

## Innovation Principle – Why Now?

### What is it?

This is simply *'whenever policy or regulatory decisions are under consideration, the impact on innovation should also be fully assessed and addressed'*.

The Innovation Principle enables **better regulation** by ensuring a balanced approach is taken in policy decision making, thereby stimulating investment in innovation by increasing the confidence of innovators in the regulatory system. One of the first legislations to refer to the Innovation Principle is the recently adopted EU legislation Horizon Europe; its publication in the EU Official Journal of Law is imminent. This important development was recently acknowledged by the OECD<sup>1</sup>.

### What does it do?

When used alongside other principles, including environmental principles, we can protect society and the environment whilst also protecting UK's ability to innovate. Without its inclusion only human health and environment considerations are systematically accounted for, with no automatic consideration of the implications for innovation.

The Innovation Principle enables societal and economic challenges to also be considered by empowering the UK to develop new technologies and solutions that are often of significant benefit to health, the environment, sustainability and society in general.

The Innovation Principle seeks to support the existing evidence-based approach, based on the best available science, which is pragmatic, proportionate and reviewable. It is used to improve the quality and application

of legislation and as a result, to stimulate confidence in investment and innovation.

### Is there a conflict between the Innovation Principle and other environmental principles?

No. The Principle does not set out to support innovation irrespective of its impact on health and / or the environment. On the contrary, the safety of employees, customers and the environment come first when bringing new innovations to the market. Through mutual application of these principles (both environment and innovation), decisions can be taken that protect society, the environment and the ability to innovate. Indeed, this will be essential as the UK drives toward increased environmental sustainability.

### Isn't innovation already linked with the Precautionary Principle in the EU?

Yes. The precautionary principle (Arts. 114 and 191 TFEU) is applied to manage the risk where scientific evidence is not only inconclusive or is contested between experts, but a preliminary and objective scientific risk assessment raises justified concern that a substance, production process or product may cause harm to human health or the environment. The European Commission's Communication of 2000 provides guidance on its application.

Whilst the Precautionary Principle can function to encourage innovation through policy options, it is also important to recognise that novel ideas originating in companies also make use of this principle during the research and development stages of innovation to appraise and manage the risks (particularly at an early stage) e.g. a

new chemical substance, new mobile phone, medicine, television etc. There is a danger though that innovation can be hindered where benefits of new technologies and solutions cannot be considered alongside potential risks, an example being a cancer treatment drug that uses the mechanism of endocrine disruption to kill cancer cells. In this regard it is important to acknowledge that well directed regulation can therefore stimulate innovation, whereas poorly formulated regulation can result in the opposite i.e. stifle innovation. This dilemma can not be solved by the precautionary principle alone, but should be addressed by application of both principles, alongside each other, in a complimentary sense.

### Why then do we need an Innovation Principle?

What the precautionary and other principles do not do, nor are designed to do, is to support the important contribution which innovation can make toward social progress, economic prosperity and sustainability.

By creating an Innovation Principle and applying this alongside other principles including environment principles, not only can society be safe in the knowledge that any risks identified are being effectively managed, they can also reap the benefits from new innovations fostered here in the UK.

Incorporating the Innovation Principle into the UK policy making process can only but assist the UK in making great strides towards achieving its contribution towards the global Sustainable Development Goals that have been set out by the United Nations.

<sup>1</sup> Reference: <http://www.oecd.org/eu/The-European-Union-A-People-Centred-Agenda.pdf> pp32

Inclusion of the Innovation Principle will help in delivering the long-term objectives to the 25-Year Environment Plan within which government states its intention to build upon both the Industrial and Clean Growth Strategies (published in October and November 2017) with the aim to 'transform productivity across the country and drive green innovation'.

## EXAMPLES:

### 1. Nanomaterials – Regulation hampering innovation<sup>2</sup>

- Excessive precaution
- Burdensome national requirements

The lack of certainty and absence of a common definition on nanomaterials has allowed some countries to introduce their own requirements to classify and regulate nanomaterials. This would have been avoided if the Innovation Principle had been implemented alongside environmental principles, when the EU drafted regulation for nanomaterials.

Nanotechnology has been identified as one of six key enabling technologies and a promoter of innovations in a huge number of sectors such as health, automotive, electronics, cosmetics, aerospace and construction. Its wider contribution to sustainable development should be recognised by enabling novel materials with enhanced efficiency and performance.

Whilst existing regulations such as REACH are an appropriate legal framework to manage nanomaterials, certain member states have introduced additional reporting measures which are not harmonised and impose high bureaucratic requirements on companies. More importantly, nano-specific inventories can signal that these materials are of specific concern and provide incentives for the development of nano-free product alternatives ('blacklisting' of materials).

Way forward: We believe existing regulations are suitable to manage any potential risks from nanomaterials, as they are for other chemical substances. Additional specific guidance in REACH Annexes should be well designed to clarify how to manage potential risks while not undermining innovation and competitiveness. Member State inventories have not been beneficial to either the EU economy or European citizens since they are not evidence-based and have led to the backlisting of products which have already made significant contributions to sustainable development.

### 2. DEHP – Regulation hampering recycling

- Compliance time constrains and costs
- Conflicting interests

REACH: Regulation can significantly impact innovative solutions that are responding to current environmental challenges.

In the past, di(2-ethylhexyl) phthalate (DEHP) was used in the manufacture of polyvinylchloride (PVC). A plant was developed to accept old PVC (containing DEHP) and safely recycle this into flexible recycled PVC for use in geomembranes and some other applications e.g. as a coextruded layer in PVC hosepipes). Then DEHP was identified as a Substance of Very High Concern (SVHC). Whilst the recycling plant invested and successfully obtained a REACH authorisation to enable this process and sell recycled PVC containing DEHP, customers no longer wanted to buy PVC containing an SVHC. This was due to associated costs and loss of the 'green' credentials of the recyclete. As a result, the recycling plant closed. Such an unfortunate and unintended consequence would not have resulted if the Innovation Principle had been

implemented when the legislation underlying these events was drafted.

Way forward: Risk regulations, and the way in which they are implemented, influence the incentives to innovate. When designed well, risk regulations can help to create consumer confidence in the safety and efficacy of technologies. In contrast, poorly-designed regulations can undermine improvements to the environment, for example, reducing access to ideas, diverting resources away from innovation, eroding process efficiency, and increasing the capitalised cost of product or technology development. Poor quality risk and hazard-based regulations also reduce protection for citizens and the environment because they can inadvertently increase net risk rather than reducing it.

### 3. Titanium dioxide – Proposed regulatory approach not fit for purpose

Current: There would be adverse implications from a potential classification of titanium dioxide as a Carcinogen Category 2 (inhalation fine powders) on waste streams and the circular economy, for example the recycling potential of plastics and paper would be impacted. In addition, there would be indirect impacts on innovative technologies based on the properties of the substance properties e.g. diesel exhaust catalysts, pharmaceuticals, photocatalysts for reducing air pollution, UV protection, etc.

### 4. Legislative barrier for circular economy and industrial symbiosis (EPOS example)<sup>3</sup>

The business case concerns the possibility for a chemical manufacturer to send one of its liquid waste streams to a building materials company for energy valorisation.

It is anticipated that the synergy between the two companies can potentially reduce the global footprint of the local industrial activities. Currently CEMEX has a permit to burn 100%

<sup>2</sup> Reference: [www.business-europe.eu/sites/buseur/files/media/reports\\_and\\_studies/2016-12-02\\_impact\\_of\\_eu\\_regulation\\_on\\_innovation\\_-\\_repository\\_of\\_industry\\_cases.pdf](http://www.business-europe.eu/sites/buseur/files/media/reports_and_studies/2016-12-02_impact_of_eu_regulation_on_innovation_-_repository_of_industry_cases.pdf)

<sup>3</sup> Reference: [https://www.spire2030.eu/sites/default/files/users/user222/Epos-docs/epos%20insights%206\\_v2.pdf](https://www.spire2030.eu/sites/default/files/users/user222/Epos-docs/epos%20insights%206_v2.pdf)

waste as fuel in its cement kilns, yet, only 80% of the fuels burned in the CEMEX kilns are based on waste. The liquid waste stream from INEOS can provide an opportunity for CEMEX to replace a portion of the remaining 20% of the energy needs currently provided by primary fuels; therefore, improving kiln operations by reducing costs and indirect emissions. In such a setting, INEOS will stop sending the stream to its current utility provider and could thus negotiate a more favourable price for steam.

The main legislative barrier is that when leaving an industrial site as a by-product, it should be possible for a registered hazardous waste stream to be evaluated and redefined where appropriate and accepted as an additional product. However, this is currently not the case and presents a legislative barrier to increasing symbiosis and consequent reductions in environmental impact. This unfortunate and unintended consequence would not have resulted if the Innovation Principle had been implemented when the legislation was formulated.

Way forward: A review of the current waste legislation is recommended in order to allow waste streams, even when hazardous, to be reused as a resource and thus contribute to the circular economy and boost industrial symbiosis, implementing the Innovation Principle alongside existing environmental principles.

## 5. Waste packaging – unintended consequences

The revision of the UK's technical guidance on the classification of waste (from WM2 to WM3), resulted in more packaging being defined as waste and much of this being classed as hazardous thereby requiring disposal by incineration. As this was contrary to circular economy thinking, in that it would have meant the unnecessary generation of waste and costs associated with its disposal, industry produced its own guidance that enabled the reuse of packaging. However, it took four years to publish this with agreement from all UK regulators. It is understood that the reason for the change was because regulators were witnessing some foul play, e.g. containers that had not been properly emptied were being reused. If the Innovation Principle had been considered during the updating of the UK guidance, impacts on the circular economy would have been better accounted for thereby preventing the need for the industry guidance that took four years to obtain agreement from the regulators.

### Contacts:

#### **Nishma Patel**

*Chemicals Policy Director  
Chemical Industries Association  
UK Tel. +44(0)20 7963 6782  
Mob. +44(0)7885 831 742  
Email: [pateln@cia.org.uk](mailto:pateln@cia.org.uk)*

#### **Roger Pullin, Head of Environment & Health, Chemical Industries Association, UK**

*Tel. +44(0)20 7963 6738  
Mob. +44(0)7951 387317  
Email: [pullinr@cia.org.uk](mailto:pullinr@cia.org.uk)*

#### **Simon Marsh, Director of Employment & Communications, Chemical Industries Association, UK**

*Mob: +44(0)7951 389197  
Email: [MarshS@cia.org.uk](mailto:MarshS@cia.org.uk)*