation to reduce Nitrogen Dioxide country-wide).

Accordingly, President von der Leyen of the European Commission proposes a Green Deal, to make Europe climate-neutral by 2050.¹⁵ This Green Deal is based on the three pillars of “*people, planet and partners*” and includes a Climate Law, an extended Emissions Trading System including air and sea transport and construction, a carbon border tax to stop carbon leakage,¹⁶ and support for clean tech.¹⁷ EU Member States have had to submit their own National Energy and Climate Plans detailing how they would contribute to this mission.

Commissioner Vestager confirmed that “*competition will have an important role in our industrial strategy*.”¹⁸ Of course, competition law already protects consumer choice for cleaner products, and agreements for the proper labeling of green products. But can we stop there? I think not.¹⁹

This article explores how EU competition policy should help. It will first discuss how the climate crisis is driven by market failures. Second, it will show that traditional consumer welfare analysis – a lodestar of competition policy – can and should account for price externalities, such as pollution and climate change. Third, it explains that we need to act in all areas of competition policy – including merger control and cooperative agreements. It concludes on a positive note: competition policy can be part of the solution rather than part of the problem, as one tool in a range including regulation, carbon taxation, emission trading systems, and innovation.

2. Environmental economics are riddled with market failures

The reason why we cannot leave the climate to the market, is that environmental economics is rife with market failures.

First, **negative externalities**: Production involves costs that are not included in the price of goods, but borne by society as a whole (“social cost”). Figure 3 below is a graphic representation of how social welfare loss occurs because the market price of a polluting product excludes the social cost, resulting in output that is higher than the social optimum. For instance, there is oversupply of electricity from coal-fired plants because the price does not include the full cost of pollution – how much is included depends on the emission trading scheme. The producer and buyer get the benefit; society bears the cost. The social cost resulting from pollution and carbon emissions is high. We spend between €39 and €200

¹⁵ See 2019 Commission Guidelines, at https://ec.europa.eu/commission/sites/beta-political/files/political-guidelines-next-commission_en.pdf; A European Green Deal, at https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en. See also High-Level Group on Energy-Intensive Industries (2019), *Masterplan for a Competitive Transformation of EU Energy Intensive Industries*, at: <https://www.fuelseurope.eu/wp-content/uploads/Energy-Intensive-Industries-Master-Plan.pdf>.

¹⁶ See also R. Rajan, “A fair and simple way to tax carbon emissions; Rich countries that pump out more than average should pay into a fund that rewards low emitters”, *Financial Times*, 17 December, 2019, at <https://www.ft.com/content/96782e84-2028-11ea-b8a1-584213ee7b2b?shareType=nongift>

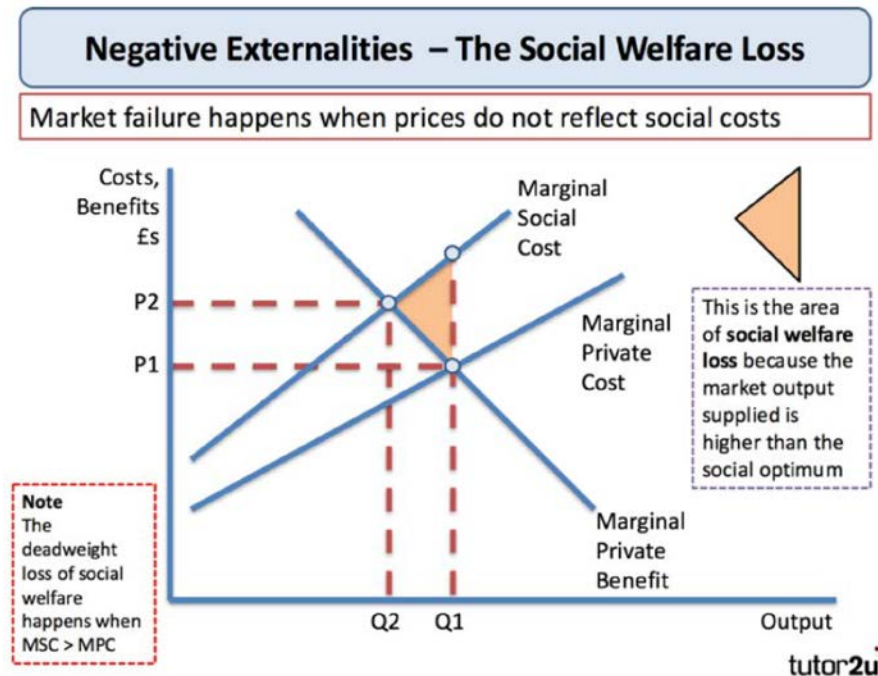
¹⁷ Council of the European Union (2019). *Transport, Telecommunications and Energy*, at: <https://www.consilium.europa.eu/media/41628/st14695-en19.pdf>

¹⁸ European Commission (2019), *Mission Letter for Margrethe Vestager*, at: https://ec.europa.eu/commission/sites/beta-political/files/mission-letter-margrethe-vestager_2019_en.pdf

¹⁹ See also “EU: MEPs demands fundamental overhaul of competition policy”, *Competition Policy International*, February 4, 2019; Competition and Consumer Day, 25-26 September 2019 in Helsinki, panel on “Sustainability and EU competition law”; Council of the European Union, “External Dimension of European Competitiveness Council of the European Union,” 19 Nov 2019; ACM, “Vision Document on Competition & Sustainability”, at https://www.acm.nl/sites/default/files/old_publication/publicaties/13077_vision-document-competition-and-sustainability-2014-05-09.pdf (2014).

billion in fossil fuel subsidies in the EU.²⁰ Including the costs of climate change, air pollution, congestion and accidents, the social cost is far higher; the IMF estimated the global cost to be \$5.3 trillion in 2015,²¹ or 6.5% of world GDP.²²

Figure 3



Leading economist Sir Nicholas Stern estimated social costs in his 2006 Report, already 14 years ago: *‘if we don’t act, the overall costs and risks of climate change will be equivalent to losing at least 5% of global GDP each year, now and forever. If a wider range of risks and impacts is taken into account, the estimates of damage could rise to 20% of GDP or more. In contrast, the costs of action – reducing greenhouse gas emissions to avoid the worst impacts of climate change – can be limited to around 1% of global GDP each year.’*²³

Revisiting the social cost estimate in 2019, Stern commented, *‘I think the aggregate economic models around climate issues have had fundamental defects — namely, underestimating the risks of inaction and overestimating the cost of action. We have to embark on very different models of production and consumption, which cannot be characterized as minor deviations from economic paths that we are following.’*²⁴

²⁰ Fouquet (2019), *State aid and Coal-to-Clean Transitions*, at: https://www.agora-energiawende.de/fileadmin2/Projekte/2019/VAs_sonstige/EUKI-State-aid-Conference/Doerte_Fouquet_14.11.19.pdf

²¹ Ibid.

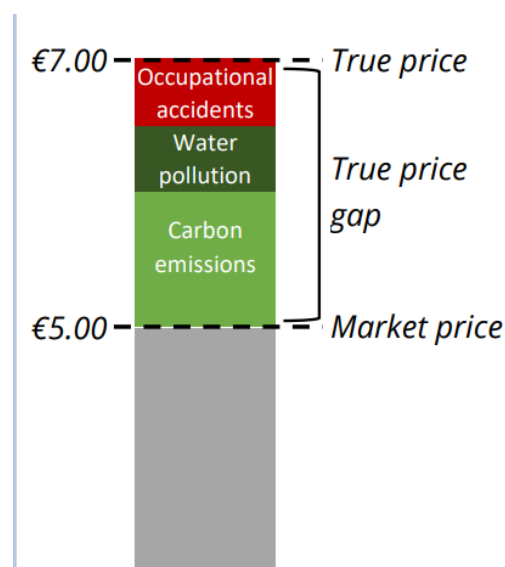
²² International Monetary Fund (2019), *The Economics of Climate*, at: <https://www.imf.org/external/pubs/ft/fandd/2019/12/pdf/fd1219.pdf>.

²³ Stern, N. (2006), *Review of the Economics of Climate Change*, at: http://mudancasclimaticas.cptec.inpe.br/~rmclima/pdfs/destaques/sternreview_report_complete.pdf.

²⁴ Stern, N. and Oreskes, N. (2019), “What’s the Price of Climate Change?” *New York Times*, at: <https://www.nytimes.com/2019/11/05/opinion/climate-change-economics.html>.

Competition policy is inadequate in its pursuit of consumer welfare if market failures like price externalities are ignored. Antitrust authorities can protect consumer welfare adequately only if the “true price” is considered. *“The true price is the market price plus the unpaid external costs. True pricing helps address all costs made in the production of goods and services by making hidden costs transparent. For instance, those costs that are paid by communities living next to a polluting factory, or the future generation that will have to deal with the increasingly disrupting effects of climate change.”*²⁵

Figure 4
Price Externalities and the True Price of a Product²⁶



A second important market failure is the existence of **coordination problems**; when producing or consuming, we each make independent choices that maximize our welfare individually in the short run, without taking into account what others do. This leaves everyone worse off. Why invest in green production, if rivals will undercut you? It will just lead to a first mover disadvantage. The same problem arises on the demand side: Why should a consumer pay more for green products, when others don't? Economists call this the “tragedy of the commons” – the degrading of commonly owned land, our environment, due to overuse, and the absence of incentives to curb consumption.²⁷

Third, there is the **eco-paradox**.²⁸ We claim to care about the environment, until we sacrifice it to obtain small benefits and convenience. Why? In part because of information asymmetries -- we don't know what will happen, and think we can't make a difference

²⁵ See “A Roadmap for True Pricing”, <https://trueprice.org/a-roadmap-for-true-pricing/>

²⁶ Ibid., p. 4.

²⁷ Buchanan and Yoon, “Symmetric Tragedies: Commons and Anticommons”, *Journal of Law and Economics*, Vol. 43, No. 1 (April 2000), pp. 1-13, at <http://www.jstor.org/stable/725744>. Economists at least recognize that even when international cooperation cannot be achieved, unilateral measures may be needed, to cut through the coordination problem. NYU found in a study of economists that “Respondents overwhelmingly support unilateral emissions reduction commitments by the United States, regardless of the actions other nations have taken (77% chose this option over alternatives such as committing only if multilateral agreements are reached).” See NYU Institute of Policy Integrity, “Expert Consensus Report” (2015) <https://www.edf.org/sites/default/files/expertconsensusreport.pdf>.

²⁸ For an equivalent in the privacy sector, see Athey et al, “The Digital Privacy Paradox: Small Money, Small Costs, Small Talk”, NBER Working Paper No. 23488, June 2017, at <https://www.nber.org/papers/w23488>

anyway.²⁹ We also think future costs are much less than they actually are. Behavioral economists label this “**hyperbolic discounting**.”³⁰ But inaction *raises* future costs.³¹ In his 2006 report, Sir Nicholas Stern warned that the cost of inaction would be far greater for future generations than the costs of actions taken today. Sir Nicholas Stern recently commented: “*With hindsight, I now realise that I underestimated the risks. I should have been much stronger in what I said in the report about the costs of inaction. I underplayed the dangers.*”³² When calculating social costs, and deciding whether to act now or delay, we should not be discounting *future* costs that are *going up* because of inaction *today*.³³

What can we do to address these market failures and instinctive human responses? Sir Nicholas Stern makes three recommendations in his 2006 Report: “*The first is the pricing of carbon, implemented through tax, trading or regulation. The second is policy to support innovation and the deployment of low-carbon technologies. And the third is action to remove barriers to energy efficiency, and to inform, educate and persuade individuals about what they can do to respond to climate change.*”

We won’t be able to stop fossil fuel development like natural gas, even if we want to limit temperature increase to 1.5 degrees, because of rising demand for energy also outside the OECD. Global energy needs will rise by 25% to 2040, led by non-OECD countries. But we can initiate a program of Regulation, Education,³⁴ Innovation,³⁵ and Reforestation.³⁶ Regulation in particular should include measures to “internalize” environmental costs in the price of goods. This includes in particular a better Emission Trading Scheme with lower caps

²⁹ “Experts on the economics of climate change expressed higher levels of concern about climate change impacts than the general public, when asked identical survey questions.” See NYU Institute of Policy Integrity “Expert Consensus Report” 2015, at <https://www.edf.org/sites/default/files/expertconsensusreport.pdf>.

³⁰ *Time Discounting*, Behaviouraleconomics.com (2019), at: <https://www.behavioraleconomics.com/resources/mini-encyclopedia-of-be/time-temporal-discounting/>

³¹ Environmental Protection Agency (2017), “The Social Cost of Carbon; Estimating the Benefits of Reducing Greenhouse Gas Emissions” at https://19january2017snapshot.epa.gov/climatechange/social-cost-carbon_.html (“*Estimates of the social cost of ... greenhouse gases increase over time because future emissions are expected to produce larger incremental damages as physical and economic systems become more stressed in response to greater climatic change, and because GDP is growing over time and many damage categories are modeled as proportional to gross GDP.*”)

³² See McKie, R. (2016), “Cost of global warming is ‘worse than I feared’”, *The Guardian*, at: <https://www.theguardian.com/environment/2016/nov/06/nicholas-stern-climate-change-review-10-years-on-interview-decisive-years-humanity>

³³ For the appropriate discount rates to calculate the social costs of carbon, see NYU Institute of Policy Integrity “Expert Consensus Report” 2015 <https://www.edf.org/sites/default/files/expertconsensusreport.pdf>

³⁴ For a list of daily decisions within our reach, see figure 8 at the end of this article, and the source quoted there. See also T, Shapiro Ledley et al, “*Addressing Climate Change Through Education*” <https://oxfordre.com/environmentalscience/view/10.1093/acrefore/9780199389414.001.0001/acrefore-9780199389414-e-56>

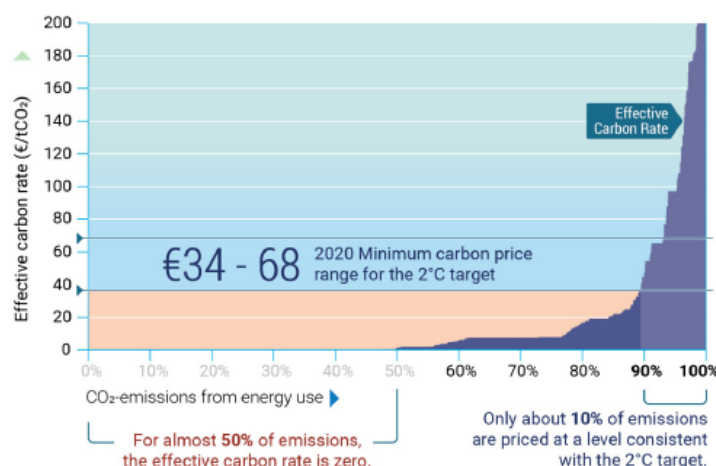
³⁵ See examples from *Project Drawdown* at the end of this article, and <https://www.drawdown.org/>. See also Hsu, S., “Capital Transitioning: An International Human Capital Strategy for Climate Innovation”, *Transnational Environmental Law*, 2016, at <http://myweb.fsu.edu/shsu/publications/XXTransEnvtlLXX.pdf> (advocating a series of “Los Alamos”-style research labs, staffed by researchers from a variety of countries, all working to accelerate carbon capture). See also more radical proposals: <https://www.carbonbrief.org/explainer-six-ideas-to-limit-global-warming-with-solar-geoengineering>

³⁶ Widespread reforestation is needed to re-capture carbon, but must be done thoughtfully, planting a variety of local species, avoiding monoculture, regenerating the soil and biodiversity, and engaging local population and authorities in helping trees survive. See projects like www.igivetrees.org and <https://www.4p1000.org/>. See also M. Huxham, “I’ve seen mass tree-planting projects go awry around the world – UK politicians should take note”, *The Conversation*, December 4, 2019, at <https://theconversation.com/ive-seen-mass-tree-planting-projects-go-awry-around-the-world-uk-politicians-should-take-note-128184>

than today, which should annually decrease,³⁷ to such an extent that they result in a carbon emission price that is at least equal to the true social cost of carbon, for all industrial and commercial emissions.

Fiscal policy and carbon pricing

Fiscal policy reform can create strong incentives for low-carbon investments and reducing GHG emissions. The use of carbon pricing is only emerging in many countries and generally not applied at a sufficient level to facilitate a shift towards low-carbon societies.



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All of that said, as an antitrust community, we cannot just shift responsibilities to others – especially not if the environment and climate is the European Commission’s top policy priority. What can we do?

3. Consumer welfare analysis should account for environmental price externalities.

First, we should consider what is included in the “consumer welfare standard” that competition policy promotes.³⁸ It includes lower prices, better quality, useful innovation, and

³⁷ EU Emissions Trading System, https://ec.europa.eu/clima/policies/ets_en

³⁸ *Guidelines on the application of Article 81(3) of the Treaty*, C 101/97, 27.4.2004, para. 13 and 33 (“The aim of the Community competition rules is to protect competition on the market as a means of enhancing consumer welfare and of ensuring an efficient allocation of resources.”) The term “efficient allocation of resources” encompasses sustainability (e.g., the renewability of those resources). Ibid., para. 85 (“society as a whole benefits where the efficiencies lead either to fewer resources being used to produce the output consumed or to the production of more valuable products and thus to a more efficient allocation of resources”). See also Holmes, “Climate Change, Sustainability And Competition Law”, *Oxford Journal of Antitrust Enforcement*, forthcoming. The analysis does not depend on acceptance of “consumer welfare” as the goal of competition law. Competition law should minimize “environmental impact”, accounting for the social cost and price externalities, also and indeed more so if one sees competition law as one of the tools to foster the general objectives of the European Union, since the latter include Articles 9 (protection of health) and 11 TFEU (environment and sustainable development), and Article 3 TEU (“a high level of protection and improvement of the quality of the environment.” ... “the sustainable development of the Earth”), discussed above. See also Townley, Christopher, “Is There (Still) Room for Non-Economic Arguments in Article 101 TFEU Cases?” (October 17, 2012), The Conference on Aims and Values in Competition Law, Copenhagen, September 20, 2012, at SSRN: <https://ssrn.com/abstract=2162864> (“There is still room for non-economic goals in Article 101 cases.”).

consumer choice, but should also include “environmental impact”, accounting for the social cost and price externalities discussed above. Indeed, it already does so by its nature. After all, the costs to society from pollution and carbon emissions are effectively a price increase, for *all* consumers. It has just not been sufficiently recognized.

Case law from the Court of Justice of the EU supports integrating social costs in our consumer welfare assessment. The Court held in *Österreichische Postsparkasse* that “[T]he ultimate purpose of the rules that seek to ensure that competition is not distorted in the internal market is to increase the well-being of consumers.”³⁹

The references to “*public interest*” and “*well-being*” are a throwback to the goals set out in Article 11 TFEU (quoted above) and Article 3 TEU: “*The Union's aim is to promote peace, its values and the well-being of its peoples.... It shall work for the sustainable development of Europe based on balanced economic growth and price stability, a highly competitive social market economy, aiming at ... a high level of protection and improvement of the quality of the environment. ... It shall contribute to peace, security, the sustainable development of the Earth...*”⁴⁰ Article 7 TFEU adds: “*The Union shall ensure consistency between its policies and activities, taking all of its objectives into account...*”

An interesting question arises whether the European Commission, or indeed any antitrust authority, has the democratic right to pursue policy goals like the environment through, for instance, competition law. The answer is positive, in that the national legislatures approved European Treaties identifying environmental protection and public health as important goals (as mentioned above), and providing four criteria in Article 101(3) TFEU for the exemption of restrictive agreements that improve “*production or distribution of goods*” or promote “*technical or economic progress*”. So long as the antitrust authorities stay within these conditions, the use of competition law is within the bounds of democratic legitimacy.⁴¹ This is the more so since the European Parliament has declared a climate crisis, and has given a clear environmental mandate to the Von der Leyen Commission.⁴²

³⁹ Joined-Cases T-213/01 and T-214/01 *Österreichische Postsparkasse v. Commission* ECLI:EU:T:2006:151, para. 115. See also Case C-52/09 *Konkurrensverket v TeliaSonera AB* [2011] ECLI:EU:C:2011:83, para 22.

⁴⁰ The references to “*public interest*” and “*well-being*” “do not mean that the goals of competition law should be non-economic, not focused on consumers.... Instead, they confirm that competition policy need not just seek lower prices and increased output, but serve to maximise “value” to consumers, of which price and quality are but two elements. Other elements could include innovation and choice (so consumers can find the good or service that best matches their individual preference from a range of available products), as well as aspects that are often not properly internalised in the price, such as environmental considerations, safety, privacy and avoidance of over-exploitation of unpriced resources to the detriment of society as a whole.” Dolmans and Lin, “A Fairness Paradox in Competition Policy”, in Komninos, Gerard, Waelbroeck (eds), *Fairness in EU Competition Policy: Significance and Implications*, forthcoming.

⁴¹ See also Case C-209/07, *Competition Authority v Beef Industry Development Society Ltd*, [2008] ECR I-8637, para 21 (“an agreement may be regarded as having a restrictive object even if it does not have the restriction of competition as its sole aim but also pursues other legitimate objectives (*General Motors v Commission*, paragraph 64 and the case-law cited). It is only in connection with Article 81(3) EC that matters such as those relied upon by BIDS may, if appropriate, be taken into consideration for the purposes of obtaining an exemption from the prohibition laid down in Article 81(1) EC”).

⁴² See, for instance, “The European Parliament declares climate emergency”, press release, 29 November 2019, at <https://www.europarl.europa.eu/news/en/press-room/20191121IPR67110/the-european-parliament-declares-climate-emergency>, European Parliament resolution of 28 November 2019 on the climate and environment emergency (2019/2930(RSP)), 28 November 2019, at https://www.europarl.europa.eu/doceo/document/TA-9-2019-0078_EN.html. The Parliament “Urges the new Commission to fully assess the climate and environmental impact of all relevant legislative and budgetary proposals, and ensure that they are all fully aligned with the

Critics may object that other potential policy objectives such as redistribution, education or security are caused by market failures and deserve to be protected, and that including environmental goals leaves us on a slippery slope. It may be that competition law should take account of other goals, too. But the climate crisis and certain looming environmental disasters like the decline of pollinators are unique, existential threats, the likes of which the world has not seen before. They are of a different order, covered by a specific mandate from the European Parliament, and a top priority for the Von der Leyen Commission. Taking them into account does not necessarily create a precedent for other policy goals. Other, less urgent objectives should be assessed on their own merits.

Accordingly, the thesis of this article is that whenever the EU Commission – or a national authority⁴³ – makes competition decisions, it should systematically assess the environmental impact as part of the consumer welfare analysis, and whether reduction or increase of competition will likely increase or reduce the environmental burden on consumers.⁴⁴ This is relevant especially in sectors such as energy, transport, food and chemicals.

This requires a philosophical shift. Regulation removes ‘bad’ choices, to eliminate negative externalities. By contrast, competition policy promotes consumer welfare by maintaining choice without saying which options are ‘good’ or ‘bad’. We trust consumers to make the best decision. Integrating social good in competition policy would move it away from the principle of unfettered consumer choice. This is justified, however, precisely because we are dealing with irrational (albeit innate) consumer behavior. Stepping away from the philosophical purity of competition law is a price worth paying because the goal is still consumer welfare, consumer choice is not eliminated, and climate stability is of utmost importance.

4. We need to act in all areas of competition policy⁴⁵

Merger control. In merger reviews, we discuss whether proposed acquisitions create or reinforce post-merger market power, and an ability and incentive to raise prices (or lower quality, choice, or innovation). This consumer welfare analysis should include whether the

objective of limiting global warming to under 1,5 °C, and that they are not contributing to biodiversity loss;... and to address the inconsistencies of current Union policies on the climate and environment emergency.”

⁴³ See Brook (2019), 'Struggling with Article 101(3) TFEU: Diverging approaches of the Commission, EU Courts, and five Competition Authorities'. 56 *Common Market Law Review*, (1), pp.121-156.

⁴⁴ The Commission stated in the context of the modernization of competition law that Article 101(3) TFEU provides “...a legal framework for the economic assessment of restrictive practices and not to allow the application of the competition rules to be set aside because of political considerations...” (Commission, White Paper on the Modernisation of the Rules Implementing Articles 85 and 86 of the EC Treaty, OJ 2000 C132/1, para. 57.) This statement was and remains questionable. See Joined Cases T-528/93, etc., *Métropole Télévision v Commission*, [1996] ECR II-649, para 118 (“the Commission is entitled to base itself on considerations connected with the pursuit of the public interest in order to grant exemption”). This is even more so after the Treaty of Lisbon relegated the text of 3(1)(g) (protection of competition as an EU objective) to a mere recital to Protocol 27 “on the Internal Market and Competition”. But even if the Commission was correct, this article does not propose to *set aside* the economic assessment of the application of competition rules. It proposes that an economic assessment should take into account externalities and other market failures, and that the application of competition rules should *integrate* the economics of sustainability by taking account of all costs, including social costs.

⁴⁵ State aid is not discussed in this article, but is of great importance. For a discussion of sustainable State aid, see *State aid perspectives on the “Coal-to-Clean Transition” in Europe*, November 14, 2019, at <https://www.agora-energiawende.de/en/events/state-aid-perspectives-on-the-coal-to-clean-transition-in-europe/>

concentration can be expected to raise or lower the environmental price that consumers pay, which is not reflected in the market price in monetary terms or in quality.⁴⁶

Antitrust authorities could and should find a significant impediment in effective competition (“SIEC”) if an acquirer plans, or has the incentive, to shut down a target’s cleaner production facilities – a killer acquisition. They could also find a SIEC if a merger can demonstrably be expected to increase carbon emissions appreciably (which would be equivalent to a price increase to all consumers for the product in question), and if that increase is not constrained by effective competition from greener competitors, by opposition from consumers, or by Government regulation. This could be the case if the merged firm is expected to increase output or gain market share at the expense of cleaner rivals – for instance, a rival who has just made significant investment in clean production, and needs to recover the associated sunk costs. If the net price per unit produced increases, taking into account the social cost of emissions, the deal may have to be curbed. Or we may need commitments.

Conversely, if a deal lowers polluting output or reduces the environmental cost to society per unit produced, such that the net price (including social cost) decreases, that could be a reason to allow it even if it raises the immediate market prices in monetary terms. This could be the case if a firm acquires a rival with green technology in order to adopt that technology for all of its production post-merger, if a firm acquires a rival in order to apply its cleaner technology to the target’s production, or even if the merged firm is expected to gain market share at the expense of dirtier rivals.

A more difficult question arises in connection with less immediate effects, unrelated to the commercial goals of a merger. A merger of two strong producers of carbon-intensive products that generate significant negative externalities for society may lead to significant price increases. Should such a merger be allowed on the ground that the ensuing price increase will reduce demand and hence lower pollution? Antitrust authorities may not wish to reward polluters by allowing them to exert market power in addition to polluting. Clearly, government should tax the negative externality, so consumers pay prices that incorporate the indirect impact on society at large, and use the proceeds for climate-mitigating measures. But if regulation or taxation are unrealistic or ineffective, if the benefits of reduced pollution to consumers clearly outweigh the higher prices, and if higher prices may invite new (cleaner) entry, the perfect should not be the enemy of the good.

Quantifying the cost of carbon emissions. To analyze the climate impact of a merger, we would need to quantify the cost of environmental externalities. After all, we should avoid arbitrariness and bias against certain industries. But a predictable, evidence-based analysis is possible – pollution and emissions can be assigned a value, as is done for health and safety law.⁴⁷ The US Government calculates a global ‘social cost of carbon’ (“SCC”), reflecting the

⁴⁶ For a different take on the same problem, see R. de Adelhart Toorop et al. “Maatschappelijke toetsing van overnames is nodig”, *Economisch Statistische Berichten*, 4752, August 2017, at <https://trueprice.org/wp-content/uploads/2017/08/Code-in-Bedrijf-ESB-Aug-2017.pdf> (proposing, in a Dutch context, a public interest review by the Enterprise Chamber of the Court of Appeals of Amsterdam). The EU should consider a more permissive State Aid for pan-European geo-research projects, like the recent battery value chain of the Important Project of Common European Interest: https://ec.europa.eu/commission/presscorner/detail/en/ip_19_6705.

⁴⁷ See for instance the Global Reporting Initiative (GRI) (2019), “GRI and Sustainability Reporting,” at: <https://www.globalreporting.org/information/sustainability-reporting/Pages/gri-standards.aspx>.

marginal cost to society of carbon dioxide emissions.⁴⁸ Specifically, a US Government Interagency Working Group estimated \$42-62 to be the 2020 present value of all future damages to the global society of one additional metric ton of carbon dioxide-equivalent greenhouse gasses emitted.⁴⁹ See Figure 5 below.

Figure 5

The “net present” cost of carbon emissions, for different discount rates⁵⁰

Table ES-1: Social Cost of CO₂, 2010 – 2050 (in 2007 dollars per metric ton of CO₂)

Year	5% Average	3% Average	2.5% Average	High Impact (95 th Pct at 3%)
2010	10	31	50	86
2015	11	36	56	105
2020	12	42	62	123
2025	14	46	68	138
2030	16	50	73	152
2035	18	55	78	168
2040	21	60	84	183
2045	23	64	89	197
2050	26	69	95	212

The Environmental Defense Fund explained that the US estimate “*does not yet include all of the widely recognized and accepted scientific and economic impacts of climate change*”.⁵¹ Indeed, as long ago as 2006, Sir Nicholas Stern found in his landmark report that each ton of CO₂ we emit cost at least \$85.⁵² And he now thinks that was too conservative.⁵³ Figure 6 below from an NYU study suggests it may now be as much as \$130 per ton and increasing:

⁴⁸ For a 2011 estimate of the air pollution damages for each industry in the United States, see Muller et al, “Environmental Accounting for Pollution in the United States Economy,” *American Economic Review* 101 (Aug 2011): 1649–1675, at <http://www.aeaweb.org/articles.php?doi=10.1257/aer.101.5.1649> (“Solid waste combustion, sewage treatment, stone quarrying, marinas, and oil and coal-fired power plants have air pollution damages larger than their value added. The largest industrial contributor to external costs is coal-fired electric generation, whose damages range from 0.8 to 5.6 times value added... This indicates that the air pollution damages from these industries are greater than their net contribution to output ... Five industries stand out as large air polluters: coal-fired power plants, crop production, truck transportation, livestock production, and highway-street-bridge construction”).

⁴⁹ See Environmental Protection Agency (2017), “The Social Cost of Carbon; Estimating the Benefits of Reducing Greenhouse Gas Emissions”, at https://19january2017snapshot.epa.gov/climatechange/social-cost-carbon_.html

⁵⁰ US Government Interagency Working Group, Technical Support Document, p. 4, at https://www.epa.gov/sites/production/files/2016-12/documents/sc_co2_tsd_august_2016.pdf. Note that the discount rates are higher than the current market level of interest rates. Also, “*there is extensive evidence in the scientific and economic literature on the potential for lower-probability, but higher-impact outcomes from climate change, which would be particularly harmful to society and thus relevant to the public and policymakers. The fourth value is thus included to represent the marginal damages associated with these lower-probability, higher-impact outcomes.*” Ibid., p. 4.

⁵¹ See Environmental Defense Fund, “The true cost of carbon pollution”, at <https://www.edf.org/true-cost-carbon-pollution>.

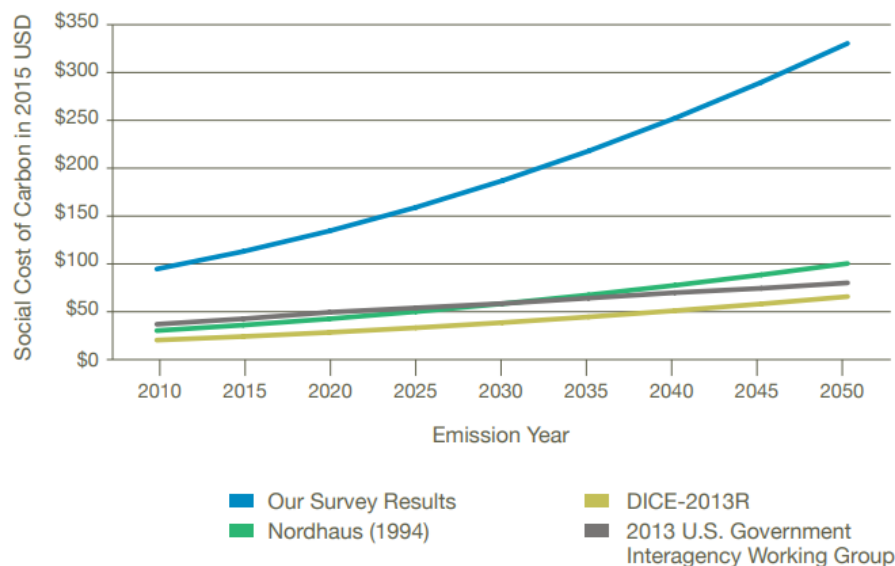
⁵² Stern, N. (2006). *Review of the Economics of Climate Change*, at: http://mudancasclimaticas.cptec.inpe.br/~rmclima/pdfs/destaques/sternreview_report_complete.pdf, p. xvi.

⁵³ See McKie, R. (2016), “Cost of global warming is ‘worse than I feared’”, *The Guardian*, at: <https://www.theguardian.com/environment/2016/nov/06/nicholas-stern-climate-change-review-10-years-on-interview-decisive-years-humanity>

“the current U.S. values for discount rates (to analyze climate regulations) and the social cost of carbon undervalue emissions reductions.”⁵⁴ The social cost of methane and nitrous oxide (laughing gas) is even higher, up to \$3,200 and \$39,000 per ton, respectively.⁵⁵

Figure 6⁵⁶

The Social Cost of Carbon for emissions from 2010 to 2050 in 2015 U.S. dollars, using damage functions calibrated from our survey results



Does an ability to appreciably increase greenhouse gas emissions following a merger reflect a SIEC (or reflect an increase of market power)? If not, merger control may not be an appropriate tool, absent a causal link between the merger and climate impact. The answer is yes, if and to the extent emissions can be expected to increase post-merger, and that increase is not disciplined by competitors, buyers, suppliers, or the government. Market failures are relevant here: buyers have little incentive to oppose a detrimental price externality, even if it is environmentally significant, if they don't perceive it immediately and individually. Even if they know about and object to the increase in greenhouse gas emissions, it is a price externality. It therefore remains to be seen whether enough customers care enough to create countervailing buyer power by refusing to buy the firm's products, or have the willingness and ability to pay for greener alternatives. Similarly, competitors can counter an increase of post-merger emissions only if they have the power to take market share from the merging parties – if they have greener products than the merging parties and can convince customers to buy them instead. Finally, we should assess whether the government can take timely and effective measures to prevent an increase in greenhouse gas emissions by means of regulation. If so, that may depress post-merger polluting power.

⁵⁴ NYU Institute of Policy Integrity, “Expert Consensus Report” 2015, at <https://www.edf.org/sites/default/files/expertconsensusreport.pdf> (emphasis added).

⁵⁵ Cf. also the ranges mentioned by the Environmental Protection Agency (2017) in “The Social Cost of Carbon: Estimating the Benefits of Reducing Greenhouse Gas Emissions” at https://19january2017snapshot.epa.gov/climatechange/social-cost-carbon_.html

⁵⁶ NYU Institute of Policy Integrity “Expert Consensus Report” 2015 <https://www.edf.org/sites/default/files/expertconsensusreport.pdf>.

In sum, merger control can be an appropriate tool to help combat the climate crisis, amongst others.

Horizontal Agreements. The review of the Horizontal Guidelines is another opportunity to assist a sustainable environmental policy.⁵⁷ Environmental agreements were cut out from the Guidelines in 2010.⁵⁸ We should put them back in.⁵⁹ Not doing so in the current climate crisis would be a negative political signal to the engaged public, and inconsistent with the EU's focus on the environment.

The new Guidelines should discuss and encourage not just environmental standard-setting and agreements on well-monitored labels based on objective and relevant criteria. They should also discuss other forms of environmental agreements, where individual producers are willing to invest in greening production, but may be held back by the fear that they will be undercut by those who don't invest, or by cheaper imports.

Article 101(3) TFEU permits agreements that restrict competition if they meet four conditions. They must (1) *“contribute to improving the production or distribution of goods or to promoting technical or economic progress”*, (2) *“[allow] consumers a fair share of the resulting benefit,”* (3) *“not ... impose ... restrictions which are not indispensable to the attainment of these objectives,”* and (4) *“not ... afford such undertakings the possibility of eliminating competition in respect of a substantial part of the products in question.”*

Contribution to progress. On its face, environmental efficiency qualifies as *“improving the production or distribution of goods or ... promoting technical or economic progress.”* Sustainability agreements can therefore meet the first condition of Article 101(3) TFEU. Examples include agreements mentioned in the 2001 Guidelines, as well as agreements between groceries and farmers to source produce locally; agreements between supermarkets to phase out plastic packaging, or to buy only products (whether beef or soy) that is certified not to come from forest destruction; agreements within an industry branch to jointly underwrite sustainable energy sources; agreed goals to reduce emissions;⁶⁰ coordination of

⁵⁷ European Commission, “Review of the two Horizontal Block Exemption Regulations”, with links to relevant documents, at https://ec.europa.eu/competition/consultations/2019_hbers/index_en.html

⁵⁸ The 2001 Horizontal Guidelines indicated that “environmental agreement” are unlikely to fall under Article 101 if *“no precise individual obligation is placed upon the parties or if they are loosely committed to contributing to the attainment of a sector-wide environmental target”* leaving discretion to the parties as to the means (para. 185); *“agreements setting the environmental performance of products or processes that do not appreciably affect product and production diversity”* (para. 186); *“agreements which give rise to genuine market creation, for instance recycling agreements”* (para. 187). Exemption under Article 101(3) is available if *“net benefits in terms of reduced environmental pressure resulting from the agreement, as compared to a baseline where no action is taken. In other words, the expected economic benefits must outweigh the costs”* (para. 193). Guidelines on the applicability of Article 81 of the EC Treaty to horizontal cooperation Agreements, OJ C 3/2, 6.1.2001, para 179 ff.

⁵⁹ See also Holmes, “Climate Change, Sustainability And Competition Law”, *Oxford Journal of Antitrust Enforcement*, forthcoming (arguing also for application of rules for standard setting agreements; analogous application of precedents clearing collective bargaining under the *Albany* case; and the ancillary restraints doctrine).

⁶⁰ See the JAMA and KAMA cases, XXVIII the Report on Competition Policy (1998), p. 160 (clearance of agreement to reduce emissions, leaving parties free as to the means to achieve this), at https://ec.europa.eu/competition/publications/annual_report/1999/en.pdf.

sustainability;⁶¹ or agreements to close down polluting production facilities,⁶² and others.⁶³ The EC has on occasion allowed Article 101(3) TFEU defenses for economic “crisis cartels”, where unfettered competition would favor outdated production with low fixed costs, and drive out producers who still have to recover investments in efficiencies (or pollution reduction), on condition that only the most inefficient capacity is closed, and no caps are imposed on outputs. Similar conditions might be applied to agreements to replace high-carbon-intensive production with cleaner alternatives. Indeed, we should consider exemption of any environmental agreement that leads to prices closer to the “true price” of a product or service, including the cost of pollution.⁶⁴

Effectiveness. Whether the first condition for exemption is met depends on whether the agreement effectively contributes to the sustainability goal. The burden of proof should not be too rigid, as in the following example:

- In 2013, 40 parties concluded an Energy Agreement, mediated by the Social and Economic Council of the Netherlands (SER), to speed up closure of five coal-fired plants in The Netherlands. The Dutch ACM objected, because “*a private agreement to withdraw production capacity from the market constitutes a restriction of competition*” and could be expected to raise electricity prices.⁶⁵ The ACM considered

⁶¹ European Commission Decision, Case IV.F.1/36.718, *CECED*, 24 January 1999, Section II.B. The Commission considered that the coordination saved water and electricity for consumers and provided collective benefits in the form of emissions reductions of carbon dioxide, sulphur dioxide and nitrous oxide provided benefits “more than seven times greater than the increased purchase costs of more energy-efficient washing machines” (recital 56).

⁶² These agreements may come in various forms, including coordination of sustainability standards, production/price cartels, or both. See Schinkel and Spiegel (2017) “Can Collusion Promote Sustainable Consumption and Production?”, *International Journal of Industrial Organization*, 53, 2017, 371-398; and Schinkel and Toth (2019), “Public Goods Provision by a Private Cartel”, December 2019, at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2723780.

⁶³ An encouraging number of examples exists in the US. The State of California struck a [deal](#) with four automakers to raise emissions standards, which unfortunately is being [attacked](#) by the Trump DOJ under anti-trust law; At least 40 companies in the UK agreed to a [UK Plastics Pact](#) to reach certain milestones to transform plastic packaging by 2025. [We're Still In](#) is a coalition of public and private organizations committing to climate action despite U.S. federal policy; [America's Pledge](#) is co-founded by Michael Bloomberg and former California Gov. Jerry Brown and works in parallel to We're Still In to tally efforts of states, cities, businesses, and non-profits to meet the U.S. Paris agreement goals; the [Global Climate Action Summit](#) was organized by Jerry Brown in California in 2018, which included [commitments from businesses](#); the [Climate Group](#) is a non-profit that [works to connect businesses and others](#) with the goal of limiting global warming to 1.5 C. It runs Climate Week NYC every year, where different groups come together to show their work and share information; they also have a list of networks of businesses they work with, including ones like EV100, dedicated to facilitating the transfer to Electric Vehicles, or EP100, for companies committing to greater energy efficient; European Cooperation on Renewable Energy is discussed in Wind Europe, “Corporate sourcing of renewables key to meeting Europe’s 32% renewable energy target,” press release, 2 October 2019, at <https://windeurope.org/newsroom/press-releases/corporate-sourcing-of-renewables-key-to-meeting-europes-32-percent-renewable-energy-target/>; [RE-Source](#) is a platform that connects buyers and sellers of renewable energy to facilitate corporate sourcing of renewable energy; the trade association for [European airports committed to be carbon neutral by 2050](#). In the online sector, Prof Tirole proposed the notion of “participative antitrust” – Codes of Conduct (like the Contractfortheweb.org) sponsored by the EC. See also OECD paper on “Extended Producer Responsibility”, ENV/EPOC/WPRPW(2015)16/FINAL, 12 April 2016, at https://mma.gob.cl/wp-content/uploads/2015/06/ENV-EPOC-WPRPW_2015_16-FINAL-ENG.pdf

⁶⁴ See above “A Roadmap for True Pricing”, <https://trueprice.org/a-roadmap-for-true-pricing/>

⁶⁵ ACM, *Afspraak sluiting kolencentrales is nadelig voor consument*, press release of September 26, 2013, at <https://www.acm.nl/nl/publicaties/publicatie/12032/Afspraak-sluiting-kolencentrales-is-nadelig-voor-consument>; ACM, *Notitie ACM over sluiting 5 kolencentrales in SER Energieakkoord*, September 26, 2013, at <https://www.acm.nl/nl/publicaties/publicatie/12033/Notitie-ACM-over-sluiting-5-kolencentrales-in-SER>

the environmental impact, but concluded this did not justify the agreement because (a) the CO₂ emission rights *could* be used elsewhere, and “*it must therefore be assumed that the reduction of CO₂ emissions will be undone by an increase in emissions elsewhere*”; and (b) the reduction of NO_x and SO₂ emissions was discounted because “*these emissions are subject to national caps... [which means that] fewer other measures are required to prevent exceeding the cap*”.⁶⁶

The ACM should be commended for including the social costs of emissions in the consumer welfare analysis,⁶⁷ but the outcome is regrettable. If the ACM had approved the deal, five coal fired plants would have closed more quickly, reducing emissions by 4,7 mton CO₂, 1,5 kton NO_x, 2,0 kton SO₂ and 0,1 kton particles during 2016-2021. There appears to have been no evidence that the CO₂ emission rights would have been used by another entity that would *not* emit if they could *not* acquire the rights from the five plants.⁶⁸ The documentation suggests these were just assumptions. Also, the CMA looked at the case from a local perspective, even though the climate crisis is a *worldwide* problem. The ACM in this respect fell for the coordination problem and the tragedy of the commons.⁶⁹ Limiting the analysis to the local or national impact would no longer be allowed after the 2019 judgment of the Dutch Supreme Court in *Urgenda* that The Netherlands must reduce “*its part*” of the worldwide emissions, and that “*States have (...) the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.*” Since the EU is bound by the same rule of public international laws, it should comply with this principle, too.

The next question is when environmental agreements meet the other conditions for exemption, namely, “necessity,” and “fair share to consumers”.

Necessity. In theory, the best answer to market failure is effective regulation, or taxation to compensate for the externality. If *fully* effective regulation exists, cooperative agreements may not be necessary. But adoption of new regulation moves at a glacial pace.⁷⁰ More important, existing regulation appears to be inadequate, such as the current carbon trading scheme – the right to emit a ton of CO₂ trades at less than \$20,⁷¹ well below an effective carbon emission price, which should equal at least the social cost of carbon of \$85-130 (discussed above). So part of the answer is allowing or even encouraging coordination between market parties, as a complement to regulation. Another Dutch example highlights,

[Energieakkoord](https://www.acm.nl/sites/default/files/old_publication/publicaties/12033_acm-notitie-sluiting-kolencentrales.pdf) ; and ACM, *Analyse van de Autoriteit Consument en Markt met betrekking tot de voorgenomen afspraak tot sluiting van 80er jaren kolencentrales in het kader van het SER Energieakkoord*, at https://www.acm.nl/sites/default/files/old_publication/publicaties/12033_acm-notitie-sluiting-kolencentrales.pdf

⁶⁶ See above. See also Schinkel et al. (2017 and 2019).

⁶⁷ The ACM appears to have valued the emission costs on the basis of the ETS emission rights price. This is inadequate, since that price is well below the actual social costs of emissions, as explained above. This did not affect the outcome, since the ACM in the end ignored the social cost savings, but this should be reconsidered in future decisions.

⁶⁸ Paraphrasing the words of the Dutch Supreme Court in *Urgenda*, “*The defense that a ... reduction of emissions is ineffective because others ... will continue their emissions, cannot be accepted, because every reduction counts.*” *Urgenda*, op. cit., para 5.7.8.

⁶⁹ *Urgenda*, above.

⁷⁰ The average number of days from proposal to final act is 533 for EU directives and regulations. This is without the time needed to prepare the proposal, which can be much longer.

⁷¹ The UK calculates the market price of carbon emissions each year. See Department for Business, Energy and Industrial Strategy (2018), *Updated Short-Term Traded Carbon Values*, at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/671194/Updated_short-term_traded_carbon_values_for_appraisal_purposes.pdf.

however, how the condition of “necessity” can kill an otherwise well-intended sustainability agreement:

- Dutch supermarkets, the poultry processing industry, and chicken farmers agreed on a “Chicken of Tomorrow” – an eco-alternative to the unnatural broiler chicken. This agreement would have covered the entire poultry sector. But the Dutch competition Authority ACM found that the additional costs per kilo of chicken were €1.46, and that the average consumer was willing to pay only €0.68 per kilo for animal welfare, plus €0.14 benefits of reduced ammonia and particle emission.⁷² So the ACM slaughtered the Chicken of the Future.⁷³

The ACM tried to do the right thing, by recognizing that the social costs, and the consumer’s valuation of animal welfare, are part of “consumer welfare” as a whole. Unfortunately, consumer valuation of animal welfare is marred by the eco-paradox mentioned above, resulting in an undervaluation. While the ACM should be commended for acknowledging that non-economic benefits count, what matters is not just the consumers’ willingness to pay, but the total social costs or benefits.⁷⁴

Interestingly, the ACM is conducting a study to verify whether supermarkets have since 2015 unilaterally increased the sale of sustainable chickens, which could provide insight into the question whether the “Chicken of Tomorrow” arrangements were in fact indispensable to promote chicken welfare. If the study finds that supermarkets compete on animal welfare so as to attract footfall, and that this has resulted in a significant volume of chickens being treated better than even the “chicken of the future” would have been, this could suggest that cooperation to promote a common level of reduced animal exploitation is not only unnecessary, but may even dampen the efforts to go further, in markets where consumers care about sustainable consumption.⁷⁵

This example shows that it is not a foregone conclusion that sustainability agreements are “necessary” in markets where consumers care about sustainability and are willing to pay more for ethical products. Schinkel and Spiegel (2017) find that in such markets, agreements on specific sustainability solutions may actually be counterproductive, and “allowing firms to

⁷² ACM Economic Bureau, “Economische effecten van ‘Kip van Morgen’ Kosten en baten voor consumenten van een collectieve afspraak in de pluimveehouderij”, October 2014, at https://www.acm.nl/sites/default/files/old_publication/publicaties/13759_onderzoek-acm-naar-de-economische-effecten-van-de-kip-van-morgen.pdf

⁷³ ACM, *Analyse ACM van duurzaamheidsafspraken Kip van Morgen*, analysis, January 26, 2015; https://www.acm.nl/sites/default/files/old_publication/publicaties/13758_analyse-acm-kip-van-duurzaamheidsafspraken-kip-van-morgen-2015-01-26.pdf. See generally ACM, *Afspraken Kip van Morgen beperken concurrentie*, press release, January 26, 2015, at <https://www.acm.nl/nl/publicaties/publicatie/13760/Afspraken-Kip-van-Morgen-beperken-concurrentie>.

⁷⁴ For a critique of the ACM’s approach, see Claassen and Gerbrandy, “Bredere kijk op mededingingsrecht gewenst”, *Me Judice*, 24 februari 2015, at <https://www.mejudice.nl/artikelen/detail/bredere-kijk-op-mededingingsrecht-gewenst>; Claassen and Gerbrandy, “Rethinking European Competition Law: From a Consumer Welfare to a Capability Approach”, Vol. 12, Issue 1 (Jan 2016) at <http://doi.org/10.18352/ulr.321>. They advocate a change in the law, to allow competition law to serve “total welfare” or “capability” rather than merely “consumer welfare”. This approach is politically controversial and takes time, and may not be accepted in enough countries. Hence the proposal in this article to recognize all aspects of consumer welfare, which can be done with immediate effect.

⁷⁵ Schinkel and Spiegel (2017) “Can Collusion Promote Sustainable Consumption and Production?”, *International Journal of Industrial Organization*, 53, 2017, 371-398. Note that the broiler chickens still being sold may not agree that their welfare has increased, which raises the question whether in cases of individual welfare, utilitarian calculations of average welfare are adequate.

*coordinate their investments in sustainability hinders investments in SCP.*⁷⁶ It makes intuitive sense that where consumer willingness to pay for a clean product is equal to, or exceeds, the social costs (and assuming that correct information on sustainability of the products is readily available to the consumer), it may be better if producers do not agree on specific solutions, but compete with each other to supply the cleanest product, and to provide relevant information to consumers. (Exceptions may be where cooperation is needed to generate economies of scale or scope or network effects needed to achieve sustainability. This may be the case for recycling schemes.)

This does not mean that there should be no sustainability agreements in markets where consumers care about sustainability. First, environmental labeling standards are particularly important in such markets. Second, especially for products with low margins (where suppliers have little or no room to invest in sustainability) sector-wide agreements may still be needed to create common goals for sustainability, leaving producers free as to how they achieve those objectives. Interestingly, Schinkel and Spiegel find that where “*consumers care about sustainable consumption and have a higher willingness to pay when products are more sustainable*”, i.e., where sustainability is a *primary* parameter of competition, and where rivals focus first on sustainability to attract buyers, a price rise would promote sustainability investments, since “*firms invest more than they do in the absence of any form of collusion.*” While such agreements may pass the “necessity” test so long as they set sector-wide goals without prescribing implementations, they also need to pass the “fair share to consumers” condition, discussed below.

Finally, and importantly, the requirement of “necessity” may be met in the (perhaps more normal) case where consumers have no, or only limited, ability or willingness to pay for sustainability, that is to say, where $WTP < SCC$. Competition prevents or erodes suppliers’ ability to protect the environment where sustainability is not the main feature of competition, where consumers select products on the basis of price, quality or functionality instead of sustainability. For instance, individual refrigerator manufacturers may well be willing to abandon the most damaging greenhouse gases for coolants, for instance, but as long as consumers are unwilling to give up small perceived savings even if societal damage is large, competition will not allow responsible corporate conduct. It will instead undermine it. It is precisely in such markets that coordination of sustainability initiatives may be needed to avoid the “first mover disadvantage” and cut through coordination problems.

Fair share to consumers. The third requirement under Article 101(3) TFEU is that consumers must receive “*a fair share of the resulting benefit.*” In the limited debates to date, the requirement of a “*fair share to consumers*” appears to have been the main stumbling block for a more lenient application of competition law to environmental agreements.⁷⁷

⁷⁶ See Schinkel and Spiegel (2017) “Can Collusion Promote Sustainable Consumption and Production?”, *International Journal of Industrial Organization*, 53, 2017, 371-398; Schinkel and Toth (2019), “Public Goods Provision by a Private Cartel”, Dec 2019, at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2723780.

⁷⁷ Schinkel and Spiegel (2017) “Can Collusion Promote Sustainable Consumption and Production?”, *International Journal of Industrial Organization*, 53, 2017, 371-398 (concluding that if Article 101(3) TFEU is interpreted to ignore benefits to society or to consumers in general (an important limiting assumption), in a market where consumers value sustainability and select products based on sustainability before prices (another important limiting assumption), a production cartel increases sustainability only in limited circumstances, and coordination of sustainability investments always reduces the level of sustainable production and harms consumers).

Critics argue, first, that environmental efficiencies can't easily count as a justification under Article 101(3) TFEU, because the Guidelines on Article 81(3) say that “*The assessment under Article 81(3) of benefits flowing from restrictive agreements is in principle made within the confines of each relevant market to which the agreement relates*”.⁷⁸ In other words, environmental efficiencies are not recognized if they arise in a different relevant market than the one in which the restrictions are felt. The words “in principle” may leave room for exceptions. More importantly, with a climate disaster looming at the horizon, it would be shortsighted to apply Article 101(3) TFEU in such a limited fashion.

In the case of environmental and climate agreements, at least, there is moreover neither economic nor legal justification for this limitation.⁷⁹ Unlike the Guidelines, which do not have force of law, the wording of Article 101(3) TFEU does not require that the balancing test be limited to the same market. Efficiencies such as emission cuts can justify an otherwise restrictive agreement so long as they are “*allowing consumers a fair share of the resulting benefit*.” So whatever the Guidelines say, what matters is not the “*relevant market*” but the “*fair share to consumers*”. The “*fair share*” may accrue to consumers in a different market, too. For instance, an agreement to reduce pollution may increase prices, but reduce the same consumers’ healthcare costs and increase their life expectancy and quality of life by more than the extra amount they pay for the cleaner products.⁸⁰

The traditional approach to determine the “*fair share*” is to calculate the costs and benefits for the actual and potential customers of the parties to the agreement (excluding benefits accruing to other consumers), and approve the agreement only if the benefits exceed the costs *for those specific customers* in monetary terms.⁸¹ That leaves the question whether, if the benefits of an agreement accrue to society as a whole, we can still say that it “*allow[s] consumers a fair share of the resulting benefit*”? The answer is yes, for several reasons, at least for agreements that concern greenhouse gas emissions and serious pollution.⁸²

⁷⁸ See *Guidelines on the application of Article 81(3) of the Treaty*, C 101/97, 27.4.2004, para. 43 (“*The assessment under Article 81(3) of benefits flowing from restrictive agreements is in principle made within the confines of each relevant market to which the agreement relates*”). See also Case T-131/99, *Shaw*, ECLI:EU:T:2002:83, paragraph 163. But see Case C-360/92 P, *Publishers Association*, [1995] ECLI:EU:C:1995:6, paragraph 29 (when applying Article 101(3) TFEU in a case where the relevant market is wider than national, it is not correct only to consider the effects on the national territory).

⁷⁹ As an aside, the benefits arguably *do* arise in the same market: The emission cuts reduce social costs, which is equivalent to a reduction of the total price paid for the product supplied, or akin to a fall of the cost of production. If the benefit consists of a monetary cost and price reduction, that is seen as a benefit in the same market regardless of the markets where consumers subsequently proceed to spend the cash they save. The same should apply to the reduction of social costs.

⁸⁰ See also European Commission Decision, Case IV.F.1/36.718. *CECED*, 24 January 1999, para 52, at <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32000D0475> (environmentally friendlier washing machines were more expensive, but save water, washing powder, and electricity).

⁸¹ See *Guidelines on the application of Article 81(3) of the Treaty*, C 101/97, 27.4.2004, para. 80 (“*the net effect of the agreement must at least be neutral from the point of view of those consumers directly or likely affected by the agreement*”). See also *Post Danmark II*, where the Court of Justice stated that dominant firms seeking to establish an objective justification for their conduct under Article 102 TFEU must “*show that the efficiency gains likely to result from the conduct under consideration counteract any likely negative effects on competition and consumer welfare in the affected markets*.” Case C-23/14 *Post Danmark v. Konkurrencerådet* ECLI:EU:C:2015:651, para. 49.

⁸² “*Allowing also others to benefit from the sustainability investments directly, for example through a reduction in emissions or other negative externalities, would widen the scope for the policy to exempt cartels*.” Schinkel and Spiegel (2017) “Can Collusion Promote Sustainable Consumption and Production?”, *International Journal of Industrial Organization*, 53, 2017, 371-398, fn. 16.

First, the share can be “fair”, because even a small reduction of a risk with potentially large consequences could significantly improve – indeed preserve – the customer’s life and home and that of their offspring, and thus outweigh the economic cost of a price increase. Even if discounted, the value of delay or avoidance of a future climate cataclysm is significant (assuming discounting is at all justified if the avoidance, mitigation and adaptation costs increase annually).⁸³ In the words of the Dutch Supreme Court, *“The possibility exists that even a smaller warming of the earth and a lower [increase of the] concentration of hothouse gases causes a dangerous climate change, for instance because a tipping point is reached, or because the ice melts more quickly The precautionary principle means that more rather than fewer far-reaching measures have to be adopted to reduce the emission of hothouse gases”*.⁸⁴

Second, Article 101(3) TFEU by its terms is not limited to benefits accruing to “the” consumers or to “customers of the parties.” It requires that “consumers” in general receive a fair share of the resulting benefit. Fairness is not merely a matter of cold arithmetic, nor is fairness inherently individualistic or selfish. Fairness is in its essence a social norm based on deep roots of reciprocal altruism.⁸⁵ An individual can be said to receive a fair share of a benefit when the group or society to which s/he belongs benefits significantly, especially if the benefits are as significant as avoidance or mitigation of an threatened calamity affecting everyone.⁸⁶ Indeed, the goal of competition policy is to “make markets work more fairly for everyone” and “spread the benefits of fair competition in Europe and worldwide.”⁸⁷ All consumers, including the companies’ actual and potential customers, benefit from emission cuts and pollution reduction.⁸⁸ A collective benefit should be enough to approve a sustainability agreement under Article 101(3) TFEU to reduce serious pollution and greenhouse gas emissions.⁸⁹

⁸³ Article 101(3) TFEU recognizes future benefits. *“In some cases a certain period of time may be required before the efficiencies materialise. Until such time the agreement may have only negative effects. The fact that pass-on to the consumer occurs with a certain time lag does not in itself exclude the application of Article 81(3). However, the greater the time lag, the greater must be the efficiencies to compensate also for the loss to consumers during the period preceding the pass-on.”* Guidelines on Application of Article 81(3), above, para. 87-88.

⁸⁴ Dutch Supreme Court, *Urgenda*, above, para 7.2.10.

⁸⁵ See K. Binmore, *Natural Justice*, Oxford University Press, 2005, p. 14ff. See also K. Binmore, “Bargaining and fairness,” PNAS July 22, 2014 111 (Supplement 3) 10785-10788, at http://www.pnas.org/content/111/Supplement_3/10785.full. When society suffers, especially from something as pervasive as a climate crisis, each individual suffers – not just in moral terms, but also economically (directly, or indirectly because of increases in insurance premiums or taxes or reductions of economic opportunities, pressure of migration and loss of natural resources). Conversely, when the suffering of the group as a whole is relieved, each member of the group can be said to receive a “fair share.”

⁸⁶ Philosophically, it can be said that consumers receive a “fair share” when the environment benefits, because consumers are part of the environment ourselves. Uexküll’s and Heidegger’s notion of “*Umwelt*” or “environment” created a dualist impression of a separation between us and our environment. But we depend on air, water, food, and natural resources, and we are part of nature, which we influence and which influences us. As much as our individualistic and materialistic culture may have created a sense of separation between us and our environment, policy decisions must be based on the recognition that that impression of separation is wrong.

⁸⁷ European Commission Report on Competition Policy 2016, COM(2017) 285 final, May 31, 2017, p. 2.

⁸⁸ The conclusion that this is fair flows from various notions of “fairness,” including the Golden Rule common to all main religions, Kant’s Categorical Imperative, Varian’s and Dworkin’s “envy test”, or Rawls’ Theory of Justice (consumers in an “original position” behind a “veil of ignorance”, before they know whether they would qualify as a customer or not, would approve of counting benefits to society as a whole, because that way they would always all benefit).

⁸⁹ Many other potential objectives such as redistribution, education, security, or animal welfare have merit and are caused by market failures. The question therefore arises whether this reasoning should apply to all agreements pursuing worthy goals. These goals may well meet the first condition of Article 101(3) TFEU, and

Significantly, the Commission held as much in the *CECED* case, where it exempted an agreement to improve energy efficiency of washing machines:

*“the benefits to society brought about by the CECED agreement appear to be more than seven times greater than the increased purchase costs of more energy-efficient washing machines. Such environmental results for society would adequately allow consumers a fair share of the benefits even if no [economic] benefits accrued to individual purchasers of machines”*⁹⁰

This is the way to go. It should be restated in the new Horizontal Guidelines, at least for agreements to cut greenhouse gas emission and serious pollution that could affect society as a whole.

Third, and most important, when assessing what is a “fair” share for purposes of Article 101(3) TFEU, we should look at the question the other way around. Recall that emissions and pollution impose a cost on society as a whole, related to production and consumption by a few. *Individual* buyers get the benefit; *others* bear part of the costs (and those others have no say in that decision). That externality is unfair in itself. Consumers who impose a cost on society – and thereby act unfairly themselves – cannot object on grounds of unfairness if they have to pay more to reduce or compensate for that cost, *e.g.*, when the externality is internalized. Cutting down these emissions reduces an existing unfair asymmetry. An agreement that restores a more reasonable balance of costs and benefits, and improves fairness overall in accordance with the “polluter pays” principle, must therefore by definition be deemed to “allow consumers a fair share of the resulting benefit.” For this reason alone, environmental benefits to society as a whole can and should be included in the calculation under Article 101(3) TFEU.

For these reasons, the new Horizontal Guidelines should signal a broader application of Article 101(3) TFEU, based on the broader consumer welfare standard mentioned above, at least for agreements limiting hothouse gas emissions and serious pollution. The Dutch Government tried this in 2016. A Policy Rule on Competition and Sustainability instructed the ACM how an environmental agreement could pass each of the conditions of Article 101(3) TFEU.⁹¹ It provided:

a. when assessing the condition that agreements must contribute to improving the production or distribution of goods or to promoting technical or economic progress, [it is necessary to take into account] advantages in the long run, benefits to society as a whole ...; b. when assessing the condition that ... consumers are allowed a fair share of the resulting benefit, [it is necessary to take into account] both quantitative and qualitative benefits accruing to consumers in the long run;

be included in the objectives of the European Union. But when analyzing “fair share to consumers” it is reasonable to recognize that improving chicken welfare is of a different order of importance than limiting the climate crisis or preserving our environment. The latter affects us all, more directly, and to a much greater extent. And obligations of international law differ with respect to pollution and carbon emissions on the one hand (as the *Urgenda* case confirms), and other policy goals.

⁹⁰ European Commission Decision, Case IV.F.1/36.718. *CECED*, 24 January 1999, para. 56, at <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32000D0475>.

⁹¹ Beleidsregel mededinging en duurzaamheid 2016, <https://wetten.overheid.nl/BWBR0038583/2016-10-06>

c. when assessing the condition that the agreements must contain no restrictions that are unnecessary to achieve the sustainability goals, [it is necessary to take into account] the fact that when an undertaking adopts independent action to foster sustainability, it may see reduced market share and profits as a result of increased costs of production, which may deprive the undertaking of the incentive to develop sustainability initiatives;

d. when assessing the condition that the agreement must not afford the undertakings the possibility of eliminating competition in respect of a substantial part of the products in question, [it is necessary to take into account] the possibility of sufficient competition on parameters other than sustainability.

There were doubts as to whether the Courts and the European Commission would follow. The Dutch Government therefore now proposes a Bill on Creating Space for Sustainability Initiatives.⁹² This would allow sector-wide or local sustainability initiatives, initiated privately, to be translated into generally-applicable regulation, subject to democratic review, and unhindered by competition law.

This approach is creative, if it works, but an artifice. It would not be necessary if the Commission created more room under Article 101(3) TFEU. The Commission could use Article 10 of Regulation 1/2003 (which allows the Commission to make a finding that there is no competition infringement based on public interest) to set precedents, and should update the new Horizontal Guidelines to follow and further develop the principles set out in the *CECED* case, the 2001 Horizontal Guidelines, and the Dutch Policy Rule of 2016.

5. Conclusion

Commissioner Vestager has said that the EU cannot in the name of sustainability “turn a blind eye” to agreements that hurt competition.⁹³ We should indeed avoid ‘greenwashing’ of anti-competitive agreements. But we can also no longer afford to turn a blind eye to competition that exploits externalities that hurt the environment and the climate. Nor can we ignore the coordination problems that hamper solutions.⁹⁴

We must at least halve CO₂ emissions in the next decade to have at least a chance to limit the climate temperature increase to 1.5 degrees. See the UNEP chart in figure 7.

To achieve this, antitrust should be a part of an integrated climate policy, and the social cost of carbon emissions should be taken into account when assessing an agreement or conduct’s impact on consumer welfare. In theory, antitrust is not the only or even a primary tool to fight the crisis. Economists tell us the right tools are regulation; carbon taxation; an effective emission trading scheme resulting in a price at least equivalent to the damage to society; reform of the CAP to improve land use; State aid for innovation in carbon offsets, carbon capture, and clean production; ESG Reporting in the financial sector;⁹⁵ and personal

⁹² <https://www.tweedekamer.nl/kamerstukken/wetsvoorstellen/detail?id=2019Z14708&dossier=35247>

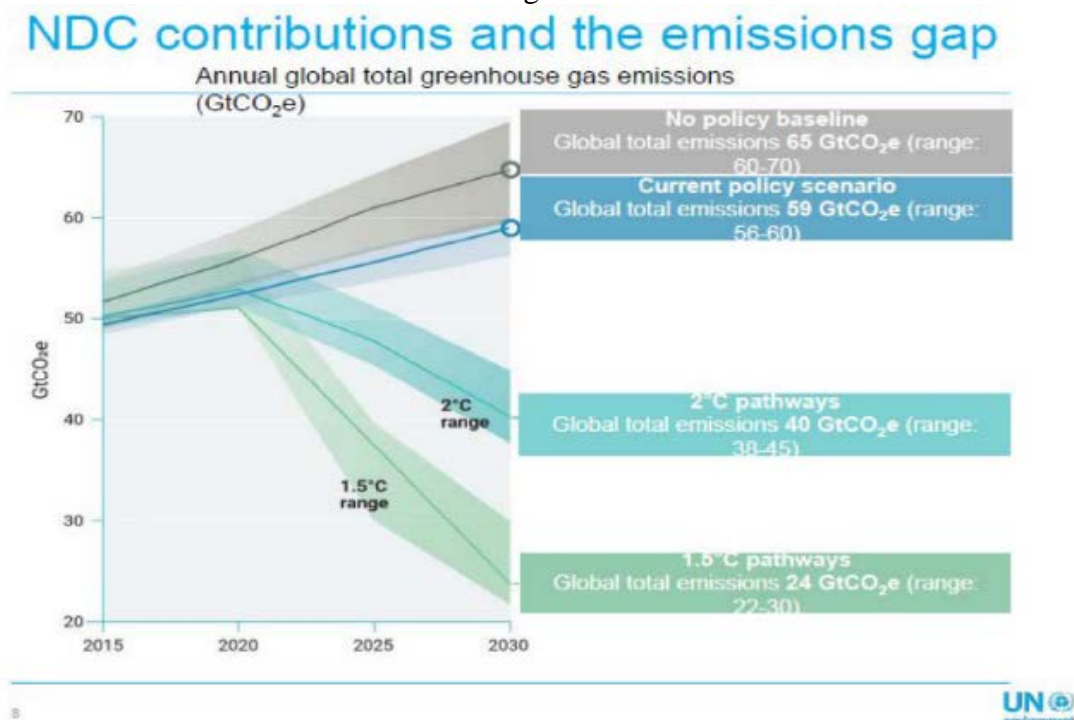
⁹³ PARR, “Vestager says sustainability initiatives must not conceal cartels”, October 24, 2019.

⁹⁴ We do, however, need to take care that these costs don’t fall on those who can least afford it. The unrest in France shows the potential consequences of this. Tax credits or subsidies are one potential solution.

⁹⁵ See “Sustainable finance: Commission welcomes deal on an EU-wide classification system for sustainable investments (Taxonomy)”, press release, 17 December 2019, at https://ec.europa.eu/commission/presscorner/detail/en/ip_19_6793

initiatives (energy savings, use of renewable energy, proper tree planting and maintenance, reduced consumption). But Governments should have done these things properly a decade ago, yet we are no further ahead.⁹⁶ We should keep pushing for them, of course, but at this late stage, it's all hands on deck. We cannot let the perfect be the enemy of the good. In a crisis, we have to use all means available, including private sustainability initiatives. Antitrust policy should support and encourage those.

Figure 7



We must at least halve global CO₂ emissions in the next 10 years to limit temperature increases to 1.5C

The European Parliament has given a clear environmental mandate to the Commission, when it declared a climate crisis.⁹⁷ President Von der Leyen and Executive Vice-President Vestager have made the climate crisis the key policy issue for the coming term. If the European Commission is really serious in its plan to give priority to fighting climate change, it should recognize that every reduction of a risk of a cataclysmic event is meaningful, in light of the precautionary principle, and that it should use every available tool. As the Dutch Supreme Court concludes, “*every reduction counts.*”⁹⁸

⁹⁶ When regulators don’t coordinate on issues affecting competition and the environment, industries can suffer on a broader scale. A good example of this is the solar industry – various tax credits and feed-in tariffs have been introduced and repealed over the years by different countries, particularly in the United States and China, which can distort prices and competition. Failure to manage these issues has led to several bankruptcies of solar companies in the US.

⁹⁷ See “The European Parliament declares climate emergency”, press release, 29 November 2019, at <https://www.europarl.europa.eu/news/en/press-room/20191121IPR67110/the-european-parliament-declares-climate-emergency>.

⁹⁸ Dutch Supreme Court, *Urgenda*, above, para 5.7.8.

Let's end on a positive note: A great inventory of all things being done, and that could be done, can be found in Jonathan Foley's "Project Drawdown"⁹⁹ – it shows that cement can be made to capture carbon;¹⁰⁰ red seaweed in cattle feed can dramatically cut down methane emissions from cows;¹⁰¹ algae can be a renewable energy source;¹⁰² the intense solar energy generator developed by the Swedish firm Ripasso can dramatically improve solar energy generation;¹⁰³ and lists other inventions that have huge potential. While the expectation of future technological change cannot be an excuse to refrain from using all available tools now, there is at least hope.

Ex-Unilever CEO Paul Polman said companies that lead on the environmental front will be the most successful of the 21st century.¹⁰⁴ Those who put short-term profit ahead of sustainability will vanish. If companies need an incentive to adjust their conduct, this should be it: there are huge opportunity in solving the climate crisis. If we play our role, the same is true for our competition community, and each of us individually.

Figure 8
Impact of individual actions¹⁰⁵

⁹⁹ Project Drawdown, The world's leading resource for climate solutions, at <https://www.drawdown.org/>

¹⁰⁰ Ibid.

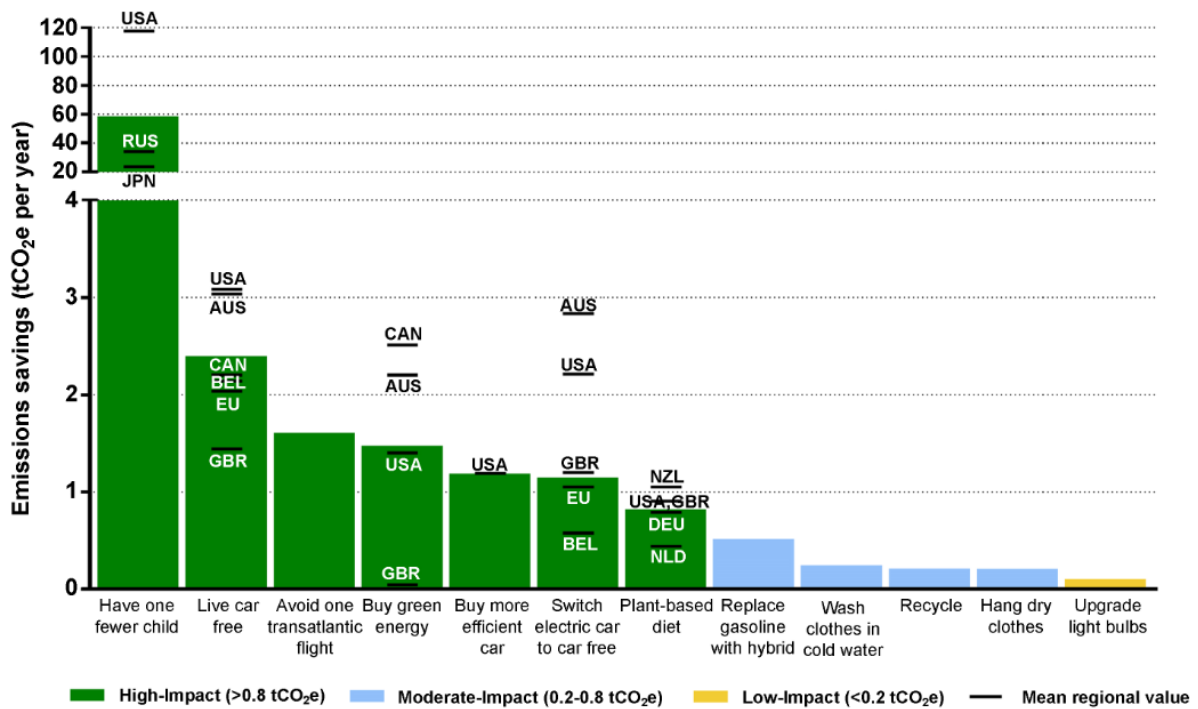
¹⁰¹ Gabbatiss, J. (n.d.). "Feeding Cows Seaweed cuts 99% of greenhouse gas emissions from their burps," *The Independent*, at: <https://www.independent.co.uk/environment/cows-seaweed-methane-burps-cut-greenhouse-gas-emissions-climate-change-research-a8368911.html>.

¹⁰² Wocken, C. (2019). The Power of Algae. *Biomass Magazine*, at: <http://biomassmagazine.com/articles/3096/the-power-of-algae>.

¹⁰³ A single Ripasso dish, for instance, can generate 75 to 85 megawatt hours of electricity a year — enough to power 24 typical UK homes. Barbee, J. (2015), "Could this be the world's most efficient solar electricity system?", *The Guardian*, at: <https://ourworld.unu.edu/en/could-this-be-the-worlds-most-efficient-solar-electricity-system>. It could dramatically reduce greenhouse gas emissions from industry. Cement, for example, accounts for 7% of global CO₂ emissions.

¹⁰⁴ Farrell, S. (2019), "Damaged ideology: business must reinvent capitalism – ex-Unilever boss," *The Guardian*, at: https://www.theguardian.com/business/2019/oct/29/damaged-ideology-business-must-reinvent-capitalism-ex-unilever-boss?CMP=Share_AndroidApp_Gmail.

¹⁰⁵ Wynes and Nicholas, "The climate mitigation gap: education and government recommendations miss the most effective individual actions", *Environmental Research Letters*, Volume 12, Number 7, 12 July 2017, <https://iopscience.iop.org/article/10.1088/1748-9326/aa7541>. See also <https://www.bbc.com/future/article/20181102-what-can-i-do-about-climate-change>, and the Ducky app <https://www.ducky.eco/en/> ("Ducky combines established behavioral science, fun and technology to mobilize individuals and organizations to take direct action.")



BLOCK QUOTES:

Competition policy does not work if we ignore market failures like price externalities.

Externalities affect “Consumer welfare” -- social costs of emissions are a price increase, for *all* consumers.

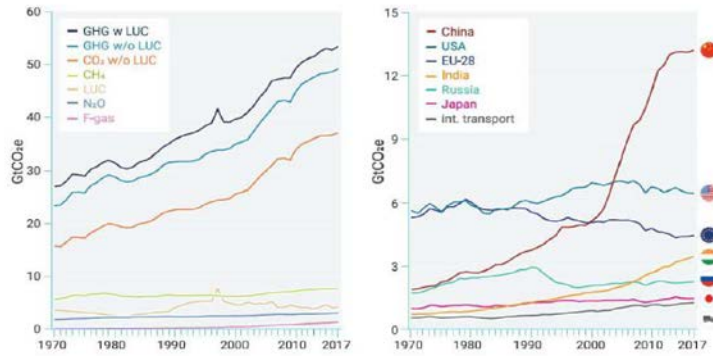
Ignoring environmental agreements in Horizontal Guidelines would be a negative signal, inconsistent with EC’s climate focus.

An agreement “allows a fair share to consumers” if it *restores* a “polluter pays” principle, reducing emissions.

Reserve graphic

UNEP Emissions Gap Report 2018

Global greenhouse gas emission levels for majors emitters and per type of gas



The concentration of and emission of hothouse gases is increasing