

Health and Safety Executive: Innovation in regulation

Introduction

Keeping pace with change and anticipating and tackling new health and safety challenges is one of the strategic themes in the Helping Great Britain work well strategy.¹ HSE's strategic priorities include getting into the best shape to deliver its responsibilities by continuing to improve the health and safety system and anticipating the future by developing and embracing new ways of working.

Proportionate, risk-based regulation will be used to support productivity, innovation and the safe introduction of new technologies and working practices.

HSE investigates failure of controls to manage risk. The lessons learned from this activity can help business design out technological, process or design issues to help prevent these failures occurring in the future. By adopting this approach, potential health and safety barriers to innovation can be removed.

How legislation and enforcement frameworks could adapt to new technologies and disruptive business models to encourage growth

The enduring principle of health and safety law in Great Britain is that those who create risks are best placed to control them, and they should do so in a proportionate and practicable way. The approach is primarily goal-setting, not prescriptive. It sets out the objectives to be achieved, giving dutyholders considerable flexibility when deciding what measures are needed to meet these objectives and supporting innovation.

Goal-setting gives dutyholders the freedom and the incentive to meet regulatory requirements in the most cost-effective way possible, applying new or existing technologies to control the risks in ways that maximise their productivity.

Goal-setting regulation can also aid the development of new areas of industry. It continues to be a key part of the general duties of the Health and Safety at Work etc Act 1974 (HSWA) and the health and safety regulations that HSE and local authorities (LAs) regulate.

HSE has the power to issue certificates of exemption from requirements in regulations in certain circumstances and provided health and safety will not be compromised. Examples of how this can support business growth are given in the following pages.

¹ www.hse.gov.uk/strategy/assets/docs/hse-helping-great-britain-work-well-strategy-2016.pdf

HSWA allowed prescriptive legislation to be replaced with modern, outcome-focused regulations, including when implementing EU Directives. In response to the 2011 Löfstedt review,² the regulatory framework and associated guidance were further modernised and the final layers of prescriptive legislation have been removed. As part of that exercise, HSE removed or improved around 84 per cent of health and safety regulations without compromising health and safety standards.

We will maintain our focus on simplification, increasing flexibility and improving administrative processes without reducing levels of health and safety. We will also continue to maintain a routine refresh cycle for legislation and guidance, and our planning processes and strategic priorities take account of emerging trends and innovation.

Sensible and proportionate risk management is integral to good business practice. Many SMEs and start-ups are in low-risk areas where managing workplace risks shouldn't be complicated or costly. Customised support³ is available, providing access to proportionate advice and guidance focused on the needs of SMEs. This can help to keep customers and employees safe, while helping to protect and grow the business.

Examples of adapting legal frameworks

HSE exemption for SGN

This will allow SGN to convey gas, for a 12-month trial, in the Oban Statutory Independent Undertaking (SIU) with a 'Wobbe Index' outside that currently permitted by the Gas Safety (Management) Regulations 1996. This is to evaluate whether the use of such gas by consumers causes any safety or health issues such as increased carbon monoxide production.

The existing specifications mean that sources of gas from outside Great Britain have to be adjusted before going through the country's gas transmission and distribution network, adding complexity and cost. If the trial is successful, the gas industry estimates that large cost reductions could be made.

HSE is working on further similar exemption requests to allow SGN to transport such gas in their Campbeltown, Thurso and Wick SIUs. Their performance during the exemption period will be monitored closely and will add to the evidence base for gas specification change, contributing to security of gas supply for Great Britain and flexibility in the sourcing of gas.

Olympics

London won the bid for the 2012 Olympics and Paralympic Games in July 2005. Key to the overall success of the project was the innovative and early identification and immediate engagement with the main stakeholders going to be involved in building the main venues. HSE's enabling approach, acting as a facilitator, set the tone for engagement with all the London 2012 dutyholders. HSE encouraged the integration of design teams to ensure better health and safety outcomes. Empowerment at all levels was critical, ie the ability to stop work when necessary.

HSE also used data analytics to support the Olympics project. This included supplying information from their National Population Database to other government departments to assist with their emergency response planning, and mapping the major hazards sites and their associated risk zones to check their proximity to Olympic venues.

² www.gov.uk/government/uploads/system/uploads/attachment_data/file/66790/lofstedt-report.pdf

³ www.hse.gov.uk/simple-health-safety

The health and safety record of the project was excellent. London 2012 was the first modern Olympics where no workers were killed constructing the venues. Importantly, HSE's approach has left a considerable legacy including practical case studies, developed using HSE's 'Safety Climate Tool', for use by the construction industry to improve and learn from the success of the Olympic build.

The London 2012 team have continued to ensure that the lessons learned from HSE's involvement with the games are taken forward into other major projects, including the Commonwealth Games in Glasgow in 2014, the Crossrail project, Thames Tideway and High Speed 2.

Public information on major accident hazard sites

HSE led the way in developing a database⁴ in conjunction with industry and cross-government stakeholders that hosts the information on major hazard establishments by the regulations. The database was designed to balance the need to provide statutory information useful to the public with keeping burdens on business to a minimum and ensuring sensitive information is not put in the public domain.

Improved GMO Regulations

While the Genetically Modified Organisms (Contained Use) Regulations 2014⁵ retain the essential protections for human health and the environment, they are now more risk-based and proportionate. They take account of current working practices and available technologies and provide a more flexible approach. This change supports growth in the key bioscience sector and ensures UK business is not at a competitive disadvantage. HSE will maintain its international dialogue, ensuring the future direction of the field is regulated in a way that supports responsible innovation.

Adapting chemicals authorisations

HSE has responded to new application technologies and changing practice in the use of biocides and pesticides by adapting the conditions of authorisation for these products to allow safer and more efficient use.

An assessment of how new technology is likely to shape the sectors being regulated

One of HSE's strategic goals is that it should lead the world in anticipating and tackling new health and safety challenges created by social, economic and technological change. In a continuously evolving world of work, health and safety practices must move with the times. To remain a world leader in risk management Britain needs to attract high-quality capability, anticipate the workplace challenges of tomorrow and use the flexibility of HSE's goal-setting approach to solve them in ways that enable innovation and the safe use of new technologies.

HSE sees foresight activity as fundamental to identifying new health and safety challenges from social, technological, environmental, economic and political change. We continue to invest in horizon scanning and have a team of scientists to set science programme priorities and build networks between science, policy and legislative processes to develop and implement programmes of research and innovation. This will enable us to respond to emerging innovative technologies and check that the regulatory framework is proportionate and not a barrier to growth.

⁴ <https://notifications.hse.gov.uk/COMAH2015/Search.aspx>

⁵ www.hse.gov.uk/biosafety/gmo/whats-new.htm

The proactive engagement approach used by our Foresight Centre has helped to identify five priority research areas (eg developing an appropriate evidence strategy for the future and taking responsibility for health at work) and have a more forward-looking and longer-term approach to science planning. It will continue with its programme of work to deliver systematic scanning to identify future trends and the outputs will contribute to:

- designing robust policies that support research and development to foster innovation;
- policies for education and training to provide the workforce with the relevant skills for the future;
- policies to promote sound business, which encourages innovation.

HSE has a worldwide reputation for independent research. We are currently developing shared research programmes, co-funded by industry and other partners, to generate the evidence needed to produce practical intervention in meeting health and safety challenges. We will be publishing the outcome of shared research on vapour cloud explosions and on flammable atmospheres from oil mists. Key new topics under discussion with potential investors are energy storage and engineering composite repairs.

HSE will explore 'opening up' research programmes to other governments and private sector companies (eg the formation of an International Institute for Regulatory Research and access for SMEs through 'research clubs'). This shared research will help to support the introduction of technology and process innovation by enabling industry and others to work in partnership with HSE on developing shared solutions, and shaping the research activity.

Examples of how technology is shaping sectors

Hydrogen-powered vehicles

Over the past decade industry, academia and HSE have been working together to define codes and standards that have laid the ground for the safe introduction of hydrogen-powered fuel-cell electric vehicles and the development of a safe refuelling infrastructure. This work continues and the latest addition to this is a wind-powered hydrogen refuelling station, which opened in Sheffield in September 2015.

Transfer of technologies into agriculture

HSE is developing a strategy that will inform future research and guidance priorities for those seeking to transfer mature technologies used by other industries in controlled environments (such as robotics and remotely controlled work equipment in factories) into agriculture. The impact these technologies will have on health and safety in agriculture is uncertain and the research will put HSE in a better position to provide advice.

Breath test for silica

Respirable crystalline silica can cause conditions such as silicosis and lung cancer. HSE is developing a breath test to assess the harm to health posed by breathing in silica. It has potential to complement traditional approaches and also to be a biomonitoring tool to detect and assess exposure in workers before harm occurs.

Reducing asthma in motor vehicle repair

Scientists at HSE's Health and Safety Laboratory (HSL) in Buxton were awarded the British Occupational Hygiene Society's 'Bedford Prize' for their work in support of the successful HSE initiative to reduce occupational asthma in motor vehicle repair caused by exposure to isocyanate paints.

Manual handling project

HSL has worked with a major supermarket and trade union to reduce manual handling risks for staff handling items in distribution centres. Using surveys, and monitoring workrates and musculoskeletal well-being to provide evidence, HSL advised the supermarket on changes to be put in place. This has increased productivity and reduced risks. The intervention has had a significant, positive impact on the well-being of the workforce and should generate savings for the business.

Actions for how regulators could better utilise new technologies to generate efficiency savings and reduce burdens on business

HSE's primary function is to secure the health, safety and welfare of people at work in Great Britain and to protect others from risks to health and safety from work activity. It works in partnership with LAs as co-regulators in accordance with HSWA and its supporting regulations. HSE acts as an enabling and safeguarding regulator supporting the introduction of new technologies in key risk areas. Our goal is to be a modern, independent and effective regulator.

Great Britain has the potential to lead the world in the use of proportionate risk management to protect people and promote productivity. HSE's ongoing strategy seeks to ensure that responsibility for the prevention of work-related death, injury and ill health is owned and shared throughout the health and safety system. We will continue to support those efforts and play our part to improve outcomes and deliver our responsibilities as the independent regulator and prime mover in the system.

HSE has a rounded and robust regulatory approach that draws on a varied toolkit of intervention strategies. This means investing in use of intelligence, customer insight and digital tools. It also requires clear prioritisation and targeting of interventions, on the basis of achieving most impact from the resources deployed. HSE will continue to develop services and products that contribute to improved management and control of risks, sharing knowledge at home and further afield.

The reputation of HSE's data analytics capabilities is growing across government. Our expertise in mining large volumes of data, extracting useful information and then presenting this in a user-friendly way is attracting a lot of interest. We are developing our 'user insight' and digital capabilities and creating a dedicated 'Insight' team. This will improve our relationships with dutyholders and the wider public, and will help create more effective interventions.

Alongside this, a 'digital by default' approach is modernising HSE's service delivery, including the provision of advice and guidance, the collection of intelligence (eg accident reporting) and capturing public concerns. We are currently exploring options to improve service provision through end-to-end process reviews and digitally enabling our services where it is appropriate to do so.

Examples of how new technologies can generate savings and reduce burdens

IT tool for dutyholder performance

HSE specialists have developed a tool called Find-It⁶ to target inspection efforts more explicitly on higher-risk sectors, poor performers and serious regulatory breaches. Find-It uses innovative techniques to match and link disparate data and provide a combined view of dutyholder performance. It helps inspectors target regulatory activity to where it is most needed and reduce burdens on compliant businesses.

Find-It has been successfully used in HSE since 2012 and interest in the approach has been growing from other regulators. This has included Alpha trials for Defra to look at agricultural inspection, for BRDO looking at local authority regulation and for the CO/DCLG for use in joint tasking to address the illicit economy. Scoping studies are underway with ORR and the Defence Security Authority and HSE is in discussion with more than ten other departments about the use of this approach.

As a result, we are currently developing a plan to extend the Find-It concept to a Regulatory Intelligence Hub, to provide a coordinated, cross-government approach to the provision of intelligence for regulation. This would improve the targeting and efficiency of regulatory activity by allowing more effective risk- and evidence-based interventions using appropriate sharing of data by regulators across government. It would also meet a number of government objectives by using an innovative solution to enhance operational cost-effectiveness and reduce the burden of inspection on compliant businesses.

Land-use planning

HSE has introduced a land-use planning service for developers and businesses in the chemical sector. This innovative, fee-paying service is designed to make a positive contribution to national growth.

Laser scanning for investigations

HSE specialists have developed and deployed laser-scanning capability for incident investigation work. This increases efficiency in deployment of specialists on incident sites, and enhances material for use in court. Laser scanning enables dimensionally accurate visualisation of any scene in the form of millions of data points captured by a rotating laser. It allows levels of detail and accuracy previously impossible to acquire; incident evidence can be gathered in just a couple of hours that previously took days with traditional methods. This has been used in the Alton Towers and Bosley investigations.

INSPECT tool

HSE social scientists and economists have drawn on 'nudge' approaches to develop the 'INSPECT' tool for both dutyholders and policymakers to enable them to tackle health and safety challenges. There have also been workshops with stakeholder groups including industries and trade unions.

⁶ www.shponline.co.uk/making-greater-use-of-data/