Better Regulation for the Green Transition

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Climate change and other environmental threats require urgent government action. This policy paper discusses how governments can use better regulation instruments (good regulatory practices, risk-based and agile approaches, regulatory delivery, international regulatory cooperation, economic regulators, and behavioural insights) to design, implement and evaluate efficient and effective regulations for the environment. It explores the challenges governments face and presents good practices for environmental and other regulations, to ensure that all policy instruments coherently pursue environmental goals. Finally, the paper suggests how regulatory policy systems can meet present and future environmental challenges. It argues that to fully exploit the potential of better regulation for the environment, governments should implement measures that ensure an inclusive, cooperative, outcome-based and global approach to regulating.

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Introduction

The world will not achieve its environmental sustainability goals[1] without urgent action to address the alarming rate of biodiversity loss, the increasing impacts of climate change and the overconsumption of natural resources.

Regulation is one of the key tools governments have to achieve environmental goals – along with financial instruments and green budgeting, procurement and infrastructure. When well-designed and implemented, government regulation can address climate change and other environmental threats while encouraging technological innovation and promoting economic growth.

Making use of better regulation tools and mechanisms can help promote the quality of regulations for the green transition. While better regulation has historically been geared towards alleviating economic costs and administrative burdens; the notion that it can and should be used to pursue environmental goals is increasingly well established, though less systematically implemented in practice.

The *2021 OECD Regulatory Policy Outlook* shows that governments continue to face various challenges in designing and implementing regulations (OECD, 2021[1]). Economic concerns may take precedence over social or environmental considerations in regulatory design and the consequences of different policy options are not systematically assessed. Relevant stakeholders, in particular vulnerable groups, are not sufficiently engaged at the different stages of the regulatory cycle. Governments also tend to "regulate and forget", i.e. adopt regulations and enforce them without regularly reviewing their actual consequences. The principle of risk-proportionality is not adequately reflected in either the design or the delivery of regulations and more could be done to encourage innovation. Finally, governments are not yet sufficiently co-operating internationally in regulation.

The gaps and challenges in implementing good regulatory policy more broadly are of particular importance for environmental policy issues. A lack of policy coherence, transparency and effectiveness in regulatory design means that regulations do not effectively pursue environmental goals in a consistent manner or balance potentially competing economic, social and environmental objectives and trade-offs effectively. Regulations may also lead to unintended consequences and must be changed frequently, which creates an unfavourable business environment and hampers green investment. Most importantly, these gaps mean that environmental and other regulations do not achieve the ambitious measures that are crucial to protecting the environment and preserving life on Earth.

This paper reviews how better regulation tools and practices can enable governments to promote the green transition. It is structured along the regulatory policy cycle, starting from tools that are relevant for regulatory design - regulatory impact assessment (RIA), stakeholder consultation, and *ex post* evaluation - and examining also regulatory delivery tools – inspections and enforcement. The paper also discusses the role of international regulatory co-operation (IRC), regulators and an understanding of behavioural change in

[1] For the purpose of this paper, environmental sustainability goals refer to government and societal ambitions that seek to minimise environmental degradation due to climate change, biodiversity loss, hazardous land-use, depletion of natural resources and rising air and water pollution.

helping governments to embed environmental considerations at all stages of the regulatory cycle. Finally, the paper suggests how regulatory policy instruments may need to be adapted to fully exploit the potential of better regulation for the green transition.

The scope of the paper is focused on the application of better regulation practices to both environmental *and* other regulations, with examples focusing on key sectors with a substantial environmental impact, such as energy, transport and agriculture. The paper secondarily gives special consideration to several issues that are of particular importance for environmental regulation, such as the notion of risk and precaution, methodological challenges in the cost-benefit analysis and competing objectives and trade-offs. However, the majority of good regulatory practices discussed in the paper applies to all regulations, as the framework conditions for preserving the environment are not only provided by environmental regulations; all policy domains should allow for the integration of environmental sustainability. The paper does *not* evaluate the usefulness of individual policy levers available to address environmental policy issues.

This policy paper complements and expands on further work carried out by the OECD Public Governance Directorate on how governments need to change to attain climate and environmental goals (OECD, 2022[2]). The paper, together with recent reports on the role of risk-based regulation (OECD, 2023[3]) (OECD, 2023[4]), expands on the role of regulation in the green transition. To this end, the paper identifies and takes stock of the body of relevant literature.

References

OECD (2023), *Risk-based Regulatory Design for the Safe Use of Hydrogen*, OECD Publishing, Paris, https://doi.org/10.1787/46d2da5e-en. [4]

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OECD (2022), *OECD Reinforcing Democracy Initiative*, https://www.oecd.org/governance/reinforcing-democracy/. [2]

OECD (2021), *OECD Regulatory Policy Outlook 2021*, OECD Publishing, Paris, https://doi.org/10.1787/38b0fdb1-en. [1]

Key policy messages

- **Regulation is a key government tool for achieving environmental goals.** At the same time, governments face important challenges in designing and implementing regulations that effectively pursue environmental goals and balance competing economic, social and environmental objectives and trade-offs.
- **Regulatory impacts on the environment are not sufficiently assessed** as part of governments' ex ante impact assessment processes and implementation across ministries is uneven. Economic concerns may take precedence over environmental (particularly non-climate) and distributional considerations, resulting in negative consequences for the environment and society. Taking a more horizontal approach to regulatory impact assessment (RIA) and adapting RIA methodologies accordingly will help promote policy effectiveness, coherence and predictability.
- **Governments are not sufficiently engaging with diverse stakeholders** at all stages of the regulatory cycle. Marginalized groups and minorities are disproportionally affected by environmental threats yet underrepresented in the participatory process. As a result, regulations may be poorly planned and negatively affect vulnerable groups. Adopting innovative forms of public consultation can help engage a more diverse group of stakeholders, improve regulations and foster public trust.
- **Governments tend to "regulate and forget"**, i.e. adopt regulations and enforce them without regularly reviewing their actual impacts. This means that negative consequences for the environment may go undetected or that regulations may not keep up with evolving environmental challenges. The rapid pace of climate change and technological developments will require governments to establish more iterative and flexible regulatory assessment cycles to continuously evaluate existing regulations through a system-wide approach.
- **The implementation and enforcement of regulations for the environment fall short** of what is required to address both environmental and economic challenges effectively. Environmental permits and licenses can place significant burdens on businesses, hinder investment and stifle innovation. A risk-based approach to permitting and enforcement can help limit burdens on government and businesses while protecting the environment.
- **Domestic and international regulatory action on climate are largely disconnected**, despite it being a global challenge. International regulatory co-operation will be needed to tackle transboundary environmental issues such as air pollution and biodiversity. To this end, governments should consider international evidence, impacts and instruments related to environmental issues throughout domestic rulemaking.
- **Economic regulators can substantially affect environmental outcomes** by developing regulations to target producer and consumer behaviour in key sectors such as water, energy, e-communications and transport. To reconcile economic, social and environmental objectives, regulators may have to effectively manage trade-offs. Governments can help regulators meet these goals by providing them with a clear role, appropriate powers, and sufficient capacities.
- **Governments could make greater use of insights from behavioural sciences** to inform environmental regulation. Behavioural barriers and biases can lead to inaction in the face of climate change. To prevent bias and promote compliance, governments may want to consider individual and group behaviours that drive environmental choices in regulatory design and delivery.

- **Governments should adopt an inclusive, horizontal, outcome-based and global approach** to regulating to fully exploit the potential of better regulation for the environment. Ultimately, successful environmental action may require a paradigm-shift in regulatory policy. Governments could consider placing the environment at the heart of regulatory policy by rebalancing environmental considerations *vis-à-vis* economic ones.

Regulatory policy terminology used in this paper

Ex post evaluation refers to the process of assessing the effectiveness of policies and regulations once they are in force. It can be the final stage when new policies or regulations have been introduced and it is intended to know the extent of which they met the goals they served for. It can also be the initial point to understand a particular situation as a result of a policy or regulation in place, providing elements to discuss the shortcomings and advantages of its existence.

International regulatory co-operation (IRC) is defined as any agreement or institutional arrangement, formal or informal, between countries to promote some form of coherence in the design, monitoring, enforcement or *ex post* evaluation of regulation. It also includes the unilateral efforts of countries to account for the international environment in domestic rulemaking and the impacts of regulations beyond borders.

Regulation is the diverse set of instruments by which governments set requirements on enterprises and citizens. Regulation includes all laws, formal and informal orders, subordinate rules, administrative formalities and rules issued by non-governmental or self-regulatory bodies to whom governments have delegated regulatory powers. Examples of environmental regulation are compulsory environmental quality standards; limits on total emissions of various pollutants during a given time period; and limits on the concentration of various pollutants in emissions to air or water.

Regulatory delivery refers to the implementation phase of the regulatory governance cycle. Delivery includes licensing and permitting, regulatory enforcement and inspections aim to ensure effective compliance with and implementation of rules and regulations. Regulatory delivery also represents an important opportunity to reduce the overall level of regulatory burdens imposed on businesses and citizens while saving public resources and protecting health and security of citizens as well as the environment.

Regulatory impact assessment (RIA) is the systematic process of identification and quantification of benefits and costs likely to flow from regulatory or non-regulatory options for a policy under consideration. A RIA may be based on benefit-cost analysis, cost-effectiveness analysis, business impact analysis etc. Regulatory impact assessment is also routinely referred to as regulatory impact analysis, sometimes interchangeably.

Regulatory management tools comprise different tools available to implement regulatory policy and foster regulatory quality. In particular, the 2017 Indicators of Regulatory Policy and Governance survey focuses on quality control of three regulatory management tools in particular: Regulatory Impact Assessment (RIA), stakeholder engagement, and *ex post* evaluation.

Regulatory policy is the set of rules, procedures and institutions introduced by government for the express purpose of developing, administering and reviewing regulation. Regulatory quality is about enhancing the performance, cost effectiveness, and legal quality of regulation and administrative formalities. The notion of regulatory quality covers process, i.e. the way regulations are developed and enforced. The notion of regulatory quality also covers outcomes, i.e. regulations that are effective at achieving their objectives, efficient, coherent and simple.

Stakeholder engagement refers to the process by which the government informs all interested parties of proposed changes in regulation and receives feedback.

Source: (OECD, 2021[1]), OECD Regulatory Policy Outlook 2021, OECD Publishing, Paris, https://doi.org/10.1787/38b0fdb1-en.

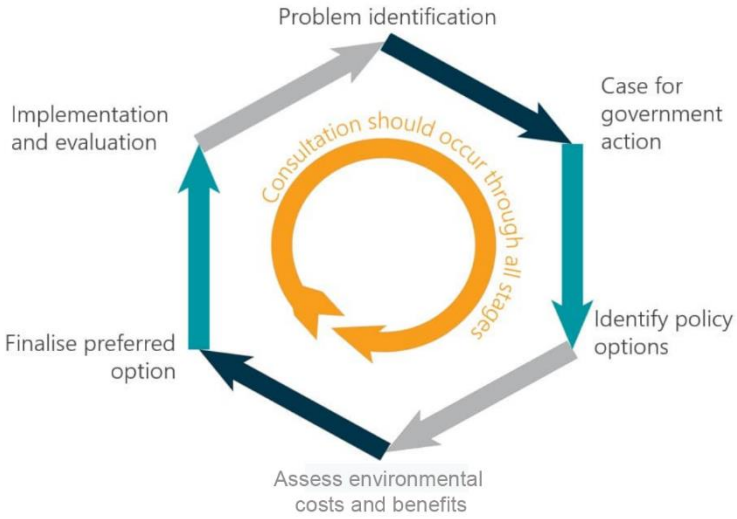
1 Regulatory design: Promoting a green lens

Regulation is one of the key tools governments have at hand to achieve environmental goals. Regulations, including prescriptive "command and control" regulation and performance standards, are the most commonly used instrument for environmental policy in OECD countries. The quality of regulatory design is therefore at the heart of successful environmental action. Well-designed regulations can reduce the likelihood of negative consequences for the environment, promote biodiversity and halt (and ultimately reverse) climate change.

Regulatory impact assessment

Regulatory impact assessment (RIA) is a powerful tool for policy design that helps to integrate environmental concerns, alongside economic and social concerns, in different policy areas. Embedding climate and other environmental considerations at the ex-ante impact assessment stage is crucial for the development of new regulations positively influencing environmental goals. As part of the RIA process, policy makers should assess the environmental costs and benefits of different policy options and consult with relevant stakeholders to inform and identify the option most beneficial to the environment (along with the economy and society) (Figure 1.1) (OECD, 2020[1]).

Figure 1.1. Regulatory impact assessment for the environment

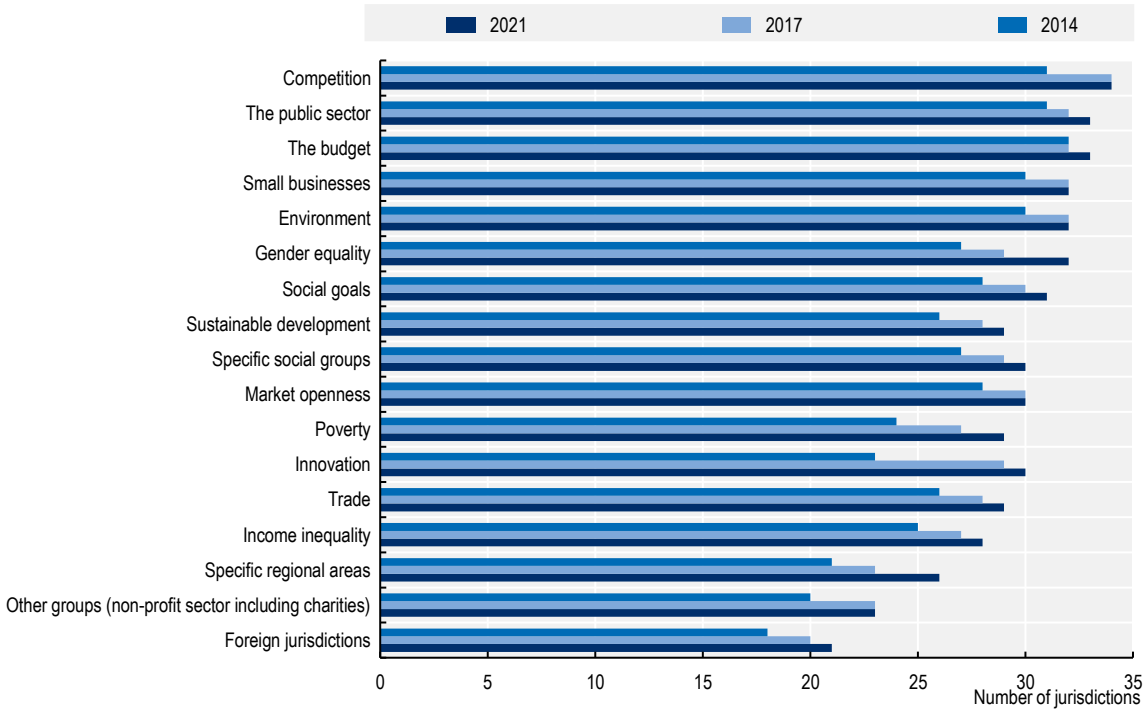


Source: Adapted from Queensland Treasury, https://www.treasury.qld.gov.au/queenslands-economy/office-of-productivity-and-red-tape-reduction/regulatory-review/regulatory-review-process/.

Assessing environmental impacts of policies and regulations

Systematically assessing environmental impacts[2] when developing regulations is essential to ensuring policy coherence for the environment and, more broadly, for sustainable development. OECD countries are increasingly formally requiring policy makers to consider the environmental impacts of regulations according to the *2021 Regulatory Policy Outlook* (Figure 1.2). Formal requirements to assess competition and budget impacts are however more common and such impacts are also most systematically assessed in practice, according to OECD experience.

Figure 1.2. More OECD countries require an assessment of regulatory impacts on the environment



Note: Data are based on 34 OECD member countries and the European Union.
Source: Indicators of Regulatory Policy and Governance (iREG) Surveys 2014, 2017 and 2021. In: (OECD, 2021[2]).

There is scope to improve the assessment of environmental impacts of policies and regulations:

- **Environmental impacts are not assessed in a systematic and granular manner in practice.** OECD countries are not systematically assessing environmental impacts of new regulations in practice, and when they do, the analysis is often limited to a narrow range of issues. A 2011 OECD report observes a substantial implementation gap vis-à-vis formal requirements for analysis of environmental impacts and finds that where countries do carry out an environmental impact assessment, they tend to focus on climate aspects, which "[…] risks neglecting the impacts on other environmental aspects, e.g. on biodiversity, other emissions, or the use of different types of resources" (Jacob et al., 2011[3]). A more recent study by think-tank PS4SD suggests that in the EU, impacts on GHG emission targets are more systematically considered as part of RIA than impacts on other sustainable development goals (Meuleman et al., 2022[4]). Going beyond GHG

[2] To be distinguished from "Environmental Impact Assessment" (EIA), a tool commonly used to assess the likely environmental impacts of proposed (e.g. construction) projects or developments (as opposed to regulation).

emissions will be crucial to fully understand a regulation's impact on the environment. Additional environmental issues to be considered include: the treatment of natural capital, ecosystem services and biodiversity, health valuation and the social cost of carbon. Further research will be required to gauge OECD countries' practices for assessing environmental impacts of regulations in practice.

- **Distributional impacts of policies that directly or indirectly impact the environment are not sufficiently considered.** Climate change and other environmental threats disproportionally impact minorities and marginalised groups and affect future generations, who are the primary group concerned by long-term environmental degradation. Unwanted or hazardous land-uses (such as waste disposal and transfer facilities) are often unfairly or inequitably distributed, i.e. located predominately in areas which are relatively highly populated by low-income groups or particular ethnic groups. Regulations that affect car use tend to impact citizens in rural (and often lower income) areas disproportionally in a number of countries (OECD, 2015[5]). It will be necessary to identify the communities or geographical areas that bear the costs or enjoy the benefits of regulations, to ensure that vulnerable groups in society are not disproportionally affected negatively. In assessing distributional impacts, information can be provided about the balance (or implied trade-off) between maximising the overall benefits of an intervention and directing interventions towards certain groups (OECD, 2018[6]). Such distributional considerations are not well integrated into traditional methodological tools such as CBA and represent an important area for future policy research.
- **Practices for assessing environmental impacts are uneven across ministries**. Ministries that do not have environmental policy issues as a primary responsibility have less experience with assessing environmental impacts and do so less systematically, according to an OECD study (Jacob et al., 2011[3]). This is crucial as the framework conditions for preserving the environment are not only provided by environmental policies; all policy domains should allow for the integration of environmental protection and the transformation towards a low carbon society. A more horizontal effort for assessing environmental impacts will require increased co-ordination between ministries and capacity-building measures in the form of guidance and training, targeted at ministries with insufficient experience in this regard. Centralised coordination approaches in the form of inter-ministerial committees or dedicated units at the centre of government can help promote a horizontal approach to assessing environmental impacts across the administration (OECD, forthcoming[7]).

The assessment of environmental impacts comes with a number of challenges to governments. Regulations with environmental impacts affect a range of issues, such as climate change and human and animal health, in a way that is difficult to quantify in monetary terms as part of the cost-benefit analysis and appropriate baselines are difficult to establish. A number of challenges, including the global nature of environmental damages and the uncertainty around climate trajectories, make the calculation of those impacts complex. Nevertheless, some valuation methods exist:

- Integrated assessment models (IAMs) of climate and economy allow policy makers to consider climate damages in policy design. The value of biodiversity and ecosystems can be assessed by, among other things, the "services" they provide which translate into direct and indirect economic values (e.g. flood and wind protection, consumptive and productive use) (OECD, 2018[6]) (Eurostat, 2021[8]).
- Some governments attempt to quantify regulatory impacts on human health and well-being,[3] albeit with inherently subjective methodologies. As part of CBA, governments will also face the challenge whether to acknowledge and how to account for the "inherent" value of the environment. Scholars argue that the environment should be protected not only for economic, social and health reasons,

[3] See UK Treasury Wellbeing Guidance for Appraisal: Supplementary Green Book Guidance https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005388/Wellbeing_guidance_for_appraisal_-_supplementary_Green_Book_guidance.pdf.

but also for ethical and moral considerations (Ehrlich and Ehrlich, 1997[9]) (Stone, 2010[10]). Qualitative descriptions of impacts that complement quantitative assessments can therefore be helpful.

In addition, when weighing the costs and benefits of regulations for the environment, the selection of a discount rate is a key consideration and often a source of controversy. The discount rate is the rate at which society is willing to trade off present for future benefits. Some policy measures with environmental impacts can provide short-term benefits, but may come at a long-term cost (e.g. deforestation, nuclear energy) or at short-term cost with long-term benefits (e.g. wetland protection). To correctly determine the net present value of such policies, governments will have to choose a discount rate based on a number of factors, including the uncertainty of future benefits, opportunity cost and inflation rates (OECD, 2018[6]).

If done systematically, RIA helps to improve regulations for the environment (see Box 1.1) by promoting policy coherence and improving regulatory predictability. A robust appraisal of the different policy options and their impacts on the environment as part of RIA helps to minimise unintended consequences and therefore the need to change the regulation after implementation.

Box 1.1. How RIA has helped to improve environmentally-related regulatory proposals

A regulatory proposal in **Canada** on the release of methane and compounds included managing five emission sources using regulation, specific emission limits for significant emission sources, and anticipating compliance actions that could reduce methane emissions from each source. In response to public consultation, the Department changed the commencement dates of the proposed regulations to account for businesses' operational difficulties in the winter. As a result, the regulatory proposal promotes environmental goals while making it easier for businesses to comply with the regulation.

The **New Zealand** Government proposed a Healthy Waterways policy package aimed at restoring and protecting the health of the country's waterways by strengthening *Te Mana o Te Wai* as the framework for freshwater management; improving the health of the ecosystem; strengthening the protection of wetlands and estuaries; protecting sources of drinking water; improving water and farm management practices; controlling high-risk farming activities and limiting agricultural intensification. The proposed policies changed significantly in light of the consultation comments on the interim RIA, recommendations from the Independent Advisory Panel, and in response to the new implementation challenges of COVID-19 pandemic. The updated proposal sought to protect freshwater bodies through more environmentally conservative objectives and limits in plans, halt further degradation of freshwater bodies, and increase restoration efforts where communities and regional councils identified that water would not be able to sustain current demands.

The Ministry of the Environment in **Denmark** amended the Environmental Protection Act by the executive order on waste management. The Implementing Regulation on waste management executive order was initially drafted in a way in which businesses were imposed DKK 24 M in administrative burdens. Based on the results of a RIA on administrative burdens for businesses, the regulation was rewritten putting the burden on fewer businesses, thereby lowering the burden substantially to less than DKK 4 M.

Source: Indicators of Regulatory Policy and Governance survey 2021, http://www.gazette.gc.ca/rp-pr/p1/2017/2017-05-27/html/reg1-eng.php, https://www.mfe.govt.nz/action-for-healthy-waterways, https://www.retsinformation.dk/eli/lta/2019/224.

Considering alternatives to traditional regulation

Considering all regulatory and non-regulatory options is an essential part of RIA. It allows decision makers to compare regulatory costs and benefits of different options for both environmental and other policy issues and choose the one with the greatest net benefits for, along with the economy and society, the environment.

Historically, regulation has been the means of choice to address environmental policy issues. Regulations can be effective in cases of weak response to price signals, high costs of measuring emissions and where a total ban is required but have been criticised for stifling competitiveness and hampering innovation. Given those potential drawbacks and the fact that environmental damage often results from several interacting market failures, an appropriate policy response will in many cases involve a mix of complementary instruments (D'Arcangelo et al., 2022[11]). There is academic consensus that "traditional" command-and-control (prescriptive) regulation should be balanced with other forms of regulatory interventions (performance standards), market-based instruments (taxes and permits), and other measures (incentives, co- and self-regulation). (de Serres, Murtin and Nicoletti, 2010[12]) (Braathen, 2019[13])

Yet, results from the OECD Indicators of Regulatory Policy and Governance suggest that countries do not sufficiently assess different available options when making policy decisions, especially non-regulatory options are not identified and assessed systematically (OECD, 2021[2]).

OECD work on environmental policy has highlighted the advantages of using market-based instruments to effectively achieve environmental objectives. Environmental taxes, tradable permit systems or targeted subsidies can influence business and consumer behaviour by changing their economic incentive structures. Traditional examples include taxes on pollution or a proxy of pollution (e.g. fuel taxes, congestion pricing) and "cap and trade" systems, where regulators set a cap on the maximum level of emissions and create permits for each unit of emission allowed under the cap (Grantham Research Institute on Climate Change and the Environment, 2018[14]). More recently, initiatives in the EU and US have put an emphasis on direct subsidies and tax credits to incentivise green growth (OECD, 2022[15]).

By putting a price on a pollution source or on the over-exploitation of a scarce resource, market-based instruments can incentivise emissions abatement at the lowest possible cost. Scholars consider such instruments the single most efficient policy tool to address environmental externalities, because they encourage investment in fossil fuel alternatives, energy efficiency and technological innovation while also generating revenue for the government (de Serres, Murtin and Nicoletti, 2010[12]). Taxes and caps however can only achieve their goals when set ambitiously enough, which is currently not the case in OECD countries[4]. Some instruments, such as fuel taxes, carry serious distributional considerations as they can disproportionally affect lower income groups in society (OECD, 2015[5]).

Other alternatives to traditional regulation that governments can use to achieve environmental goals include incentives, information campaigns incl. regulating the environmental information that must be provided with a product or service, and co- and self-regulation. The latter makes use of the expertise and resources of private industry to ensure safety, protect the public, and promote a culture of compliance. The advantage of co- and self-regulation lies in the fact that the industry may have better knowledge on products and processes, and on how to manage their risks vis-à-vis the public administration (e.g. in case of use of leading-edge climate-relevant technologies and innovative practices and processes). Examples include self-reporting, industry-led monitoring, and performance standards. (OECD, 2015[16]).

In reality, most policy instruments will contain elements of both market-based and regulatory instruments and the distinction between both instruments may not even be all that clear cut. In fact, market-based

[4] OECD Taxing Energy Use 2019 shows that for 44 countries accounting for over 80% of energy emissions, taxes on polluting sources of energy are not set anywhere near the levels needed to reduce the risks and impacts of climate change and air pollution.

instruments essentially can be considered indirect regulatory instruments, as many of them, including emission trading systems (ETS) and tax schemes, are enforced by regulation. Some scholars argue that the dichotomy between regulations and market-based instruments for the environment may be misleading (Braathen, 2019[13]) (Johnstone, Hascic and Kalamova, 2009[17]) and thinking in terms of policy attributes could be more helpful.

An OECD report finds that for all environmental policy instruments, several attributes[5] determine successful policy design, two of which are discussed here: stringency and flexibility (Johnstone, Haščič and Kalamova, 2011[18]). Stringency refers to the strength of the environmental policy signal – the explicit or implicit cost of environmentally harmful behaviour, for example pollution (OECD, 2016[19]). Currently, taxes on polluting fuels – while increasing - are still too low to encourage a shift to low-carbon alternatives. Many performance standards and emission caps are not ambitious enough (OECD, 2021[20]). Stringent policies (with or without emission trading) raise the cost of routine compliance and create an incentive to innovate in order to escape the high costs. *Flexibility* allows businesses to attain the policy objective by selecting the least costly means and can thus lower their cost of compliance. Paired with stringency, flexibility can encourage the technological innovation that is needed to address environmental crises. Policies can provide flexibility as to *how* a given environmental improvement is achieved, *where* and *when* environmental improvements take place, *who* is to achieve the improvements, and for *which* pollutants the emission reductions are to be achieved (Braathen, 2019[13]). In doing so, social costs and benefits of flexibility mechanisms should be assessed carefully as they can sometimes shift negative impacts to other local areas or social groups.

Ensuring an agile and risk-based approach to regulatory design

Tackling climate- and environment-related challenges of our time will require strengthening regulatory governance and ensuring that relevant instruments, processes and institutions are fit to promote an agile and risk-based approach to regulating.

The regulatory environment plays a major role in creating incentives for companies to invest in innovation for the environment. Regulation can unduly stifle or discourage the kind of innovation that can help our economies and societies become more resilient and (environmentally) sustainable.

To address this issue, OECD governments are increasingly considering agile approaches to regulation. Enabling the development of agile, technology-neutral and adaptive regulation helps to promote innovation while contributing to mitigate innovation-related risks (including for climate and the environment), as per the OECD *Recommendation for Agile Regulatory Governance to Harness Innovation* (OECD, 2021[21]). The agile regulatory framework should include efforts to reduce time-to-market (approval and testing, licensing) and non-tariff barriers to trade to facilitate investment in innovation (European Regulation and Innovation Forum, 2022[22]).

Addressing the above-mentioned challenges effectively will also require reassessing long-standing concepts such as risk and precaution in the development of regulation to ensure appropriateness. Risk analysis is of particular importance to environmental regulation, which can pose significant burdens to businesses and citizens justified by risk assumptions. Also, risks to the environment may materialize as irreparable damages.

[5] Attributes include depth (i.e. incentives to innovate throughout the range of potential objectives (down to zero emissions)), incidence (i.e. does the policy target directly the externality, or is the point of incidence a «proxy» for the pollutant?) and stability (i.e. is the policy signal consistent, foreseeable, and credible?) as key determinants for successful policies that promote environmental protection and encourage innovation (Johnstone, Haščič and Kalamova, 2011[18]).

The notion of risk is not yet reflected systematically in policy making processes in OECD countries. Conducting a risk assessment when developing environmental regulation is required in some form in a majority of OECD countries, yet implementation is uneven. 10 out of 36 OECD countries require systematic risk assessment for environmental regulation, according to the OECD Indicators of Regulatory Policy and Governance (OECD, 2021[2]).

Rules should exist only when the corresponding risk is significant, they should address the factors that can lead to harm, and permitting requirements, inspections and enforcement should be proportional to the level of risk of a given product, issue, and business. This can mean, for instance, differentiation between different businesses in terms of how much harm they can create to the environment or how likely this is to happen – or within a business, priority attention to be given to practical elements that can lead to higher risk to the environment. (OECD, 2021[2])

There is a need to balance precautionary measures such as prohibition and environmental licensing with the societal benefits of environmental action and innovations. An increasing emphasis is put on risk-risk trade-offs in this regard. Crucially, in the energy transition context, the severity of potential harm due to climate disruption or dramatic biodiversity loss may be much greater than the harm potentially resulting from certain energy technologies. Even in best-case scenarios, the magnitude of climate-driven harm is of global scale and much greater than most technologies considered under the energy transition, which pose far more limited and localised harm. Accounting for risk-risk trade-offs is therefore essential in the design of regulations for the environment. (OECD, 2023[23])

Box 1.2. Agile and risk-based approaches to green policy design in Canada and Korea

The **Risk Assessment Directorate of Environment and Climate Change Canada** has developed the Threat-Risk Assessment (TRA) model, based on a large review of available data to estimate the probabilities and potential impact of known sources of harms for the environment. Data is gathered from the industry, government partners and international actors. Outcomes from the strategic risk assessment are used by the Climate Change and Environment of Canada to inform policy design and for project planning and allocation of resources. Likewise, it is shared with enforcement officers to inform their work.

The **Korean Ministry of Environment** is currently implementing a reform plan for environmental regulation that foresees the introduction of a risk-based approach to the design of regulation for toxic chemicals by the end of 2023. Before the reform, the same 330 regulations applied to what are considered low-risk (high-concentration lead) and high-risk chemicals (high-concentration sulfuric acid). The plan also includes a regulatory sandbox to test a new waste management regulation that will no longer specify permitted technologies, therefore enabling innovation that is projected to reduce waste treatment costs by KRW 211.4 billion annually.

Source: (OECD, 2021[2]), (Ministry of Environment of the Republic of Korea, 2022[24]).

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2 Reviewing regulation for effective environmental action

The pace of rapidly progressing climate change and advancing climate-relevant technologies poses significant challenges to governments. Due to the urgency of environmental threats, adopting measures that ensure that regulations, once in place, stay fit-for-purpose, encourage investment in innovation and continue to support environmental goals, is of utmost priority. Balancing competing (environmental and economic) objectives and trade-offs will be of particular importance in this regard.

In many countries, *ex post* evaluations fail to take on a "system-wide" approach. Evaluations often focus on the marginal impacts anticipated in the *ex ante* impact assessment and neglect the assessment of indirect and second order impacts that could be larger or worse for the environment vis-à-vis the regulatory objective. In addition, evaluations of individual regulations are not always complemented with sector-wide reviews that assess the impact of regulations in a given sector (e.g. transport, agriculture) on the environment. The cumulative effect of those regulations on the environment is therefore not considered. (OECD, 2020[1])

Governments also tend to "regulate and forget", i.e. adopt regulations and enforce them without regularly reviewing their actual consequences. A regulatory framework fit for the green transition will require a paradigm shift in regulatory policy and governance, moving away from the traditional "regulate and forget" towards an "adapt and learn" approach. Putting in place iterative and flexible regulatory assessment cycles will allow governments to continuously evaluate existing policies. They should make use of technological solutions, such as artificial intelligence, to improve the quality of evidence. (OECD, 2021[2])

Ex post reviews do not include an assessment of the regulatory framework conditions for investment in some countries. Regulatory barriers to investment can hinder the allocation of capital towards innovation in operating technologies, materials, products, services and infrastructure needed to deliver on green policy goals. Such barriers include non-tariff barriers to investment, excessive time-to-market (approval and testing, licensing) and different product standards among countries (European Regulation and Innovation Forum, 2022[3]). Regular review of the regulatory framework helps identify and remove such obstacles to create and sustain conditions for private sector investors to preferentially allocate capital and human resources towards green initiatives.

"Red tape" is another challenge governments are facing when putting in place green policies. Environmental and other policies may impose transaction and administrative costs related to permitting and licensing, which pose burdens on businesses and can lead to increased barriers to entry. Conducting regular evaluations has shown to enable governments to simplify and improve environmental (and other) policy (Box 2.1) (Berestycki and Dechezleprêtre, 2020[4]).

Box 2.1. Regulatory reform efforts simplify and improve environmental policy

Spain, Israel and Portugal have seen the most significant improvement in the OECD Design and Evaluation of Environmental Policies (DEEP) Indicators between 2013 and 2018 thanks to regulatory reform efforts. The DEEP indicators measure potential market burdens generated by environmental policies and the extent to which environmental policy evaluations take those into account.

Israel and **Spain** have introduced regulatory reform measures following the OECD *Recommendation of Regulatory Policy and Governance* and have put in place systematic *ex ante* and *ex post* evaluation for all regulations and administrative simplification measures in 2014 and 2017. **Portugal** introduced its "Quanto Custa?" ("How much?") Directive in 2017, which requires policy makers to quantify the impact of any new regulation on, among other things, the private sector.

This new setup for policy evaluation accounts for the sharp drop in the value of the sub-indicators *evaluation of new and existing policies* for all three countries, which dropped by 78% for Spain, 71% for Israel, and 50% for Portugal.

Note: The DEEP indicator measures potential market burdens generated by environmental policies and the extent to which environmental policy evaluations take those into account. The lower the score, the better the result.
Source: (Berestycki and Dechezleprêtre, 2020[4]), "Assessing the efficiency of environmental policy design and evaluation: Results from a 2018 cross-country survey", OECD Economics Department Working Papers, No. 1611, OECD Publishing, Paris, https://doi.org/10.1787/482f8fbe-en.

Yet not all *ex post* evaluation tools are conducive to environmental goals. Some countries make use of so called stock-flow linkage rules,[6] a tool that helps to continuously "manage" the regulatory stock (Trnka and Thuerer, 2019[5]). Such instruments incentivise policy makers to introduce regulations that pose minimal costs to society in an effort to reduce regulatory compliance costs for businesses. This can come at the expense of costly regulations that are beneficial to the environment. Introducing flexibility mechanisms to the stock-flow linkage rule can allow for exemptions in cases where social and environmental issues are affected.

[6] Such rules include for example the "one-in, one-out" rule, which requires ministries to introduce a deregulatory measure equal to every newly introduced regulatory measure.

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3 Engaging with stakeholders for a green and just transition

Stakeholder engagement in policy making is key for a green and just transition. People have a clear stake in environmental policy issues, both for their own interests and the sake of the environment. At the same time, businesses and other stakeholder groups can provide valuable data and feedback on implementation issues to inform the policy at hand.

Governments are not sufficiently engaging with a wide range of stakeholders at all stages of the regulatory cycle. Only a few countries consult systematically at an earlier stage of the process, to define policy problems and consider potential solutions. A limited number of countries consult when reviewing existing regulations (OECD, 2021[1]). As a result, government regulations can be poorly planned, ineffective, and negatively impact vulnerable groups in society. Crucially, this may hamper capturing the full environmental impacts in regulations.

In light of the scale of the transformations required to act on climate change and other environmental issues, putting in place two-way consultation mechanisms can be key to seek input from experts, civil society and citizens. In this context, governments can ask stakeholders to help place societal values on environmental goods and services by using willingness-to-pay/willingness-to-avoid (WTP/WTA) methodologies to support the cost-benefit analysis (OECD, 2018[2]). Recognizing that the green transition may require a more coordinated approach to consultation efforts, some governments consolidate institutional responsibilities for stakeholder engagement for climate-related policy at the centre of government (OECD, forthcoming[3]).

Stakeholder engagement is also central to fostering public trust in public institutions, and in turn compliance. This is of particular importance as environmental-, along with public health- and economic crises, have tested citizens' trust in public institutions, as identified and addressed by the OECD *Reinforcing Democracy Initiative* (OECD, 2022[4]). The OECD Trust Survey finds that half of the population in OECD countries think their government should prioritise climate change, but only one-third are confident they will succeed (OECD, 2022[5]).

Trust is key to forge agreement around the often burdensome policies for the environment and can be strengthened by involving all relevant stakeholders in their design, implementation and evaluation. A positive perception of involvement in the policy process is proven to lead to greater acceptance of government decisions and better compliance with regulations. The reverse also holds. Stakeholders are more likely to accept negative outcomes, such as financial penalties, if they feel that they have been engaged sufficiently (Lind and Arndt, 2017[6]).

Success in addressing environmental pressures will require collective action from a variety of stakeholders, including public and private sector actors, international organisations, civil society organisations and individuals. As climate change and other environmental threats impact minorities and marginalized groups in society disproportionally, their input needs to be actively sought out in the policy making process. Those groups traditionally have less access to consultations and fewer resources they can dedicate. Engaging

vulnerable groups, including indigenous populations, in a targeted manner allows governments to harness their local knowledge and address their needs. Engaging civil society will help to fine-tune regulations to local realities (OECD, 2016[7]).

Similarly, governments should actively engage with young people, as future generations are the primary group concerned by long-term degradation of the environment. The OECD *Recommendation on Creating Better Opportunities for Young People* (OECD, 2021[8]) provides helpful guidance in this regard.

Governments are making use of innovative forms of public participation, such as deliberative processes (e.g. citizens' assemblies and panels) to bring together groups of citizens broadly representative of society to tackle challenging policy issues such as the climate transition (OECD, 2020[9]) (Box 3.1). The Government of Finland has undertaken a research programme into "Silent Agents" to gather information on those groups in society who, due to their social position or circumstances, tend not to participate or provide input into legislative processes. Such initiatives allow governments to directly engage a more diverse group of citizens.

Box 3.1. Examples of deliberative processes addressing climate-related issues

Citizens' Convention on Climate in France (2019-2020)

The Citizens' Convention on Climate was a deliberative process that brought together 150 citizens representative of the French population, selected via civic lottery, for seven weekends over six months. It was designed to give citizens an opportunity to propose informed policy recommendations for addressing climate change – to define a range of measures that will enable France to reduce its greenhouse gas emissions by at least 40% by 2030 (compared to 1990 levels) in a socially just and equitable way. After extensive deliberation, citizens have prepared a list of 149 measures for the French government.

Besaya Citizens' Jury (2021)

Besaya Citizens' Jury was comprised of a broadly representative group of 35 everyday citizens selected by civic lottery from ten municipalities in the Besaya region in Spain. Citizens met online and in person for six weekends between May and July. They were asked to develop recommendations for the Regional Ministry of Economy to help find ways how to make the most of European Green Funds in the Besaya basin to create and / or maintain jobs that respect the criteria of a fair and inclusive ecological transition. Citizens have identified three strategic priorities, and 26 specific recommendations for action.

Source: Besayaeuropa.es. 2021, Besaya delibera en Europa, available at: https://besayaeuropa.es/. Convention Citoyenne pour le Climat. 2021, Site officiel de la Convention Citoyenne pour le Climat, available at: https://www.conventioncitoyennepourleclimat.fr/. In: (OECD, 2022[10]), Governing Green: Gearing up government to deliver on climate and other environmental challenges, OECD Publishing, Paris.

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4 Delivering regulation for the environment

Appropriate regulatory delivery, which includes licensing and permitting, regulatory enforcement and inspections, is essential to manage environmental hazards effectively and efficiently and to close the compliance gap on environmental regulation.

As documented by the UNEP, *implementation and enforcement of environmental laws and regulations falls far short of what is required to address environmental challenges* (UNEP, 2019[1]). Given the environmental pressures, and the regulators' financial constraints, there is a need to evolve regulatory delivery into a risk-based focused system. This will allow regulators to improve conditions to achieve their environmental policy objectives (effectiveness) and to drive better compliance with fewer resources (efficiency).

Risk-based regulatory delivery is key to detect actual risks on the ground and provide inputs for regulators to quantify their scope and magnitude. If adequately designed, a regulatory delivery system allows the flow of information to circle back and increase risk prevention, rather than rely on remediation. This is particularly important in environmental policy as many risks may materialise as irreparable damages.

Improving environmental licensing and permitting

Permitting, or licensing, is a regulatory tool through which public administrations regulate the registration and/or operation of a business unit by prior approval. It encompasses all ex ante requirements (approvals, permits, licenses, certifications, professional requirements, authorisations of all types) needed by the operator to start their activity.

In the case of environmental policy, improving licensing and permitting procedures can promote green innovation by enabling businesses to carry out environmentally friendly activities, such as operating a hydrogen refuelling station, or establishing wind farms.

The use of permitting can increase administrative and financial burdens and thus hinder green investment and innovation and fail to protect the environment. It can also raise entry barriers for new players in the energy sector thereby promoting anti-competitive behaviour amongst incumbents. Substantial efforts are still needed to minimize the use of permitting (and related information obligations and requirements) to what is strictly necessary to achieve environmental goals, to control and reduce risks, or to restrict the access to goods or resources that are limited (e.g. natural resources). (OECD, 2023[2])

Ultimately, permitting should be meaningful, effective and designed with the goal of mitigating an actual environmental hazard, which has been identified through an evidence-based process. To that aim, the use of permitting and related requirements needs to be based on risk assessment and proportionality, burden reduction, consideration of alternatives to regulation and existing trade-offs. It also needs to be delivered in close relation with the regulatory inspections and enforcement system – through e.g. the collection of

information for risk analysis, identification of emerging risks, barriers to compliance etc. – to ensure appropriate, proportionate, and effective regulatory delivery.

Box 4.1. Efforts to improve environmental permitting in OECD countries

Korea undertook a major environmental permitting reform in 2017, moving from issue specific to integrated permitting for large industrial installations. The new system integrates 10 environmental permits prescribing uniform emission limit values (ELVs) for each activity sector, which required the involvement of multiple authorities and 73 types of documents. The integrated permitting system is applied to 19 industry sectors. Best available techniques (BAT) are identified for each sector by technical working groups and specified in BAT reference documents, taking into account potential compliance costs and economic feasibility.

Portugal established the Single Environmental Permitting Platform, developed to operationalise the *Single Environmental Licensing Scheme* (LUA) which was introduced in 2015 to simplify, harmonise and integrate 12 different environmental permits. The OECD currently supports the Portuguese government with reviewing and updating the Licensing Scheme to further reduce administrative burdens on businesses.

Source: (Trnka, 2020[3]), (European Commission, 2019[4]).

Risk-based regulatory inspections and enforcement

Only few OECD countries have made consistent efforts to improve the way regulatory enforcement and inspections are organised and delivered in the environmental policy area. The processes of how regulations are designed and developed, how they can be improved and made “smarter”, have been given considerably more study than the regulatory delivery mechanisms of inspections and other enforcement tools (OECD, 2021[5]). Efforts in this area can be key to ensure progress in using better regulation to deliver on the green transition.

There are organisational and technical challenges to improve regulatory delivery and to expand risk considerations for the environment. These include *co-ordination* among regulatory agencies and levels of government; *use of data- and IT-systems* to inform decision-making; *development of adequate methodologies* and tools to conduct risk-based regulatory delivery, improve meaningful compliance and make appropriate and proportionate decisions on regulators’ measures following inspections; as well as *continuous capacity-building* for inspectors and technical staff.

There are several measures governments can take to improve regulatory enforcement and inspections to achieve environmental goals. The OECD *Regulatory Enforcement and Inspections Toolkit* offers government officials, regulators, stakeholders and experts a simple tool for assessing the inspection and enforcement system in a given jurisdiction, institution or structure – so as to identify strengths and weaknesses, gauge actual performance, and pinpoint areas for improvement (OECD, 2018[6]). The Toolkit recommends for risk considerations to inform environmental inspections at different stages. First, inspection planning is developed with risk criteria, to focus on the most urgent hazards. Regulators have a limited number of inspectors available, and they can only perform a limited number of inspections. Therefore, regulators have to anticipate risks and ensure they are targeting the establishments with a higher probability of causing environmental hazards.

The information collected during environmental inspections should feed back into the cycle to inform the risk-based regulatory delivery system. However, often regulators do not systematise or feed this information into databases. Even if they do digitise collected information, databases do not communicate with those from other agencies, creating information silos among regulators. This is a substantial issue, as often multiple regulators and different levels of governments are involved in supervising the enforcement of environmental regulation. By achieving swift and technical co-ordination, environmental agencies would be able to perform sector-wide risk analysis.

Box 4.2. Netherlands' interface and interconnection between all inspection systems

Inspection View is an integrated online platform that enables data exchange and horizontal co-ordination between inspectorates in the Netherlands. It was initiated in 2013 and developed for different sectors. Through the platform, inspectors can consult information on inspection objects that comes from data systems of other inspectorates. The integrated platform allows for inspections and enforcement to be carried out in a whole-of-government approach. Inspection View is now used by over 500 national, regional and local inspectors. It is developed as a government-owned platform, with outsourced maintenance and support.

Source: Adapted from (OECD, 2021[5]).

Securing information sharing, preferably by having a common platform among environmental regulatory delivery agencies (both regulators in charge of permitting and those in charge of regulatory inspections) is a necessary first step. However, as outlined in the OECD *Enforcement and Inspections Toolkit*, information sharing should go beyond these authorities (OECD, 2018[6]; Stone, 2010[7]). The information collected from inspections is valuable for other stages of regulatory delivery. For instance, the licensing and permitting processes should be designed with risk analysis fed by results from inspections, among other data. This way, authorities will enhance risk considerations for environmental licensing, balancing two different objectives: properly managing environmental risks, while reducing unnecessary burden for economic growth.

Promoting compliance with environmental regulation

Promoting compliance with environmental regulation is crucial for achieving environmental goals. Regulations establish standards and guidelines that can minimize environmental degradation while providing opportunities for green investment and innovation. Promoting compliance with these regulations is therefore a fundamental component of responsible environmental stewardship.

Strategies to ensure compliance with environmental regulation can go beyond deterrence and remediation actions. OECD experience shows that closer cooperation with industry and other regulated entities can drive compliance higher and reduce the number of resources dedicated for inspections, sanctions procedures and other enforcement activities. This is why compliance promotion, greater transparency in providing informational resources, and posting online information on regulatory requirements help both the industry to better understand regulation and save time and resources of regulatory agencies (OECD, 2021[5]).

Box 4.3. Compliance promotion for the green transition in Korea

The **Korean Ministry of Environment** provides information on environmental regulations and green business practices through its website and printed materials and operates a web-based helpline where regulatory questions must be answered within five working days. The Korea Environmental Industry and Technology Institute (KEITI) operates the Green-Up programme, a customised consulting service for environmental improvement of SMEs. It also offers financial support for environmental performance audits.

Source: (Trnka, 2020[3]).

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5 Using international regulatory co-operation to ensure effective regulations for the environment

The green transition is a global effort. The full scope of policy priorities that seek the green transition cannot be met by one country alone. Issues such as air pollution, climate change, biodiversity loss, ocean acidification, or plastic waste are all global commons problems, posing major threats to the planet and requiring urgent international action. To effectively address these issues, regulatory action will have to be coherent and – at times – joint between countries as well as between different levels of government in federalised systems. Regulations designed in isolation without consideration of transboundary aspects risk being at best ineffective, at worst counterproductive.

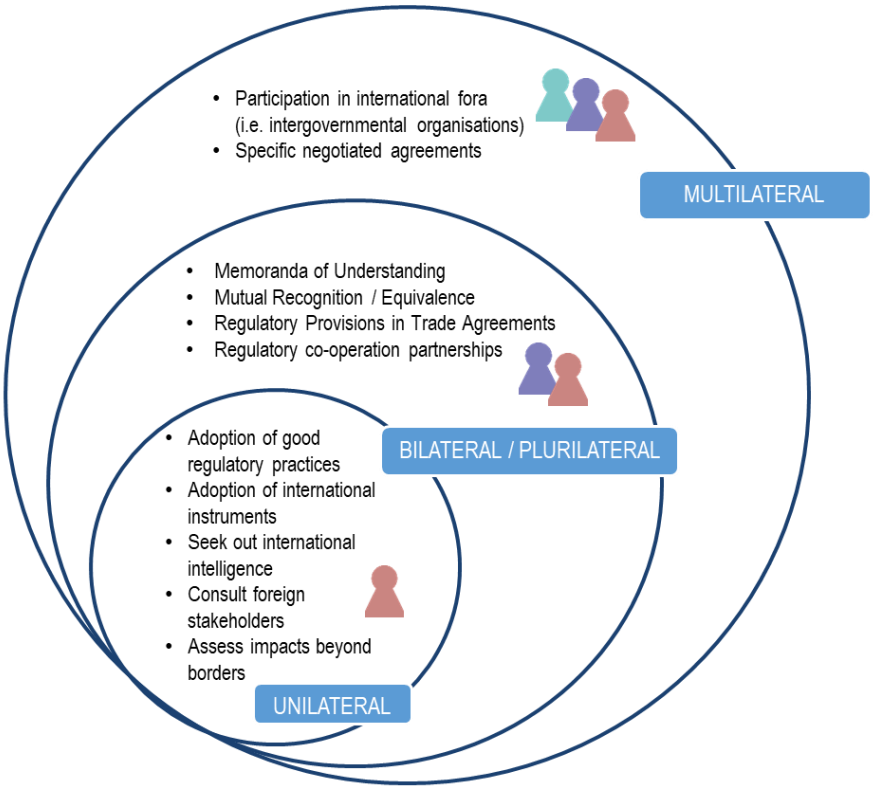
Despite the availability of many mechanisms of co-operation (Figure 5.1), domestic and international regulatory action is very much decentralised, and often still very much disconnected (OECD, 2021[1]) (OECD, 2018[2]). Addressing this disconnect is particularly important for environmental regulation. For example, the public good characteristics[7] of environmental action and efforts to reduce climate change provide a strong incentive for actors to benefit from other actors' investments without taking action themselves. Convergence of regulatory approaches is however essential to reduce the risk of economic actors targeting their activities to jurisdictions with less stringent regulations and effectively avoiding compliance with more ambitious environmental policies.

International regulatory co-operation (IRC) allows countries to exchange regulatory experiences, learn from each other, ensure coherent approaches and, when possible, adopt joint regulatory approaches. It is essential to ensure the effectiveness of regulations, lower administrative costs and reduce unnecessary burdens on international trade and financial flows (OECD, 2021[3]).

The OECD *Recommendation on International Regulatory Co-operation to Tackle Global Challenges* (OECD, 2022[4]) sets three high-level principles to support governments in ensuring the whole of government is well co-ordinated, has sufficient incentives and knowledge about the available forms of IRC: 1) Taking a whole of government international regulatory co-operation approach that conveys political leadership and builds a holistic vision with clearly defined roles and responsibilities. This is typically important to ensure that regulators across sectors are aware of their government's international commitments; 2) Recognising international regulatory co-operation throughout domestic rulemaking; and 3) Co-operating internationally (bilaterally, plurilaterally and multilaterally). The sections below will focus on the principles 2 and 3, to show what improvements can be made by governments to make their regulatory actions more effective to achieve environmental goals.

[7] i.e. they create benefits for all countries that can be enjoyed by any number of countries, individuals and institutions at the same time.

Figure 5.1. Mechanisms of international regulatory co-operation available to governments



Source: (OECD, 2021[3]).

Considering international evidence, impacts and instruments related to environmental action throughout domestic rulemaking

National regulatory frameworks do not sufficiently reflect international environmental considerations in regulatory process. Doing so will involve a more systematic review and consideration of foreign and international regulatory frameworks of relevance when regulating and assessments of how regulatory measures impact and fit within the broader cross-border management of the issue to address.

In this perspective, the regulatory management tools (regulatory (ex ante) impact assessment, stakeholder engagement and *ex post* reviews of regulation) provide important entry points in the rule-making process to consider international evidence, guidance and rules in the development and revision of laws and regulations (OECD, 2021[3]), as covered by the first three sections of this paper. Particular focus should be given throughout all of these phases to expertise and knowledge from foreign and international sources (particularly when dealing with policy fields based on scientific knowledge that evolves rapidly), information about transboundary impacts on the environment, engagement with foreign stakeholders who may have first-hand views about environmental impacts abroad, and ex post assessments that consider international experience in the review of regulation.

As part of regulatory impact assessment, impacts of the policy on foreign jurisdictions[8] are not sufficiently assessed during policy development. Even though environmental issues are frequently transboundary issues, only 5 out of 36 OECD members require the assessment of transboundary impacts. This means that international environmental impacts of national policies go potentially undetected. Challenges such as international environmental leakage, where interventions aimed at reducing environmental pressures at one site increase pressures elsewhere, should be given particular attention. International environmental externalities should equally be considered, as for example regions that are not primarily responsible for the environmental damage can be disproportionally affected by climate change.

Beyond the traditional regulatory management tools, the OECD also recommends that governments consider existing international instruments when developing regulation and document the rationale for departing from them (OECD, 2022[4]). International normative instruments are usually the results of significant evidence gathering and consensus building (including scientific). Using them in domestic legislation provides a strong driver for regulatory consistency internationally, therefore reducing the opportunities for arbitrage and the costs for the regulated entities of having to comply with multiple requirements (OECD, 2021[3]).

The diversity of international instruments makes it particularly challenging for regulators at the domestic level to identify the right environmental instrument to follow. The OECD therefore highlights the importance of facilitating the access to applicable international instruments, whether legally binding or not, through centralised databases (by sector/policy areas or other) (OECD, 2018[2]) (OECD, 2021[3]).

Making complementary use of bilateral, regional and multilateral regulatory co-operation *fora* for effective environmental action

Beyond the actions throughout domestic rulemaking, stronger forms of bilateral, regional or international co-operation approaches are needed (and de facto exist) to promote greater coherence in regulatory matters. The modalities of international co-operation will depend on the legal and administrative system and geographic location of the country, as well as on the sector or policy area under consideration (OECD, 2021[3]).

The landscape of international *fora* in which science and experiences are exchanged across environmental matters is very diverse. At the regional level, a mix between bilateral and regional co-operation efforts need to be leveraged strategically to maximise strengths of the different fora, beyond the usual focus on exchange of information. At the multilateral level, a number of international bodies have been created throughout the years with specific mandates.[9] Organisations with broader mandates often have more of an oversight role, such as the United Nations Agency on Environmental Protection.

International organisations can support governments with managing environmental hazards in several ways. They can set standards to improve environmental rulemaking. An ongoing effort by the UNFCCC, the enhanced transparency framework, provides a quality standard for countries' reporting of their implementation progress of the Paris Agreement. Another support measure is promoting a common approach to environmental action, particularly when the challenge has international dimensions, and affects other policy areas (e.g. BIPM, OIML, OTIF, WCO, and WTO). For instance, the OECD has been

[8] Fourty-four States and the European Union ratified the UN Espoo Convention as of 2014, which sets out the obligation of Parties to assess the environmental impact of certain activities at an early stage of policy planning.

[9] Such as the preservation of the Ozone Layer (Ozone Secretariat), the protection of biodiversity (Secretariat of the Convention on Biological Diversity - SCBD), trade in endangered species (Convention on International Trade in Endangered Species of Wild Fauna and Flora), or to tackle Climate Change (The Secretariat of the United Nations Framework Convention on Climate Change), or the World Meteorological Organisation (WMO).

active in bringing countries together to address challenges raised by the EU's planned border carbon adjustments mechanism and its effects on trade partners. Finally, IOs can serve as a forum for exchange of experiences and peer learning, through workshops, conferences, and other means. The OECD Global Forum on the Environment brings together international experts, as well as member and non-member countries to share experiences and explore common policy issues.

The great variety of all bilateral, regional, and multilateral frameworks that exist for co-operation can however make it difficult for regulators to engage actively, all the more that participation within them is often beyond the scope of regulator's key functions. Without engagement by regulators, it makes it particularly challenging for them to be aware of the instruments of relevance to them, let alone implement them. Conversely, there is thus little information available about countries overall implementation of international commitments across policy fields, given the decentralisation of information by IO. At a minimum, continuous monitoring of the normative activity of international organisations will help identify when issues of relevance to a specific jurisdiction are being raised. To support regulators in taking up a more active role internationally, central information about all international *fora* active in policy fields related to environmental sustainability can be helpful (OECD, 2021[3]).

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6 The role of economic regulators in promoting a green transition

At their outset, most utility regulators were established with a core duty of economic regulation, i.e. to control monopoly power and promote competition. Acting as rule-setters as well as market referees, they exist to bring stability, predictability and confidence to sectors. Their role included ensuring that markets run efficiently, that consumers have access to good quality and affordable services, that competition is upheld and that a level playing field exists for market actors.

The sectors that economic regulators oversee – typically energy, transport, e-communications and water – are often highly resource-intensive and have significant impacts on the environment. In 2019, approximately 34% of total greenhouse gas emissions came from the energy supply sector and 15% from transport (IPCC, 2022[1]). The telecommunications industry consumes 2-3% of global energy production and generates significant amounts of e-waste (GSMA, 2022[2]). As leading public bodies in the governance of these sectors, the activities of economic regulators can substantially affect environmental outcomes (Bartle and Vass, 2007[3]). Furthermore, there has at times been a view that the focus of regulators on predominantly economic concerns may compromise the attainment of environmental goals (Owen, 2006[4]). Economic regulators are therefore increasingly being seen as key institutions to implicate in achieving environmental policy objectives, by either facilitating or actively promoting these objectives within the sectors they oversee.

The role of economic regulators in promoting a green transition is discussed in more detail in *The contribution of economic regulators to environmental sustainability: A view from the literature* (OECD, forthcoming[5]).

The potential impact of economic regulation on environmental outcomes

Several functions that economic regulators routinely carry out can have important impacts on environmental outcomes. These may be direct outcomes (e.g. monitoring regulated entities' compliance with environmental standards) or more indirect, for example, by shaping investment conditions in ways that incentivise investment in green technologies. Regulators' in-depth knowledge of the markets they oversee also makes them invaluable sources of expertise for environmental policy making.

Some examples of the levers that economic regulators may employ include, depending on their exact mandate towards environmental action:

- *Tariff-setting*: Economic regulators' role in tariff-setting has the potential to shape environmental outcomes. Price-setting processes can explicitly take into account the infrastructure investments that will be needed to reach environmental goals, such as the net zero transition. Tariff-setting powers can also be used to promote green innovation, for example through dedicated funds collected through regulatory tariffs. In the energy sector, the use of dynamic tariff structures could

increase the flexibility of energy systems - incentivising demand to respond to periods in which there is a high supply of renewable resources.

- *Infrastructure planning*: Regulators that have the function to approve infrastructure investment plans could ensure that such plans are coherent and aligned with environmental goals and targets, such as greenhouse gas (GHG) emission reductions. Regulators could also promote the re-use of existing physical infrastructure, the co-ordination of civil works and the co-location or sharing of infrastructure to reduce environmental impact (WIK-Consult and Ramboll, 2021[6]).
- *Granting access to infrastructure*: In some sectors, regulators' functions in approving access to infrastructure could be used to promote environmental objectives. For example, spectrum management functions held by some e-communications regulators may offer possibilities to promote environmental sustainability objectives, for example by assigning radio spectrum rights to uses that enable reductions in GHG emissions, such as smart grids (WIK-Consult and Ramboll, 2021[6]).
- *Targeting consumer behaviour*: Regulators can use communications, awareness raising and other behaviourally informed techniques to encourage consumers to adjust their consumption patterns to reduce environmental impact. For example, consumers shifting the timing of their energy use (flexibility) will play an important part in the transition to net zero GHG emissions (Ipsos MORI and Ofgem, 2021[7]). Regulators can encourage the use of smart appliances or smart heating that help consumers use energy flexibly. Informing and empowering consumers with environmental information ("sunshine regulation") could also create incentives for operators to move to more sustainable practices.
- *Targeting operator behaviour*: Different tools and techniques to influence operators' behaviour can be envisaged. Regulators could help identify and encourage environmentally friendly practices developed by the industry with relevant authorities (BEREC, 2022[8]). Economic regulators can design reward tools to incentivise utilities to offer products and services with positive environmental externalities, such as reducing greenhouse gas emissions (WAREG, 2021[9]).
- *Collecting, analysing, publishing data*: Regulators' detailed knowledge and understanding of the sectors they oversee rests on the data and information that they collect. Early work on environmental sustainability by European e-communications regulators has concentrated on data and measurement issues, in particular to understand the impact that the sector has on environmental sustainability (BEREC, 2022[8]). In this regard, many regulators have stressed the potential role that they could play in developing common methodologies to ensure comparable and reliable data (WIK-Consult and Ramboll, 2021[6]). Regulators could also initiate studies into relevant aspects of environmental sustainability to expand the knowledge base.
- *Monitoring targets or standards and ensuring compliance*: Closely related to the function of data collection is that of monitoring compliance with targets or standards set by the government. Economic regulators may have functions to monitor whether regulated entities meet environmental standards. For example, water regulators may be tasked with monitoring whether water utilities meet standards on discharges from storm overflow that are in place to protect the environment (as well as public health). In some jurisdictions, reflections are ongoing whether the goal of achieving climate neutrality could be monitored by sectoral regulatory authorities (European Commission, 2022[10]).
- *Choice of regulatory approach*: More broadly, the choice of regulatory approach could support environmental objectives. For example, innovation can be stimulated through outcome-based regulation, where regulators set envisaged outcomes rather than dictate procedures for how operators should achieve them. Regulatory experimentation through regulatory sandboxes, pilot projects and pilot regulations can also be used to harness innovations that will have a beneficial environmental impact.

Considering governance arrangements

The potential contribution of economic regulators to environmental objectives rests on a number of important considerations around governance arrangements. In particular, the regulatory framework needs to consider regulators' role and objectives, co-ordination with other public bodies, and the requisite powers and resources to deliver on new or expanded mandates.

Governments will face important decisions about the desired role and functions of economic regulators within the broader regulatory framework for achieving environmental policy objectives. As explained above, the original purpose of economic regulators concern primarily economic considerations of limiting monopoly power and promoting competition, although often alongside social objectives such as consumer protection. Pursuing environmental objectives – in particular if done so on a par with economic objectives – represents a qualitatively distinct task that expands a regulator's mandate beyond this core role.

There is currently no standard approach to what the role of economic regulators should be in contributing to environmental policy objectives. Governments may choose to change the duties of regulators to explicitly encompass environmental objectives; or they may give the regulator guidance or directions on how to consider or facilitate environmental matters; or they may take action elsewhere to tackle the environmental challenges that economic regulators do not address (Owen, 2006[4]). Different approaches bring different advantages and disadvantages that each jurisdiction will need to weigh carefully, raising as they do questions of independence, accountability and the purpose of economic regulators.

The choice of approach will determine the division of responsibilities between the executive and the regulator. In some scenarios, governments may retain responsibility for key policy decisions, with the regulator assuming the role of implementer or administrator (for example, of schemes to improve environmental outcomes). Regulators may also have the function of providing advice and insights to government – for example, to calculate the costs of meeting environmental requirements or to clarify potential conflicts between different economic, social and environmental objectives – with the government responsible for deciding where to strike the balance or how to manage trade-offs (Owen, 2006[4]). In scenarios where regulators have a primary duty to deliver on environmental objectives, the responsibility for managing trade-offs and other questions more traditionally considered as political or policy decisions (e.g. distributional issues) rather than technical decisions may fall to the regulator.

Indeed, reconciling economic, social and environmental objectives will undoubtedly entail managing trade-offs. Achieving environmental objectives may in certain cases run counter to other policy objectives such as promoting competition, cost effectiveness, or protecting consumer welfare (see Box 6.1). OECD guidance recommends that where trade-offs between objectives are likely to be necessary, there should be a means for the minister to provide an overall direction on priorities, or that legislation should include clear guidance as to how the regulator should resolve trade-offs between objectives (OECD, 2014[11]) (OECD, 2019[12]). Furthermore, it will be important to have transparency around these issues: the regulator should make explicit any trade-offs between objectives in decision making, and this information should be available to regulated entities in a clear and comprehensible format.

Box 6.1. Potential trade-offs between economic and environmental objectives in e-communications regulation

A study commissioned by BEREC (WIK-Consult and Ramboll, 2021[6]) highlights cases where pursuing measures that would be beneficial for the environment might run counter to existing rules applying to the European electronic communication sector or require trade-offs to be made against socio-economic objectives. For example:

- Although certain network technologies are known to be more energy efficient, European e-communications regulators are required to promote "Very High Capacity Networks", which can include less energy-efficient legacy technologies, and to respect the principle of **technological neutrality**.
- Encouraging or requiring network sharing could limit energy use but could create trade-offs with the objective to promote **infrastructure competition** and reduce incentives for operators to invest in their own infrastructure to achieve higher coverage and/or quality.
- Strategies to reduce energy consumption might create trade-offs with **network coverage and quality**.
- There may be trade-offs between environmental objectives and **cost**. For example, environmental considerations may drive the deployment of more costly technologies, when alternatives might meet the shorter-term needs of consumers.

Source: (WIK-Consult and Ramboll, 2021[6]).

Whatever the chosen approach, clarity on the role of economic regulators in contributing to environmental policy objectives will be fundamental. Role clarity is essential for a regulator to understand and fulfil its role effectively. As stated in the *OECD Best Practice Principles on the Governance of Regulators* (OECD, 2014[11]), the role of the regulator should be clearly defined in terms of its objectives, functions and co-ordination with other entities. These should be clear to the regulator but also to the regulated bodies, citizens and other stakeholders. This is necessary for a well-functioning and predictable regulatory framework with different actors knowing their role and purpose that is complimentary and not duplicative or detrimental toward each other. Role clarity is also important for accountability: it must be clear to regulated entities and the public at large whom to hold to account.

While co-ordination between economic regulators and other public institutions is always important, it becomes even more so in the context of a broadened mandate that encompasses economic, social and environmental objectives, given the complex interactions between these issues. Indeed, high-level co-ordination could help regulators and public institutions clarify and navigate the line between political and technical decision making. Extensive and close co-ordination will need to extend to other economic regulators, governmental bodies, and other types of regulators. For example, in the field of energy regulation increasing interaction may be needed between regulators across sectors to address the issues of "stranded assets"[1] (Université Paris Dauphine-PSL, 2021[13]). An important pre-requisite is clear authority for co-ordination to remove uncertainty about the legality of any arrangements. Ideally legislation should explicitly empower regulators to co-operate with other agencies and bodies in pursuit of the regulator's objectives (OECD, 2014[11]).

Importantly, if the mandates of economic regulators expand to encompass environmental goals, regulators must be afforded the appropriate powers to deliver their objectives. This may include new or expanded powers for data collection, use and publication. For example, in France, e-communications regulator Arcep was granted expanded powers to enable access to data needed to measure the digital environmental footprint in France[2] (Arcep, 2022[14]).

[1] Stranded assets could include, for example, coal-fuelled power stations that close prematurely due to fossil-fuel divestment or gas infrastructure that will become obsolete due to a decreasing use of natural gas.

[2] Stranded assets could include, for example, coal-fuelled power stations that close prematurely due to fossil-fuel divestment or gas infrastructure that will become obsolete due to a decreasing use of natural gas.

Finally yet importantly, regulators will need to build sufficient capacity and capabilities to deliver on new or expanded mandates for the green transition. This will entail ensuring that regulators have the right skills and technologies, supported by sufficient financial resources. A regulator's staff and funding arrangements can have an important bearing on its ability to remain agile to respond to new roles and expectations (OECD, 2022[15]).

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7 Leveraging behavioural sciences for the green transition

Regulation is fundamentally about behaviour change, with the goal to encourage or discourage people from doing an action. Viewing environmental problems from the perspective of human behaviour can help policy makers to make effective regulation that considers and solves a host of behavioural barriers and biases that cause (in)action throughout the regulatory policy making process. Understanding behaviour can also help explain why governments so far have been reluctant to address environmental issues in full.

Human behaviour plays a pivotal role in influencing the design and implementation of public policies, operating on two distinct tiers: the "policy level", which pertains to the behaviour of regulators, and the "design and delivery level", which focuses on the behaviour of regulated entities. A comprehensive grasp of behaviour dynamics at these dual levels is imperative in the pursuit of environmental objectives, as it enables policymakers to tailor policy interventions that effectively address the complex interplay of factors contributing to environmental challenges.

Introducing a behavioural lens at the policy level

At the policy level, a behavioural lens can help to understand why most governments have not, to date, taken sufficient action to tackle climate change and other environmental threats. One common finding has been the effect of "present bias" which can lead policy makers to prioritise short-term economic or political gains over taking sufficient action to tackle long-term challenges like climate change (Zhao and Luo, 2021[1]). Behavioural factors may also lead policy makers to disregard evidence-based advice for green policies, as personal motivations and perceptions of the issue may make shifting positions from anti- to pro-environmental regulation very difficult.

From a behavioural perspective, there is an underlying issue with the system that produces evidence-informed policy advice. As discussed above, such advice is generated with tools such as RIAs, consultation and evaluation. It is commonly assumed that these tools "de-bias" decision making by slowing down and forcing deliberative thought to drive decision making, rather than relying on the intuitive judgments of the problem and its solutions. However, the institutions, tools and processes to produce this advice are created and run by humans, who experience the same biases and barriers as individuals and groups in society (Drummond, Shephard and Trnka, 2021[2]). Humans produce the evidence-informed advice and use it to make decisions. When doing so, they will filter the information through their own perspectives, experiences and goals, resulting in errors in judgment still entering the policy process (Drummond and Radaelli, forthcoming).

Behavioural biases and barriers are of particular importance in cost-benefit analysis (CBA) which is commonly included in RIA to support decision making. On the one hand, the production of a CBA could be impacted by an inability to know everything about the issue, rely on inaccurate or incomplete data, be generated using mental shortcuts or assumptions, and be affected by institutional priorities or decisions

that frame how CBAs are conducted (Drummond and Radaelli, forthcoming[3]). This leads to sub-optimal CBAs, that then will lead to sub-optimal decisions. On the other, discrete decisions made can change significantly the advice given. For example, choosing the discount rate (as discussed in Chapter 1 in section on Assessing environmental impacts of policies and regulations) may produce a CBA where the costs of immediate action are perceived to outweigh the short-term benefits, leading policy makers to maybe opt for more incremental measures or delay taking significant action due to present bias. Knowing these biases are helpful, as behaviourally-informed solutions can help such as by (Hirsch and Wong-Parodi, 2023[4])who found that reminding policy makers about their "evidence-based policymaker" identity salient when presenting new information can help increase that information's impact on climate policymaking.

Considering behaviour at the design and delivery level

At the design and delivery level, many governments have made significant efforts to use insights from behavioural sciences to inform environmental policy, mostly in the energy sector, but more efforts are needed in other domains such as waste management and water (OECD, 2017[5]). These efforts should take place at all stages of the regulatory policy cycle (Figure 1.1):

- Regulatory design will need to take into consideration individual and group/firm level behaviours that drive environmental choices, and how behaviourally-informed policies can help address these issues to create the necessary change.
- Stakeholder engagement can be affected by behavioural biases and barriers, such as changes to the way a question is worded will lead to different responses.
- Compliance with regulatory decisions can be enhanced by understanding the drivers of behaviour change and leveraging this knowledge to aide effective enforcement (see Box 7.1).
- Behaviour can be used as a lens to look back at existing regulations *ex post* to see whether unintended behavioural barriers and biases are preventing the current rules from reaching their optimal efficiency and launching new regulatory processes in response.

Integrating a behavioural lens in the regulatory impact assessment process can help mainstream considerations of individual and group level behaviours with regards to environmental policy issues at the regulatory design stage. This can be facilitated by ensuring high-level political support for the use of behavioural science in regulatory decision making; establishing a clear strategy for behavioural science which is monitored over time; putting in place an institutional accountability structure for mainstreaming behavioural public policy; and building relevant skills and analytical capacities within the administration (OECD, forthcoming[6]).

To address biases such as the present bias, as explained above, and encourage policy makers to take more significant action on the climate crisis with the help of regulatory policy, several strategies can be employed. These include promoting public awareness and buy-in through transparent regulatory processes and stakeholder engagement, incentivizing sustainable practices and renewable energy for example with simplified and risk-based permitting procedures, and encouraging international regulatory cooperation to tackle the global challenge together. Additionally, having a long-term strategic vision and commitment to sustainability from both policy makers and the public is crucial in overcoming present bias and securing a sustainable future.

Box 7.1. Using behavioural insights to promote compliance with environmental regulation

The **Australian Government Department of the Environment** made use of behavioural interventions to improve entities' compliance with reporting obligations under the *Ozone Protection and Synthetic Greenhouse Gas Management Act*. Entities with a licence to import equipment containing ozone-depleting substances and synthetic greenhouse gases must submit quarterly import reports to the Department of the Environment. The department tested different approaches to simplify and frame government-issued information on reporting obligations in a randomised control trial with 667 licensed entities. The intervention resulted in a 26% percentage increase in in-time reporting, leading to 60 hours of staff time gained per year and telecommunications costs saved.

The **Irish Environmental Protection Agency** carried out the Climate Change in the Irish Mind study (CCIM), a nationally representative survey collected from May through July of 2021. The study assesses citizens' climate change beliefs, risk perceptions, policy preferences and behaviours regarding climate change on a national level. Findings of this work will be used to inform the design of domestic climate policies, including the choice of different policy options, as well as strategies for regulatory delivery.

Source: (OECD, 2017[5]), Environmental Protection Agency (2021): PA-Yale Climate Opinion Maps of Ireland, https://www.epa.ie/our-services/monitoring--assessment/climate-change/climate-opinion-maps/about/.

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8 The future of regulating for the green transition

This paper discusses the essential role that better regulation plays in achieving environmental goals. Tools like regulatory impact assessment, *ex post* evaluation and stakeholder engagement allow governments to design regulations that are based on the latest evidence, informed by various groups in society and stay fit-for-purpose to promote the green transition. Risk-based and agile approaches to regulating ensure regulations are proportionate and encourage technological innovation. Regulatory delivery tools enable governments to implement policies in an effective manner. International regulatory co-operation allows countries to exchange experiences, learn from each other and ensure coherent approaches to addressing environmental challenges. Economic regulators carry out several functions and activities that could potentially be leveraged to contribute to environmental goals. Finally, behavioural insights can help policy makers understand how humans make choices to support more efficient policy making processes and decisions.

The paper finds that governments face a number of gaps and challenges when implementing the above-mentioned practices. Environmental impacts of regulations are not assessed sufficiently in practice. This is particularly true for regulations with indirect environmental impacts. The pace of climate change and advancing climate-relevant technologies requires governments to review regulations with environmental impacts more frequently. The principle of risk-proportionality is not sufficiently reflected in regulation-making and more could be done to encourage innovation for the green transition. Governments are not yet systematically co-operating internationally on climate and other environmental issues and economic regulators face the challenge of reconciling economic, social and environmental objectives. Finally, countries' regulatory policy systems are not sufficiently adapted to promoting environmental goals in practice.

To fully exploit the potential of better regulation for the green transition, governments may have to re-enforce and potentially re-think the way they approach regulatory policy. As a first step, it will be important to refuse false choices. Economic crises are driving the need for rapid growth and the removal of undue regulatory burden, while climate change and other environmental threats call for urgent action to protect the environment. In this context, it will be essential to not oppose the goals of protecting the environment or unlocking growth, between sustainable development or tackling the climate emergency. Regulatory policy instruments, if well-designed and implemented systematically, can help promote both environmental and economic objectives while minimizing trade-offs.

Going forward, governments may want to consider a range of measures to fully utilize the potential of better regulation for the green transition:

- Introducing a green lens to regulatory design and consultation in an inclusive and horizontal approach. Assessing environmental and distributional impacts in a horizontal effort through inter-ministerial cooperation may help ensure policy coherence. Understanding which communities or geographical areas will bear the costs or enjoy the benefits of policies for the environment will be essential for a green and just transition. Climate change and other environmental threats impact minorities and marginalized groups in society disproportionally and their input needs to be

systematically sought out in the regulatory process. To this end, governments may want to adapt their methodological approaches to stakeholder engagement and regulatory impact assessment. This includes actively consulting vulnerable groups and young people to ensure their perspectives inform the regulatory process.

- Moving away from a process- to an outcome-based and risk-informed approach. Making use of outcome-focused regulatory design and flexibility mechanisms enables economic actors to choose the best way for them to meet the requirements and thus can enhance innovation and compliance. Informing regulations by the goals they want to achieve and the risks they aim to prevent can foster a proportional approach. This includes risk-based regulatory design and delivery and considering risk-risk trade-offs. Putting in place agile and risk-based regulatory systems can help encourage innovation and promote green investment and economic growth all while protecting the environment (OECD, 2021[1]).
- Connecting regulatory systems and going global. Countries cannot effectively deal with cross-border environmental challenges such as climate change and transboundary air- and water pollution solely through domestic action. This will require systematically considering international evidence at the policy design stage and making a complementary use of bilateral, regional and multilateral regulatory co-operation fora for effective environmental action.

Overall, this may call for a paradigm shift in regulatory policy. Traditionally, regulatory policy has put economic considerations at the forefront. Environment and sustainability-related considerations, while increasingly acknowledged as relevant, do not always play a determining role in regulatory decision-making and often amount to little more than an afterthought.[12] Impending climate and environmental challenges suggest that the status quo is likely to lead to catastrophic consequences, and that there may be a strong case for rethinking how these issues are dealt with by regulatory systems. An interesting proposal would consist of adopting an "ecologically rational" approach to regulation. This means recognising the embeddedness of the human species in ecological systems: the environment should be understood as the larger, over-arching driver in which economic, social, and political understanding of regulation must be placed (Parker and Haines, 2018[2]). Such an approach would require putting in place a legal framework that places environmental concerns at the centre of government action. On a global level, the United Nations have taken important steps to advancing environmental legal rights. In 2022, the General Assembly declared the access to a "clean, healthy and sustainable environment" a human right in a (non-binding) resolution. Some scholars argue that potential measures on a domestic level could include introducing far-reaching legal provisions to protect the environment, such as giving legal rights to nature (Stone, 2010[3]). A recent Horizon Report for the Law Society in the UK also discusses the potential need for developing and implementing a non-human rights-based framework in international and local law that provides for a greater role for nature in decision-making. Doing so would raise fundamental questions of liability for damage to the environment, such as climate change or biodiversity loss (The Law Society, 2022[4]). Although most legal systems treat animals, nature, and ecosystems as property, countries such as Ecuador, Bolivia, New Zealand, India have granted rights and legal protections in their Constitutions (Alberta Civil Liberties Research Centre, 2021[5]). In a similar vein, a pioneering law was adopted in Spain in September 2021 that confers legal rights to the *Mar Menor* ecosystem (Agencia Estatal Boletín Oficial del Estado, 2022[6]). Although such measures are currently far from most countries' realities, they may represent a valuable source of inspiration for governments worldwide to bring about the necessary changes that will allow them to effectively pursue the green transition through regulatory action.

[12] As discussed in Chapter 1, see section on "Assessing environmental impacts of policies and regulations".

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