4 Designing Technology

4.1 Introduction

Technology has been transformative of life and ecosystems. The Industrial Revolution, digital revolution, globalisation, industrial food production, or the revolution in transport, are just some examples of new technologies prompting new ways of production and distribution, which in turn have had vast impacts on socio-economic conditions and natural ecosystems. Technology is also central to any imaginary of political economy - as it is intimately connected to how we understand progress and prosperity.[1]

When thinking about technology through the lens of imaginaries of prosperity, what matters is its governance: who makes technologies, to what purpose, for whose benefit, and at what cost. While descriptively, technology has been certainly transformative, prescriptively, that is *in what way*, it has been a matter of intense political and economic struggles. As businesses compete and strive for economic success, they aim to adopt, appropriate, develop, or implement various types of technologies quicker and better than their competitors.[2] Workers can benefit from technologies, as they can free them from difficult or menial work. Yet, more often than not, technologies have been 'labour productivity enhancing', thus aiming to replace workers or at least subject them to

[1] Carl Benedikt Frey, *The Technology Trap: Capital, Labor, and Power in the Age of Automation* (Princeton University Press, 2019); Simon Johnson and Daron Acemoglu, *Power and Progress: Our Thousand-Year Struggle Over Technology and Prosperity* (Hachette UK, 2023).

[2] I do not account in this chapter for the development of military technology, which is one of the most important sources of technological advance as well as between states competition. Often, however, that advance has been translated into economic advantages, thus feeding back into economic competition.

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various types of disciplines, first and foremost in order to increase the return on capital invested.[3]

The task of governments in relation to technology is starkly "two-faced"[4]: the governments need to foster technological advance of their economies, in order to ensure future prosperity as well as geopolitical relevance. At the same time, technology can also be very disruptive from the governments' perspective – especially where it is aimed at increasing 'labour productivity' (replacing labour and increasing unemployment)[5] or having large environmental (chemicals, pesticides, and industrial agriculture)[6] or social consequences (social media or AI).[7]

Governments can have many different relations to technology – they can actively support its development, they can steer it, they can shield people from its impacts, or they can leave its governance to market. In the analytical framework of this book, the core question when it comes to technology is who – private, public or collective actors – controls technological futures. Who gets to decide what kind of technologies are developed? How are the benefits of those technologies distributed? And what kind of social, environmental, or political futures are we set up with?

The two imaginaries of prosperity have different responses to these questions. In the imaginaries of privatised prosperity, technological progress is understood as market driven, and private actors are seen as its leaders (whatever the reality[8]). The government in such an imaginary would be well advised not to intervene, or to intervene lightly, for instance, in a 'horizontal' way.[9] In the imaginaries of shared prosperity, in contrast, the questions of development of technologies, its public steering and shielding from technological impacts, will become much more central, as the distributive and distributed effects of technology become more politicised.[10]

[3] Ibid. Also Karl Aiginger and Dani Rodrik, 'Rebirth of Industrial Policy and an Agenda for the Twenty-First Century', *Journal of Industry, Competition and Trade* 20 (2020): 189–207.
[4] Or three-faced, if you also account for military technology, as mentioned in fn. 2.
[5] Aiginger and Rodrik, 'Rebirth of Industrial Policy and an Agenda for the Twenty-First Century'.
[6] Paul Harremoes et al., *The Precautionary Principle in the Twentieth Century: Late Lessons from Early Warnings* (Routledge, 2013).
[7] Jürgen Habermas, *A New Structural Transformation of the Public Sphere and Deliberative Politics* (John Wiley & Sons, 2023).
[8] Marianna Mazzucato, *The Entrepreneurial State: Debunking Public vs. Private Sector Myths*, 1st ed. (Anthem Press, 2013).
[9] Mario Pianta, 'An Industrial Policy for Europe', *Seoul Journal of Economics* 27 (2014): 277–305.
[10] Johnson and Acemoglu, *Power and Progress*.

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In this chapter then, I will take as a "case-study" one increasingly significant element of the EU's technological governance: ecodesign. The reasons to look into ecodesign are at least twofold. First, ecodesign presents a success story in the governmental steering of technological development in the EU. Remaining for the most part at the sideline of public discussion, ecodesign has fundamentally impacted the daily life of all Europeans, making everyday products (vacuum cleaners, lamps, or washing machines) more energy efficient and longer lasting. Second, the framework that we see put in place today will create important background conditions for any impending *compossible technological futures*.[11] It sets the grounds for the conversation on how technology relates to sustainable economy; what kind of technological advances are necessary; what is the relation between production, distribution, and consumption of technologies; what are the limits to these interventions; and importantly, what are their distributive consequences. These questions will become ever more salient as we pursue sustainable futures, from digital economy to energy transition, from possible transport mix to sustainable food provision.

In what follows, I will track the changing imaginaries of political economy on the background of the changes in the ecodesign framework. After shortly outlining the development of the ecodesign framework from its inception until the present day, I concentrate on the transformation of imaginaries of economy, politics, government, and law post-2005. Empirically, this chapter is based on a systematic survey of the ecodesign legislation, proposals, and ecodesign workplans, as well as various 'circular economy' staff documents and communications, which have directly shaped the implementation of the ecodesign framework.[12]

4.2 Embedding the Product

4.2.1 Ecodesign Framework

Almost fifty years after the very first ecodesign measures, the most recent Commission's Proposal for a Sustainable Products Regulation, well advanced in the legislative process at the time of writing, expands

[11] Ngai-Ling Sum and Bob Jessop, *Towards a Cultural Political Economy : Putting Culture in Its Place in Political Economy* (Edward Elgar Publishing, 2013).

[12] This chapter also includes references to the two (negative and conditionally positive) positions of the 'Regulatory Scrutiny Board' on the 2022 Proposal for a Sustainable Product Regulation. See Commission, Communication Regulatory Scrutiny Board Opinion, Sustainable Products Initiative, SEC(2022) 165.

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the 'ecodesign approach' to any products that carry substantial environmental impact, ranging from textiles to electronics and plastics.[13] This is a significant expansion of the scope that can reshape not only how we go about making technologies but also how we think in that regard about the relationship between public and private, the state and the market. But let us start from the more modest beginnings.

The first ecodesign legislation dates back to the 1970s when, in the wake of the oil crisis (!), the European institutions introduced the first mandatory rules on energy efficiency, complemented with the first labelling directive,[14] in order to reduce '*the rate of growth of internal consumption by measures for using energy rationally and economically without jeopardizing social and economic growth objectives,* stressing that *any improvement in the rational use of energy is generally beneficial to the environment'*.[15] These first measures, however, still only required the member states (MSs) to develop and set the minimum performance standards within their national markets.

The new wave of regulations in the 1990s – including refrigerators and gaseous boilers,[16] as well as a new labelling directive for household appliances[17] – Europeanised the field, in line with the Single European Act and the White Paper for the Competition of the Internal Market. Thus, in order to '*promote measures aimed at the progressive establishment of the internal market in the period up to 31 December 1992*', as well as to account for the need of the '*Community* [to] *take proper account of potential climatic change linked to the greenhouse effect*', the EU would from then onwards set itself the minimum performance standards as it concerns

[13] European Commission, Proposal for a Regulation of the European Parliament and of the Council establishing a framework for setting ecodesign requirements for sustainable products and repealing Directive 2009/125/EC, COM(2022) 142 final, art. 1.

[14] Robin Barkhausen, Antoine Durand, and Katharina Fick, 'Review and Analysis of Ecodesign Directive Implementing Measures: Product Regulations Shifting from Energy Efficiency towards a Circular Economy', *Sustainability* 14, no. 16 (2022): 103-18.

[15] Council Recommendation of 25 October 1977 on the rational use of energy in industrial undertakings (77/713/EEC), p. 1.

[16] The EU first introduced the energy-saving requirements on heating systems, the production of hot water, and the insulation of heat and domestic hot-water distribution (Council Directive 1978/170/EEC [5]), followed by hot-water boilers fired with liquid or gaseous fuels (Council Directive 1992/42/EEC of 21 May 1992) and household refrigerating appliances (Council Directive 96/57/EC of 3 September 1996).

[17] Council Directive 92/75/EEC of 22 September 1992 on the indication by labelling and standard product information of the consumption of energy and other resources by household appliances.

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energy consumption for product groups and require MSs to ensure the free movement of goods that comply with such standards.[18]

In the 2000s, several important shifts in the thinking about ecodesign took place. In 2001, in the European Green Paper on Integrated Product Policies, the Commission proposed a 'life-cycle' thinking about product design,[19] which requires as a later Working Plan clarifies '*improving the environmental performance of products throughout their life cycle (raw material selection and use; manufacturing; packaging, transport and distribution; installation and maintenance; use; and end-of-life) by systematically integrating environmental aspects at the earliest stage of product design*'.[20] This life-cycle approach will be adopted in the new 2005 ecodesign framework directive.[21]

The 2005 Directive marks another shift. The EU will move from drafting independent product-specific directives on ecodesign requirements to a framework directive,[22] which sets out the process for the regulation of ecodesign, while leaving the development of rules for particular product groups to the level of implementing legislation, in the co-regulation framework.[23] What is more, with the amended 2009 directive, the scope of the framework directive also further expands, with a focus shifting from energy-*using* products[24] to a broader category of energy-*related* products – thus giving the EU competence to regulate also products such as tyres.[25] The framework directive has been supplemented with a new Directive 2010/30/EU establishing a framework for energy labelling of energy-related products.[26] By the end of the 2000s, we see also the first implementing measures on the basis of the 2005 directive[27]

[18] Council Directive 92/42/EEC of 21 May 1992 on efficiency requirements for new hot-water boilers fired with liquid or gaseous fuels, art. 4.

[19] European Commission, Green paper on Integrated Product Policy, COM(2001) 0068 final. See also Section 4.4.2.

[20] European Commission, Establishment of the Working Plan for 2009–2011 under the Ecodesign Directive, COM(2008) 660 final, p. 2.

[21] Directive 2005/32/EC of the European Parliament and of the Council of 6 July 2005 establishing a framework for the setting of ecodesign requirements for energy-using products and amending Council Directive 92/42/EEC.

[22] Ecodesign Directive 2005/32/EC. [23] Ecodesign Directive 2005/32/EC, art. 15.

[24] Ecodesign Directive 2005/32/EC, art. 1(1). [25] Ecodesign Directive 2009/125/EC, art. 1.

[26] Directive 2010/30/EU of the European Parliament and of the Council of 19 May 2010 on the indication by labelling and standard product information of the consumption of energy and other resources by energy-related products.

[27] Commission Regulation (EC) No. 107/2009 of 4 February 2009 implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to ecodesign requirements for simple set-top boxes.

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as well as a first working plan outlining the action for the upcoming years.[28]

4.2.2 *Embedding the Product in Time (Life-Cycle) and Society (Circular Economy)*

While the 2005 directive had already incorporated reference to 'life-cycle', it took a while before the idea to minimise the environmental impact across the life span of products got a foothold in the ecodesign thinking. Thus, the 2005 directive stated that when developing the standards, the Commission '*should consider the life cycle of the product and all its significant environmental aspects, inter alia, energy efficiency*'.[29] However, the 'life-cycle' was not a political priority, instead '*greenhouse gas mitigation through increased energy efficiency should be considered a priority environmental goal pending the adoption of a working plan*'.[30] The reasons for this initial disinterest were several, including the incapacity of methodologies chosen to actually assess environmental impact other than energy efficiency, as well as (more prosaically) the overestimation of the environmental impacts of energy efficiency by the consultants working on the file, or potentially the fact that it was DG Energy and Enterprise that was in charge of Ecodesign.[31]

It took until the 2015 Circular Economy Action Plan, followed by the 2016 Ecodesign Working Plan, before it became clear that energy efficiency could not be the sole, or even the main focus of ecodesign – that is, if the ecodesign is to achieve its environmental objectives. There was, according to the Commission, *'an increasing need, and political priority, to improve resource efficiency in the EU''*.[32] The resource efficiency acquires circular reading (i.e. reduce, reuse, and recycle),[33] with the Commission suggesting that what is required is '*Extending product lifetime, Ability to re-use components or recycle materials from products at end-of-life, Use of re-used components and/or recycled materials in products*'.[34]

[28] Ecodesign Working Plan 2009–2011. [29] Ecodesign Directive 2005/32/EC, art. 15(4)(a).
[30] Ecodesign Directive 2005/32/EC, Recital 12.
[31] Anaïs Michel, 'Premature Obsolescence: In Search of an Improved Legal Framework, KU Leuven Thesis, 2022, pp. 122 and 123.
[32] European Commission, Ecodesign Working Plan 2016–2019, COM(2016) 0773 final, p. 2.
[33] Kris Hartley, Ralf van Santen, and Julian Kirchherr, 'Policies for Transitioning towards a Circular Economy: Expectations from the European Union (EU)', *Resources, Conservation and Recycling* 155 (2020): 1–10.
[34] Ecodesign Working Plan 2016–2019, p. 9.

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By 2016, only one regulated 'product group' had been designed around a whole range of circular economy standards. The 2009 and 2012 lighting regulations have focused especially on durability, minimum lifetime, warranty and limiting 'planned obsolesce'[35] – perhaps one of the most remarkable commercial interventions to limit the life span of products otherwise perfectly able to function longer. The lighting regulations remained, however, an exception even post-2016, as mandatory durability requirements were not, with a limited exception of vacuum cleaners,[36] too widely imposed on other product groups in the following years.

Post-2016, we have, however, seen first the increase in circular economy *informational* requirements (for example on recycled content), as correlated with the increase in the number of regulated product groups.[37] Only with the 2019 generation of implementing measures (updates for electronic displays, televisions, computers, and computer servers, info on battery loading cycles, etc.) do we also see a broader increase in more demanding, or steering, circular economy requirements.[38] Today the possible implications are best seen in their, at present, most advanced incarnation: the Battery Regulation.[39]

The 2019 European Green Deal has blazed new life into the circular economy orientation of the ecodesign framework. In the 2020 Circular Economy Action Plan (CEAP), it is argued that '*there is currently no*

[35] Commission Regulation (EC) No. 244/2009 of 18 March 2009 implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to ecodesign requirements for non-directional household lamps; Commission Regulation (EC) No. 245/2009 of 18 March 2009 implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to ecodesign requirements for fluorescent lamps without integrated ballast, for high-intensity discharge lamps, and for ballasts and luminaires able to operate such lamps, and repealing Directive 2000/55/EC of the European Parliament and of the Council; Commission Regulation (EU) No. 1194/2012 of 12 December 2012 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for directional lamps, light-emitting diode lamps, and related equipment.

[36] The Commission will propose new rules for vacuum cleaners; the Consultation has ended and the new rules are expected in the second half of 2023; see https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12832-Energy-efficiency-ecodesign-requirements-for-vacuum-cleaners-review-_en.

[37] Barkhausen et al., 'Review and Analysis of Ecodesign Directive Implementing Measures', p. 15.

[38] Ibid., p. 16.

[39] Regulation (EU) 2023/1542 of the European Parliament and of the Council of 12 July 2023 concerning batteries and waste batteries, amending Directive 2008/98/EC and Regulation (EU) 2019/1020 and repealing Directive 2006/66/EC.

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comprehensive set of requirements to ensure that all products placed on the Union market become increasingly sustainable and stand the test of circularity'.[40] '*As a result, products are being replaced frequently, involving significant energy and resource use in order to produce and distribute new products and dispose of old ones*'.[41] What is called for, then – and to a degree delivered by the Commission in 2022 – is a new Ecodesign framework, which would significantly expand both the scope of the previous directive, going beyond 'energy *related* products' to all products that have a significant environmental footprint, and more genuine application of the circular economy principles (reparability, durability, upgradability, and recyclability), including the stronger mandatory rules for producers and distributors.[42]

The new 2022 Regulation proposal aims to embed the circular economy commitments more prominently. '*Directive 2009/125/EC has been generally successful in fostering the energy efficiency and some circularity aspects of energy-related products, and its approach has the potential to progressively address the sustainability of all products. To deliver on Green Deal commitments, this approach should be extended to other product groups and systematically address key aspects for increasing the environmental sustainability of products with binding requirements*'.[43] To do so, the new regulation aims not only to expand the scope of the directive in terms of product groups – to include other important consumer goods such as textiles[44] – but also stresses that this will come with new 'mandatory requirements' for producers and distributors '*to improve product durability, reusability, upgradability and reparability, improve possibilities for refurbishment and maintenance, address the presence of hazardous chemicals in products, increase their energy and resource efficiency, reduce their expected generation of waste materials and increase recycled content in products, while ensuring their performance and safety, enabling remanufacturing and high-quality recycling and reducing carbon and environmental footprints*'.[45] The more steering law seems to be in the making.

Over time, we have seen the expansion of what the product means in the context of ecodesign in two distinct ways. First, and more obviously, the scope of the EU legislation has been gradually expanding, to include

[40] European Commission, a New Circular Economy Action Plan for a cleaner and more competitive Europe, COM(2020) 98 final, section 2.1.
[41] Sustainable Products Regulation Proposal 2022, Recital 2, p. 16.
[42] Sustainable Products Regulation Proposal 2022.
[43] Sustainable Products Regulation Proposal 2022, Recital 1, p. 16.
[44] Sustainable Products Regulation Proposal 2022, p. 4.
[45] Sustainable Products Regulation Proposal 2022, Recital 5, p. 17.

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eventually any product groups with large environmental footprint, with the last 2022 Regulation.[46] In the second sense, ecodesign as a matter of circular economy aims to '[connect] *the design of a product to the larger situation of materials extraction, production, transportation, use and disposal and attempts to minimize environmental impacts across the entire life-cycle*'.[47] Focusing on the 'life-cycle' of products is thus to pay attention to relations of production, distribution, consumption, and disposal of products – embedding the product in its social and natural context.

This expansion of what product is, the embedding of the product so to say, is a similar tendency to what we have observed also in Chapter 3 on consumption, and we will see later in the chapter on corporation – expanding or thickening the *objects* of regulation, beyond their narrow privatised "selves". Yet, this socialisation has hit some limits, perhaps a bit too early in the context of ecodesign.

Despite the considerations in the 2020 Circular Economy Action Plan, the Commission's 2022 Proposal for Framework Regulation does not consider, unlike the targeted Battery Regulation, some of the more effective measures that would make life-cycle an integral part of production, such as 'extended producer responsibility', or the 'end of life responsibility' of producers – even if the producers may be hereby both better incentivised to account for life-cycle in the production and later best placed to ensure the effective recycling and the final disposal of the product.[48]

Overall, however, the gradual shift from energy efficiency to 'resource efficiency', and later to a more ambitious understanding of 'circular economy',[49] presents an important change in terms of political economy of technology. To the extent that the focus remains on energy efficiency, or even narrowly understood resource efficiency, such a focus has the capacity to make the goods ultimately cheaper – fostering in turn greater consumption.[50] The focus on circular economy points already to a different model of circulation, which counts with the reduction of consumption

[46] Sustainable Products Regulation Proposal 2022, art. 5.

[47] Kate Fletcher, 'Environmentally Responsible Design in Textiles', in *EcoTextile'98 - Sustainable Development,* ed. A. R. Horrocks (Woodhead Publishing, 1999): 271–8 as cited by Renate Hübner, 'Ecodesign: Reach, Limits and Challenges 20 Years of Ecodesign – Time for a Critical Reflection', *Forum Ware International* 1 (2012): 25–38, p. 27.

[48] Michel, Premature Obsolescence.

[49] Barkhausen et al., 'Review and Analysis of Ecodesign Directive Implementing Measures', p. 6.

[50] Anja Marie Bundgaard, Mette Alberg Mosgaard, and Arne Remmen, 'From Energy Efficiency towards Resource Efficiency within the Ecodesign Directive', *Journal of Cleaner Production* 144 (2017): 358–74.

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and the replacement of products with services such as repair. This presents cracks in the understanding of prosperity as economic growth.

4.3 Steering Growth

When it comes to the imaginaries of the economy, we see an increasingly complex relationship between ecodesign framework and the objective of economic growth. If in 2005 and 2009, ecodesign was still seen as a cheap way of protecting nature, given that the '*significant potential for improvement in terms of the environmental impact of these product groups will not entail excessive costs*',[51] in 2015 we see a shift to underline the "growth potential" potential of ecodesign and circular economy themselves: '*The circular economy will* ***boost the EU's competitiveness*** *by protecting businesses against scarcity of resources and volatile prices, helping to create new business opportunities and innovative, more efficient ways of producing and consuming. It will create local jobs at all skills levels and opportunities for social integration and cohesion. At the same time, it will* ***save energy and help avoid the irreversible damages*** *caused by using up resources at a rate that exceeds the Earth's capacity to renew them in terms of climate and biodiversity, air, soil and water pollution*'.[52]

The first Circular Economy Action Plan (CEAP) thus makes a very strong *business case* for circular economy, as it is expected to stimulate sustainable activity in key sectors, provide new business opportunities, unlock the growth and job potential of the circular economy, foster innovation, and generate new and sustainable competitive advantages for Europe.[53] Similar enthusiasm for the "growth potential" potential of circular economy is also present in the 2016 Ecodesign Working Plan, where the Commission states that the '*Ecodesign, complemented by energy labelling rules, supports the Commission's overarching priority to strengthen Europe's competitiveness and boost job creation and economic growth; it ensures a level playing field in the internal market, drives investment and innovation in a sustainable manner, and saves money for consumers while reducing CO2 emissions*'.[54]

The 2020 Circular Economy Action Plan backtracks somewhat from the traditional language of growth and competitiveness, to use "regenerative growth" as a leitmotiv, while stressing the environmental *urgency* of transition and the negative sides of (over)consumption of resources:

[51] Ecodesign Directive 2009/125/EC, art. 15(2)(c).
[52] European Commission, Closing the loop – An EU action plan for the Circular Economy, COM(2015) 0614 final, p. 2. All emphases in the quotes, in this and the following chapters, were added by the author of this book.
[53] Circular Economy Action Plan 2015. [54] Ecodesign Working Plan 2016–2019, p. 2.

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'*the EU needs to accelerate the transition towards a* ***regenerative growth model*** *that gives back to the planet more than it takes, advance towards keeping its resource consumption within planetary boundaries, and therefore strive to* ***reduce its consumption footprint*** *and double its circular material use rate in the coming decade*'.[55]

One of the central ways in which the Commission sees that the potential of circular economy can be harnessed is via its link to digital economy, seen as a medium creating possibilities for innovative business models based on '*closer relationship with customers, mass customisation,* ***the sharing and collaborative economy****, and* ***powered by digital technologies****, such as the internet of things, big data, blockchain and artificial intelligence,* [which] *will not only accelerate circularity but also the dematerialisation of our economy and make Europe less dependent on primary materials*'.[56]

The 2022 Regulation proposal is based fully on a "green growth" paradigm (rather than a "regenerative growth") model, aiming at '*decoupling of economic development from natural resource use and reduction of material dependencies*, all the while *supporting economic growth, job creation and social inclusion*'.[57] The Regulation is strongly motivated by innovation potential, where the early movers will have advantages later, as '*producers that use more sustainable production and transparent supply chains are expected to gain EU market share and increase their competitiveness over producers that use less sustainable methods*'.[58]

Now, while green growth and the attempts at decoupling are pointedly criticised for not being able to revert us from ecological catastrophe on time,[59] what we should still appreciate is the (potential of the) underlying shift in the imaginary of the economy. The shift is not only that the growth is supposed to be *green* but, more fundamentally within the framework of this book, that the growth has to be *steered*. This growth thus in principle does not require removing regulation or freeing the hands of private actors. Rather it requires *more* governmental steering, and *more* tightening of the hands of private actors, so that we can see both *more* and *better* growth and innovation. Thus, while the transition to

[55] Circular Economy Action Plan 2015, p. 2.
[56] Circular Economy Action Plan 2020, p. 2.
[57] Sustainable Products Regulation Proposal 2022, p. 1.
[58] Sustainable Products Regulation Proposal 2022, p. 8.
[59] Alevgul H. Sorman, 'Deceitful Decoupling: Misconceptions of a Persistent Myth', in *The Barcelona School of Ecological Economics and Political Ecology*, ed. Sergio Villamayor-Tomas and Roldan Muradian, vol. 8, *Studies in Ecological Economics* (Springer International Publishing, 2023), 165–77.

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"green growth" may not go far enough, quickly enough, a different way of thinking and talking about economy and growth is a fundamental precondition for developing a more credible new imaginary of shared and sustainable prosperity.[60]

4.4 Beyond Win-Win

By and large, the picture presented in the previous paragraphs may seem to suggest that the imaginary of politics behind ecodesign continues to be of a "win-win" kind that we know from the times of neoliberalism. But that is not the full story: a careful reading of the underlying documents makes clear that there are some clear distributive trade-offs between different groups – consumers, businesses, SMEs, or workers – and later documents are also increasingly ready to both acknowledge the distributive conflicts and make a choice for that or other 'winner'. Thus, we also see emerging a new imaginary of politics, which moves beyond the neoliberal "win-win" story, making distributive conflicts both visible and potentially open to further politicisation.

4.4.1 Distributive Trade-Offs 1: Consumers

Both the 2005 and 2009 framework directives promised environmental benefits[61] without many downsides for consumers: '*There shall be no significant negative impact on the functionality of the product, from the perspective of the user; (b) health, safety and the environment shall not be adversely affected; (c) there shall be no significant negative impact on consumers in particular as regards the affordability and the life cycle cost of the product*'.[62]

If anything, consumer's interests seemed aligned (energy efficiency), and consumers were seen as allies who would contribute to ecodesign objectives by exercising their freedom of choice in the market to choose more energy-efficient products. Thus '*while ecodesign progressively bans the least-efficient appliances from the market, energy labelling guides consumers towards the most energy efficient appliances leading to concrete economic benefits to the consumer over the life cycle of the product*'.[63] By '*encouraging and*

[60] Tim Jackson, *Prosperity without Growth: Foundations for the Economy of Tomorrow* (Taylor & Francis, 2016).

[61] Ecodesign Working Plan 2009–2011. At this stage, it is assumed that the significant potential for improvement in terms of the environmental impact of these product groups will not entail excessive costs.

[62] Ecodesign Directive 2009/125/EC, art. 15(5)(b) and (c).

[63] Ecodesign Working Plan 2012–2014, p. 1.

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empowering consumers to buy the most efficient products based on useful information (through energy labelling) [. . .] it reduces the energy consumption of consumers and businesses, and thereby their energy and utilities bills'.[64]

An important change in the imaginary of consumption, however, takes place in the background. Once the Commission's story becomes more than just the 'energy efficiency' that should fill consumers' pockets, and a move to circular economy principles becomes necessary, consumption patterns will also need to change. This means that consumers should want and consume somewhat different things than they have so far. The consumers are encouraged to shop also for second-hand and refurbished products, both as a sign of rationality and taste for quality. '***Second-hand products*** *can represent an affordable, high-quality alternative* ***for low quality new products***'.[65] For consumers, the 2020 Circular Economy Action Plan suggests that circular economy will provide *'high-quality, functional and safe products, which are efficient and affordable, last longer and are designed for reuse, repair, and high-quality recycling*'.[66] Importantly, such second-hand and refurbished products are already incorporated in the "cost structure" of the 2022 Regulation Proposal, changing thus considerably the 'cost-benefit analysis' when it comes to 'consumer welfare': '*Thus there shall be no significant negative impact on consumers in terms of the affordability of relevant products, also* ***taking into account access to second-hand products, durability and the life cycle cost of products***'.[67]

This is an important shift away from the neoliberal imaginary of consumers and consumption. If online shopping was the core message twenty years ago, as both rational and market-improving, today the situation is different. On the one hand, at least the worst effects of e-commerce (such as the major destruction of unsold goods) have to be controlled.[68] On the other hand, the Commission seems to envisage a slower kind of consumption. Consuming second-hand or refurbished goods is not fully standardised consumption, available in large quantities online and offline. Rather, such consumption will more often than not require us to go to a shop or, in the case of refurbished goods, encourage

[64] Ecodesign Working Plan 2016–2019, p. 2.
[65] European Commission Staff Working Document, Sustainable Products in a Circular Economy – Towards an EU Product Policy Framework contributing to the Circular Economy, SWD(2019) 91 final, p. 19.
[66] Circular Economy Action Plan 2020, p. 2.
[67] Sustainable Products Regulation Proposal 2022, art. 5(5)(c).
[68] Sustainable Products Regulation Proposal 2022, art. 1.

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bringing in one's old device next to buying a new refurbished device, etc. The same goes for repair, which both takes time and care.

4.4.2 *Distributive Trade-Offs 2: Businesses*

The starting point for both the 2005 and 2009 framework directives is low cost. '*At this stage, it is assumed that the significant potential for improvement in terms of the environmental impact of these product groups will not entail excessive costs*'.[69] The 2009 Directive promises that '*there shall be no significant negative impact on industry's competitiveness; in principle, the setting of an ecodesign requirement shall not have the consequence of imposing proprietary technology on manufacturers; and no excessive administrative burden shall be imposed on manufacturers*'.[70]

The overwhelming concern with the costs – be it placed on industry, or on competitiveness – is becoming less prominent in recent years. While the Commission's 2022 Proposal accepts that '*[o]verall, this means* ***costs for economic actors involved in product manufacturing are likely to increase, with some costs passed on to consumers***'',[71] the gains are to be made mainly on economic growth potential as '*producers that use more sustainable production and transparent supply chains are expected to gain EU market share and increase their competitiveness over producers that use less sustainable methods*'.[72]

Where the concern for the economic actors remains at its strongest is in the concern for stable regulation and standards. '*Industry needs harmonised requirements applicable across the board, efficient means to comply with them, proper enforcement, reinforced market surveillance and customs controls based on a risk analysis*'.[73] What is more, it is about protecting our economic operators against those who do not abide by the same standards, as it is a '***level playing field*** *for businesses operating on the internal market*'.[74] Thus, it is not the costs per se, but the degree of governmental guarantee of a "level playing field" for European producers that matters to the Commission.

It is not the case that competitiveness based on price is not important, but the bar of concern is much higher than a decade ago. Only

[69] Ecodesign Working Plan 2009–2011, p. 5.
[70] Ecodesign Directive 2009/125/EC, art. 15.
[71] European Commission, Executive Summary of The Impact Assessment, Accompanying Sustainable Products Regulation 2022, SWD(2022) 83 final, p. 2.
[72] Sustainable Products Regulation Proposal 2022, p. 8.
[73] Sustainable Products Regulation Proposal 2022, p. 2.
[74] Sustainable Products Regulation Proposal 2022, p. 5.

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'***disproportionate*** *negative impact on the competitiveness of economic actors*' really counts, and even that is qualified as applying '*at least of SMEs*'.[75] With the circular economy becoming an important growth/industrial strategy, in the face of the sluggish growth (of productivity) in the EU over the past decade, the investment in *regulation-led* innovation is seen as a strategy that gives first mover advantages.

The disinterest in costs is also (critically) observed by the Regulatory Scrutiny Board, the Commission's (de)regulation watchdog.[76] The RSB has been made particularly nervous about this proposal, demanding in its second 'positive with reservations' opinion, '*Considering the difficulty of estimating the costs and benefits of what will likely be a costly measure, the methodology should be more explicit as to* ***what would be "acceptable" cost increases****. It should clarify whether there is an expected time horizon for durability savings to offset increased product prices resulting from the sustainability requirements*'.[77]

As there are broadly shared concerns that the regulation-led innovation may be to the disadvantage of small- and medium-sized businesses,[78] the 2022 Regulation proposal aims to provide some cushioning. The measures that are encouraged include training and financial support, as well as one-stop shops or similar institutional mechanisms to aid the SMEs.[79] Generally, the impact assessment predicts a positive impact: '*including from a shift of activity from the processing of primary towards secondary raw materials and from production of products to maintenance, reuse, refurbishment, repair and second-hand sales, which is expected to benefit SMEs significantly because they are more active in these sectors*'.[80] This conclusion in the impact assessment is not an obvious one though: earlier documents suggest, for instance, that in the repair sector there is a '*tendency towards a higher centralisation of the sector, with large repairers gaining a higher share of the market and small independent repairers being either absorbed by larger repair*

[75] Sustainable Products Regulation Proposal 2022, art. 5(5)(c) and (d).
[76] Regulatory Scrutiny Board is the main protagonist in the later chapter on corporation. More information can be found here: https://commission.europa.eu/law/law-making-process/regulatory-scrutiny-board_en.
[77] European Commission Regulatory Scrutiny Board, 'Opinion: Sustainable Products Initiative', SEC(2022) 165, p. 2.
[78] Sustainable Products Regulation Proposal 2022, art. 5(5)(d).
[79] Sustainable Products Regulation Proposal 2022, art. 19.
[80] Executive Summary of the Impact Assessment, Accompanying the Sustainable Products Regulation Proposal 2022, p. 2.

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services or withdrawing from the sector'.[81] Yet this concern with the concentration does not feature in the 2022 Regulation proposal.

4.4.3 *Distributive Trade-Offs 3: Workers*

Of all economic actors, workers get the least attention in the Ecodesign framework. In the 2005 and 2009 directives, there is no mention of workers or work whatsoever. The CEAP of 2020 is the only document, among the studied, that has something to say about work and workers. Namely, that '*circularity can be expected to have a positive net effect on job creation provided that workers acquire the skills required by the green transition*'.[82] The strategy of the CEAP to achieve such skills acquisition is twofold. On the one hand using the '*potential of the social economy, which is a pioneer in job creation linked to the circular economy*', which, on the other hand, '*will be further leveraged by the mutual benefits of supporting the green transition and strengthening social inclusion, notably under the Action Plan to implement the European Pillar of Social Right*'.[83]

The 2022 Regulation proposal does not pick up on the aspects of work or the aspects of social economy. The only reference to the 'social aspects' is their relegation to other uncertain legislative proposals: '*due to the adoption of the Commission Proposal for a Directive on Corporate Sustainable Due Diligence during the preparation of this initiative, it was deemed appropriate to exclude requirements on social aspects from the scope of this legislative proposal*'.[84] The relevance of the due diligence proposal is also quite unclear, as that is mostly meant to require very large companies to monitor their operations outside of the EU – where EU and MS public law obligations do not reach. Moreover, this proposal sets rather minimal substantive standards on corporations, thus hardly being an ambitious target within the borders of the EU. One explanation for this exclusion is some sort of gesture to the Regulatory Scrutiny Board, which has singled out these two proposals (Due Dilligence Directive and new Sustainable Products Regulation) for particularly unsympathetic treatment.

The omission of the social economy from the Regulation proposal is also remarkable. As the social economy is in several places considered crucial for innovation in the area of circular economy, it is unclear why the

[81] European Commission, Staff Working Document, Sustainable Products in a Circular Economy – Towards an EU Product Policy Framework Contributing to the Circular Economy, SWD(2019) 92 final, p. 18.
[82] Circular Economy Action Plan 2020, p. 15.
[83] Circular Economy Action Plan 2020, p. 15.
[84] Sustainable Products Regulation Proposal 2022, p. 8.

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Commission is not more interested in tapping into its potential. Not only are social enterprises and Bcorps some of the most innovative entities in relation to circular production[85], but if circular economy is also to provide indeed more 'local jobs at all skills levels', that ideally should *not* lead to the concentration in, for instance, repair sectors as the Commission has already observed. Drawing on the old and the new social economy (i.e. repair shops and public workshops on the one hand and innovative social enterprises on the other) may be a promising way forward.

4.5 Shoring up Publicness

From its inception, the Ecodesign framework could be considered a particularly 'interventionist' type of legislation, inasmuch as it entrusts public authorities – rather than private actors and "market forces", – with the leading role in setting performance standards for at least one segment of 'energy-related products'. In comparison with many other fields of market regulation, around the mid-2000s, this presented a notable sign of trust in the competence of government on the one hand and the lack of trust in the market mechanism on the other.

With every new iteration of legislative measures and plans, the trust in this public leadership has increased. The reason is that overall, ecodesign has booked large success for both energy savings and consumers' purse – in spite of persistent concerns about the efficacy of market surveillance.[86] Thus in 2016, the expectation was that '*By 2020 this framework is estimated to deliver energy savings of around 175 Mtoe per year in primary energy, more than the annual primary energy consumption of Italy. For consumers, this translates into €490 savings per household per year on energy bills. [. . .] As such, it also contributes to energy security by reducing the import of energy into the EU by the equivalent of 1.3 billion barrels of oil each year and by reducing CO2 emissions by 320 million tonnes annually*'.[87] In the Working Package 2022, the Commission confirms that large savings of energy took place, arguing that '*the cumulative effect of EU rules on ecodesign and energy labelling in 2020 reduced EU primary energy demand by 7 % or*

[85] Opinion of the European Economic and Social Committee on Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions – Building an economy that works for people: an action plan for the social economy, COM(2021) 778 final, p. 38.
[86] Sustainable Products Regulation Proposal 2022.
[87] Ecodesign Working Plan 2016–2019, p. 2.

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1 037 TWh/year (ca. 170 Mt CO2 equivalent GHG reduction), including some 16 bcm of gas'.[88]

How did the EU achieve those goals? Already the 2005/2009 directives set the basic elements of the ecodesign framework. In the legislative procedure,[89] every 'implementing measure' that will come to regulate an entire product group (such as washing machines or TVs) has to be accompanied by an 'impact assessment'. This impact assessment has to account for both environmental aspects and more narrowly economic aspects, including cost-benefit analysis and the impact on the competitiveness of the EU businesses. Importantly, however, the legislator suggests that the uncertainty about non-environmental impacts should not stand in the way of regulating. The implementing measures should be developed in consultation with the relevant stakeholders: to this effect, the Commission was also to set up a specific body named the 'Consultation Forum', which would bring together a balanced group of stakeholders. This body is tasked with contributing to defining and reviewing implementing measures, examining the effectiveness of the established market surveillance mechanisms, and assessing voluntary agreements and other self-regulation measures.

When it comes to the obligations of producers or distributors, before they place a product from within a regulated product group on the European market, they have to certify the 'product's conformity' with the ecodesign requirements. The certification is undertaken by a 'notified body': in principle, a private company, but with ever more requirements placed on its operation in order to make sure that it is not a *consultancy* for compliance but instead fulfils the public function.[90] Once the product has been certified, it could be affixed with a **CE conformity marking** and put on the market.

[88] European Commission, Ecodesign and Energy Labelling Working Plan 2022–2024, 2022/C 182/01, section 2.

[89] Ecodesign Directive 2009/125/EC, art. 15(4):
(a) ***the life cycle of the product and all its significant environmental aspects, inter alia, energy efficiency****. The adoption of ecodesign requirements on the significant environmental aspects of a product* ***shall not be unduly delayed by uncertainties*** *regarding the other aspects;*
(b) carry out ***an assessment****, which shall consider the impact on the environment, consumers and manufacturers, including SMEs, in terms of* ***competitiveness*** *– including in relation to markets outside the Community – innovation, market access and costs and benefits;*
(c) take into account ***existing national environmental legislation*** *that Member States consider relevant;*
(d) carry out ***appropriate consultation with stakeholders.***

[90] Sustainable Products Regulation Proposal 2022, Recital 75, p. 35.

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The 2022 revision of the ecodesign framework with the New Regulation proposal does not bring vast changes in governance structure, or to the powers of the Commission. The changes that were made concerned the reclassification of the measures as delegated (rather than implementing) acts, a procedure that gives a greater normative force to the measures, as well as more voice to both Parliament and the Council, that can object to the measures within a certain timeframe. The aforementioned Consultation Forum also has been kept by the new Proposal, if renamed as the Ecodesign Forum.

What the Regulation proposal does, however, is to further specify the roles and responsibilities of all actors involved in order to safeguard the public nature of the process. This concerns additional conditions placed on both private and public actors in the process, including those who control the conformity, the obligations of the online platforms to survey the products they offer, or by requiring that sufficient financial resources are placed at the disposal of the relevant authorities at the EU or the MS level. Let me take each one in turn.

First, the Regulation requires that the private actors engaged in the conformity assessment, the so-called notified bodies, have to remain autonomous and not outsource certain tasks regarding the conformity assessment of products and other activities internal to the notified body, to other organisations.[91] Even more importantly, '*Prior to taking a final decision on whether a product can be granted a conformity certificate, the economic operator that wishes to place that product on the market should be allowed to* ***supplement the relevant documentation once only.*** *[. . .] as that would mean that the service provided resembles a consulting service and could in practice dilute the* ***public interest nature of notified bodies' tasks***'.[92] Importantly, the incentive structures for notified bodies also need to be aligned with the public interest purpose of these bodies, as '***the remuneration of the top-level management and assessment personnel*** *of a conformity assessment body shall not depend on the number of assessments carried out or their results*'.[93]

Second, the Regulation also aims to place surveillance and cooperation obligations on online platforms, '*Given their important role in intermediating the sale of products between economic operators and customers, online marketplaces should take responsibility for addressing the sale of products that do not*

[91] Sustainable Products Regulation Proposal 2022, Recital 82, p. 37.
[92] Sustainable Products Regulation Proposal 2022, Recital 82, p. 37.
[93] Sustainable Products Regulation Proposal 2022, art. 45(8).

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comply with ecodesign requirements and should cooperate with market surveillance authorities'.[94] Not only are the online platforms responsible for cooperation and surveillance but they are also obliged to enable market surveillance authorities to scrape their interfaces for non-compliant products or to remove illegal content if *ordered* by the market surveillance authority.[95]

Third, the Regulation aims to improve the material capacity of national governments to make this policy efficacious. To that purpose, the Regulation adds provisions on green procurement, which postulate that the Commission may stipulate an obligatory amount of green public procurement from within the regulated product group.[96] The Regulation also encourages member states to make use of fiscal measures to reward the best-performing companies, by, for instance, introducing eco-vouchers and green taxation. The incentives would have to be targeted at products in the two highest classes of sustainability performance: '*Then Member States decide to make use of incentives to reward the best-performing products among those for which classes of performance have been set by delegated acts pursuant to this Regulation, they should do so by targeting those incentives at the highest two populated classes of performance*'.[97] Altogether, such targeted governmental support for *chosen* products and *chosen* services suggests a shift from a regulating market framework to directly making choices in the market. A nod thus to the following industrial policy chapter.

Fourth, and final, the Regulation also aims to ensure that the authorities, as well as conformity assessment bodies (!), have sufficient resources to do their job well. The Commission is clearly indicating resolve to '*significantly* ***step up resources*** *allocated to implement ecodesign policy as part of a more ambitious sustainable product policy*'.[98] The Regulation, however, goes even further than that and requires that MSs also have '*sufficient number of competent personnel and sufficient funding at their disposal for the proper performance of their tasks*'.[99] Where the states appear to not have enough competent personnel, it will be on the

[94] Sustainable Products Regulation Proposal 2022, Recital 58, p. 32.
[95] Sustainable Products Regulation Proposal 2022, art. 29.
[96] Sustainable Products Regulation Proposal 2022, art. 58.
[97] Sustainable Products Regulation Proposal 2022, Recital 86, p. 38.
[98] Ecodesign and Energy Labelling Working Plan 2022–2024, p. 10.
[99] Sustainable Products Regulation Proposal 2022, Recital 74, p. 36.

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Commission to set a full-time equivalent that should be at the disposal of the notifying authorities.[100]

Overall, two trends can be discerned. On the one hand, the Commission wants to make sure that government has the capacity to govern – not only at the EU level but also at the national level, as both the certification and enforcement need a boost. On the other hand, where private actors are called to act as notified bodies, they need to do so along public (public-interest regarding as well as competent and well staffed) rather than private (profit-making) lines. Thus, a certain degree of "publicisation" of private certification bodies ought to take place.

4.6 Hardening Law

From its inception, ecodesign has relied more or less heavily on law as a means of governance. The first Ecodesign directives were very specific and narrow; they have been 'hard law' in their scope of application. From 2005, however, the EU changes the strategy and moves away from a product-specific approach to an 'Ecodesign framework', where the directive sets the objectives and procedures for developing ecodesign implementing measures, while leaving the specific measures themselves to be developed in the process of co-regulation between the Commission, industry, scientists, and other relevant stakeholders. As the Commission itself observes, this approach fits neatly with the 'new approach to technical regulation'.[101]

4.6.1 Rise and Fall of Self-Regulation

The starting point for both the 2005 and 2009 directives has been that legislation serves a subsidiarity role, as '*priority should be given to alternative courses of action such as* ***self-regulation*** *by the industry where such action is likely to deliver the policy objectives faster or in a less costly manner than mandatory requirements*'.[102] Yet, if the perception was that market forces were not '*evolving in the right direction, or at an acceptable speed*',[103] the EU authorities could intervene with common specifications.

[100] Sustainable Products Regulation Proposal 2022, Recital 74, p. 36.
[101] European Commission Notice, The 'Blue Guide' on the implementation of EU products rules, C/2016/1958 (2016).
[102] Ecodesign Directive 2009/125/EC, Recital 18.
[103] Ecodesign Directive 2009/125/EC, Recital 18.

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Both 2005 and 2009 directives aim to provide procedurally a more robust understanding of what self-regulation needs to look like, taking on board a widespread critique of the lack of inclusivity of self-regulatory measures. Namely, self-regulatory processes must secure '*openness of participation, added value, representativeness, quantified and staged objectives, involvement of civil society, monitoring and reporting, cost-effectiveness of administering a self-regulatory initiative and sustainability*'.[104]

Where the industry indeed develops self-regulatory 'voluntary agreements', a slightly different model applies to those measures than to the norms and standards developed under the public arm of the Ecodesign framework. Namely, the self-regulation was not expected to remove the worst-performing products from the market – as is the case with mandatory public rules. Rather it was expected to motivate innovation and the improvement of performance of a growing portion of the products on the market. Thus, a certain amount of products (30 per cent, 50 per cent, 80 per cent, etc.) had to be placed on the market that aligned with the voluntarily set ecodesign standards – while leaving the worst-performing products still in the market.[105]

The voluntary agreements, in the rare cases when they were concluded,[106] suffered from some limitations. Thus, Bundgaard et al. argue that '*In the voluntary agreement covering imaging equipment, durability requirements were not included; even though the preparatory study showed that the short lifespan of inkjet printers resulted in a high impact from the manufacturing phase*'.[107] This, the authors suggest, has been due to the fact that incorporating durability standards would have reduced sales.[108]

The 2022 Regulation proposal presents a break in this (over)reliance on self-regulation. Rather than being a *preferred* (as in cheaper and more effective) form of regulation, self-regulation is presented now only as a *valid alternative* – if and only if a number of old and new conditions are met. These include requirements as to what a self-regulation measure should contain, what the industry should submit as evidence to the Commission, and the procedure for the Commission to recognise the

[104] Ecodesign Directive 2009/125/EC, Recital 20.
[105] Bundgaard et al., 'From Energy Efficiency towards Resource Efficiency within the Ecodesign Directive', p. 371.
[106] Overall, the voluntary agreements present only a fraction in the overall regulation of the thirty-one product groups, as of now.
[107] Bundgaard et al., 'From Energy Efficiency towards Resource Efficiency within the Ecodesign Directive', p. 371.
[108] Ibid.

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self-regulation measure as a valid alternative to a delegated act. At any point, the Commission can also require the signatories to submit a revised and updated measure or, if existing and proposed self-regulatory measures do not align with public objectives, decide to regulate the issue itself.[109]

4.6.2 *Toward a More Mandatory Law*

The recent Regulation proposal stresses, instead, mandatory rules as a path to circularity. This is necessary as circularity's core principles – reduce, reuse, and recycle[110] – are not shared by all stakeholders. When it comes to *reducing* consumption, mainly by extending product lifetime, it has usually been the industry that has worked against it.[111] The lack of durability requirements in the 'voluntary ecodesign agreements', which serve as the alternatives to mandatory rules within the framework of the 2009 directive, is a particular sign at hand.[112] *Reuse* is still culturally a difficult sell, so long as consumers want novelty and are steered to want novelty above all else.[113] Finally, when it comes to *recycle,* neither consumers nor companies are 'natural allies'. While consumers have little economic incentives to choose recycled goods, for companies recycling remains a far more expensive alternative to date. Mandatory rules on durability, reuse and recycled content, and recyclability of products, next to information on recycled content, become thus a necessary ingredient if one is to steer the economy in a different direction.

And that is also what the Commission seems to have established from the 2020 CEAP as the shift towards circular economy would require several additional measures, and powers, on the side of the public authorities. The CEAP suggests that such measures should go beyond the existing Ecodesign requirements to include also measures against premature obsolescence, a ban on the destruction of unsold but durable goods, 'end of life responsibility' and the concept of 'product-as-a-service'. The latter two have not found their way into the 2022 Regulation

[109] Sustainable Products Regulation Proposal 2022, Recital 76, p. 36.
[110] Barkhausen et al., 'Review and Analysis of Ecodesign Directive Implementing Measures', p. 7.
[111] Bundgaard et al., 'From Energy Efficiency towards Resource Efficiency within the Ecodesign Directive', p. 370.
[112] Barkhausen et al., 'Review and Analysis of Ecodesign Directive Implementing Measures', p. 20.
[113] For a good overview of the psychology of advertising, see Bob M. Fennis and Wolfgang Stroebe, *The Psychology of Advertising* (Psychology Press, 2015).

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Proposal: it is not inconceivable that this was due to the intervention of the Regulatory Scrutiny Board.[114]

The 2022 Sustainable Products Regulation proposal presents a tendency towards *hardening* law in the ecodesign framework, on several levels. First, the Regulation begins with the shift from a (framework) directive to a (framework) regulation. Regulation need not be implemented by MSs and thus improves legal certainty for businesses – at the expanse of not only MS discretion but also experimentation with different ways of regulating at the national level.[115]

Second, in order to '*deliver on Green Deal commitments, this approach* [ecodesign] *should be extended to other product groups and systematically address key aspects for increasing the environmental sustainability of products with* ***binding requirements***'.[116] Thus harder, mandatory law is necessary, on two levels: *performance requirements* (such as durability or recycled content) and *information requirements* (product passport or substances of concern) that would enable consumers to compare, repair, or dispose of the product.[117]

The Regulation also introduces the requirements that products come equipped with the so-called product passports. Product passports are the true child of the circular economy movement, as 'waste is material without an identity'.[118] Product passports should contain information that would enable over time increased recyclability, repairability, refurbishment, etc. The question remains what kind of information the EU rules will require – this is still to be specified by delegated acts, stipulating what information such passports need to comprise for specific product groups, how such information should be stored, and who should have access to what part of that information.[119] Product passports nevertheless create basic pre-conditions for improving circularity.

[114] Regulatory Scrutiny Board, 'Opinion: Sustainable Products Initiative', SEC(2022) 165.
[115] Evelyne Terryn and Estelle Valentine Irambona, 'Duurzame Consumptie En Maximum Harmonisatie: Water En Vuur?', *SSRN* (2023), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4376907, last accessed 5 January 2024.
[116] Sustainable Products Regulation Proposal 2022, Recital 10, p. 19.
[117] Davide Polverini, 'Regulating the Circular Economy within the Ecodesign Directive: Progress so Far, Methodological Challenges and Outlook', *Sustainable Production and Consumption* 27 (2021): 1113–23.
[118] A philosophy, and a business strategy, of a Dutch architect and innovator Thomas Rau. For the whole vision, see Thomas Rau and Sabine Oberhuber, *Material Matters: Developing Business for a Circular Economy* (Taylor & Francis, 2022).
[119] Sustainable Products Regulation Proposal 2022, Recital 32, p. 26.

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One of the more important substantive measures that were mentioned in the CEAP and the Regulation includes the (qualified) prohibition on the destruction of unsold goods.[120] The practice of the destruction of unsold goods became widespread with the rise of online commerce.[121] While the full breadth of this practice is still unclear – as companies keep this information mostly secret – one report suggests that in the EU we are talking about billions in value and that companies such as Amazon have been engaged in the destruction of unsold goods across EU countries.[122] The reasons for the destruction range from concerns with brands to the costs of more sustainable disposal.[123] To counter the waste of resources, companies (except for SMEs under certain conditions) will be required to publish relevant information as it concerns discarded products and how those products had been dealt with, on a publicly accessible website.[124] The Commission would then be further empowered to ban the destruction of products that have a significant environmental impact.[125]

Clearly, despite being a Regulation, it remains a framework regulation, which means that many difficult choices will come in the implementation phase. It is still worth noting, however, that the Regulation places durability first in the list of ecodesign requirements.[126] Such a prominent place is at least a nod towards a different imaginary of production and consumption. The omission of the Regulation to engage with the 'extended producer responsibility' or the 'product as service' as suggested by the 2020 CEAP is regrettable, in as much as such a step would bring *sustainability by design* one step closer.

[120] Sustainable Products Regulation Proposal 2022, art. 20.
[121] Pourya Pourhejazy, 'Destruction Decisions for Managing Excess Inventory in E-Commerce Logistics', *Sustainability* 12 (2020), p. 20.
[122] Ökopol for the European Environmental Bureau, 'Policy Brief on Prohibiting the Destruction of Unsold Goods' (2021), https://eeb.org/wp-content/uploads/2021/10/Prohibiting-the-destruction-of-unsold-goods-Policy-brief-2021.pdf, last accessed 5 January 2024.
[123] Ariele Elia, 'Fashion's Destruction of Unsold Goods: Responsible Solutions for an Environmentally Conscious Future', *Fordham Intellectual Property, Media and Entertainment Law Journal* 30, no. 2 (2020): 539–91.
[124] Sustainable Products Regulation Proposal 2022, Recital 47, p. 30.
[125] Sustainable Products Regulation Proposal 2022, Recital 48, p. 30.
[126] Sustainable Products Regulation Proposal 2022, art. 1. The list is not in alphabetical order!

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4.7 The Contours of the New Imaginary of Prosperity

I argue above that the ecodesign framework is gradually institutionalising a different understanding of economy, law, politics, government, and technology, setting the ground for different 'compossible' technological futures. Let me thus conclude this chapter by outlining what the most important discursive and normative building blocks of such a new imaginary of technology and prosperity are as well as what may be (more or less) glaring omissions.

Ecodesign plays excellently into the EU's strengths. Inspired by a 'new approach to technical regulation', the EU has over time managed to improve a wide range of consumer products, without much ado, to the benefit of both consumers and environment. Over time, it became clear that governmental intervention needed to go beyond energy efficiency and be expanded to a greater range of product groups – if the environmental objectives were to be achieved. The expansion of the requirements regarding products' circularity (i.e. durability, recyclability, repair, and reuse) has at the same time shown that a more *strategic* relation to "economic growth" is necessary and immanent.

The framework makes clear that technological innovation is not entirely a market matter. Instead, as we have learned above, to be more socially useful (e.g. durable and serve many customers), resilient as well as truly innovative, innovation often needs public steering. Such public steering is here entrusted with public institutions and increasingly mandatory law.[127] Where private bodies are involved in certification, this is acceptable to the extent that such action carries a high degree of regard for the public nature of decision-making.[128] While over time, the co-regulation remains important, public authorities drew more responsibility towards themselves as to what rules and expectations are to be delivered by the products and technologies behind them. It is only then that innovation holds '*large potential in terms of* ***sustainability in the broadest sense****, benefiting* ***people, planet and prosperity***'.[129]

What the ecodesign framework so far does not do is to further develop some of the more transformative ideas that have been aired by the Commission. First, as mentioned earlier, more transformative policies

[127] Sustainable Products Regulation Proposal 2022, p. 4.
[128] Sustainable Products Regulation Proposal 2022, p. 35.
[129] European Commission, Staff Working Document, Sustainable Products in a Circular Economy – Towards an EU Product Policy Framework Contributing to the Circular Economy, SWD(2019) 92 final, p. 3.

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such as 'product as service' as well as 'end of life responsibility' are not developed further by the policymakers. With regard to the product as service, and 'shared economy', the ongoing spread of this (socially and environmentally promising) practice should be shaped via public regulation, as it at the same time raises serious questions of concentration of ownership and widespread dependency on the one hand[130] and regional distribution on the other.[131] With regard to the end-of-life responsibility, this potentially powerful circular economy technique is so far sparsely used – with one exception, namely the Battery Regulation, which includes a series of circular economy requirements such as durability, recycled content, and the collection of used batteries, as well as mandatory due diligence for the many rare materials (cobalt, nickel, lithium, etc.) used in batteries. The regulation will go into effect in 2025.[132]

Second, the ecodesign framework also does not engage seriously with the distributive effects of technologies vis-à-vis labour, hoping rather than ensuring that innovation is labour enhancing and produces more quality jobs rather than fewer and/or bad ones. The framework also leaves the impact on the third countries largely unaddressed: the reference to the CSDDD proposal as a means to deal with 'social aspects' seems to be a way to avoid rather than tackle this question.

Third, despite the recognition of the importance of social economy for advancing the circularity agenda, social economy aspects remain unmapped even if they (typified by social purpose, limited profit distributions, and participatory governance of organisations[133]) may be a crucial vehicle for making sure that the promises of technology and innovation are more equitably shared. Ultimately, how the benefits of technological innovation will be distributed will to a large degree depend on who owns technologies and to what purpose. A conversation that only has to start.

[130] Feja Lesniewska and Katrien Steenmans, *Circular Economy and the Law: Bringing Justice into the Frame* (Taylor & Francis, 2023).
[131] Shared cars as needed in peripheral towns as in Amsterdam, for instance.
[132] Battery Regulation 2023, Recital 30.
[133] See here: https://social-economy-gateway.ec.europa.eu/about-social-economy_en.

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