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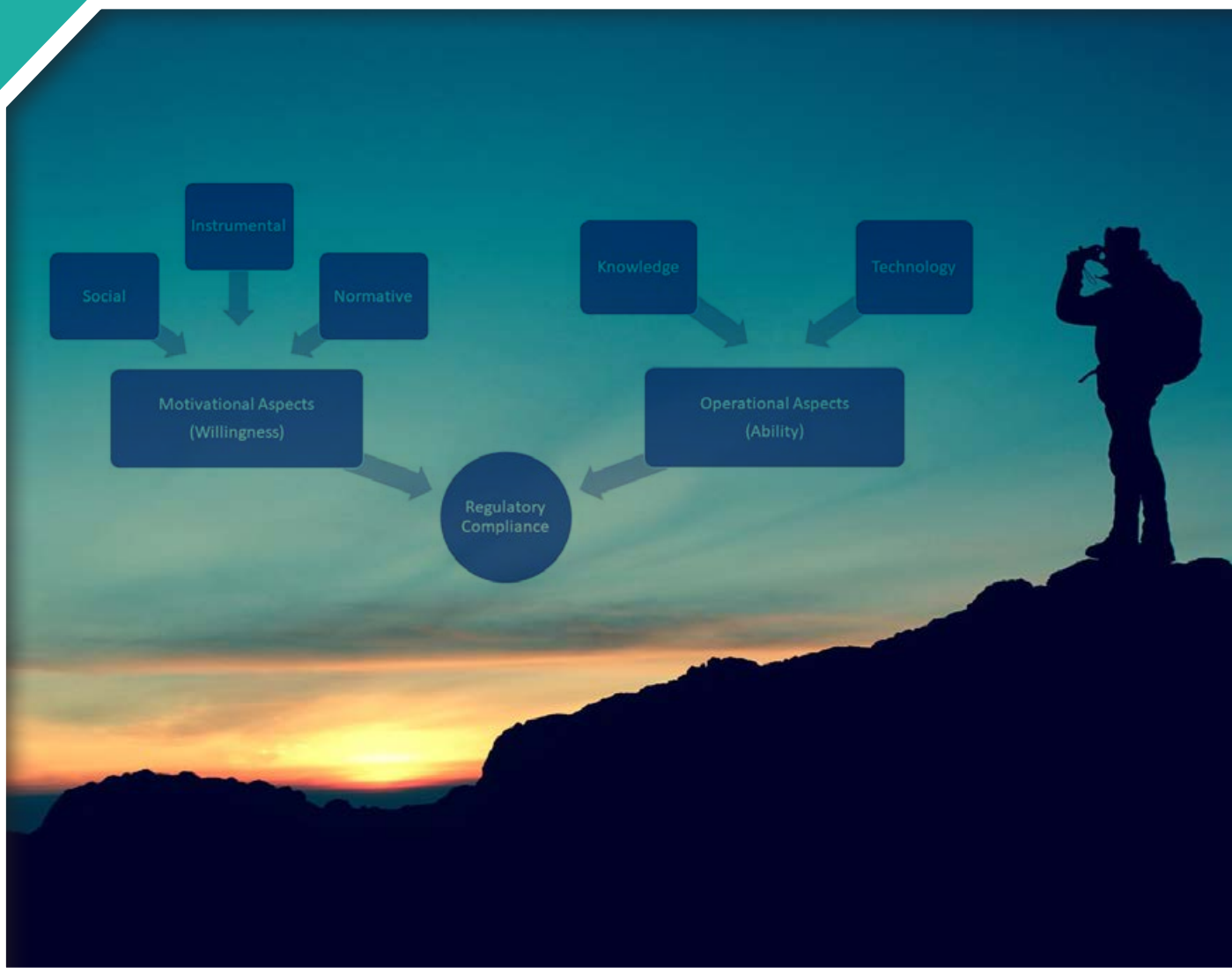
Behavioural Change Tools to Promote Going Beyond Compliance in the Regulated Community

Authors: Niall Keely, Myles Kingston and Ken Stockil



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Rialtas na hÉireann
Government of Ireland

ENVIRONMENTAL PROTECTION AGENCY

The Environmental Protection Agency (EPA) is responsible for protecting and improving the environment as a valuable asset for the people of Ireland. We are committed to protecting people and the environment from the harmful effects of radiation and pollution.

The work of the EPA can be divided into three main areas:

Regulation: *We implement effective regulation and environmental compliance systems to deliver good environmental outcomes and target those who don't comply.*

Knowledge: *We provide high quality, targeted and timely environmental data, information and assessment to inform decision making at all levels.*

Advocacy: *We work with others to advocate for a clean, productive and well protected environment and for sustainable environmental behaviour.*

Our Responsibilities

Licensing

We regulate the following activities so that they do not endanger human health or harm the environment:

- waste facilities *(e.g. landfills, incinerators, waste transfer stations)*;
- large scale industrial activities (*e.g. pharmaceutical, cement manufacturing, power plants)*;
- intensive agriculture *(e.g. pigs, poultry)*;
- the contained use and controlled release of Genetically Modified Organisms *(GMOs)*;
- sources of ionising radiation *(e.g. x-ray and radiotherapy equipment, industrial sources)*;
- large petrol storage facilities;
- waste water discharges;
- dumping at sea activities.

National Environmental Enforcement

- Conducting an annual programme of audits and inspections of EPA licensed facilities.
- Overseeing local authorities' environmental protection responsibilities.
- Supervising the supply of drinking water by public water suppliers.
- Working with local authorities and other agencies to tackle environmental crime by co-ordinating a national enforcement network, targeting offenders and overseeing remediation.
- Enforcing Regulations such as Waste Electrical and Electronic Equipment (WEEE), Restriction of Hazardous Substances (RoHS) and substances that deplete the ozone layer.
- Prosecuting those who flout environmental law and damage the environment.

Water Management

- Monitoring and reporting on the quality of rivers, lakes, transitional and coastal waters of Ireland and groundwaters; measuring water levels and river flows.
- National coordination and oversight of the Water Framework Directive.
- Monitoring and reporting on Bathing Water Quality.

Monitoring, Analysing and Reporting on the Environment

- Monitoring air quality and implementing the EU Clean Air for Europe (CAFÉ) Directive.
- Independent reporting to inform decision making by national and local government *(e.g. periodic reporting on the State of Ireland's Environment and Indicator Reports)*.

Regulating Ireland's Greenhouse Gas Emissions

- Preparing Ireland's greenhouse gas inventories and projections.
- Implementing the Emissions Trading Directive, for over 100 of the largest producers of carbon dioxide in Ireland.

Environmental Research and Development

- Funding environmental research to identify pressures, inform policy and provide solutions in the areas of climate, water and sustainability.

Strategic Environmental Assessment

- Assessing the impact of proposed plans and programmes on the Irish environment *(e.g. major development plans)*.

Radiological Protection

- Monitoring radiation levels, assessing exposure of people in Ireland to ionising radiation.
- Assisting in developing national plans for emergencies arising from nuclear accidents.
- Monitoring developments abroad relating to nuclear installations and radiological safety.
- Providing, or overseeing the provision of, specialist radiation protection services.

Guidance, Accessible Information and Education

- Providing advice and guidance to industry and the public on environmental and radiological protection topics.
- Providing timely and easily accessible environmental information to encourage public participation in environmental decision-making *(e.g. My Local Environment, Radon Maps)*.
- Advising Government on matters relating to radiological safety and emergency response.
- Developing a National Hazardous Waste Management Plan to prevent and manage hazardous waste.

Awareness Raising and Behavioural Change

- Generating greater environmental awareness and influencing positive behavioural change by supporting businesses, communities and householders to become more resource efficient.
- Promoting radon testing in homes and workplaces and encouraging remediation where necessary.

Management and structure of the EPA

The EPA is managed by a full time Board, consisting of a Director General and five Directors. The work is carried out across five Offices:

- Office of Environmental Sustainability
- Office of Environmental Enforcement
- Office of Evidence and Assessment
- Office of Radiation Protection and Environmental Monitoring
- Office of Communications and Corporate Services

The EPA is assisted by an Advisory Committee of twelve members who meet regularly to discuss issues of concern and provide advice to the Board.

EPA RESEARCH PROGRAMME 2014–2020

Behavioural Change Tools to Promote Going beyond Compliance in the Regulated Community

(2017-SE-DS-16)

EPA Research Report

Prepared for the Environmental Protection Agency

by

Central Solutions Ltd

Authors:

Niall Keely, Myles Kingston and Ken Stockil

ENVIRONMENTAL PROTECTION AGENCY
An Ghníomhaireacht um Chaomhnú Comhshaoil
PO Box 3000, Johnstown Castle, Co. Wexford, Ireland

Telephone: +353 53 916 0600 Fax: +353 53 916 0699
Email: info@epa.ie Website: www.epa.ie

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This report is based on research carried out/data from January to December 2018. More recent data may have become available since the research was completed.

The EPA Research Programme addresses the need for research in Ireland to inform policymakers and other stakeholders on a range of questions in relation to environmental protection. These reports are intended as contributions to the necessary debate on the protection of the environment.

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Project Partners

Dr Niall Keely
Central Solutions Ltd
National Technology Park
Limerick
Ireland
Email: nkeely@central-solutions.com

Myles Kingston
Central Solutions Ltd
National Technology Park
Limerick
Ireland
Email: mkingston@central-solutions.com

Ken Stockil
Central Solutions Ltd
National Technology Park
Limerick
Ireland
Email: kstockil@central-solutions.com

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Executive Summary

The environmental compliance and enforcement landscape has evolved significantly over the last number of decades, with policy and legislation serving as a key driver. The nuances and complexities of compliance and enforcement have also evolved, as they now require a better understanding of the barriers and challenges, drivers and incentives, and the behavioural and contextual factors at play among regulated communities. These communities comprise enterprises of various scales, capacities and cultures. The increasing complexity and raising of standards place pressure on limited resources, making innovation ever more important. New enforcement and compliance approaches are needed to keep pace with current knowledge and best practices to influence compliance outcomes and deliver optimal environmental performance.

Emerging areas in compliance and enforcement include greater utilisation of technology for data, information and intelligence, new strategies and models to help target resources more effectively and efficiently, utilising behavioural insight in policy and intervention development, and supporting organisational culture change. Considering the environmental, social and economic pressures we face globally, there is a pressing need to transition beyond "business-as-usual" mindsets and practices. "Going beyond compliance" (GBC) is an approach to help deliver greater organisational performance and long-term value across the triple bottom line.

By consulting with key actors involved (e.g. regulators, members of the licensed community, policymakers, government departments and support agencies), common challenges, barriers, drivers and opportunities are identified. With greater knowledge and understanding of the motivational and operational aspects that are key factors in influencing an organisation's regulatory compliance, we are in a better position to develop appropriate interventions or tools to target specific barriers and drivers to affect behaviours and support desirable outcomes. The report presents several case studies presenting GBC initiatives and highlights some common characteristics, tools and approaches.

The main recommendations of this report are to:

- set out a vision for GBC nationally;
- establish an environmental excellence community of practice;
- review policy and investigate new regulatory frameworks for GBC;
- develop a programme of supports and incentives for GBC;
- conduct further research, innovation and collective action on GBC.

These recommendations would promote greater adoption of a GBC culture and practices in Ireland and deliver long-term value and benefits across environmental, economic and social dimensions.

1 Introduction

The main objectives of this desk study research are to:

- provide guidance and insight on what factors drive and influence compliance behaviour among the regulated community;
- assess what tools and approaches offer the most impact in terms of compliance outcomes with regard to engaging stakeholders to maintain and go beyond compliance.

For the purposes of the study, (environmental) compliance has been defined by the authors of this work as *conforming to environmental laws and regulations required for operation*. Other viewpoints and definitions of compliance were captured during stakeholder consultations for comparison.

This chapter outlines the main objectives, report structure and main outputs for this research.

The second chapter presents the findings of a review of the national and international landscape investigating the background, challenges, drivers and emerging trends in environmental compliance and enforcement (C&E) practices. The chapter also introduces and discusses the topic of “going beyond compliance” (GBC).

The third chapter examines organisation behaviour and performance, focusing on the motivational and operational aspects of regulatory compliance within organisations. Influencing factors and instruments used to affect behaviour are discussed along with what tools are supportive of adopting GBC culture and practices. The chapter concludes with several case studies highlighting common characteristics and elements for success.

The fourth chapter presents a summary of common themes identified and discussed during the stakeholder consultations, which involved members from the regulated community, support agencies and other national and international stakeholders.

The fifth chapter concludes the report and provides recommendations on tools/approaches that may be supportive and utilised to alleviate barriers and challenges, enable drivers and influence the adoption of a GBC approach in terms of culture and practices.

The main outputs of the desk study contribute to greater knowledge and understanding of what factors influence behaviours in relation to environmental regulatory compliance, improved environmental performance and a culture of environmental excellence. This new knowledge and understanding will also help guide policymaking and the development of appropriate interventions/tools.

2 Environmental Compliance and Enforcement Landscape

2.1 Overview

Compliance and enforcement activities are essential for effective environmental legislation implementation and should never remain static. Increasing environmental concerns and pressures have led to significant increases in the number and scope of C&E activities across global regulatory environments. There is no unified theory of environmental C&E; instead, a variety of techniques have emerged over the decades (Paddock, 2005).

Early C&E efforts often follow a “complete coverage model” whereby entities subject to specific regulation are inspected and enforcement actions are issued for any violations. This model works best in situations where the regulated community is small and regulatory resources are plentiful. However, the model quickly breaks down when the regulatory community grows larger and as enforcement resources become limited. As a result, compliance assistance programmes become beneficial, as “customer-orientated” services to provide training, expertise and support to operators to achieve environmental compliance and better self-management. Smart regulation or risk-based enforcement strategies are another response. These are based on targeting efforts and resources on issues deemed to be the most problematic and/or with the highest impacts, while giving a lighter touch to those activities considered to be more compliant. Increased complexity has also led to the emergence of compliance management systems to handle enforcement and compliance more effectively and efficiently. In terms of influencing compliance behaviour, the use of penalty policies and employing fiscal powers remain high-powered (environmental) compliance incentive devices (Lombardo, 2009).

2.1.1 Pressures and challenges

The enforcement of environmental legislation has many specific challenges in terms of environmental protection. In other areas of law (e.g. consumer protection) there are clearly defined entities with legal interests, which help to ensure that the law is enforced. However, the environment is often “unowned” in legal terms and the responsibility for its protection principally lies with public authorities (i.e. regulatory agencies, police, local authorities, etc.). However, public authorities typically have competing priorities and tight resource constraints. How to plan and utilise resources has often been left to the discretion of enforcement authorities, which are best placed to understand the local conditions/situation and culture/behaviours. However, under increasing financial and resource constraints, regulators and enforcement agencies need to develop more effective approaches and strategies and ensure policy is implemented.

Surveys conducted by the European Union Network for the Implementation and Enforcement of Environmental Law (IMPEL) in 2014 and 2017 on practitioners’ views about the implementation challenges with European Union (EU) legislation indicated that the most commonly reported barrier to achieving effective implementation of environmental law was a lack of overall resources and suitably qualified personnel in regulatory authorities (IMPEL, 2017). Other issues that emerged in the 2014 survey continue to cause problems, including lack of skills at municipal level; insufficient data, evidence and information; and low levels of fines and inadequate sanctions. Problematic areas reported in the 2017 survey also included, among other issues:

- access to environmental information;
- unclear, incomplete or overly complex legislation;
- operator self-monitoring;
- clarity of environmental permits.

The reports highlight that there are long-standing pressures and challenges that are felt across the nations surveyed.

2.1.2 Barriers and drivers

In recent years, more attention has been placed on environmental performance and enforcement of legislation. The following questions arose: how should enforcement of legislation be implemented most effectively? How best to ensure compliance? How should breaches be dealt with effectively if they occur?

The authors define environmental performance as the efficient resource consumption and waste generation in an operation's activities in which any associated environmental impact is minimised or ameliorated. Environmental performance is an important goal in C&E. By incorporating sustainability practices, companies reduce their environmental impact, improve social performance and generate economic value.

> The global challenges associated with sustainability, viewed through the appropriate set of business lenses, can help to identify strategies and practices that contribute to a more sustainable world and, simultaneously, drive shareholder value: This we define as the creation of sustainable value for the firm. (Hart and Milstein, 2003)

Seeing the value of sustainability often requires quite a complex shift in mindset for management and staff. To ensure buy-in, the economic, societal and environmental value needs to be clearly demonstrable for the firm and its stakeholders. These three value dimensions are influenced by different and sometimes competing needs. To compound this, these values or benefits are perceived as long-term rather than short-term gains, so the sense of urgency can be lost. Therefore, in most cases, drivers external to the company are responsible for moving an organisation towards greater environmental performance and beyond the baseline (compliance) requirements.

The European Commission Directorate-General (DG) for Environment summarised the various internal/external barriers and drivers that play a role and influence an organisation's environmental performance (Rademaekers *et al.*, 2012). The factors (see Table 2.1) are a complex mix of policy and regulation, market forces, investor pressures, supply chain requirements, various dimensions of risk (e.g. financial, reputational, operational), availability of data/information, and social (or behavioural) dimensions. The behavioural dimensions (i.e. personality traits, characteristics, habitual patterns, cognitive frameworks and so on) span levels of the individual to the corporate (e.g. employee attitudes, corporate culture, customer behaviour and ethics). An important point to note is that, before drivers can be created, regulators need to remove barriers and make it easier to comply with regulations. Once it is easy to comply, then the regulated community can be encouraged to "go beyond" the norm (Rademaekers *et al.*, 2012).

2.2 Excellent Regulators

In order to support excellent C&E of environmental regulation among the regulated community, it is important to also look at the regulator itself and ensure strides are being made with regard to regulatory excellence in parallel. To have excellent regulators, a nation first needs regulations that are visible to the regulatees and the general public alike, and the regulators – as custodians of the regulations – must

Table 2.1. Internal/external barriers to and drivers of environmental performance

	Drivers	Barriers
Internal	• Financial benefit to the organisation • Organisational culture (history and norms) • Leadership commitment • Individual employee ethics and attitudes • Operational risks from a high environmental footprint	• Lack of available funding • Organisational culture (norms, structure, learning and communication) • Pressure on staffing and financial resources • Lack of knowledge and information • Lack of leadership commitment • Lack of employee acceptance and participation
External	• National government and EU legislation • Risk to organisational reputation • Media, NGOs, community groups and wider society • Competitors • Shareholders, investors and customers • Supply chain partners • Financial institutions, including insurance providers	• Intransigent regulations • Market demands • Consumer behaviour • Lack of available funding • Lack of shareholder acceptance

NGO, non-governmental organisation.

be seen as objective and even-handed in all C&E engagements.

Coglianese (2015) states that much of the regulatory excellence and regulatory performance literature conceptualises excellence in three different and separate ways based on traits, actions and outcomes; these are known as the "TAO" of regulatory excellence. Traits and actions can both affect outcomes, but regulatory excellence only happens if a regulator's traits, actions and outcomes are all aligned.

Coglianese (2015) put forward the "RegX molecule" framework in which the key aspects of regulatory excellence are proposed. If regulatory excellence "RegX" was a molecule, it would be made of three clustered atoms:

1. utmost integrity;
2. empathic engagement;
3. stellar competence.

The adjectives are used to highlight the exemplar level required from regulators; they must have a high level of all three attributes.

1. *Utmost integrity* is about character. The regulator must be public spirited and show commitment to serving and respecting the law. They must critically review all evidence and be humble enough to learn from mistakes. In addition, the excellent regulator also must be courageous, making decisions for the good of all, but this may be unpopular with some in power positions.
2. *Empathic engagement* is centred around openness and transparency with the public. The regulator should seek public input on proposals, educate the public about hazards and give adequate notice of activities, and act in an empathic manner in engagements with individuals (non-compliance may not be deliberate). When decisions are made, they should be accompanied with clear and coherent explanations.
3. *Stellar competence* is about delivering meaningful solutions, maximising the public value through effective and equitable outcomes. Competence requires a variety of skills in which technical knowledge meets proportionality, with expertise, including risk-informed priority setting and flexible use of advanced monitoring. Behind individual skills there must be organisational strength in the regulatory body, such as having adequate available financial resources and state-of-the-art information technology (IT) systems.

2.3 Compliance and Enforcement Strategies, Regimes and Models

Historically, the standard method for the government to ensure compliance was through "command and control" – tell them to comply (command) and punish them if they do not (control). This method has achieved many major successes in reducing pollution. However, command and control through legislation can only ever bring companies to a baseline level. Command and control is also sometimes a target for criticism from politicians and economists for its inflexibility, high costs and negative impact on innovation.

There have been many shifts in the practice of environmental governance and today command and control is only one of the tools used by regulatory agencies. Kagan *et al.* (2003) strongly conclude that any behavioural model based on a single variable (i.e. legal, economic or attitudinal) would be inadequate. In an era of shrinking resources for regulatory enforcement, command and control is now viewed as only one piece of a wider compliance solution and the ability for regulatees to voluntarily "go beyond compliance" must be a core part (Gunningham, 2002).

As a regulator, careful attention must be paid to choosing C&E intervention strategies. Gunningham (2015) posed the following two important questions:

1. How should the regulator interact with regulated entities and with a wide range of other interested groups and members of the public?
2. How should a regulator pursue efforts to promote compliance or other desired behaviour?

Studies have been carried out exploring the C&E intervention strategies employed by various environmental regulators internationally (Gunningham, 2011). On account of the complexity and numerous variables involved, Gunningham (2015) identified a number of distinct C&E models/strategies (or ideal types) and "hybrids" that have been adopted by agencies with varying degrees of success, as reported in regulatory literature (see Table 2.2).

The literature highlights that regulatees can have complex relationships with regulations and

Table 2.2. C&E models, strategies and regimes

C&E models/strategies	Key features and characteristics
Advice and persuasion	Co-operation rather than confrontation
	Conciliation rather than coercion
	Focuses on bargaining, negotiation and persuasion rather than sanctioning
	Legal recourse is rare
	Assumes majority of regulatees are willing to comply voluntarily
Rules and deterrence	Coercive, formal and adversarial style of enforcement and sanctioning of rule-breaking behaviour
	Assumes regulatees are rational actors who respond to incentives
	If offenders are detected with sufficient frequency and penalised with appropriate severity, other potential violators will be deterred
Risk-based regulation	Intervention in a non-compliance event depends on the evaluation of degree of risk to environment and impacts
	Emerging as consensus method for allocation of C&E resources via decision-making frameworks and prioritisation procedures for resource deployment
Meta-regulation	Places responsibility on the regulated community members (often larger organisations) to submit their plans to the regulator and self-regulate, subject to external scrutiny
	Regulator role as “risk manager” and “auditor” of plans
	Supports internal development of self-regulation skills and knowledge
	Inadequacies will invoke a responsive approach (e.g. advice, sanction)
Responsive regulation	Assumes best outcomes if regulators are responsive and adapt to the regulatee’s actions
	Range of approaches including praising good behaviour and capacity-building and resorting to escalation up a pyramid of sanctions if necessary
	Dynamic model in which strengths and weaknesses of various regulatory forms balance out each other
Smart regulation	Expands on the responsive regulation model by suggesting that markets, civil society, other institutions, etc. can act as surrogate regulators and support the achievement of public policy goals more effectively (including cost-effectively) and with greater social acceptance
	Assumes that complementary mixes of C&E strategies and tools are more beneficial than stand-alone strategies
Criteria strategies	Lists of criteria are provided to inspectors and decision-makers to support decision-making on a particular case
	Has no prescriptive formula and the mechanism that is used in a given case will depend on its particular circumstances

enforcement. They present a complex profile of pressures, fear and normative duty. They do not always act rationally and can be limited by the information available (or indeed information overload) and by their cognitive capabilities, referred to as “bounded rationality”, a term used to describe decision-makers who experience limits in formulating and solving complex problems and processing information (Baum, 2002). Additionally, incentives to exceed basic requirements must be obvious (Lomdardo, 2009) and how the various motivational factors influence activity and behaviour should not only be associated with the size and/or sophistication of regulated firms (Thornton *et al.*, 2005).

Environmental regulators could base their choice of intervention strategy on (1) whether or not the regulatee has self-interest in environmental performance that goes beyond regulatory requirements; and (2) the degree of environmental risk posed by the regulatee’s operations (Gunningham, 2011). Four categories could emerge, reflecting whether or not the regulator will have a form of ongoing engagement with the regulatee:

1. high performers: organisations which are highly motivated to innovate, go beyond compliance and develop continuous improvement in environmental sustainability and stewardship;
2. environmental strategists: large, sophisticated organisations self-interested in good environmental performance that requires a licence and which can also be motivated to go beyond compliance to some extent;

3. reactive licensees: organisations with the capacity to cause major environmental harm (i.e. all other regulatees);
4. low-risk enterprises: non-licensed premises that lack the potential to cause major environmental harm (e.g. small to medium-sized enterprises – SMEs – and individuals).

With this distinction, a different intervention strategy, or combination of strategies, might be applied for each of the four groups. For example, high performers may lend themselves to a meta-regulation approach, as this category of regulatees would be motivated to ensure that skills, knowledge and risk management systems to self-regulate are present. This regulatee category could also support the regulator in identifying gaps and opportunities to improve its own environmental policies and tools.

2.3.1 Importance of context

Context has a significant role in determining the effectiveness of an intervention. Different types of environmental problems require different types (or combinations) of regulatory instruments *and* different approaches to C&E. An excellent regulator understands the context and appreciates what regulatory strategy or blend of approaches to employ. Understanding the drivers, motivations, factors and attributes of the regulatee/licensee is key to choosing the appropriate blend of interventions and tools. For example, “social licence to operate” refers to a level of acceptance and/or approval by a local group, community and stakeholders of an organisation and their operations. Social license can be a powerful leverage device in some instances where the organisation’s reputational risk is high. However, a social licence exerts weaker leverage forces on organisations where social pressure is less of a risk (i.e. smaller, not-so-well-known SMEs, for example) (Gunningham, 2015).

A regulated community comprising mixed scales of enterprise adds another layer of complexity and challenge to C&E policy and implementation for regulators. Gunningham (2002) discusses the fact that it is important for regulators to distinguish between SMEs and large enterprises. Larger firms may have (more) dedicated and specialised resources and systems in place to support their compliance efforts.

SMEs can make up a high percentage of all firms within an economy; per business unit they can have a greater effect on the environment. They typically have lower compliance rates and, while the environmental impact from individual SMEs is low, their number does create an aggregate effect. This represents a major policy issue for agencies attempting to apply conventional regulations, as SMEs can:

- lack resources to dedicate to compliance, which can have a high cost;
- lack specialist environmental practice expertise;
- lack awareness of the environmental impact of activities;
- lack awareness of regulatory obligations and technical solutions;
- lack exposure to social pressure from community groups/environmental non-governmental organisations (NGOs).

Because of these factors many SMEs have not integrated environmental practices into their business processes and structures, making it a challenge to build awareness among SMEs of the benefits of environmental best practice. These observations by Gunningham (2002) were based on international literature and field work conducted in Australia. This, coupled with the large numbers of SMEs, makes regular inspections logistically impossible, meaning that many SMEs may fall outside the regulatory net and they may not gain from any policy incentives; SMEs also leave themselves open to enforcement liabilities if an environmental breach occurs. Gunningham (2002) sets out instruments themed around education, self-inspection/self-audit, a systematic approach, buyer–supplier relations, industry self-regulation, incentives and regulation; these regulators can be used to specifically influence SME attitudes and behaviours.

Overall, understanding the context and influencing factors is key to determining what behavioural levers can be used to achieve the policy/regulatory/performance goal(s); this is discussed further in Chapter 3.

2.3.2 Measuring environmental performance

Assuming that the ultimate goal of C&E is achieving optimal environmental performance, it is crucial to possess an ability to measure efforts and impacts.

At a macro level, weighted indices exist to support a comparison of environmental performance across nations. One example is the Environmental Performance Index (EPI), which is a scorecard developed by Yale University and Columbia University in collaboration with the World Economic Forum (Wendling *et al.*, 2018). The EPI ranks 180 countries on 24 performance indicators, measuring how close countries are to establishing two environmental policy goals: (1) environmental health, which measures threats to human health, and (2) ecosystem vitality, which measures ecosystem services and natural resources. The construction of such indices will of course have weaknesses (e.g. choice of weightings for different indicators). That said, the indices do offer a more data-driven approach to identify problems, monitor trends, highlight policy successes and failures, show leaders and laggards in environmental performance, provide insight on best practices, offer guidance for countries that aspire to improve and optimise any gains from environmental protection investments. The EPI has highlighted that there are data gaps, particularly in areas of sustainable agriculture, water resources, waste management and threats to biodiversity.

In the 2018 EPI, Ireland ranked ninth overall with an EPI score of 78.77. A snapshot of the top 10 highest-ranked countries included in the index is shown in Table 2.3.

2.4 National Landscape of Compliance and Enforcement

The Irish Environmental Protection Agency (EPA) is the authority for granting and enforcing industrial emissions, integrated pollution control and waste licenses for specific industrial, agricultural and waste activities in Ireland across a wide scope of categories (including food and drink, intensive agriculture, chemicals, waste, metals and energy). In this role, the EPA publishes updated enforcement reports that concisely outline the regulations, the role of the EPA, strategy, licence assessment and compliance, enforcement tools and methods, and key activities and occurrences and the reports summarise the current nature of the licensed community in Ireland (EPA, 2019a).

2.4.1 National environmental policy and legislation

Rooted in EU directives, Ireland's environmental legislation system is well developed and the Office of Environmental Enforcement (OEE) regulates the activities licensed under the Environmental Protection Agency Act, the Waste Management Act and related regulations and waste water discharge regulations, and supervises local authorities' performance with regard to their statutory functions in environmental protection. The local authorities are the main regulators in protecting the environment. The EPA designed the Performance Framework to help local authorities to continuously improve their C&E duties and activities (EPA, 2019b).

The OEE also prosecutes or assists in prosecuting cases involving significant breaches of environmental protection legislation. It also serves as the quality regulator for drinking water and urban waste water treatment plants operated by Irish Water.

Table 2.3. Top 10 countries with the highest EPI rankings

Country	EPI ranking 2018	EPI 2018 score	EPI policy objective – environmental health: score	EPI policy objective – ecosystem vitality: score
Switzerland	1	87.42	93.57	83.32
France	2	83.95	95.71	76.11
Denmark	3	81.60	98.20	70.53
Malta	4	80.90	93.80	72.30
Sweden	5	80.51	94.41	71.24
United Kingdom	6	79.89	96.03	69.13
Luxembourg	7	79.12	95.07	68.48
Austria	8	78.97	86.38	74.03
Ireland	9	78.77	95.92	67.34
Finland	10	78.64	99.35	64.83

The EPA employs a combination of measures to maintain and secure environmental compliance. The OEE assesses licence compliance on an ongoing basis and uses a variety of tools, such as site audits and inspections, monitoring (i.e. air emissions, landfill gas, noise), desk-based assessments, water sampling and analysis, odour assessment and specialist investigations (e.g. drones, e-noses) (EPA, 2018).

Much of the policy, along with the C&E methodologies and tools, was developed at a time when there was less understanding of behavioural aspects, social contexts and non-regulatory drivers and when less emphasis was placed on these elements (O'Rafferty, 2018). In more recent times, a greater understanding has been developed of these elements and more emphasis is being placed on them to achieve individual and organisational change and increased performance in terms of policy and impact. More recently, the EPA established a new C&E tool – the National Priority Sites List – to help rank industrial and waste licensed sites for priority enforcement.

2.4.2 Case study: National Priority Sites List

The EPA's National Priority Sites List is a system that ranks industrial emission or waste sites in order of nationally poorest performing sites and these are therefore the top priority for enforcement and corrective action. The underlying methodology was developed in consultation with licensees and their representative bodies in 2015 and was further refined in 2016. Every industrial and waste site licensed with the EPA is scored on enforcement factors, including number of complaints, incidents, compliance investigations, records of non-compliance to license terms and serious environmental incidents. It was launched in July 2017 and the number of sites on the list is variable. Published on a quarterly basis, there was an average of 6.5 sites on the list each quarter between July 2017 and June 2019 (EPA, 2019c).

The list is seen as a driver for improved national environmental compliance as well as legal enforcement, resulting in monetary penalties and corrective action. Being included on the National Priority Sites List brings regulated community members into the public eye; this engages a level of social scrutiny towards organisations that may normally avoid the spotlight of community and NGO attention (for instance, if they are SMEs or if they do not supply to the general public).

A preliminary assessment in 2015 using the national priority sites[1] methodology showed that less than 3% of licences were indicated as a "national priority" for enforcement (EPA, 2015). Nonetheless these facilities accounted for a "disproportionate amount of incidents, complaints and non-compliances and received the most enforcement effort in terms of site visits and compliance investigations" (EPA, 2015). The methodology was therefore introduced to assist the EPA in focusing enforcement effort towards a small number of sites within the regulated community. Following its introduction, 15 sites were reported as national priority sites in 2018, with 15% of the non-compliances recorded in that year accounted for by the 15 national priority sites (EPA, 2019d).

2.4.3 Network for Ireland's Environmental Compliance and Enforcement

The Network for Ireland's Environmental Compliance and Enforcement (NIECE) includes participants from the EPA, government departments, An Garda Síochána, the National Bureau of Criminal Investigations, the Police Service of Northern Ireland, Inland Fisheries Ireland, the Health Service Executive (HSE), the Revenue Commissioners and the Director of Public Prosecutions. Representatives from other sectors, including NGOs, businesses and those taking part in producer-responsibility schemes, are also invited to participate where relevant. The OEE (EPA) acts as the co-ordinator of NIECE's activities.

The Network aims to support "improved implementation of environmental protection legislation through enhanced promotion, engagement and collaboration among public authorities" (NIECE, 2018). NIECE acts collectively to co-ordinate a more consistent and effective approach to environmental legislation enforcement in Ireland across three

1 Note: the EPA's "national priority sites system" should not be confused with the US EPA's "National Priorities List" (NPL), the latter of which lists sites containing high-level hazardous waste. Where the US EPA cannot identify the parties responsible or if the company has ceased operation, a federal superfund can be used to fund clean-up operations and to recover the costs where possible legal action is brought against those responsible (US EPA, 2018a).

core thematic areas: waste, water and air/climate (NIECE, 2018).

2.5 International Landscape of Compliance and Enforcement

As highlighted above, the C&E strategies, regimes and models employed internationally by environmental regulators are complex and varied; these are influenced by the context and factors such as the availability of resources, the degree of environmental risk posed and the resulting environmental impact.

An Organisation for Economic Co-operation and Development (OECD) report summarised a study conducted in 2007–2008 that undertook a comprehensive analysis of government programmes designed to ensure compliance with environmental regulations, particularly in the industry sector (OECD, 2009; Science for Environment Policy, 2016). The study investigated the compliance assurance systems of Finland, France, Japan, the Netherlands, the UK, the USA, Russia and China. Effective and efficient compliance assurance (systems) requires the following three key pillars working in tandem:

1. compliance promotion;
2. compliance monitoring;
3. compliance enforcement.

The following study findings highlighted trends in the efforts to improve the C&E programmes and systems:

- increased focus of strategic planning for compliance assurance and assessment on environmental outcomes;
- more integration of environmental permitting and compliance monitoring;
- greater compliance promotion at SME-level enterprises;
- targeting of compliance monitoring on high-risk industries;
- shift towards self-monitoring and self-reporting;
- ensuring enforcement is more proportionate to non-compliance;
- increasing stakeholder engagement, transparency and public disclosure;
- leveraging IT opportunities;
- more analysis of non-compliance to improve overall policy design.

2.5.1 EU environmental policy

With a combined population of over 500 million in the EU, the authority of EU environment policy has widened in both scope and importance over time. The first European Environment Action Programme was agreed in 1973, and currently EU legislation consists of wide-ranging environmental directives covering nature and biodiversity, integrated pollution control, waste management, air pollution, water pollution, noise pollution, environmental impact assessment and genetically modified organisms. Most of this legislation is aimed at limiting negative effects on the environment and the directives are critical tools in fostering sustainable development (DG for Environment, 2014).

Environmental protection was embedded in the EU's Treaty of Lisbon, with Article 191 stating the following four objectives (EU, 2008):

1. preserve, protect and improve the quality of the environment;
2. prudently and rationally use natural resources;
3. promote measures to protect human health;
4. deal with regional and international environmental issues, including climate change.

While the EU has some of the world's most exacting environmental standards, there have been integration challenges in Member States as policymakers struggle to turn ambitious goals and rhetoric into working practice. Some key EU environmental legislation is expanded on briefly in Appendix. 1

The Seventh Environment Action Programme "EAP 2020" is the current EU environment framework (DG for Environment, 2014). The framework is aimed at building a sustainable European society and setting the pace for a sustainable global society through the following three thematic priorities:

1. conserving and enhancing natural capital;
2. becoming a resource-efficient, low-carbon economy;
3. safeguarding citizens from environmental risks to health and wellbeing.

There are two further parallel key priorities (DG for Environment, 2014):

1. "to make the Union's cities more sustainable";
2. "to help the Union address international environmental and climate challenges more effectively".

Cognisant of the importance of encouraging behaviour that goes beyond policy and to ensure national implementation of the priorities, an "enabling framework" has been added with four overarching actions (DG for Environment, 2014):

1. "better implementation of legislation";
2. "better information by improving the knowledge base";
3. "more and wiser investment for the environment";
4. "full integration of environmental requirements and considerations into other policies".

European Union institutions and Member States are now responsible for ensuring that the programme is implemented.

2.5.2 International stakeholders

Some key actors in the international/EU environmental and C&E landscapes are detailed below, based on information synthesised from their public websites.

United Nations Environment Programme

The goal of the United Nations (UN) Environment Programme is to serve as an advocate for the global environment. It is responsible for setting the UN's environmental agenda and promoting subsequent policy implementation; it also works as an advocate of smart governance by integrating environmental policy across UN bodies. The UN Environment Programme fosters partnerships with stakeholders to promote, mainstream and implement environmental goals as part of the 2030 Agenda, the Sustainable Development Goals (SDGs) and other environmental frameworks (UN, 2019).

European Commission DG for Environment and DG for Climate Action

The DG for Environment within the European Commission is responsible for proposing new policies and legislation to help protect habitats, ensure clean air and water, ensure appropriate waste disposal, improve awareness of toxic chemicals and help business become more sustainable. It is responsible for ensuring that EU Member States apply all EU environmental legislation correctly by investigating complaints from NGOs or citizens and helping the state involved to become compliant (DG for Environment, 2019).

The European Commission's DG for Climate Action (DG CLIMA) was set up in 2010 to lead efforts in tackling climate change at the EU and international levels. Climate change was previously handled by the DG for Environment. DG CLIMA's mission includes the formulation and implementation of climate change policy and strategy, taking a leading role in climate negotiations, implementing the EU's Emissions Trading System (ETS), monitoring emissions and promoting a low-carbon economy (DG CLIMA, 2019).

European Environment Agency

The European Environment Agency (EEA) gathers and disseminates environmental data to EU decision-makers as well as the general public. The EEA is run independently from other EU agencies to ensure information is accurate and unbiased. The EEA management board consists of representatives from Member States and Laura Burke from the EPA is the current Chair. The main aim of the EEA is to produce "European, pan-European and regional integrated environmental data and indicator sets, assessments and thematic analyses in order to provide a sound decision basis for environmental policies in the EU and Member countries"; another aim is the "cooperation with candidate and potential candidate countries and those covered by the European Neighbourhood Policy" (EEA, 2019).

Under Irish environmental legislation, the EPA is required to produce a report for the EEA every 4 years. The report assesses the current state of the environment and any pressures placed on it and outlines trends, changes in quality and any links to socio-economic activities (EEA, 2015). Regularity of reporting varies between Member States; some countries submit a State of Environment Report (SoER) annually (e.g. Bulgaria) while others submit every 3 (e.g. Austria), 4 (e.g. Croatia) or 5 years (e.g. Germany).

European Environmental Bureau

The European Environmental Bureau (EEB) is an independent coalition of environmental citizen groups. The EEB network consists of over 140 civil organisations from 30 countries (EEB, 2018). As such a large umbrella group for environmental stakeholders, the EEB is seen as a powerful advocate of pan-European and international environmental policy. Its primary focus is on building effective European processes but the EEB is also involved in influencing global policy through the UN and the UN's Global Goals 2030, as well as the OECD. With the expansion of the EU, the EEB has been working closely with environmental organisations from Eastern Europe to help them incorporate EU regulations into national policies (EEB, 2018).

International Network for Environmental Compliance and Enforcement

The International Network for Environmental Compliance and Enforcement (INECE) is the only international network of environmental compliance practitioners. It aims to maximise C&E capacity through the co-operation of both public and private organisations internationally to advance sustainable development. INECE has over 4000 members (individual and organisational) from 120 countries. It was originally founded in 1989 as a joint initiative between the US EPA and the Dutch Ministry of Housing, Spatial Planning and the Environment.

The INECE's working goals are to promote better enforcement and compliance through closer co-operation, reinforce and streamline the regulatory cycle to ensure compliance and increase awareness of environmental compliance and the need for enforcement as drivers for sustainable development.

As well as working to improve implementation and enforcement of national environmental protection legislation, a key strategic focus of INECE is to improve the effectiveness of international agreements by sharing working knowledge and creating efficiencies by agreeing international best practices. INECE working groups have negotiated multilateral agreements between nations, making infractions and penalties more standardised and allowing cross-border investigation and enforcement. Internationally agreed frameworks for what the expected standard of environmental enforcement should be also act to create a level playing field for regulatees while fostering political action to strengthen implementation (INECE, 2019).

European Union Network for the Implementation and Enforcement of Environmental Law

IMPEL is a network of European environmental regulators and non-regulatory body observers established by the EU in 1992 to encourage effective enforcement of environmental legislation through co-operation and exchange of implementation and enforcement experiences between field inspectors. Network membership is drawn from all EU Member States, Turkey and Norway, as well as from practitioners from the European Commission.

IMPEL's core activities include information exchange and training, developing common views on current legislation and minimum inspection criteria, presenting expert opinion on the practicality and enforceability of early-stage proposed legislation, and helping new countries quickly reach compliance with EU standards (IMPEL, 2019).

2.6 Emerging Trends in Compliance and Enforcement

Effective environmental compliance legislation must be well designed, dynamic and properly enforced. Some of the emerging topics in C&E of environmental legislation are as follows:

- utilising blends of new *intervention models and strategies and hybrids* (as discussed above) appropriate to the context, risk profile, intended outcome and available resources;
- leveraging *technology developments* in a new "data" era (i.e. "next generation" approach);
- moving more towards trust-based and ethics-regulating business models;
- adopting *behavioural insight* into policy development and interventions;
- adopting a *GBC* mindset/culture.

2.6.1 Next generation approach

In this report, "next generation" refers to the next stages of the evolution and development of systems, processes and technologies. For example, some

of these next generation advances mean that there is now increased availability of and access to computational resources attributable to cloud computing, increased connectivity of devices as a result of the internet-of-things, greater availability and production of data from various sources, faster digital communication channels and so on. With increasing availability of next generation technology, new and innovative ways of applying and utilising technology and data have also emerged, aimed at increasing overall environmental performance. Technologies are already changing how regulators, industries and citizens are monitoring and detecting changes to the environment. Technology is more capable of delivering data that are more accurate, more complete, more immediate and more relevant than ever before.

Next Generation Compliance is a US EPA programme that uses advanced monitoring technology as part of an integrated strategy to improve environmental monitoring and compliance and to strengthen enforcement and operational transparency by making data publicly accessible (US EPA, 2018b; see Box 2.1 for a next generation case study). Widespread monitoring and use of data analytics mean trends can be tracked and risks targeted; furthermore, because datasets are available in real time, newly arising issues can be identified and resolved. Next Generation Compliance leverages advanced monitoring and electronic reporting to not only speed up the oversight process but also add transparency (e.g. online data can easily be made publicly available), and enforcement techniques can be kept up to date and innovative (e.g. next versions of software can seamlessly be rolled out). As part of the approach, regulations have been streamlined and applications, inspection reports, permits, etc., can all be electronically submitted, making the process much quicker and easier to implement. The use of advanced technology to detect emissions means that datasets are more accurate and can be made available to all stakeholders, from regulators and regulatees to the community and interested NGOs.

However, key to the effectiveness of Next Generation Compliance is the understanding that it is not simply the adoption of new technology to be added to existing working practices; rather, it encompasses new streamlined practices designed to be constantly reviewed and updated with five (equally important) interconnecting tenets (see Table 2.4) that work together to ensure the ongoing success of compliance programmes (see Figure 2.1).

INECE has been an active proponent of Next Generation Compliance methods, working closely with national agencies and reporting to them on the new C&E strategies that become possible through its implementation. INECE, being a driving force behind the US EPA and the international adoption of Next Generation Compliance, underscores the importance of independent working groups, such as INECE, in keeping agencies appraised of best practice and future trends.

Some unintended effects of Next Generation Compliance have been observed (Tasch, 2017), some of which are detailed below:

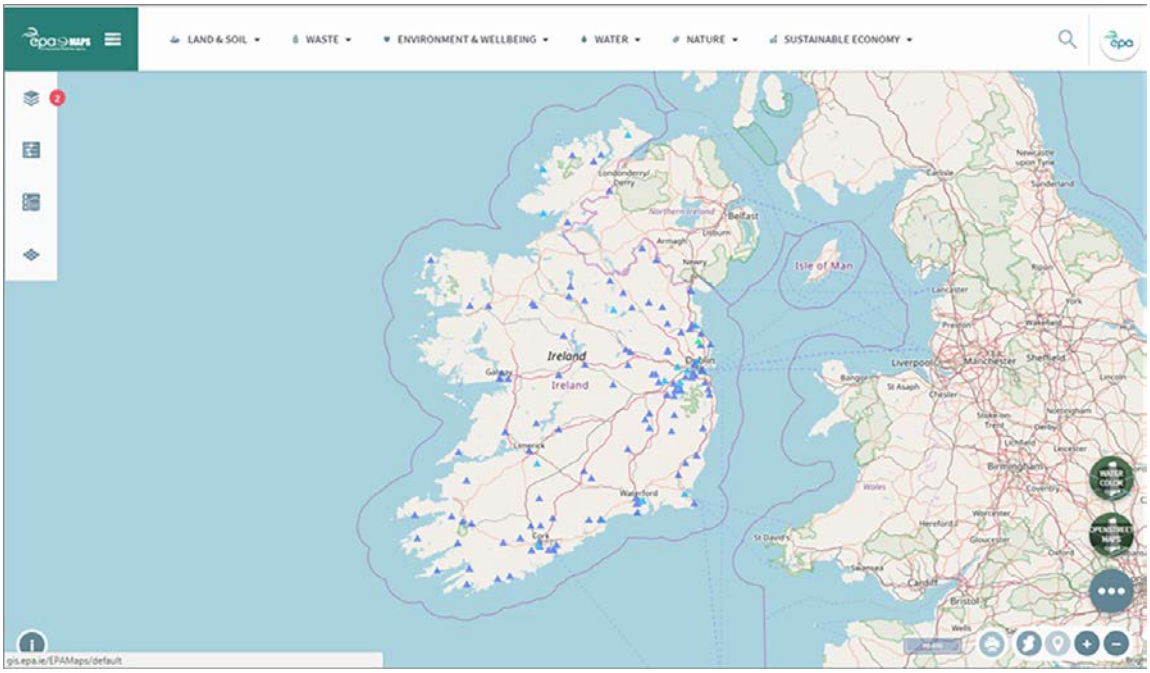
- While advanced monitoring means fewer physical inspections, the regulatees are expected to carry the time, financial and infrastructural burdens of setting up monitoring equipment; they are then also expected to self-monitor by analysing and interpreting the collected data.
- Greater community awareness of minor issues could counter-intuitively lead to increased pressure and a reduced social licence for companies, because in being compliant their data are shared publicly and their activities are more widely known.
- Information is also being used as evidence against neighbouring companies where data collected by the regulatee show a breach that they are demonstrably not responsible for.
- When regulators find a breach from a neighbouring firm, they regularly request that extra data be collected, so the more data regulators get, the more they require.
- Instead of simplifying the process, often more in-depth questionnaires/reports are requested and these require more resource expenditure from the regulated firm with the risk of them becoming disillusioned with the process.

2.6.2 Trust- and ethics-based business models

Hodges (2016) summarises best practice for public regulators to affect the ethical behaviour of regulated organisations in contemporary democracies. These five points rely on the acceptance of a collaborative approach based on shared ethical values between

Box 2.1. Next generation case study: mapping and visualisation

TOXMAP is a set of interactive environmental health maps leveraging data on toxicology, hazardous chemicals, environmental health and toxic releases across the USA (US National Library of Medicine, 2018). Data come from multiple sources including the US EPA's Toxics Release Inventory, federal Superfund sites, coal and nuclear power plant emissions and the Nuclear Regulatory Commission, as well as from Canada's National Pollutant Release Inventory. The information is displayed using a web application, and as TOXMAP is related to environmental health issues, it is hosted by the US National Library of Medicine, which is a section of the Department of Health and Human Services. The maps are publicly available online to encourage all stakeholders to freely explore information. To encourage novice users to use the maps, the interface and usability were deliberately designed to be straightforward and easily accessible. In addition, filters can be used to hide unwanted data and show specific years or sites, and local or national maps can be outputted for offline use.



Source: EPA, 2019e.

The Irish EPA uses a similar geographic information system (GIS) for mapping environmental data (EPA, 2019e). The GIS uses advanced or next generation visualisation technology to present complex metadata in an easy-to-understand visual format. This enables fact-based judgments while also making it a perfect tool to encourage public, community and NGO engagement through informed discourse. Before the EPA initiated the custom GIS, national regulators and policy planners used a pan-European system known as Corine (Coordination of Information on the Environment). However, the mapping from Corine was not accurate enough to allow meaningful decision-making based on realities on the ground; this underlines the value of keeping up to date with next generation technological advances.

Table 2.4. Next Generation Compliance tenets and descriptions

Tenet	Description
Regulation and permit design	To improve compliance and environmental outcomes, regulations and permits are designed to be easier to implement and should be constantly under review. Giles (2013) references "simplicity and clarity" and "real world" considerations in drafting compliance regulation, as the easier it is to understand the rules, the more compliant the regulated community will be.
Advanced monitoring	Advanced emission monitoring technology is used to detect compliance breaches as they happen rather than after the fact.
Electronic reporting	Regulatees report electronically so that data and information can be efficiently managed and the datasets are more accurate and complete.
Innovative enforcement	By using the latest data analytics and targeting techniques, it is possible for regulators to achieve more complete coverage of the regulated community.
Transparency	By being transparent with emission and enforcement data, the regulators and wider community can be reassured of proper and fair handling. Accountability is key to generating acceptance.

Source: USA EPA, 2018b.

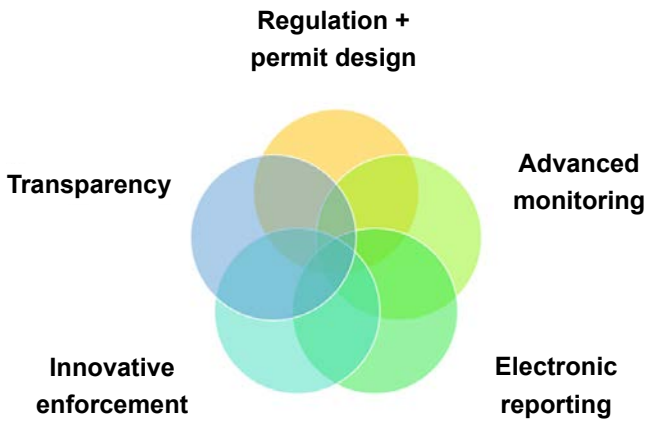


Figure 2.1. Next Generation Compliance tenets.

regulating officials, regulated organisations and stakeholders.

1. Regulation must support ethical behaviour. Regulation alone cannot guarantee compliance; an ethical business culture is essential and must be nurtured.
2. Trust must be grounded in evidence. To build trust on all sides the regulated organisation needs to demonstrate ongoing commitment to ethical behaviour at all organisational and supply-chain levels. To facilitate this constant flow of evidence, the regulatory system needs to systematically record evidence of ethical behaviour.
3. Open collaborative culture. Reporting of the maximum amount of unbiased information (environmental successes and failings) that facilitates learnings should be ensured.
4. Regulatory systems need to be based on collaboration. Regulations are most effective in supporting an ethical regime when based on collaboration between all parties (regulated, regulator and stakeholders). This also maximises compliance, performance and innovation.
5. Immoral behaviour should be punished. All parties share ethical values, agreeing that society should be protected from those who wilfully breach the law, and therefore proportionate action is expected.

There is a substantial body of empirical research supporting the effectiveness of the "soft enforcement" approach to compliance (Braithwaite and Ayres, 1992; FCPA Professor, 2015). However, it does require a high level of professional competence by regulatory officers, as they must exercise regulatory discretion based on context. The UK's statutory code of practice

for regulators underlines the importance of adopting a proactive approach to ensure compliance, telling regulators to support those they regulate and supply clear information and guidance, so they can comply and grow.

Those regulated should not need to be aware of every piece of legislation if they work within a culture where ethical behaviour is the norm. Then, once faced with a compliance breach, they will deal with it openly and learn from the incident. Decisions are made by people not organisations and the structures within organisations can affect decisions and so regulators need to split their focus between the behaviour of individuals and the behaviour of organisations. This can be done by using behavioural psychology and economic incentives while reinforcing ethical values to ensure good decision-making. People obey rules, especially when the rule corresponds to the individual's internal moral value system, when the rule is seen as having been made fairly and when the rule is seen to be applied in a balanced and fair manner.

2.6.3 Behavioural insight to policy development and interventions

Internationally, as reported in a recent OECD report, there has been an increased integration of behavioural science, economics and insight expertise into institutions, government bodies and agencies to support improved public policy (OECD, 2017a). Behavioural insight refers to the approach of combining insights from psychology, cognitive science and social science with empirically derived results to gain knowledge on how humans actually make choices (OECD, 2017b). Globally, more and more behavioural "units" are providing their insight to support better policymaking, intervention design, implementation and outcomes for wider society (see Figure 2.2). Nationally, behavioural insight has been applied by the Central Bank, the Economic and Social Research Institute, the Office of the Revenue Commissioners, the Sustainable Energy Authority of Ireland (SEAI) and the EPA.

However, the OECD report also highlighted that, while behavioural insight has been applied most commonly during the *implementation* phase of the policy cycle (a five-step cyclical approach to regulatory policy, management and governance, from agenda setting through to enforcement) (see Figure 2.3), it has rarely been applied in the area of *agenda setting* and *enforcement* and there is a paucity of examples to study in those areas.

Behavioural insight has been used specifically to help tackle environmental problems by encouraging energy, water and waste conservation and efficiency, promoting more sustainable transport choices, incentivising environmentally sustainable food consumption and increasing environmental regulatory compliance (OECD, 2017b). The Australian Government Department of the Environment has investigated and trialled (in the field) interventions aimed at increasing environmental reporting compliance among regulated entities and motivating businesses to become voluntarily certified as carbon neutral. For both interventions, simplification and framing of information were the key behavioural levers targeted (OECD, 2017c).

Purcell (2016) highlights that many departments have begun behavioural economics projects to improve policy design, implementation and operations. The Department of Public Expenditure and Reform Irish Government Economic and Evaluation Service Unit helps drive the development of behavioural economics in Irish policy design and is involved in supporting and developing toolkits to help departments through the initial phases of behavioural change projects (Purcell, 2017). Some of the problems investigated include missed appointments, poor questionnaire response rates, non-registrations, information gaps, resource scheduling and non-compliance to regulations. Behavioural insights and design elements were used to better understand the factors contributing to the problems and interventions were trialled and studied to monitor the desirable effects and outcomes (e.g. redesign of forms, the presentation of more salient information, simplification of processes).

From an Irish context, O'Rafferty (2018) highlights some key behavioural insights that are informative for future policy intervention and service design in the context of resource efficiency and sustainable behaviour change in business and communities. Likewise, these insights are also pertinent to the topic of GBC behaviour and intervention design:

- salience (e.g. if a GBC strategy is to be adopted, the topic should be prominent to decision-makers);
- frictions (e.g. removing barriers);
- measuring value (e.g. focus on opportunities that add value to the "triple bottom line");

Figure 2.2. OECD map of the application of behavioural insights to public policy: focus on Europe.
Source: Naru, 2018.

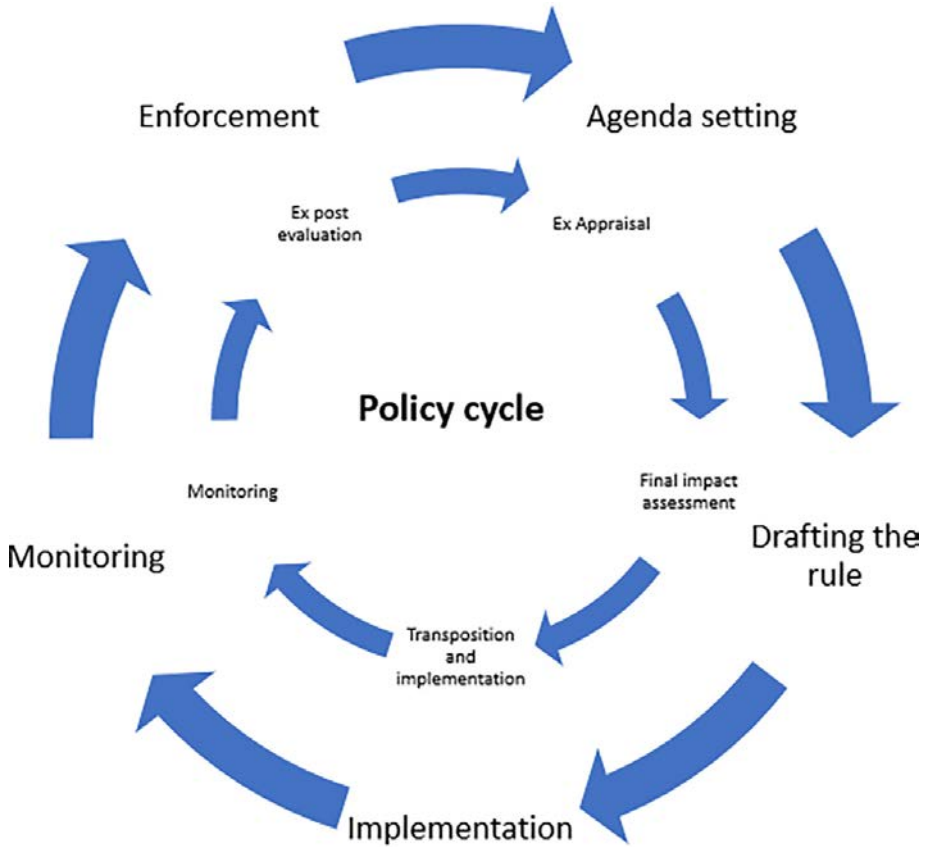


Figure 2.3. Phases of the policy cycle. Adapted from OECD, 2017a.

- framing (e.g. repositioning "compliance as a cost" to an "investment adding long-term value");
- messenger (e.g. scope for trusted "champions" who promote GBC strategy and approach);
- optimal moments (e.g. leverage key business milestones such as a capital investment project);
- skills and competencies (e.g. build up capacity and knowledge).

2.6.4 Going beyond compliance

What does "going beyond compliance" mean?

"Going beyond compliance" refers to organisations *willingly* and *deliberately* searching out ways to exceed the regulatory requirements. This is done by fostering an innovative and communicative culture, analysing working processes at all levels in the organisation and instigating and cultivating new management systems. In the context of environmental compliance, a key focus of GBC is to take ownership of (environmental) risk and managing or minimising any potential systems failures (Prakash, 2001).

Different opinions, assumptions and mindsets exist surrounding the term GBC, which means that a clear definition is elusive. Regarding GBC, is the underlying assumption that the current compliance ideologies, models and systems are functioning as required? Is now the time to progress to the next best thing? Or are compliance ideologies, models and systems broken and is it time to move on to something better? Perspectives can differ also; compliance can be viewed as a framework for "stopping bad things from happening" or "helping make good things happen" and GBC could be viewed as a framework that helps actors "get better" rather than "less bad". It is evident that GBC is challenging and must build on strong foundations of compliance (Sedex Supply Chain, 2018).

Going beyond compliance is not the same as over-compliance. Over-compliance usually occurs out of pragmatic necessity, for instance if an organisation uses standard work practices, machinery or technology in different work sites across jurisdictions that attract varying degrees of environmental

Figure 2.4. Competitive environmental management strategies. From Orsato, R.J., Competitive environmental strategies: when does it pay to be green? *California Management Review* 48(2), pp. 127–143, copyright © 2006 by The Regents of the University of California. Reprinted by permission of Sage Publications, Inc.

regulation; in this case, to keep working practices standardised the firm may choose to over-comply.

Why go beyond compliance requirements?

Orsato (2006) describes "beyond-compliance leadership" as one of many generic competitive environmental strategies that management can elect to follow as a means to gain a competitive advantage by focusing on "organisational processes" and "differentiation" (see Figure 2.4).

The same internal and external factors in, barriers to and drivers for environmental performance exist for firms when contemplating and making decisions to "go beyond compliance" regulations. ECI (2016) suggests that organisations willing to go beyond compliance will always be a minority of regulatees, but there are significant forces at work internationally that are driving firms to adopt a GBC mindset and culture. Kagan *et al.* (2003) suggest a wide range of motivations/ drivers exist for firms to work beyond basic levels of compliance, which include:

- tightening environmental regulations;
- rising international standards;
- fast-growing public scrutiny and subsequent reputational risk (social cost);
- increasing financial costs of misconduct.

These drivers could all be classified as fear-based or negative drivers. The positive forces encouraging firms to "go beyond compliance" are less obvious; for example, for many firms GBC can be a public relations and marketing opportunity to gain an improved reputation, resulting in sustained long-term company value and resilience.

Legislation is updated regularly in the fast-evolving landscape of contemporary environmental protection and business managers often complain about the time and logistical implications of keeping up to date with new regulations. By adopting a GBC approach, management teams are mitigating the risk of inadvertently contravening new or updated legislation.

From the regulatee's point of view there are five key goals behind instigating a GBC programme:

1. sustain organisational integrity and reputation (through portrayal as a responsible business);
2. minimise risk of wrongdoing by employees, contractors and suppliers (through thorough processes);
3. maximise the likelihood that wrongdoing will be detected or reported (process is not simply a box-ticking exercise and there is a proactive reporting culture);

4. increase the probability that the organisation will process any wrongdoing in a responsible manner (by correcting issues, updating processes and self-reporting violations to authorities);
5. offset penalties for regulatory infractions that may occur (by showing every possible precaution is being taken).

For the organisation to truly "go beyond compliance" it means that a higher level of environmental protection and performance is achieved rather than that simply an extra layer of bureaucracy has been added. For this distinct difference to occur, beyond compliance initiatives cannot simply be "go-through-the-motions" processes. There must be cultural acceptance of environmental best practices, so staff actively support compliance, through prevention, detection and response mechanisms. In addition, the systems used must encourage communication across all levels within the organisation about everyday challenges faced and ongoing improved processes for better compliance (ECI, 2016).

Gunningham (2007) refers to "steering not rowing", in other words, using third-party regulators and industry groups motivated to maintain high standards within a community of members, with high achievers being flagged to the public in marketing campaigns or conspicuous award ceremonies. Most recognised examples would be in the food service industry, where restaurants apply for hygiene and culinary excellence awards, with an annual plaque going on display outside the premises.

Enforcement will only ever achieve adherence to minimal standards; in no way does it encourage exceeding legislative standards. While GBC should be encouraged for most legislation, it is especially critical in the case of environmental protection. Incentive schemes can be used to encourage the regulated community to go beyond the minimum required standard. Generally, the purpose of incentives is to reduce barriers and to empower and augment drivers, thus making it easier for companies to make decisions to improve their environmental performance, address the "triple bottom line" and create more long-term value.

2.7 Summary

The environment C&E landscape has evolved significantly over the last number of decades, with policy and legislation serving as a core driver. The nuances and complexity of C&E have also evolved, leading to a better understanding of the barriers and challenges, drivers and incentives, and behavioural and contextual factors at play. Policy, strategies and approaches have been developed and evolved to support C&E activities given the scope, resources and powers available. Considering the environmental, social and economic pressures we face globally, there is a need to transition beyond "business as usual". GBC is an approach to help deliver greater organisational performance and long-term value across the triple bottom line. The next chapter focuses on organisational performance, influencing behaviours and tools for GBC, and highlights a selection of GBC case studies.

3 Compliance, Behaviour and Tools

In this chapter, we highlight key elements that are supportive of GBC and which improve environmental performance for an organisation, with a focus on behavioural dimensions or aspects of these different elements and tools. Some policy and interventions aim to change or shape behaviour using “hard instruments”, such as legislation and regulation, to make us act in a certain way. These hard instruments are often very effective but can also be costly and in some cases inappropriate. On the other hand, some policy and interventions employ less coercive instruments, such as incentives and information, which can also be very effective.

Section 3.4 includes several GBC and environmental excellence case studies so as to highlight particular characteristics and key elements of the various approaches.

3.1 Organisational Performance and Behaviour

A key goal of GBC is to achieve improved environmental performance and benefit from the positive impacts it can bring. However, environmental performance is a subcomponent of overall organisatioal performance and it is important to understand what parameters (and potential behavioural levers) affect overall organisational performance to help support GBC approaches and initiatives strategically. Any performance is a function of the external environment, the motivations and the capacity (Figure 3.1 shows one example of a framework of factors shaping organisational performance).

Organisations operate within the “context of unavoidable constraints” (e.g. limitations of information, time, capacity and experience). O’Rafferty (2018) outlines a simplified framework of factors to consider when driving business behaviour, which include:

- capacity (i.e. decision-making processes, skills and competencies);
- culture (e.g. pervading organisational culture and subcultures);
- structure (e.g. tacit structures of the organisation vis-à-vis procedures, history and ethos);

Figure 3.1. Organisational performance parameters. Source: Lusthaus *et al.*, 1999; Universalia, 2019.

- social context: (e.g. relationships that the business engages in with other organisations and its supply chain).

When undertaking any form of (organisational) change there are forms of competing forces at play: those that act as driving forces for change and those that resist the change (see Table 3.1), as highlighted by Mustafa (2013). The authors of this report recommend that, when designing and implementing behavioural tools, it is important to reduce resistance and augment driving forces where possible; in other words, remove barriers and challenges and support drivers and motivating factors.

3.1.1 Distinction between individual, group and organisational behaviour

A decision to "go beyond compliance" as an organisational strategy is made by an individual or group and/or organisation. Human behaviour and decision-making can be irrational, systematically biased and habitual, while also heavily influenced by our environment and signals received consciously and subconsciously via social norms, incentives, motivations, values, framing and/or feedback (Behaviouraleconomics.com, 2018). The UK government-sponsored Behavioural Insights Team (BIT) summarised nine (non-coercive) influences on behaviour within its MINDSPACE checklist (included in Appendix 2).

However, it is important to highlight that organisational behaviour differs from individual behaviour, and some behavioural economics interventions reported (such as "nudging" mechanisms targeting cognitive biases) are not so useful when targeting organisational behaviour.

As highlighted by O'Rafferty (2018), organisations often make decisions strategically, co-operatively and more slowly and they thus display more rational behavioural characteristics than individuals. That said, organisations are not "immune from cognitive biases" and can be influenced by incentive, priming and saliency, for example (O'Rafferty, 2018).

Depending on the context or parameters of the enterprise, the decision to go beyond compliance and improve environmental performance may be made by an individual (i.e. a managing director) or more collectively through a designated group and pre-defined approval process, for example. This highlights the challenge of implementing behavioural tools, as they will vary in efficacy and impact depending on the context.

3.2 Factors That Drive Compliance

It is crucial to understand the factors that lead organisations to comply with environmental regulations in order to effectively design and manage regulations and target appropriate interventions. A regulatee's compliance with regulations is based on two core elements: its willingness and its ability to comply (Parkey, 2014). According to Parkey, willingness is influenced by instrumental, social and normative motivations. Instrumental motivations are cost–benefit and economic calculations that weigh up the benefits of compliance versus the costs of doing so and the resources sacrificed. Social motivations are based on concern over social standing, perception and relationships across stakeholders (i.e. peers, clients, regulator and community). Normative motivations are based on the regulatee's internal values, morals, principles and culture regarding "the right thing to do".

Table 3.1. Common driving and resisting forces in organisations

	Internal	Environmental
Forces for change	• New technology • Changing work values and patterns • Creating new knowledge	• Competition • Changes in consumer demands • Resource availability • Social/political/cultural change
	Individual	**Organisational**
Forces resisting change	• Fear of the unknown • New learning • Disruptions to stability • Distrust of management	• Threat to power structure • Inertia of organisational structure • System relationships • Sunk costs and vested interests

Source: Mustafa, 2013.

Aside from these motivational aspects, the regulatee must also possess the ability or operational capacities (both knowledge and technology) to comply with the regulations. Operational aspects include awareness and understanding of the rules and requirements, physical and technological assets, management capabilities and systems. Deficiencies in any of these areas can add pressures to organisations in maintaining compliance, never mind GBC requirements (see Figure 3.2, which summarises Parkey's findings).

A synthesis of literature findings by Gunningham (2015) in the area highlights that a few core factors acting together are sufficiently powerful to induce high levels of compliance across a wide array of programmes and contexts:

- regulation-induced fear of legal punishment;
- social licence pressures;
- the normative commitments and sense of obligation of the majority of regulated enterprise managers.

Note, these have all strong *behavioural* dimensions/ aspects. A goal of improving GBC behaviour would be supported by increasing *influential* motivating factors and supporting operational aspects.

3.2.1 Influencing factors

Understanding what determining or influential factors are at play is important in order to target them to drive the desirable change in individuals and/or organisations. According to IDAE (2009), influencing factors can be categorised as one of three main types:

1. Motivating factors are individual, internal drivers of behaviour, such as awareness, knowledge, social influence, attitude, intention and perceived capabilities.
2. Enabling factors are the external behavioural constraints, such as external financial, technical and organisational resources.
3. Reinforcing factors are consequences of actions that provide positive or negative feedback to individuals for continuing their behaviour, such as feedback from powerful stakeholders and impacts of past behaviour.

Different interventions, tools or instruments are designed to target these different factors in order to affect behaviour to produce a desired outcome. For example, a subsidy payment helps remove an external financial barrier and acts as an enabling factor for an organisation.

"Social licence to operate" can be a very powerful tool to serve as a reinforcing factor. The external stakeholders to an organisation (e.g. customers, suppliers, regulators, strategic partners and competitors) can affect an organisation's social licence to operate; they thus can be utilised as a "lever" to influence behaviour. Social licence is usually thought of at a unit level, where an individual site is given permission to operate by the community of

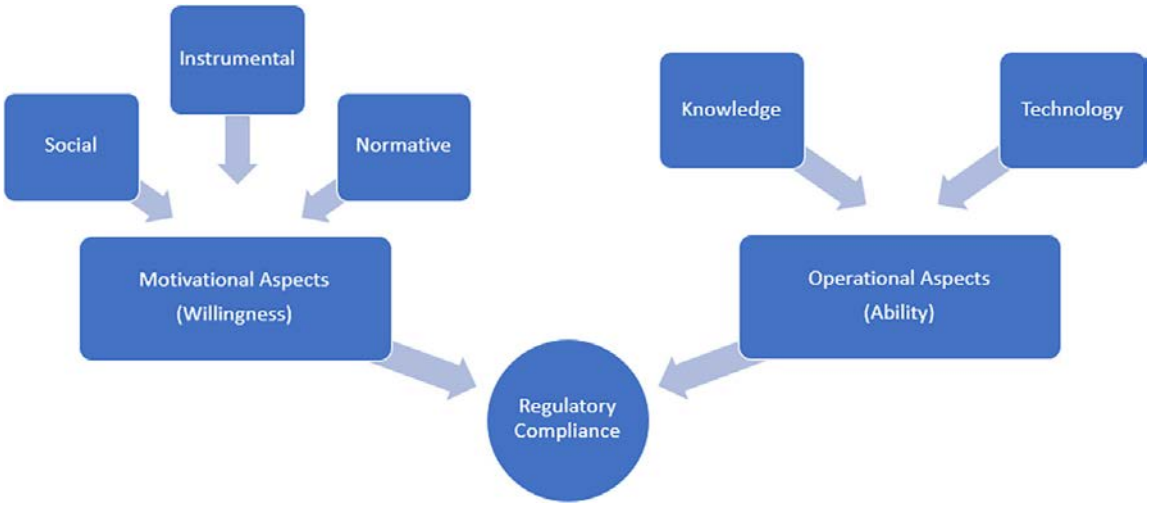


Figure 3.2. Motivational and operational aspects of regulatory compliance in organisations. Source: Parkey, 2014.

stakeholders. However, Dare *et al.* (2014) view it as a *"*continuum of multiple licences achieved across various levels of society*"* (e.g. local community, NGOs, wider community, local government), so the licence is an aggregate from multiple stakeholders and it changes over time as expectations change and therefore does not have a single set of expectations or norms. If an organisation's operations, processes and underlying values match the various expectations of all stakeholder groups, then they are seen as legitimate and the inferred licence to operate in the community is given. Community stakeholder engagement is an important driver for GBC, as, despite their broad range of self-interests, all groups would agree on the value of environmental best practice.

In some cases, the influence of the social licence may be more demanding than those imposed by regulation, resulting in GBC even when sometimes unprofitable (Leigh, 2014). Nike, for example, received significant damage globally to its brand as a result of the widespread publication of its work practices in developing countries by activists such as Global Exchange, which deemed its activities as exploitative of local labour (Van Yoder, 2001).

3.2.2 Instruments and incentives for environmental performance

Regulation will always be an important driver of environmental behaviour, but its effectiveness is increased by use of incentives (Rademaekers *et al.*, 2012). Effective enforcement ensures a minimum standard of environmental performance, so by combining regulation with targeted incentive schemes, a positive cycle of organisational improvement can be generated.

To understand how incentives can influence companies to improve environmental performance, Rademaekers *et al.* (2012) studied the Organisation Environmental Footprint (OEF) initiative instigated in 2010 by the European Commission as a technical methodology for organisations to use as a common guide to calculate their environmental footprint by tracking performance and improvements. The study outlines all internal drivers for and barriers to and external drivers for and barriers to improved environmental working practices and the common theme is that all these factors (drivers and barriers) require a level of organisational change.

Incentives can be used to empower the drivers and reduce the influence of barriers by offering financial gains or to market a more positive company image. Barriers can be further reduced by creating smarter regulation and improving the availability of information. The European Commission grouped incentives into three types, administrative, economic and reputational:

1. administrative incentives:
   - extending the length of permits while reducing inspection frequency and depth;
   - setting manageable levels of administrative upkeep;
2. economic incentives:
   - reduced permit charges;
   - decreased taxes and levies;
   - availability of soft loans and grants;
   - preferred supplier status through sustainable procurement standards;
   - reduced insurance costs;
   - greater access to private funding;
   - free business support consultancy services;
3. reputational incentives:
   - carbon/environmental footprint disclosure schemes;
   - sustainability league tables, industry awards.

Elsewhere, IDAE (2009) describes four main instrument categories which are available to regulators to adjust behaviour – corresponding to the influencing factors at play – within a target group (see Figure 3.3).

Regulatory instruments are quantitative or technical controls issued by political, administrative and authoritative bodies in the form of mandatory restrictions and/or requirements. Regulations issued under the environmental framework code typically act as the basis of a country's environmental policy. Covenants and agreements are a more voluntary, "softer" form of regulatory instruments. Specification (technology)-based standards and performance standards (which specify the outcomes to be achieved but not how to achieve them) are the two most common regulatory strategies. However, both have a substantial limitation in that they most often only require the minimum standards to be achieved and lack incentives or encouragement to adopt continuous improvement, industry best practice and/or a "go beyond" approach (ECI, 2016). In contrast, many economic incentives do provide continuing incentives for improvement.

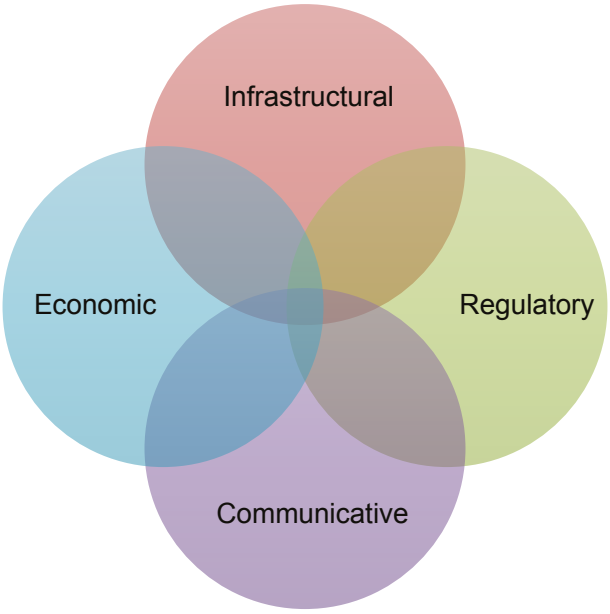


Figure 3.3. Instruments available to target influencing factors to affect behaviours.

Economic instruments affect the costs and benefits of the choices available and decisions to be made by those entities concerned. Taxes, fees, tradeable emission allowances, deposits as securities and various forms of grants and subsidies are all different forms of economic instruments.

Infrastructural instruments are infrastructure changes, new technical approaches and solutions. Transitioning to digital platforms and templates for data and reporting submission would be one example of an infrastructural instrument; traffic-calming measures would be another example of an infrastructural instrument to encourage safer driving behaviours to improve road safety.

Communicative instruments target knowledge transfer, or persuading, convincing and/or encouraging people to behave in a desirable way. Communication instruments work better in combination with other instrument types (i.e. economic/regulatory/ infrastructural instruments). In addition, the more customised the communication, the stronger the effect it has on influencing behaviour.

3.3 Tools for Going beyond Compliance

As discussed earlier, regulatory compliance in organisations is underpinned by motivational and operational aspects and contributing factors (Parkey, 2014). This section focuses on tools and approaches that support these aspects, but which, more specifically, may help support the development of a GBC approach and culture.

3.3.1 Culture and champions

Baines Simmons Ltd (2015) argues that internal champions in power positions are a proven driver for organisations to go beyond compliance and active leadership creates cultural buy-in from staff so they willingly commit to behaviours and practices that may add to their workload (such as creating and managing new procedures and tools) because they can see the value for the organisation and society at large. To realise this value, change leaders need to be credible communicators, collaborate with the team to find agreed objectives and provide feedback and, importantly, recognition. With this cultural buy-in, GBC becomes a core organisational value and integral part of all operations and processes. In a proactive culture, all employees act and feel responsible for the organisation's environmental effects. A cultural feeling of empowerment often follows where many organisations have "learned helplessness" behaviours towards legislation and compliance-enforcement GBC firms become very flexible and responsive to external change forces. The outcomes from a proactive beyond compliance culture will be tangible enough to be benchmarked across all levels of the organisation.

Once established, GBC becomes a core value, often acting as a driver for ethical action and GBC in other fields.

Key traits of a beyond compliance culture (Baines Simmons Ltd, 2015) are the following:

- top leadership who drive GBC behaviours to become a core value;
- team training to understand responsibilities within and beyond legislation;
- a shared common vision and the significance and importance of GBC is understood and valued;
- GBC is managed and fully owned at all levels; all staff are engaged in a culture of reporting and taking responsibility;
- trust at and between all organisational levels and functional areas;
- there is demonstrable organisation-wide learning; it is a questioning and learning culture – seeking improvements and learning from experience;
- commitment to continuous improvement and GBC;
- commitment to ongoing measuring of performance;
- the culture is flexible to change (by being empowered rather than helpless).

3.3.2 Management systems, standards and frameworks

Environmental management systems and International Organization for Standardization standards

Environmental management systems (EMS) are platforms that have the objective to help implement sound and proactive environmental management. EMS offer structured and systematic approaches to identify and deal with environmental issues as part of business operations. The International Organization for Standardization (ISO) 14000 family is a group of standards relating to environmental protection and it provides firms looking to mitigate their effect on the environment that voluntarily sign up to the ISO 14000 standards with practical tools. For example, ISO 14001:2015 is the current iteration of the standard specifying what systematic processes need to be implemented through the EMS to enhance an organisation's environmental performance. The other standards within ISO 14000 focus on specific process obligations, including audits, communications, life cycle analysis and performance against major issues (e.g. climate change). For example, reasons to use an ISO EMS can include enhancing environmental performance, fulfilling compliance obligations and achieving environmental objectives. Research has shown that firms using the 14001:2004 standard were on average more profitable than comparable organisations without certification (Ferron ***et al.***, 2012).

The ISO 26000 standard was published in 2010 and, unlike most international standards which implement a management system, provides guidance to organisations on social responsibility. The standard aims to encourage organisations to go beyond legal compliance and implement socially responsible behaviours into their strategy (Theron and Lyons, 2010).

Eco-Management and Audit Scheme (EMAS)

Launched by the European Commission in 1983, the Eco-Management and Audit Scheme (EMAS) is a voluntary environmental management tool for organisations to assess, manage and improve environmental performance (EC, 2010). Updated in 2010, the current iteration, EMAS III, uses six key environmental areas to assess an organisation's environmental impact: (1) energy efficiency, (2) material efficiency, (3) water, (4) waste, (5) biodiversity and (6) emissions. The ISO 14001 framework is used as an integral mechanism of EMAS assessment and so organisations that are EMAS-compliant automatically meet ISO standards. EMAS assessment is validated by independent environmental consultants with periodic performance updates. As continuous improvement is tracked with the system, stakeholder engagement is an integral part of the system.

Product Environmental Footprint and Organisation Environmental Footprint

The European Commission's DG for Environment's Product Environmental Footprint (PEF) and OEF methods are new frameworks being rolled out to create a standardised method of calculating the environmental footprint (including carbon) of organisations and specific products (EC, 2018). This gives the private sector in EU Member States a common benchmarked and transparent methodology for their environmental performance.

The PEF and OEF are core elements in the Europe 2020 Strategy "A Resource-Efficient Europe" (EC, 2011), which aims to increase productivity from Europe's resources while decoupling environmental impact from economic growth. Therefore, the aim of both PEF and OEF is to reduce the environmental impact of goods and services. These are assessed by reviewing the interactions with the environment at each point throughout the entire life cycle, right from primary resource extraction through to disposal and recycling. This exhaustive life cycle survey is necessary, as environmental impact can occur "upstream" or "downstream" from production, and so any impact may not be immediately obvious.

Outcomes from the PEF or OEF analysis can then be used for sector-specific declarations through the OEF Sector Rules. An environmental footprint-labelling system for consumer awareness is the next part of the PEF and OEF schemes under assessment.

Lean thinking

The term "lean thinking" was coined by James P. Womack and Daniel T. Jones (Womack and Jones, 1996) to capture the essence of their in-depth study of Toyota's fabled Toyota Production System. Lean thinking is a way of thinking about an activity and seeing the waste inadvertently generated by the way the process is organised. Lean approaches and methodologies target the elimination of such waste, promote greater resource efficiency and support building a strong culture of continuous improvement. Lean approaches and culture bring together greater alignment of strategy to operational practice (such as environmental compliance) and lean thinking is a useful model to use to implement GBC strategy and affect culture change.

Stewardship-based approaches

The authors of this report maintain that stewardship-based models, frameworks and standards can support GBC initiatives and activities. For example, the Anti-Microbial Resistance (AMR) Industry Alliance is a private sector coalition of over 100 biotech, diagnostics, generics and research-focused pharmaceutical enterprises and associations that aim to support measures to reduce environmental impact from the production of antibiotics as one of their four key aims. The coalition members recognise and understand the stakeholder concerns regarding the presence of pharmaceuticals in the environment (PiE) and adopt a stewardship approach to address the challenge (AMR Industry Alliance, 2019).

Similarly, an organisation's water stewardship journey may begin from a focus on regulatory compliance and basic water management; yet more progressive water stewards embrace a "going beyond" basic compliance approach and aim to achieve excellence in terms of water quantity and water quality management, reduced environmental impact, best-in-class governance, stakeholder engagement and collective action (Stockil *et al.*, 2018).

Stewardship standards and associated toolkits (BSAC, 2018; Stockil *et al.*, 2018) that support many stewardship initiatives can provide practical instruments to frame and operationalise GBC and environmental excellence initiatives.

3.3.3 Other voluntary approaches

Voluntary approaches are initiatives where organisations make a commitment to improve their environmental performance beyond legal requirements, such as through self-regulation, environmental charters and/or covenants (Gunningham, 2002). Below are some (further) examples of such approaches put forward by Gunningham (2002).

Unilateral commitments

Unilateral commitments are improvement programmes established by enterprises or industry associations and communicated to the relevant stakeholders. The targets and the methodology on how they will be met and monitored is left to the discretion of the key parties themselves. Unilateral commitments work best when:

- there is a small number of industry players;
- compliance is highly valued by consumers;
- there is a history of co-operation between members;
- punishments for non-compliance can be enforced; and
- the exit cost for members is high (e.g. withdrawal would lead to adverse reactions by stakeholders, markets, regulators).

Unilateral commitments have most credibility when used in combination with direct government intervention or third-party oversight (i.e. external verification and/or ratification).

Negotiated agreements

Negotiated agreements involve specific commitments to environmental protection goals negotiated between industry and a public authority. This approach is designed to improve an environmental policy outcome without placing too much burden on industry or creating a competitive disadvantage for members. Negotiated agreements are a popular form of voluntary initiative in Europe. Government should have strong involvement in setting the goals to avoid vague goals and to complement existing regulations and policy instruments.

Public voluntary programmes

Public voluntary programmes are approaches developed by environmental agencies in which enterprises are invited to participate. Commonly, a regulator sets a pre-defined enterprise-level environmental performance target and invites enterprises to make commitments to achieving the target as part of a formal programme. Drivers for joining can include some form of technological, financial or social incentive (e.g. a green logo/eco-label). A criticism of public voluntary programmes relates to poor/weak design and lack of credible targets to transition participants significantly beyond business-as-usual or minimum regulatory levels. Such programmes do have significant effects in terms of information diffusion and technical assistance and can be established at relatively low cost. However, their impact on higher environmental performance is modest.

3.3.4 Financial dimensions

A former director of the US Securities and Exchange Commission noted that “the most effective way to communicate that ‘doing the right thing’ is a priority, is to reward it” (Fox, 2018). Financial incentives can therefore play a role in ensuring organisations drive compliant behaviour. Outlined in this section are two examples of different types of financial incentives that can contribute to an organisation’s willingness to consider best practice.

National funding supports

Enterprise Ireland and IDA Ireland both provide lean/green business grant funding mechanisms to support firms seeking to adopt environmental best practices and implement continuous improvement initiatives in order to improve performance, competitiveness and sustainability. Different scales of grant support are available depending on a project’s scale and impact. These grants support organisations keen to progress to higher levels of environmental management. Similarly, Údarás na Gaeltachta also offers a range of grant supports to businesses, including for feasibility studies, research and development, training and capital projects. Other energy and environmental funding programme activities, which are supported by the main national agencies, are available for research, development and innovation, such as a carbon management/reduction initiative and eco-label initiative as well as, previously, the Cleaner Green Production Programme (IRDG, 2019).

Investment indices as drivers

According to the UN Environment Programme Director Achim Steiner, an annual US$5–7 trillion is needed to finance the UN SDGs alone and an estimated US$90 trillion is needed to support the aims of the Paris Agreement over the next 15 years and Steiner (2015) maintains that business has a crucial role as a source of investments, a driver of technological development and innovation, and an engine for economic growth and employment.

A full review of indices linked to environmental performance is beyond the scope of this paper. However, an example of one such index is the Morgan Stanley Capital International’s (MSCI) Sustainability Impact Index, which identifies listed companies whose core business addresses one or more of the planet’s environmental and social challenges. Listed companies must derive at least 50% of their product and service revenue from a theme related to solving these global challenges. MCSI claims that its own Sustainability Impact Index is outperforming the conventional index by almost 15%, demonstrating that investing in sustainability is worthwhile and has long-term value (MSCI, 2019).

3.4 Going beyond Compliance Case Studies

This section presents a number of international case studies that illustrate examples of supports and programmes employed to encourage GBC and organisation-based excellent environmental behaviour. Please note that these summaries are based on publicly available material often produced by the initiatives themselves and therefore the information presented below is not drawn from independent studies or assessments of the initiatives.

3.4.1 SEPA – 21st-century environmental regulation

The Scottish Environment Protection Agency's (SEPA's) *One Planet Prosperity – Our Regulatory Strategy* acknowledges the challenge faced by all countries in reducing the pressure on and over-use of the planet's resources (SEPA, 2019). Under the Regulatory Reform (Scotland) Act 2014, SEPA was provided with a new statutory purpose and a range of regulatory powers to better address the challenges of the 21st century. In particular, SEPA recognises a need to support progressive businesses that want to go beyond compliance along with the need to get all other regulatees to achieve and maintain compliance.

The SEPA strategy argues that, traditionally, the main influence on environmental performance of a business was the regulatory standards and activities of the regulator. However, it acknowledges that nowadays multiple influences contribute to the environmental performance of an organisation, such as:

- demand for environmental credentials by customers;
- supply chain and investor requirements for environmental performance;
- assessment by external rating bodies (e.g. the CDP, formerly the Carbon Disclosure Project);
- trade association membership standards;
- expectations of potential employees;
- social scrutiny (e.g. community, NGOs, via social media).

In the strategy, SEPA outlines its own "*organisational characteristics*" of how it will regulate in the 21st century. SEPA will:

- produce information and evidence that supports people's decision-making;
- help people implement successful innovation (not minor improvements) on a business-as-usual level;
- support communities to view the environment as an opportunity to create social and economic success;
- routinely interact with regulated organisations through their boardrooms, executive teams and owners;
- be an organisation that people are clamouring to work for;
- use partnerships as the principal way of delivering outcomes.

A core message of the strategy is that the environment should be seen as an opportunity or market driver for success rather than as a compliance issue or problem. It argues that interactions need to occur within the most senior parts of organisations – not solely environmental or plant managers – in order to align with the appropriate sustainable economic growth ambition, agenda and opportunities in the area.

SEPA's strategy involves delivery of sector plans focusing on practical approaches to deliver environmental, social and economic outcomes with an understanding of the key issues, market context and compliance levels specific to the sector. The sector plans will bring clarity to the agenda and engagement channel and manage expectations for stakeholders.

Sustainable Growth Agreements (SGAs) are voluntary formal agreements created between SEPA and an organisation (or organisations) that focus on practical actions to deliver environmental outcomes and help link up to sector plans. SGAs can be signed with individual businesses, groups of businesses, trade bodies, local authorities, NGOs and others. According to the strategy, through the SGAs, SEPA supports organisations to collaborate with experts, innovators and stakeholders on different approaches that could improve environmental performance, while, in tandem, help create commercial and social success. Current SGAs exist with seven entities, namely Scottish Water, Entrepreneurial Scotland, Superglass, 2050 Climate Trust, Scotland Land Commission, Venture Trust and Stirling Council.

SEPA also established an International Innovation Panel to help bring additional expertise and experience to support the initiative and activity.

As part of its consultation activity, SEPA proposed a redefinition of what "excellence" means in terms of environmental compliance (SEPA, 2015). In SEPA's current compliance scoring matrix, regulatees that are fully compliant with their licence conditions are referred to as "excellent"; however, this is in fact the minimum expected from licence holders. It recommended that the term "excellent" should be reserved for those that go beyond the minimum. As part of the consultation activity, SEPA also proposed bringing environmental impact more to the fore of the compliance scoring framework to more easily identify sites that pose the most significant environmental threat and therefore help target these sites for improvement. The majority of responses received agreed with both these suggestions (SEPA, 2016).

3.4.2 South Carolina Environmental Excellence Programme

The South Carolina Environmental Excellence Program (SCEEP) is a US state-level voluntary environmental leadership programme. It is designed to recognise and reward organisations that have committed to continuous environmental improvement and have demonstrated superior environmental performance through pollution prevention, energy and resource conservation, and the use of an EMS. The programme is in its 20th year and has close to 50 members and facilities participating in the programme. The initiative is managed by the South Carolina Department of Health and Environmental Control Center for Environmental Sustainability. Membership decisions are actioned by a multi-stakeholder advisory committee and potential members must meet the performance requirements of this state-level voluntary environmental recognition programme (S.C. DHEC, 2019). Some of the instruments, incentives and benefits listed for participation in the programme include:

- public recognition of environmental leadership by stakeholders (i.e. customers, state regulatory agencies, other businesses) and this includes the use of the SCEEP logo;
- participation and peer-networking opportunities on the Environmental Excellence Council and forums;
- access to the state's Department of Health and Environmental Control's senior leadership;
- opportunities for regulatory flexibility on identified issues;
- eligibility for special awards;
- opportunities for corporate mentoring, technology transfer assistance and information exchanges.

An investigation of the factors influencing some of the top-performing SCEEP members' compliance with environmental regulations highlighted some common perspectives (Parkey, 2014), including the following:

- They view regulatory compliance as a cost-effective strategy for the organisation.
- They consider pollution as equivalent to waste and waste as an indicator of an inefficient process.
- They accept that there is a strong link between environmental performance and customer/community relations.
- They believe socially motivated compliance leads to economic and reputational benefits and value.

These top-performing organisations have a knowledgeable, aware, well-trained and incentivised workforce committed to pursuing environmental excellence, while top-level management fully embrace and actively encourage environmental excellence, continuous improvement is the norm and a strong culture of quality exists.

3.4.3 Green Marine – environmental certification programme

Green Marine is a voluntary environmental certification programme for the shipping industry in the USA and Canada; the 118 participants include ship owners, ports, shipyards and waterway management firms (Green Marine, 2019a). Green Marine was founded in 2007 after a public outcry because zebra mussels, an invasive species, had entered the North American Great Lakes in ship ballast water. Demands for better environmental practices caused a crisis in the shipping industry and, instead of setting up a public relations campaign that could lead to accusations of "greenwashing", industry leaders decided to establish a long-term sustainability programme that would demonstrate the sector's commitment to improving environmental performance. So the initiative was established for two pragmatic reasons: first, an

environmental event threatened to disrupt the industry (seaway traffic could be restricted); second, the threat of new and more oppressive legislation. The programme itself has identified numerous success stories that have developed a culture of striving to go beyond compliance, where members not only limit environmental effects but also actively look for ways to protect the environment (Green Marine, 2019b).

Green Marine was created by the industry in collaboration with environmental groups, governments, regulators and scientists, so partnership continues to play a key role in the initiative. The programme uses a detailed framework for companies to self-assess by first establishing their environmental footprint and then reducing it. All companies signing up to the voluntary programme undertake that they will:

- show industry leadership by finding the best environmental practices for sustainable business;
- minimise environmental impact by carrying out all activities in a responsible manner;
- target continual improvement in their environmental performance;
- develop and actively promote environmental protection measures;
- integrate technically and economically achievable sustainable development practices within business working processes;
- collaborate with regulators and stakeholders, such as citizen groups, to progressively implement the action plans arising from the Green Marine environmental programme.

The annual Green Marine certification is graded on a scale of 1–5, and to be admitted to the programme a company must be fully compliant with environmental legislation. The levels are as follows:

1. Level 1 is monitoring of regulations, so a company is not only compliant but also aware of regulatory implications and their responsibilities.
2. Level 2 certification indicates systematic use of a number of defined best practices.
3. Level 3 shows that footprint measurement and an environmental management plan are in place.
4. Level 4 indicates that the firm has introduced new technologies to monitor or reduce environmental impact.
5. Level 5 denotes excellence and industry leadership.

Annual reporting allows for measurable year-on-year evaluation and recertification; although the evaluation is self-assessed, the process of assessment against 12 performance indicators is rigorous and transparent with independent verification every 2 years. The independent reviewers all have specific sectoral experience (vessel or marine facility operations), are experienced in accreditation verification (ISO 14001, ISM code, etc.) and have environmental protection experience (training, working practice or academic experience).

3.4.4 US Occupational Safety and Health Administration voluntary protection programme

According to Pendergrass and Pendergrass (1991), the US Occupational Safety and Health Administration (OSHA) spent a decade attempting different legislative strategies before realising that high-functioning health and safety required buy-in from both employers and employees. In 1982, OSHA introduced the Voluntary Protection Program (VPP), aimed at emphasising, encouraging, recognising and rewarding excellence in health and safety standards at specific sites. While employer participation in the VPP is voluntary, compliance with OSHA regulations and standards is mandatory. One outcome of the VPP was that participants that had achieved the Star status – the VPP top honour – insisted that requirements remain strict, ensuring that the award retained its distinction. The following elements were looked at before awarding a Star:

- level of management commitment and overall planning;
- hazard assessment, correction and control, and reporting mechanisms;
- levels of employee participation, awareness and training.

The application process includes clear well-publicised guidelines and to be successful an organisation must comply with all criteria. The applicant must be a complete management unit or facility; this helps ensure genuine improvement and change, as breaches cannot be easily hidden within other

functional areas (for instance, reducing water discharges by incinerating waste instead).

Once a work site is awarded a Star it is not subjected to routine inspections (although spot checks may still happen); this frees up inspectors to review higher risk sites. There are then regular self-evaluations by the regulatee and periodic inspections by the certifying authority.

A publicly recognised programme has a wider-reaching impact than the tangible impact in the participating organisation; the public attention towards initiatives like the Star status scheme helps raise the expected level of environmental performance in general, thus encouraging other organisations to raise their standards (beyond compliance). The US EPA use high-functioning participant firms as operational case studies for the larger community of regulatee organisations.

One innovation arising from the VPP was the establishment of the Special Government Employee (SGE) Programme allowing industry employees to work in collaboration and share ideas and perspectives with OSHA (US Department of Labor, 2019). The programme also benefits OSHA by providing additional resources for its on-site evaluation teams. Occasionally, SGEs have an opportunity to participate in other OSHA outreach and compliance assistance activities. The support of SGEs is seen as a critical component of the VPP as it grows. The co-operation between industry, workforce and government embodies the ethos of continuous improvement, which enables SGEs to bring a unique perspective to the team effort and take back with them ideas and best practices to their sites to help further improve worker protections and support excellence/GBC.

3.4.5 Pharmaceutical serialisation – increasing business value through innovation

Globally, the pharmaceutical industry is implementing serialisation of pharmaceutical products and track-and-trace capabilities from manufacturing to dispensing to meet governmental regulatory initiatives (Zirkle, 2017). The pharmaceutical industry is exposed to threats such as counterfeiting and theft, given that products are high value, involve complex supply chains and depend on multiple organisations for distribution. The main driver for serialisation and track-and-trace is to improve the integrity of the overall drug supply chain.

While regulatory compliance is a top priority, the information about serialised products and the supply chain offers many other opportunities to drive new and improved business capabilities and lead to increased business value. There is a unique opportunity to leverage data and analytics approaches to support greater transparency and collaboration (Wood, 2018). Some of the additional opportunities for delivering greater business value include:

- optimisation of inventory;
- supply chain operations monitoring;
- support redesign and optimisation of returns and product recall processes;
- drive patient-centric engagements;
- insight on medical adherence;
- forge greater connections across the supply and value chain.

This case study highlights where long-term business value opportunities and drivers exist when adopting a GBC approach.

3.4.6 Finland's society commitment – collective action

"Society's Commitment" is an innovative strategic framework and operational tool that aims to engage the whole of society in implementing the UN SDGs by bringing the public sector, companies, civil society, organisations and citizens together in a novel way (Kestävä Kehitys, 2019).

The vision set out is for a prosperous Finland with global responsibility for sustainability that is achievable through the implementation of eight shared objectives. Commitments vary in type, size, scale and duration. Typically, operational commitments include concrete measures; development of operations; changes in procedures; boosting the achievement of an existing objective; introduction of a completely new operations model, product or service; and innovative trials that promote shared goals. Once the commitment has been registered online and is published, it becomes public. The Finnish National Commission on Sustainable Development and an expert panel then monitor and support the commitments and their progress. Commitment owners must report twice

yearly on progress and can also report on progress using their own monitoring systems and reporting schedules.

Many of the commitments to date are linked with environmental (particularly water) stewardship initiatives demonstrating a proactive GBC culture and excellence mindset.

3.4.7 Green Public Procurement – beyond core requirements

The Irish government public sector annual purchasing accounts for around 10–12% of national gross domestic product, which means it exerts a significant influence on the marketplace and on Ireland's environmental and sustainability objectives and targets. Europe's public authorities consume goods, services and works of a total estimated value of €1.8 trillion annually (Interreg Europe, 2019). Green Public Procurement (GPP) is an EU policy instrument and a process whereby public authorities seek products, services and works with a reduced environmental impact. Although it is a voluntary instrument, GPP has a crucial role in creating a more resource-efficient and less polluting society, as seen in a selection of published good practice case studies (EC Environment, 2018).

The European Commission in collaboration with Member States and multiple stakeholders developed a website containing practical information on how to implement GPP criteria. Notably, the European Commission distinguishes between *core* and *comprehensive* criteria. Core criteria are those suitable for use by any contracting authority and address the key environmental impacts while comprehensive criteria "go beyond the core requirements" and are suited to those who wish to purchase products with enhanced levels of environmental performance yet which may imply additional cost or verification effort. In addition, the EPA (2014) published a detailed and practical guidance document for the public sector to work through the procurement process for the identified GPP sectors.

Ireland is also one of nine participating EU countries taking part in the GPP4Growth Interreg project, which aims to share experiences and practices and build capacities to implement resource-efficiency policies that promote eco-innovation and green growth through GPP. The Department of Communications, Climate Action and Environment (DCCAE, 2019) has compiled several policy briefs based on the research reports regarding GPP policy, best practice examples and implementation advice developed by the project partners.

3.4.8 Ireland's Cleaner Greener Production Programme

A precursor to the EPA's Green Enterprise programme, the Cleaner Greener Production Programme (CGPP) was a grant scheme aiming to encourage organisations to implement integrated preventative environmental strategies to their processes, products and services in order to increase overall efficiency and reduce risks to humans and the environment.

In a survey of CGPP participants (Hilliard *et al.*, 2011), drivers for the adoption of cleaner and greener practices were noted as customer demand for environmentally sustainable goods and services, regulatory demands and cost advantages for achieving greater resource efficiency. However, the survey results indicated that organisations experience difficulties with innovation and are faced with barriers such as costs of technologies coupled with long payback periods, which means that justifying the investments is harder; lack of knowledge and awareness of environmental information; and resistance to organisational change.

A key observation was that the environmental commitment of those firms participating in the programme both was at the highest level of the organisations and permeated throughout the entire organisations. Top management engagement was a critical success factor along with widespread awareness and involvement and inclusion across the organisation. Successful innovation and change initiatives also benefited from champions with high levels of influence and decision-making capacities. There was also clear alignment with broader business objectives (rather than being purely environmentally focused) and improved competitive advantage as a result. Most participants felt that a wide range of new knowledge, expertise and skills were developed in their workforce, including transferrable business efficiency skills. The long-term impacts identified included improved environmental practices within the organisation and across their supply chain, better understanding/appreciation of the benefits in both

environmental and broader business terms and greater business value through resource savings/cost avoidance (Hilliard *et al.*, 2011).

3.5 Summary

While the behavioural dimension of organisation performance is complex, motivational and operational aspects are key factors influencing regulatory compliance. Different instrument categories and tool options exist that can be selected to target specific aspects in order to affect behaviours and support desirable outcomes. Some of the different instruments were highlighted in the case studies above, demonstrating GBC initiatives and approaches, including:

- environmental agency tools, such as sector-specific plans and SGAs employed by SEPA to encourage GBC performance;
- industry-wide environmental excellence recognition schemes, such as SCEEP, the Green Marine programme and the US OSHA VPP, which are applied at a regional or sectoral level to encourage GBC performance;
- value chain initiatives linked to GBC, such as those being pursued across the pharmaceutical sector, which also demonstrate that the drivers and benefits for such activities can be broader than environmental or regulatory drivers alone;
- collective action initiatives as a national level such as that being pursued in Finland to address GBC activities related to the UN SDG goals and related activities, such as the adoption of voluntary water stewardship approaches;
- existing Irish initiatives, such as the GPP and the CGPP, which provide direct support to organisations wishing to go beyond compliance requirements.

4 Stakeholder Consultations

4.1 Methodology

Following the desk review of baseline reports and literature, the consultation methodology used in this project consisted of four main activities as outlined in the following sections. The data collection for this report was completed from March 2018 to February 2019.

4.2 Stakeholder Mapping

The initial activity was, in consultation with the steering committee, to map a list of stakeholders whose input would be sought to inform the study. These stakeholders consisted of national and international actors in government and ministries, support agencies, academic institutions, representative industry bodies and members of the regulatory community. The national regulated community was considered a key group of informants and at least one organisation from each of the 13 licence categories was targeted for a consultation interview. Every effort was made to ensure the industry stakeholders consulted with represented a good geographic spread across Ireland and good mix of organisations of various scales (i.e. SMEs to larger organisations). In addition, an objective of gathering input from some organisations that had appeared on the National Priority Sites List was set. Where it was not possible to secure an interview with an entity within a specific licence category, an alternative candidate for interview was selected and approached.

4.3 Stakeholder Interviews

Following the mapping exercise and to augment the desk review, a series of stakeholder consultations were undertaken to further inform the investigation into GBC approaches, as this qualitative method offers the opportunity to explore behaviours, experiences, ideas and contextual aspects of this emerging domain.

These consisted primarily of semi-structured interviews with individuals by phone, Skype or face-to-face meetings. To ensure the research was fully informed, a range of stakeholders from various categories were included for consultation. A triangulation of perspectives was employed to identify common challenges, opportunities and influencing factors, for example employing a three-tier approach for the licensed sector involved consulting (1) regulators, (2) representative bodies and (3) licensed-community member firms.

The three main stakeholder categories consulted with were:

1. Public bodies in Ireland, e.g. regulators, support agencies and research bodies.
2. Members of the regulated/licensed community, e.g. a sample of industries taken across different “class of activity” licence categories, including stakeholders of multiple EPA-licensed sites. Stakeholders from the following licence categories were consulted: chemicals, energy, minerals and other materials, surface coatings, intensive agriculture, food and drink, and waste.
3. European/international stakeholders and representative bodies. The international stakeholders were targeted based on the findings from the state-of-art literature review and comprised ministries and government agencies, industry representative bodies and an EU network organisation.

Participants were advised that individual input would not be identified by person or by organisation and that the purpose of the consultation was to establish themes/areas of common interest and opportunity in relation to the development of tools to support GBC behaviours.

4.4 Consultative Workshop and Group Discussion Sessions

Furthermore, in support of the above, a consultative group discussion workshop was undertaken to qualitatively inform the evaluation. This consisted primarily of key stakeholder groups from public and private sectors including key support agencies

and members of the licensed (and non-licensed) community. The workshop and group discussion were utilised to gather stakeholders' perspectives on the key topics explored during the interview process.

The workshop was conducted as part of an EPA-funded Large Water Users Community of Practice (CoP) and Enterprise Ireland Innovation and Emerging Technologies Seminar, which took place on 4 December 2018 at the Midlands Park Hotel, Portlaoise, County Laois. The seminar theme was "water stewardship and the challenges, opportunities and threats of pharmaceutical contaminants in the environment" and the topic for the group discussion session was "How to encourage stakeholders to go beyond current compliance requirements". The group included a selection from across public and private sector organisations (including those from the licensed community).

The project team also took part in a roundtable discussion as part of a Scottish trade mission organised by Enterprise Ireland held on 26 September 2018 at the Millennium Hotel, George Square, Glasgow, Scotland.

The roundtable session focused on two topics: (1) environmental leadership and advancing beyond compliance and (2) barriers and opportunities for innovation and collaboration. The roundtable discussion was part of an overarching theme on "environmental leadership and innovation in the Scottish food and beverage industry".

During the group discussion workshop participants were divided into smaller working groups and asked to discuss thematic questions within their individual groups, before summarising and reporting back to all workshop participants. This was followed by some wider group discussion and feedback on points raised. The roundtable discussion format comprised an opening presentation on each topic followed by open discussion and knowledge sharing by attendees.

4.5 Development of Findings and Recommendations

Drawing from the desk review, stakeholder mapping, stakeholder consultations and group discussions, a triangulation approach was adopted to ensure a range of perspectives were encompassed in the analysis, synthesis and identification of opportunities and recommended actions.

4.6 Summary of Stakeholder Consultation Findings

The consultations were conducted with national and international stakeholders across a wide variety of sectors and organisations. Among the licensed community, an effort was made to consult with stakeholders across the different licence categories. Regarding the gender dimension of the study, the ratio of male-to-female individuals consulted was 2.5:1. This section summarises the interview responses under the themed questions below.

4.6.1 Thematic question: what is understood by compliance and to what does it refer?

Stakeholders expressed their understandings of compliance in terms of regulation, licences, technical limits and meeting targets (related to standards, voluntary schemes and internal/corporate systems). Compliance can have different interpretations; for example, it can be viewed as a transient state – meaning at any given moment an entity may be compliant or not – or it can be viewed with a more macro/longitudinal focus. For the majority of the regulated community consulted with, compliance is a "day-to-day" activity and means meeting a combination of:

- the limits of the EPA licence while ensuring manufacturing objectives are met;
- other regulatory requirements and directives (health and safety, employment law, the General Data Protection Regulation, etc.);
- targets set by corporate headquarters;
- parameters required by standards/systems (ISO 14001, Origin Green programme, Global Reporting Initiative – GRI, etc.).

In general, compliance is seen as the baseline and a requirement to meet the basic standards, terms and conditions of operations. From the environmental compliance perspective, the majority intentionally aim not to get too close to specified limits to avoid measures and impacts associated with non-compliance, or, more simply, "compliance is the

avoidance of non-compliance".[2] For some, compliance is seen as an additional or bolt-on activity.

4.6.2 Thematic question: what are the main challenges and barriers to compliance?

Demands that are placed on organisations by various corporate, policy and regulatory requirements are continuous, evolving and pose a challenge. For example, an organisation is required to maintain compliance with EPA licence requirements while also responding to the needs of EU directives, sectoral policy and corporate key performance indicators (KPIs). Given that the standard and "bar [are] always rising", resourcing was the most common challenge associated with compliance in terms of costs, personnel and administrative burden. For enterprises that operate numerous regulated sites, the challenges can also vary from site to site, which adds a further layer of complexity. From the regulator perspective, a challenge is that there is no "one size fits all" approach (e.g. SME vs large enterprise) and, coupled with resource and budget constraints, this adds pressure to C&E activities.

As the overall standard increases, there is an associated resource cost to maintain and achieve compliance requirements (i.e. investment and installation of new technology to meet the specified limits). Unfortunately, as a small number of stakeholders commented and one stakeholder succinctly stated, it is "easier and cheaper to pollute than clean up pollution". A large number of stakeholders stated that dealing with incidents, handling waste, processing waste streams, specialised sampling and testing, commissioning new technology and systems, upgrading and so on can be costly and expensive – requiring "deep pockets". Licence limits can also result in barriers for expansion of operations. Investment decisions are rooted in return on investment, market forces and consumer, buyer and/or stakeholder decisions.

Another key challenge across a large number of stakeholders was in terms of the knowledge base and capacity. Given the scale, keeping well informed and on top of policy, regulations and updates, best available techniques and reference documents (BATs and BREFs, respectively) and so on is very taxing on often limited, available resources within organisations – particularly on smaller organisations or indeed small teams within larger organisations. Training and awareness-building of compliance team members is challenging. Furthermore, staff retention and maintaining the tacit knowledge around a site's compliance history and its nuances can be an issue.

Being compliant is difficult, if not impossible, given that the licence and/or the regulation itself can be vague and written in "open language" that can be interpreted in different ways. As one stakeholder stated, this can be problematic if an individual's understanding is that they are compliant; yet, if followed through to legal action, a judge may ultimately think otherwise. Some stakeholders commented that, on account of the use of open/subjective language within licences, difficulties can arise with different interpretations of licence conditions, for example by different inspectors, which in turn can lead to conflict. These stakeholders commented that this could be as a result of insufficient handover and/or lack of understanding of unique factors and compliance history associated with the licensees. A root cause of the issue suggests that this may be as a result of the perceived subjectivity of licence terms and the need for clarity of terms. Some stakeholders suggested that some discretion may be beneficial and welcomed in order to take more of the internal and external variables or circumstances of each case into account. In addition, a lack of clear timelines led to challenges.

The administrative burden associated with compliance adds pressure to organisations – particularly those that are not well resourced in the area and/or do not have dedicated resources available, which is often the case with smaller organisations. For smaller enterprises, compliance systems are a heavy burden in terms of both administration and investment.

Nationally, in the case of the waste sector, illegal operators pose a specific challenge, as it creates an non-level playing field between those who operate under regulatory/legal requirements and those who do not. Compliance costs money and can pose a competitive disadvantage for licensed firms when

2 Unless otherwise indicated, all quotations in this chapter are from the stakeholders.

compared with firms that avoid licence costs and scrutiny, yet serve the same consumer markets. It highlights that before a GBC approach can be achieved, there must be a just and even playing field and common baseline for compliance. It was also suggested that there is a need for a review of governance structures and processes across C&E actors.

4.6.3 Thematic question: what are key drivers and influencing factors for compliance?

The key drivers and influencing factors for compliance were a blend of internal and external drivers. The most common key drivers and influencing factors for compliance noted were:

- regulations and legal requirements (external);
- portrayal and maintenance of a green image (external);
- senior management (internal);
- education and knowledge (internal).

Compliance is rule driven; therefore, the environmental regulations, legal requirements and licence limits are strong drivers. Stakeholders commented that EU (environmental) directives have "forced us" to raise the bar significantly in Ireland over the last number of decades. As noted previously, avoiding going outside the limits and breaking rules is to avoid unwanted consequences, penalties and the burden of non-compliance as dictated by the C&E system. Many pointed out that it is the lowest performers (in terms of compliance) that set the baseline, so they are an important group to be cognisant of; raising the baseline would act as a driver for those near that baseline level to improve performance. Some firms do not want to be perceived as a "laggard" and do not want to be operating too close to the limits.

The influence of senior management/directors/corporate boards was a key driver. Senior management buy-in is critical for long-term success, particularly as compliance is seen as very costly and resource intensive. Business KPIs are strong influencing factors. Likewise, at the government level, positioning a GBC overarching strategy and scheme/programme at a high senior level and appropriate level of authority (i.e. department or ministry level of government leadership) is critical. This is particularly the case to ensure that cross-cutting activity and joint thinking on topics and themes are well supported along with the implementation of any programmes and initiatives.

The "social licence to operate" dimension was a strong driver; portraying and maintaining a green image was a very strong common influencing factor expressed across the stakeholder groups. How organisations' green image and "green credentials" are perceived by themselves (and internal staff), their customers, investors, supply chain, partnering clients, the regulators and so on, act together at various degrees of influence as a strong driver for compliance and good environmental performance. Closely aligned to their "green image" and "social licence to operate" was the importance of contributing to corporate social responsibility activities and there was overlap with sustainability initiatives and approaches in terms of acting as a driver. Many stakeholders commented on the importance of their green image within the local area, community and immediate surroundings to operational sites. The effect of the "social licence to operate" at a local level ("keeping the neighbours happy") was clear and evident for the majority of stakeholders, while the effects of the "social licence to operate" at a more global level is more felt by the larger corporates as opposed to smaller SMEs and operations with less business-to-consumer channels of engagement and transaction. There is an acute awareness of the relationship between receiving complaints and ensuring those stakeholders most impacted by (potential) issues were engaged and managed.

The importance of an organisation's green image also affects consumer markets/preference and human resourcing. On account of greater availability and transparency of data and information – largely enabled by advancing digital technology – as consumers and segments of the workforce become increasingly more informed of an organisation's (global) activities, their operations, compliance records, supply chains, etc., these potential customers and employees are becoming more self-selecting in terms of their purchasing/career decisions; their decisions are influenced by green image and/or environmental performance criteria.

4.6.4 Thematic question: what is understood by GBC? Are there any specific challenges/barriers/drivers/enablers associated with GBC?

Firstly, in general, the term GBC is not well established in the current lexicon and holds little meaning in legal terms. Stakeholders understand and/or associate the term with being more proactive, looking outside the boundaries of the organisation and being forward-thinking and sustainable as an organisation in the longer term. An ethos of continuous improvement is seen as necessary with the understanding that there is no fixed state when it comes to regulations, requirements and compliance. For some, GBC is viewed as "best practice" and "something to aspire to" yet "achievable and not far-fetched", while, for others, GBC is perceived as a "marketing term" with less "real-world" and practical meaning. GBC is akin to a philosophy and a strategic decision that must be made by senior management/leaders of an organisation (and/or government). GBC is probably more likely to appear in organisations that are averse to any (environmental) risk or perceive it as a strategy to achieve greater business resilience and long-term value.

A "going beyond" mentality is "implicit in corporate responsibility", with corporate responsibility defined as seeking to add value to an organisation's activities by ensuring they have positive impact across the three core pillars of sustainability: economic, social and environmental. Also noted was that a "going beyond" approach is embedded in activities such as water stewardship, whereby organisations look outside the boundaries of their sites and look to mitigate their impact on catchments and nearby areas of high conservation value.

For some organisations and Member States that are more advanced, a "going beyond" approach is implicit in many of their policies and activities and has been so for many years, although it may not be or have been explicitly articulated or communicated as GBC.

Given some of the challenges and barriers associated with compliance (e.g. resourcing and costs), the idea of GBC was mooted as potentially quite "hard to sell" to senior management in an organisation. There would need to be clear benefits to adopting a GBC approach and many stakeholders were not clear what those benefits and/or impacts would be. It was highlighted that adopting a GBC approach would result in costs incurred by operators/organisations and ultimately these costs would be passed onto other stakeholders (i.e. customers), thus prompting the following question: would customers pay a higher percentage for a higher quality service or product developed via a beyond compliance approach? The answer is not obvious and would require market research and feasibility studies before investing in such an approach.

A stakeholder suggested that one positive aspect that environmental compliance may have over other areas of compliance (i.e. health and safety compliance) is the ability to associate financials to activities and actions more easily. If we take the case of a health and safety improvement that goes beyond compliance requirements, it can be difficult to associate an economic return for that improvement.[3] However, an improvement linked to going beyond environmental compliance that leads to greater environmental performance can be measured and put into economic terms more easily, e.g. a reduction in the quantity of waste has a direct impact on costs associated with the disposal or processing of that waste.

In the national context, current policy and regulations are not seen as a key driver or enabler to support GBC behaviours among the regulated community.

That said, some organisations consider that their activities would fall under the category of GBC and would welcome being recognised as GBC and/or being a top environmental performer in their area. The best approaches on how such a recognition system would be actioned probably warrant further research and investigation. One stakeholder suggested that recognition and image benefits could be enough to justify a higher cost solution choice over another, reiterating that GBC can involve additional costs that need to be clearly justified and incentivised, although not necessarily by economic instruments alone.

3 Example of a health and safety GBC activity: an organisation removes all asbestos-containing materials, even those that are in good condition, from a building, i.e. it does not merely remove asbestos-containing materials that are in a vulnerable position or in a condition where they cannot be repaired or protected.

Healthy competition was also seen as a driver helping to push greater environmental performance among industry peers. “Good operations look at each other” and some businesses “innovate their processes internally” as there is “no external pressure from the state/regulator” to do so.

4.6.5 Thematic question: what approaches/ systems/tools support compliance activities and compliance behaviours? Are there specific tools that support GBC behaviour and/or achieving greater environmental performance?

Business KPIs and associated tracking and communication tools (spreadsheets, visual boards/ tools, etc.) are important in supporting compliance activities.

Stakeholders commented on various IT systems as useful tools to support compliance activities, such as the EPA’s Environmental Data Exchange Network (EDEN) system, internal Supervisory Control and Data Acquisition (SCADA) systems and EMS. These tools were helpful to address and track regulatory demands in a systematic manner. With regard to the EDEN system, there are potential opportunities to improve the system/processes as some found it “not the most user-friendly” and the “template to be too rigid”.

Stakeholders also commented on the use of standards (such as ISOs, European Water Stewardship standard and British Retail Consortium – BRC) and reporting tools (e.g. GRI) as being helpful as frameworks to conduct activities. However, one stakeholder noted that having ISO 14001 does not imply that you are any more compliant or performing any better (environmentally) than an organisation which does not – “you could be doing terrible things and have ISO 14001”. Other national-level schemes such as Bord Bia’s Origin Green programme help formalise processes, provide background context and serve as communication supports or channels for organisations. Likewise, the national Repak scheme offers supports for compliance activities, albeit at a relatively small scale.

Stakeholders mentioned forums, newsletters and bulletins by organisations such as the Health and Safety Authority (HSA) and the Irish Business and Employers Confederation (Ibec) as useful and supportive tools. Stakeholders stated that they would welcome more information, training and support tools from regulators, particularly in terms of regulation updates, BATs, BREFs and best practice case studies. Stakeholders showed keen interest in more opportunities for collaborative discussions, forums and knowledge exchanges.

Frequent audits, be they internally driven, originating from regulators or via certification bodies as part of participation in voluntary schemes act as both a driver for performance and a tool to maintain good compliance and instil compliance behaviour.

In terms of behaviour specifically, stakeholders noted a variety of approaches to influence behaviour and culture. Some utilise lean methodologies and continuous improvement initiatives to support operational efficiency actions linked to reducing waste (in the broader lean thinking sense) and maintaining or improving KPIs (including those linked to compliance). A core component of lean thinking involves culture change within an organisation and the lean process was noted by some stakeholders as supporting the development of desirable behaviours.

Many commented on education and training as a key activity or tool used to influence behaviours. Like continuous improvement, education is a constant activity. Awareness days were commonly used to highlight the impacts of the organisations’ activities on behaviour and culture. One of the pharmaceutical industry stakeholders consulted with provided the following example: patients – with medical conditions treated by the pharmaceutical material manufactured at the site – are invited to present their personal story to staff and provide an insight on how the treatment they receive benefits their quality of life. This causes a powerful (emotive) response and resonance in staff – built on intrinsic reward – and supports a strong culture within the organisation and a sense of pride, motivation and purpose in what they do. It links the day-to-day activities of staff with the long-term impact on and value to patients.

Overall, when asked how the impacts of behavioural interventions are measured, there was consensus that it is a difficult task to undertake and categorically link a behavioural intervention to a specific improvement – it is more likely to arise from a combination of many interventions, causes, drivers and influencing factors.

4.6.6 Thematic question: with regard to the National Priority Site system as a C&E (behavioural) tool, what would you consider to be its strengths/weaknesses?

The stakeholders consulted with comprised organisations with varied degrees of engagement with the National Priority Site system (i.e. they appeared on a candidate list or the National Priority Sites list and so on).

Overall, the tool is considered to be effective by those familiar with the tool. There is a clear driver that no organisation wants to appear on the list (or candidate list). There were clear indications and cases evident where the tool affected a desirable response in terms of senior management and key decision-makers reacting to the feedback, remedying the issue and ensuring they reduce the likelihood of appearing on the list again. There was evidence of some knowledge gaps in terms of how the tool works in more detail (e.g. scoring breakdown).

Some criticism of the tool was that it was not well understood by the media and wider public and that it has been perceived as a "polluter list". Others felt that the system is potentially open to abuse, as it is possible to get complaints from the public that are not verified, which contributes to the total score for a site. The 6-month timeline was considered quite strict and challenging by some. There was a broad spectrum of comments regarding non-compliances; some felt non-compliances were issued to sites quite severely at times and that a variance in inspection reporting can cause issues. Many commented on a need for more context and greater distinction of terminology (e.g. nuisance vs incident). It was suggested that there is also a need to more clearly differentiate between environmental complaint and environmental harm, as a sequence of unfortunate events or a barrage of issues could equally land a site on the list.

On reflection, stakeholders felt that the National Priority Site system is probably not a tool best suited to achieve GBC. The tool is more effective at raising the baseline level of compliance rather than having a large influence on those who are performing well or looking to demonstrate or pursue a GBC approach. There is a danger of equating absence from the list as affirmation that the organisation is doing fine in terms of compliance. Organisations that appear on the priority list have been prompted to take action and improve their non-compliances. The tool has less effect on organisations that do not appear on the priority (or candidate) list.

Some stakeholders suggested that a corollary "top performer" list may be required to exert influence on those looking to go beyond compliance. However, there was also some reservation expressed in terms of creating "good" and "bad" lists; that may not be an appropriate model to use and would need more thought and discussion.

In order to drive GBC behaviour there need to be clear benefits, motivating factors and incentives. Recognition of performance may be enough for some. Many made a link between GBC and greater environmental performance with the marketing and promotion of goods and services as a means of competitive advantage.

There was also a suggestion that the tool could be refocused to support continuous improvement and, in doing so, improve efficiencies and help reduce non-compliances.

4.6.7 Thematic question: what improvements/ approaches/tools do you think could be helpful to support compliance activities and/or GBC behaviours?

Opportunities for more discussion, conversation and joint-solution thinking were suggested by stakeholders.

A criticism expressed by some of the national stakeholders was that they felt that the EPA is quite "enforcement focused" and "not very open". It was felt by some that there is a lack of opportunities to work together on issues and new approaches to work more collaboratively would be welcomed. The stakeholders mentioned that the EPA "see themselves as regulators" and not as enablers supporting greater environmental performance. However, many stakeholders felt that the EPA may be under-resourced in terms of C&E, leading to pressure.

Many stakeholders would welcome more training and knowledge supports to keep more informed of the regulations, updates and best practices.

A number of stakeholders suggested adoption of EMAS or a similar system would be beneficial. EMAS can also contribute to achieving many environmental-themed SDGs (i.e. 6, 7, 11–15). The opportunities for

synergies between adopting a GBC approach and achieving SDGs and targets were referred to by some stakeholders.

A recognition scheme (such as eco-labels) could help highlight good compliance and/or environmental performance. Furthermore, leveraging independently verified and certified standards would also serve as a method to communicate environmental performance credentials.

Many suggested that a “programme of supports” would be important in order to help stakeholders progress on a journey of GBC. Some recommendations are presented in the next chapter.

5 Conclusions and Recommendations

5.1 Conclusions

The study investigated tools and approaches to promote GBC behaviours among the regulated community. It is evident that regulatory compliance within organisations is a function of motivational aspects ("willingness") and operational aspects ("ability"), and the presence or absence of the underlying elements (e.g. knowledge, resources, senior management buy-in, social licence to operate) supporting these aspects are critical influencing factors (or behavioural levers) to target with appropriate interventions. The context has a significant role in determining the effectiveness of an intervention and different problems require different solutions. There will always be a spectrum of contexts, capacities, cultures, degrees of compliance and performances to manage. Given the variety and complexity of organisations within the regulated community – ranging in scale and sector focus – there is no ideal "one size fits all" C&E approach.

There is also not a clear definition of what GBC means and this needs to be established. GBC involves exceeding expectations, improving performance and progressing to excellence. GBC requires shifting mindsets from compliance as a system to stop bad things from happening to one that helps make good things happen. The focus needs to be shifted away from avoidance of the compliance baseline levels to focus on continuously reaching greater environmental performance. In order to support the regulated community, it is critical to understand the barriers to and drivers for removing the obstacles and supporting the enabling factors that contribute to GBC behaviours and practices.

The research findings agree with other report findings (i.e. Rademaekers *et al.*, 2012; IMPEL, 2019), identifying similar pressures, challenges and drivers experienced by international peers and actors. Key barriers identified in this research include costs of compliance, staff resourcing, lack of knowledge or information and issues with complexity and clarity. Key drivers identified were regulation, internal metrics, senior management and green and societal image influences. With this knowledge, the most appropriate regulatory, economic, infrastructural and/or communicative instruments can be chosen and/or developed to target these barriers or drivers and support the desired behavioural change.

The case studies demonstrate how different instruments are utilised to help remove barriers and/or support drivers that influence the motivational and operational aspects of an organisation's behaviour. Some common elements included supporting greater knowledge sharing, collaboration and communication between the various actors, utilising voluntary commitments and buy-in from actors, providing social recognition platforms and awards to support green image, enabling engagement with senior-level leaders and managers, alignment with business resilience, competitiveness and long-term value in terms of the triple bottom line.

5.2 Recommendations

5.2.1 Recommendation 1: set out a vision for GBC nationally

Achieving a widespread culture of GBC is a long but critically important journey. As a first step, it would be important to define what GBC means for Ireland, develop a vision of what GBC looks like and set out the expectations, challenges and impacts in environmental, social and economic terms. There is a clear need for organisations to move beyond "business as usual" in order to ensure business resilience and sustainability into the future. An opportunity exists to align the concept of GBC with efforts linked to the implementation of the SDGs, given the need in both cases for transitions in mindsets and practices beyond business-as-usual approaches. The development of a strategy and/or roadmap for adopting GBC at the national level could also support efforts in achieving SDG strategic targets in parallel.

Along with a high-level vision, there would be an opportunity to develop thematic or sectoral GBC plans/roadmaps to better reflect the specific contexts and aspects for the various actors (e.g. SMEs vs large organisations; food and drink, chemical, waste).

A critical success factor for adopting a GBC approach nationally would be the involvement and commitment from the senior levels of government, state agencies and industry alike in developing and communicating this strategic vision. Power of influence and decisions of this magnitude and strategic importance reside with this level of leadership and management. The alignment of day-to-day activities of compliance must be aligned with the vision set out at the top to be successful and sustainable.

The overall desirable outcomes of adopting GBC approaches would be greater stewardship of the planet and its resources, continuously improving environmental performance and delivering benefits and impacts not just in economic terms but across the triple bottom line. GBC is the constant pursuit of excellence.

5.2.2 Recommendation 2: establish an environmental excellence community of practice

In 2013, the EPA supported the establishment of the Large Water Users CoP initiative, which focused on addressing water management and sustainability. Similarly, there is an opportunity to establish an "Environmental Excellence" CoP or forum. The difference between a CoP approach and existing stakeholder platforms (such as IBEC's Environmental Policy Committee, NIECE, Industry Research and Development Group) may be considered as one of emphasis but the nature of such a community is that:

- The members are motivated to come together with a shared learning need (explicit or otherwise) in a particular evolving domain (such as GBC).
- Collective learning becomes the bond among them over time (albeit the contexts for the application of that learning will differ).
- Their engagements produce resources or tools that affect their operational practices in a tangible way.

One of the strong themes arising from the research was the importance of collaboration and communication between all the actors. A CoP/forum focused on environmental excellence would serve as a platform for greater communication and peer-to-peer discussions, sharing of knowledge and best practices, improving skills, participating in joint problem-solving, and supporting innovation, collaboration and collective action. Members could consist of a wide range of stakeholders including regulators, regulatees, support organisations, representative groups, domain experts and so on. Discussions could focus on thematic areas and/or specific interest topics, such as adopting GBC approaches and strategies, achieving engagement and buy-in, new technologies, and behavioural change interventions.

An Environmental Excellence CoP could act as a flagship initiative to support achieving the GBC vision for Ireland. Early activities could focus on building on the discussions and consultations to date, build up engagement and assist in the development of new policy and regulatory frameworks along with a programme of supports and incentives aimed at achieving a culture and practice of GBC.

5.2.3 Recommendation 3: review policy and investigate new regulatory frameworks for GBC

Regulation and "old-fashioned" rules act as a strong driver for compliance behaviour and it is important not to lose sight of that before moving beyond compliance; it is essential that a strong foundation of compliance exists. However, current policy is not designed with GBC in mind and the policy is not acting as a strong driver to adopt a GBC approach. Any new policy or regulation or framework must account for different contexts and all shapes and sizes of regulatees – each with their own nuances and organisational, motivational and operational aspects at play. While a subset of regulatees may face challenges with maintaining compliance, other higher performing organisations may be better positioned and more prepared to adopt a GBC approach sooner. The early adopters would serve as exemplars for those that follow. There may be an opportunity to explore and pilot new C&E strategies and collaboration models among certain members of the regulated community.

As one stakeholder commented during consultation activity, "policy is easier to write yet more difficult to enforce*"*. In reviewing and developing any new policy, there would be an opportunity to apply behavioural insight at the agenda-setting and enforcement phases of the policy development cycle and in doing so help reduce some of these enforcement issues experienced "in the field". It is also recommended to look at the

desired outcomes first (not to take a policy focus initially); once the outcomes have been decided on then the process of how to achieve the outcomes can be developed.

5.2.4 Recommendation 4: develop programme of supports and incentives for GBC

In order to achieve a culture and practice of GBC, there is a need to provide a range of supports and incentives targeting the removal of barriers and/or enabling of drivers. A programme of supports and incentives could link back and form part of the offering for participation and membership to the CoP outlined above. Various supports exist nationally at present that could support GBC adoption (e.g. existing grant funding schemes, Department of Education and Skills' Skillnet programme as a mechanism for training supports, and existing networks supports and services). An initial task could be to collate, map and signpost appropriate existing supports and incentive mechanisms that could help deliver on the national GBC vision and develop some communication collateral to ensure both grant agencies and grantees are aware of what type of initiatives would be supported. New approaches such as those outlined in the case study section herein should also be considered, including strategic agreements and enhanced recognition schemes.

Information and knowledge can act as both a key barrier and a key driver in achieving compliance and greater environmental performance. Lack of information and knowledge, poor awareness, and over-complex or open language in licences can act as barriers to achieving compliance. Training and knowledge transfer helps remove these barriers and acts as a key driver. Training supports as well as influencing third-level curricula would help ensure regulations are better understood, best practices are adopted, and cases studies and shared learning occur (e.g. peer-to-peer, regulator–regulatee). Digital technologies (such as online training and webinar technologies) could be leveraged to ensure training is delivered cost-effectively and efficiently in a standardised, scalable and flexible manner. For example, NetRegs.co.uk is a partnership between the Northern Ireland Environment Agency and SEPA in Scotland, which provides free environmental guidance, self-assessment and learning tools for SMEs throughout Northern Ireland and Scotland.

There is an opportunity to leverage the strong social driver highlighted in the research and develop a social/communitive incentive in the form of a recognition system for GBC/environmental excellence/environmental performance. It is important not to underestimate that a social driver/incentive may in fact be more powerful than an economic driver/incentive. Establishment of a prestigious award or verified recognition scheme could support green image motivating factors for organisations. Organisations could make commitments to engage in environmental excellence programmes. A tiered system of award/recognition could also account for organisations at different stages of environmental excellence maturity and help generate a pipeline and roadmap for organisations. An environmental excellence recognition system could take other schemes/programmes/accreditations into account in meeting award criteria and requirements (e.g. adoption of EMAS, implementing water stewardship standards, Origin Green programme, Repak scheme, GRI reporting).

Given the strong influence of cost and return-on-investment in compliance decision-making, economic instruments have an important role in GBC but should be considered as part of a cocktail of other regulatory, communitive and infrastructural instruments as incentives. Some examples of economic instruments to explore include reduced licence charges, greater access to finance and grants and reduced insurance. Further investigation of the most effective combinations and blends of incentives to achieve GBC adoption would be worthwhile.

5.2.5 Recommendation 5: action-based research, innovation and collective action on GBC

Underlying objectives and elements of GBC are often found and/or are implicit in other policy, models, frameworks and ideologies (e.g. SDGs, GPP, Shingo model of operational excellence). For many organisations and industries across different markets and sectors, adopting a GBC approach is associated with innovation, resilience, competitive advantage, greater trust and long-term sustainable value.

There is an opportunity to take an action-based research perspective and explore/pilot new GBC approaches by focusing on an immediate issue

and high-level thematic area such as the circular economy, waste or water. For example, Finland has a national water stewardship commitment that challenges companies to assess water risks in their value chains and develop sustainable water use and governance. This commitment is also aligned to achievement of SDG targets. Similarly, Scotland has the Hydro Nation strategy to maximise the value and benefits from its national water sector. Many tools exist internationally to support GBC activities in the area of water, such as knowledge bases and groups, water stewardship standards, and water risk assessment tools.

Along with focusing on a specific thematic area, it could also be beneficial to focus on a priority sector (or sectors), for example water and the dairy sector or waste and the food and beverage sector. This approach could align with the EPA research priorities and maintain a more defined scope in terms of collaboration activities, tools and supports, particularly in terms of developing and piloting any new GBC initiatives such as those recommended above.

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Abbreviations

AMR	Anti-Microbial Resistance
BAT	Best available technique
BIT	Behavioural Insights Team
BREF	Best available technique reference document
C&E	Compliance and enforcement
CAFE	Cleaner Air for Europe
CGPP	Cleaner Greener Production Programme
CLIMA	Climate Action
CoP	Community of practice
DG	Directorate-General
EDEN	Environmental Data Exchange Network
EEA	European Environment Agency
EEB	European Environmental Bureau
EIA	Environmental Impact Assessment
EMAS	Eco-Management and Audit Scheme
EMS	Environmental management system(s)
EPA	Environmental Protection Agency
EPI	Environmental Performance Index
ETS	Emissions Trading System
EU	European Union
GBC	Going beyond compliance
GPP	Green Public Procurement
GRI	Global Reporting Initiative
IDAE	Instituto para la Diversificación y Ahorro de la Energía (Institute for Energy Diversification and Saving)
IMPEL	European Union Network for the Implementation and Enforcement of Environmental Law
INECE	International Network for Environmental Compliance and Enforcement
ISO	International Organization for Standardization
IT	Information technology
KPI	Key performance indicator
MSCI	Morgan Stanley Capital International
NGO	Non-governmental organisation
NIECE	Network for Ireland's Environmental Compliance and Enforcement
OECD	Organisation for Economic Co-operation and Development
OEE	Office of Environmental Enforcement
OEF	Organisation Environmental Footprint
OSHA	Occupational Safety and Health Administration
PEF	Product Environmental Footprint
SCEEP	South Carolina Environmental Excellence Program
SDG	Sustainable Development Goal
SEA	Strategic Environmental Assessment
SEAI	Sustainable Energy Authority of Ireland
SEPA	Scottish Environment Protection Agency
SGA	Sustainable growth agreement
SGE	Special Government Employee
SME	Small to medium-sized enterprise
UN	United Nations
VPP	Voluntary Protection Program

Appendix 1 Key EU Environmental Legislation

A1.1 EU Industrial Emissions Directive 2010

The Industrial Emissions Directive 2010 is an EU directive that streamlines seven existing EU environmental directives into one integrated pollution prevention and control policy that commits Member States to reduce the impact of their national industrial emissions.

The directive utilises the "polluters pays" principle but offers exemptions to firms that can show that the cost of new technology outweighs the benefit. This has been criticised for allowing a large number of power plants to exceed pollution control standards: Bulgaria, for example, has requested an exemption for its coal-powered power plants, which provide 40% of the country's electricity and employ 10,000 workers.

A1.2 EU Emissions Trading System 2005

Launched in 2005 to fight global warming, the EU ETS was the world's first multi-national company-level greenhouse gas emissions trading initiative and it remains the largest. The EU ETS aims to allow organisations to reduce their greenhouse gas emissions in a cost-effective way. The scheme has over 11,000 industrial installations participating from all 28 Member States plus Liechtenstein, Iceland and Norway. The scheme is split into trading periods with specific targets for each period; we are currently in phase III (2013–2020). Emissions trading remains controversial, and public, political and industry support for EU ETS has been mixed.

A1.3 Environmental Impact Assessment 2014 (EIA Directive)

After being in force since 1985, the updated Environmental Impact Assessment (EIA Directive – 2014/52/EU) entered into law in 2014. An EIA review looks at individual local project plans through environmental studies and public discussion to ensure that environmental implications are accounted for before the project goes ahead. EIAs require decision-makers within the organisation to justify project plans, while taking into account all potential environmental effects. This pushes environmental adherence to a higher level than if a set standard of compliance was required for every scenario.

A1.4 EU Strategic Environmental Assessment 2001 (SEA Directive)

The EIA Directive applies only to localised impacts of individual private or public projects. However, high-level organisational decisions are responsible for most environmental damage. The Strategic Environmental Assessment (SEA) Directive was therefore introduced to cover strategic decision-making across national boundaries in a harmonised regulatory framework. All EU Member States are expected to comply with the SEA Directive, which covers public programmes at national, regional and local levels in the energy, industry, transport, waste/water management, agriculture, forestry, fisheries, tourism, telecommunications, urban planning and land use sectors.

As the SEA Directive applies to large-scale public policy and planning projects, it allows an extended process of public consultation and possibly judicial review. To ensure strategic alignment between organisational plans and environmental impact, an SEA survey should be undertaken before a micro-level EIA review begins.

Both the EIA and SEA Directives aim to ensure that planned projects go through a thorough environmental impact review; public consultation and participation is a key part of the review process. EU co-financed projects under agriculture, fisheries and cohesion policies must comply with both EIA and SEA Directives prior to approval of assistance and work commencement.

A1.5 European Communities (Access to Information on the Environment) Regulations 2007 (Revised 2014)

European Directive 2003/4/EC on public access to environmental information (AIE Directive) guarantees the public the right to access all environmental data held by public agencies in Member States. To ensure that data are disseminated systematically and as widely as possible, the use and promotion of computer database technology is a key objective within the regulation.

A1.6 EU Ambient Air Quality and Cleaner Air for Europe (CAFE) Directive 2008

European Directive 2008/50/EC (CAFE Directive) sets new limit values on air quality and exposure-related objectives for Member States. The CAFE Directive sets out a legal requirement to monitor, assess and manage ambient air quality as well as inform the public of quality levels. Several countries are being sued by the EU for breaching permissible limits. The directive allows natural sources of pollution to be discounted when compliance to limit values is assessed.

Appendix 2 MINDSPACE Checklist

The MINDSPACE checklist system was developed by the UK's BIT, which explores how behavioural science can be applied to policy decision-making and used to encourage better citizen decision-making.

MINDSPACE	Description	Impact
Messenger	People are influenced by the source of intervention and their perception of that person or organisation.	Demographic and behavioural similarities between messenger and recipient increase acceptance. Use messengers from diverse demographics to improve effectiveness.
Incentives	Responses to incentives are shaped by mental shortcuts; these shortcuts are predictable, for instance the urge to avoid losses.	The impact of an incentive depends on its type, magnitude and timing; these can maximise the perception of the cost or benefit of behaving in a certain way.
Norms	People are influenced by what others do, i.e. within their expected social norms. The power of social norms comes from the benefits of compliance and penalties for non-conformity.	Social norms can have a powerful effect on behaviour and automating responses. New social norms can develop and spread quickly.
Defaults	People will tend to follow pre-set options and choices, or "go with the flow", making decisions based on what feels right at the time and accepting any consequences.	By reversing the alternatives (e.g. making a scheme opt-out instead of opt-in) a more logical decision-making process can be instigated.
Salience	Focus attention on what is new; this is a mental short-hand but it can make the focus appear more relevant than it might actually be.	Conveying a simple message is important for salience, as attention is more likely to be drawn to things we understand and can encode easily.
Priming	Actions are often influenced by subconscious learnt cues that surround people and influence decisions.	Primers must be strategically controlled or people can react in random or undesirable ways.
Affect	Affect refers to people being emotionally moved; emotional reactions can strongly shape the subsequent actions. All perceptions contain a level of emotion.	Affect should be used with care; in particular, instilling fear can be counterproductive. There must be a simple link between the emotion and the expected change of behaviour.
Commitments	People do attempt to be consistent when making promises and with reciprocating favours.	Commitments are more often accomplished as the cost of failure increases; making commitments public creates a social contract that drives a positive conclusion.
Ego	People act in ways that justify their self-opinion and group opinion to make them feel better about themselves. If a positive label is put on a person or group, they will internalise it and, the more that is expected, the better they will perform.	There needs to be a thorough understanding of the motivations and capabilities of the target group.

Appendix 3 Stakeholder Consultations

The project team would like to thank all the stakeholders who offered their time to partake in the consultation activity for the research study. We would like to acknowledge the contributions from the following:

- ABP Food Group;
- Arran Chemicals;
- Bausch and Lomb;
- Beauparc;
- BOC Gases;
- Bord Bia – Irish Food Board;
- Bord Iascaigh Mhara (BIM);
- Bord na Móna;
- Enva;
- the EPA – OEE;
- IMPEL;
- Finnish Environmental Institute SYKE;
- GlaxoSmithKline (GSK);
- Guerbet Ireland ULC;
- Hovione;
- Irish Waste Management Association (IWMA);
- Kemmy Business School, University of Limerick (UL);
- Merck Millipore;
- Ministry of Environment and Food of Denmark;
- Pfizer;
- Regeneron;
- Rosderra Irish Meats Group;
- School of Law, National University of Ireland Galway (NUIG);
- Scotch Whisky Association (SWA);
- Silver Hill Foods;
- SEAI;
- University of the Highlands and Islands;
- Veolia;
- Water Institute, Dublin City University.

AN GHNÍOMHAIREACHT UM CHAOMHNÚ COMHSHAOIL
Tá an Ghníomhaireacht um Chaomhnú Comhshaoil (GCC) freagrach as an gcomhshaol a chaomhnú agus a fheabhsú mar shócmhainn luachmhar do mhuintir na hÉireann. Táimid tiomanta do dhaoine agus don chomhshaol a chosaint ó éifeachtaí díobhálacha na radaíochta agus an truaillithe.

Is féidir obair na Gníomhaireachta a roinnt ina trí phríomhréimse:

Rialú: *Déanaimid córais éifeachtacha rialaithe agus comhlíonta comhshaoil a chur i bhfeidhm chun torthaí maithe comhshaoil a sholáthar agus chun díriú orthu siúd nach gcloíonn leis na córais sin.*

Eolas: *Soláthraímid sonraí, faisnéis agus measúnú comhshaoil atá ar ardchaighdeán, spriocdhírithe agus tráthúil chun bonn eolais a chur faoin gcinnteoireacht ar gach leibhéal.*

Tacaíocht: *Bímid ag saothrú i gcomhar le grúpaí eile chun tacú le comhshaol atá glan, táirgiúil agus cosanta go maith, agus le hiompar a chuirfidh le comhshaol inbhuanaithe.*

Ár bhFreagrachtaí

Ceadúnú
Déanaimid na gníomhaíochtaí seo a leanas a rialú ionas nach ndéanann siad dochar do shláinte an phobail ná don chomhshaol:
- saoráidí dramhaíola *(m.sh. láithreáin líonta talún, loisceoirí, stáisiúin aistrithe dramhaíola)*;
- gníomhaíochtaí tionsclaíocha ar scála mór *(m.sh. déantúsaíocht cógaisíochta, déantúsaíocht stroighne, stáisiúin chumhachta)*;
- an diantalmhaíocht *(m.sh. muca, éanlaith)*;
- úsáid shrianta agus scaoileadh rialaithe Orgánach Géinmhodhnaithe *(OGM)*;
- foinsí radaíochta ianúcháin *(m.sh. trealamh x-gha agus radaiteiripe, foinsí tionsclaíocha)*;
- áiseanna móra stórála peitril;
- scardadh dramhuisce;
- gníomhaíochtaí dumpála ar farraige.

Forfheidhmiú Náisiúnta i leith Cúrsaí Comhshaoil
- Clár náisiúnta iniúchtaí agus cigireachtaí a dhéanamh gach bliain ar shaoráidí a bhfuil ceadúnas ón nGníomhaireacht acu.
- Maoirseacht a dhéanamh ar fhreagrachtaí cosanta comhshaoil na n-údarás áitiúil.
- Caighdeán an uisce óil, arna sholáthar ag soláthraithe uisce phoiblí, a mhaoirsiú.
- Obair le húdaráis áitiúla agus le gníomhaireachtaí eile chun dul i ngleic le coireanna comhshaoil trí chomhordú a dhéanamh ar líonra forfheidhmiúcháin náisiúnta, trí dhíriú ar chiontóirí, agus trí mhaoirsiú a dhéanamh ar leasúchán.
- Cur i bhfeidhm rialachán ar nós na Rialachán um Dhramhthrealamh Leictreach agus Leictreonach (DTLL), um Shrian ar Shubstaintí Guaiseacha agus na Rialachán um rialú ar shubstaintí a ídíonn an ciseal ózóin.
- An dlí a chur orthu siúd a bhriseann dlí an chomhshaoil agus a dhéanann dochar don chomhshaol.

Bainistíocht Uisce
- Monatóireacht agus tuairisciú a dhéanamh ar cháilíocht aibhneacha, lochanna, uiscí idirchriosacha agus cósta na hÉireann, agus screamhuiscí; leibhéil uisce agus sruthanna aibhneacha a thomhas.
- Comhordú náisiúnta agus maoirsiú a dhéanamh ar an gCreat-Treoir Uisce.
- Monatóireacht agus tuairisciú a dhéanamh ar Cháilíocht an Uisce Snámha.

Monatóireacht, Anailís agus Tuairisciú ar an gComhshaol
- Monatóireacht a dhéanamh ar cháilíocht an aeir agus Treoir an AE maidir le hAer Glan don Eoraip (CAFÉ) a chur chun feidhme.
- Tuairisciú neamhspleách le cabhrú le cinnteoireacht an rialtais náisiúnta agus na n-údarás áitiúil *(m.sh. tuairisciú tréimhsiúil ar staid Chomhshaol na hÉireann agus Tuarascálacha ar Tháscairí)*.

Rialú Astaíochtaí na nGás Ceaptha Teasa in Éirinn
- Fardail agus réamh-mheastacháin na hÉireann maidir le gáis cheaptha teasa a ullmhú.
- An Treoir maidir le Trádáil Astaíochtaí a chur chun feidhme i gcomhair breis agus 100 de na táirgeoirí dé-ocsaíde carbóin is mó in Éirinn.

Taighde agus Forbairt Comhshaoil
- Taighde comhshaoil a chistiú chun brúnna a shainaithint, bonn eolais a chur faoi bheartais, agus réitigh a sholáthar i réimsí na haeráide, an uisce agus na hinbhuanaitheachta.

Measúnacht Straitéiseach Timpeallachta
- Measúnacht a dhéanamh ar thionchar pleananna agus clár beartaithe ar an gcomhshaol in Éirinn *(m.sh. mórphleananna forbartha)*.

Cosaint Raideolaíoch
- Monatóireacht a dhéanamh ar leibhéil radaíochta, measúnacht a dhéanamh ar nochtadh mhuintir na hÉireann don radaíocht ianúcháin.
- Cabhrú le pleananna náisiúnta a fhorbairt le haghaidh éigeandálaí ag eascairt as taismí núicléacha.
- Monatóireacht a dhéanamh ar fhorbairtí thar lear a bhaineann le saoráidí núicléacha agus leis an tsábháilteacht raideolaíochta.
- Sainseirbhísí cosanta ar an radaíocht a sholáthar, nó maoirsiú a dhéanamh ar sholáthar na seirbhísí sin.

Treoir, Faisnéis Inrochtana agus Oideachas
- Comhairle agus treoir a chur ar fáil d'earnáil na tionsclaíochta agus don phobal maidir le hábhair a bhaineann le caomhnú an chomhshaoil agus leis an gcosaint raideolaíoch.
- Faisnéis thráthúil ar an gcomhshaol ar a bhfuil fáil éasca a chur ar fáil chun rannpháirtíocht an phobail a spreagadh sa chinnteoireacht i ndáil leis an gcomhshaol *(m.sh. Timpeall an Tí, léarscáileanna radóin)*.
- Comhairle a chur ar fáil don Rialtas maidir le hábhair a bhaineann leis an tsábháilteacht raideolaíoch agus le cúrsaí práinnfhreagartha.
- Plean Náisiúnta Bainistíochta Dramhaíola Guaisí a fhorbairt chun dramhaíl ghuaiseach a chosc agus a bhainistiú.

Múscailt Feasachta agus Athrú Iompraíochta
- Feasacht chomhshaoil níos fearr a ghiniúint agus dul i bhfeidhm ar athrú iompraíochta dearfach trí thacú le gnóthais, le pobail agus le teaghlaigh a bheith níos éifeachtúla ar acmhainní.
- Tástáil le haghaidh radóin a chur chun cinn i dtithe agus in ionaid oibre, agus gníomhartha leasúcháin a spreagadh nuair is gá.

Bainistíocht agus struchtúr na Gníomhaireachta um Chaomhnú Comhshaoil
Tá an ghníomhaíocht á bainistiú ag Bord lánaimseartha, ar a bhfuil Ard-Stiúrthóir agus cúigear Stiúrthóirí. Déantar an obair ar fud cúig cinn d'Oifigí:
- An Oifig um Inmharthanacht Comhshaoil
- An Oifig Forfheidhmithe i leith cúrsaí Comhshaoil
- An Oifig um Fianaise is Measúnú
- Oifig um Chosaint Radaíochta agus Monatóireachta Comhshaoil
- An Oifig Cumarsáide agus Seirbhísí Corparáideacha

Tá Coiste Comhairleach ag an nGníomhaireacht le cabhrú léi. Tá dáréag comhaltaí air agus tagann siad le chéile go rialta le plé a dhéanamh ar ábhair imní agus le comhairle a chur ar an mBord.

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Behavioural Change Tools to Promote Going Beyond Compliance in the Regulated Community

Authors: Niall Keely, Myles Kingston and Ken Stockil

This research critically reviewed contextual, motivational and operational aspects that influence organisational environmental regulatory compliance behaviour and performance among regulated communities. The report provides a better understanding of what barriers and drivers exist and what factors, characteristics and tools help promote "going-beyond" compliance behaviour.

Identifying Pressures

New compliance and enforcement approaches are needed to keep pace with evolving standards and best practices, resource pressures, additional complexities, increasing knowledge and expertise gaps, and sundry other environmental/economic/societal demands. Limited resources need to be utilised more efficiently and more intelligent and targeted approaches are needed. Globally, there is a critical need to transition beyond "business-as-usual" mindsets and practices in order to remain competitive, resilient and sustainable into the future. However, the organisational and behavioural changes required are challenging and complex and require long-term perspectives and perseverance.

Informing Policy

This research contributes to the body of knowledge and provides insight on the current compliance landscape and trends in terms of strategies and models of enforcement, adoption of technology and incorporation of behavioural aspects and "softer" interventions in compliance and enforcement (including policy development). Following extensive desk research and a process of national and international actor consultations, the report helps define the key challenges, barriers and drivers to (going-beyond) compliance and highlights contextual, organisational and behavioural complexities and nuances involved in addressing the topic. With a better understanding of the underlying barriers, drivers and factors influencing organisational regulatory compliance, the most appropriate policy instruments and tools can be chosen or developed to target that aspect and help deliver a desired outcome. In practice, it is a combination of different instruments, incentives and tools operating together that exerts an effect and leads to complexity.

Developing Solutions

The report outlines several recommendations to help promote greater adoption of going-beyond compliance culture and practices. There is a need to set out a clear definition and vision of what going-beyond compliance means for Ireland and how it might be implemented. There is also a need for collaboration, information sharing and knowledge transfer activities across actors to raise their capacity and capability to deliver on this vision and provide long-term value across the triple bottom line. Appropriate instruments and incentives are necessary to remove barriers and support drivers in order to drive commitments, engagement and adoption of a "going-beyond compliance" approach. Existing case studies and lessons learned from different programmes and approaches highlight key success factors and core foundational elements from which to build on in terms of compliance and enforcement policy development and the design of interventions and support tools to promote the adoption of going-beyond compliance culture and practices.

EPA Research: McCumiskey House,
Richiew, Clonskeagh, Dublin 14.

Phone: 01 268 0100
Twitter: @EPAResearchNews
Email: research@epa.ie

www.epa.ie

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