



Sustainability Commission Report

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Foreword

Rt Hon Caroline Spelman MP

After leaving DEFRA in 2012, I remain convinced that the greatest challenge facing business is to make it sustainable. Over the intervening years, and as part of the Industry and Parliament Trust scheme, I have become more aware of leaders and their businesses who really understand this and use it to great advantage.



This is just the beginning, however, and there are still many who do not appreciate what sustainability could mean for them and their businesses.

I therefore applaud the IPT and the University of Birmingham for holding an enquiry on this subject with the aims of raising awareness of best practice, and identifying the barriers that need to be addressed in the coming years. I believe this can be the beginning of a sea change in the widespread approach of business to a sustainable future.

As part of the Commission on this report, we took evidence from several companies representing a variety of sectors of the economy. It became clear that the approaches and challenges varied with each company. So there is a lot of work still to be done to make sustainability commonly practicable.

Notably, the very nature of the way markets function is not always conducive to the pursuit of sustainability, especially with the pressure for short term gains.

What we did learn was that sustainability is a 3-pronged concept embracing economics, society and the environment, and to be truly sustainable, companies must address all three.

As a country, however, we are forging the way. The UK promoted corporate accounting for sustainability at the Rio+20 Summit back in 2012 and the recommendations in this report should help the Government to lead by example.

So, please do read through this well-timed and important report, and I hope it confirms the positives behind the new direction many companies are now taking, and inspires many more to greater heights!

Yours,

Rt Hon Caroline Spelman MP
Chair of the Sustainability
Commission

Introduction



Professor Stephen Brammer, Joan Walley MP, Adam Elman, Rt Hon the Baroness Prashar CBE

Businesses and governments across the globe are taking commitment to sustainability increasingly seriously, as they look to coordinate significant change in approaches to sustainable development.

The scale and scope of the challenges associated with delivering a sustainably prosperous future are relatively well understood – most notably in the form of climate change, but also in relation to the availability of resources, threats to many species and habitats, growing social inequality, and persistent poverty – but the need to develop solutions and pathways to addressing those challenges is less well advanced. The Sustainability Commission sought to identify the practical and political challenges to achieving an efficient economy and sustainable environment, to highlight best practices from within industry, and to emphasise recommendations to both business and policy-makers as how best to confront the increasing demands of operating business sustainably.

Sustainability is a particularly broad concept, most easily considered as being achieved through harmonisation of economic, environmental and societal factors. Businesses and government are continually taking commitments to sustainability more seriously; having a sustainable business model is increasingly becoming a key tenet of an organisation's long term profitability. Coupled with government's desire to ensure natural resources are used as efficiently as possible, without irreparable damage done to a state's environment, business and government

ought to work together to ensure sustainability is achievable.

A key driver to achieving sustainability has been businesses and governments promoting sustainable development through finite targets, particularly through UN guidelines such as Agenda 21, the Kyoto Protocol, and the Millennium and Sustainable Development Goals.

The defining moment in addressing sustainability occurred at the United Nations Conference on Environment and Development, hosted in Brazil in 1992, which has since commonly been referred to as the Earth Summit. The Earth Summit has become a celebrated moment in ensuring sustainable development, providing the most comprehensive programme of action ever sanctioned by the international community: Agenda 21.

The Earth Summit used the earlier work *Our Common Future*, commonly known as the Brundtland Report, to commit nations to address sustainability. *Our Common Future's* initial objective was to help foster “a global agenda for change” as made implicit in the report's Foreword written by Chairman Gro Harlem Brundtland. The report was crucial in articulating what sustainability comprises of; to this day the Brundtland definition remains the frequently quoted definition of sustainability.

“Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts:

- the concept of needs, in particular the essential needs of the world's poor, to which overriding priority should be given; and
- the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs.”

Brundtland Definition

This definition encapsulates so much of what sustainable development aims to achieve. The breadth of Brundtland's definition covers the more distinct elements of sustainability such as climate change and preservation of eco-systems, but also addresses the importance of education, innovation and societal needs; ensuring all three pillars of sustainability are addressed through sustainable development.

Our Common Future and Brundtland's definition of sustainability became the foundation of the 1992 Earth Summit, as governments universally agreed that

nothing short of a transformation of attitudes and behaviour would be significant enough in enforcing efficiency and sustainable development goals. The Summit delivered goals to address poverty, while reflecting on how excessive consumption places strains on the world's ecology and environment. Governments agreed to redirect plans, both nationally and internationally, to ensure policy reflects the need to ensure business and economic decisions take into account the environmental impact of these decisions.

As such, Agenda 21 clarified a number of key principles to clarify the rights and responsibilities of states regarding sustainability:

Humans should be at the centre of sustainable development, and as such should be entitled to a healthy and productive life, uninhibited by stresses of the environment,

- Scientific or innovation uncertainty should not delay or deter the adoption of measures designed to prevent the degradation of the environment where there is a threat of serious, irreversible damage,
- States have a sovereign right to exploit their own resources, but should not cause damage to the environments of other States,
- Eradication of poverty and reducing the gap in living standards of living should be considered an indispensable aspect to sustainability,
- The full participation of women is essential in achieving sustainable development,
- Developed countries should recognise their role in leading the international pursuit of sustainable development, acknowledging their own encroachment on the environment and natural resources through the technologies and financial resources they command.



Agenda 21 laid the foundations, a signposting of how nations can address the issue of sustainability within an economic, environmental, societal context. The principles of Agenda 21's have been at the heart of more substantive goals, such as the UN's Millennium Development Goals and the more recent Sustainable Development Goals, as endorsed at the Rio+20 Summit which revisited the themes of the Earth Summit 20 years on.

As the Millennium Development Goals target of 2015 drew closer, participants of the Rio+20 Summit were keen to adopt a new set of goals to supersede the existing Millennium Development Goals, and going further in incentivising states to promote sustainable development. As such, one of the outcomes of the Rio+20 Summit was the *Future We Want* proposal which reaffirms states' renewed commitment to Agenda 21 and the Sustainable Development Goals.

> Goal 1

End poverty in all forms everywhere;

> Goal 2

End hunger, achieve food security and improved nutrition and promote sustainable agriculture;

> Goal 3

Ensure healthy lives and promote well-being in all ages;

> Goal 4

Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all;

> Goal 5

Achieve gender equality and empower all women and girls;

> Goal 6

Ensure availability and sustainable management of water and sanitation for all;

> Goal 7

Ensure access to affordable, reliable, sustainable and modern energy for all;

> Goal 8

Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all;

> Goal 9

Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation;

> Goal 10

Reduce inequality within and among countries;

> Goal 11

Make cities and human settlements inclusive, safe, resilient and sustainable;

> Goal 12

Ensure sustainable consumption and production patterns;

> Goal 13

Take urgent action to combat climate change and its impacts;

> Goal 14

Conserve and sustainably use the oceans, seas and marine resources for sustainable development;

> Goal 15

Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss;

> Goal 16

Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels;

> Goal 17

Strengthen the means of implementation and revitalize the global partnership for sustainable development.



The goals are broad in their remit, designed as such to be action orientated with individual nations setting their own measurable targets in respect to the economic, social and environmental aspects of a country. *Our Common Future* is self-admittedly a foundation for nations to identify priority areas to foster sustainable development across the globe. The document in no way binds nations to specific targets: *Our Common Future* respects that nations must set their own targets, dependent on where priorities lie in each state, and most importantly how readily a government is able to address the goals within the technological and financial limitations the nation has.

The document gives nations the autonomy to set their own targets, but this does not necessarily negate responsibility or dilute the commitments made by developed nations. The European Union, for example, recognises that EU Member States are in a position as developed nations to lead the way in promoting sustainable development. There is a distinct crossover between EU's own Europe 2020 targets and *Our Common Future*, and as such the EU has underlined its commitment to promote a collaborative approach to meeting the goals as outlined in *Our Common Future*.

Agenda 21 and the subsequent amendments and reaffirmation of commitments by nations has been

a comprehensive approach to addressing a global problem, ratified by 192 nations. However, given the flexibility of nations setting their own targets, Agenda 21 and subsequent UN Sustainable Development Goals do not bind States to their commitments, with little means of proper enforcement of standards, nor worthy rewards for having met targets.

A similar global commitment is the Kyoto Protocol, first signed in 1997. The Kyoto Protocol goes further than the Sustainable Development Goals, with quantifiable targets to reduce CO₂ emissions, with the target increasing by 1.3 percent if the original target isn't met. Like the Sustainable Development Goals, Kyoto is dependent on governments legislating accordingly to enforce and encourage sustainable development.

Unfortunately, for all the work of the UN in pushing countries to take action, much of the responsibility lies with organisations; the responsibility of promoting sustainable development must be a mutual endeavour between governments and industry. For all the direction the UN and government can provide as primary users of natural resources – the top 2000 listed companies holds the equivalent of 78% of the world's GDP – organisations, particularly multi-national organisations could share the responsibilities and commitments as governments have done in ratifying measures like Kyoto and Agenda 21.



The distinction between government and industry lies in the fact the two faculties have different interests with regards to what they consider sustainability. For a government, their interests are reflected in the Sustainable Development Goals and are viewed as the avenue to achieving a sustainable economy, environment and society through the eradication of poverty, social mobility, reducing inequality and addressing environmental concerns like the reduction of CO₂ emissions. For a business however, sustainability means long-term growth, resilience to future needs and the ability of a business to meet the needs of the present without compromising the ability of future generations to meet their own needs.

For a number of years, policy has failed to address the interests of private businesses and their relationship with society, focusing instead on the role of governments. As such, capital markets, investment and the private sector have largely been beyond the reach of agreements like Agenda 21. Without incentives or sanctions, capital markets fail to promote sustainable development through the misallocation of capital. Investment is aligned to short-term, unsustainable growth with policy failing to address the short-termism culture within investment and capital markets.

In addition, corporations often fail to meet the expectations of having a sustainable business model. The 2012 Kay Review explored some of the problems associated with short-term investment, recommending that the principles of investment need to change to promote sustainable investment throughout the supply chains. In effect, this means investment must be regulated or overseen

by a standards agency to ensure investment is conducted in good faith, with the best long-term interest for clients and beneficiaries, and investments are in line with general standards of decent behaviour.

Further, the Kay Review recommended an improvement internally, with company boards as a whole acting as stewards of sustainable development, rather than have shareholders and investors governing the direction a company will take. While such recommendations are welcome in this debate, there was criticism that the scope of the Kay Review was too limited and that in particular, there was too little focus on things such as high-frequency trading which distort markets towards the short-term.

Furthermore, while there is significant desire among many parts of industry and within politics to take action in this area, the avenues for achieving this are not always coordinated and at times can appear quite separate. The aim of the Sustainability Commission was to allow businesses that are beginning to deliver success in this area to share best practices with parliamentarians and other businesses, in order to promote a greater understanding in how businesses perceive their responsibilities, and how governments might be able to assist or coordinate responses to sustainability.

The Sustainability Commission involved six sessions to take evidence from businesses who demonstrated their commitment to sustainability, with the final report serving as a guide for governments and businesses, identifying different approaches to ensuring a sustainable economy, environment and society.

Can we Survive and be Sustainable?

The dilemma of the micro-business.



Federation of Small Businesses

The UK's Leading Business Organisation

**By Allen Cready, Environment, Water and Energy Chairman,
Federation of Small Businesses**

I need more light into the roof space to rent it out, I need to remove the tree in the back yard so tenants can park, I need to extend the rear of the building so tenants have the space they need...

But the building is in a Conservation Area, the planners don't want to lose the tree, don't want the extension to the rear, and certainly don't want the dormers extending - the micro-business wants to 'sustainable' - the location is close to a train station, the designs are from highly acclaimed architect, and new railings are bespoke, sympathetic and mimicking the existing, bricks for the extension are from architectural salvage, and its £500,000 private investment for a run-down area that's creating new well paid jobs, and will allow the company to fulfil a recently won overseas contract. Socially, economically and environmentally sustainable - surely!

As the example illustrates, sustainability for the micro business means first and foremost financial survival. With more and more micro's experiencing late payments, lack of liquidity and poor access to capital, sustainability is first and foremost about winning new contracts, retaining existing customers, keeping costs down and cash flow. Micro-businesses are continually innovating - they can only survive if they do! With more than 3 million of the 5 million businesses in the UK sole traders, micro business owners are usually also the finance director, the human resource manager, the health and safety officer, the marketing guru and the receptionist; and now the sustainability expert!

In the example above, it's the planners in the local authority that have a different understanding and interpretation of sustainability from the micro. From the

micro's perspective all the sustainability boxes have been 'ticked' - so the sustainability demands of the council are seen as 'additional', 'unreasonable', 'unnecessarily expensive', 'unjustified and unaffordable'.

Dancing to a different sustainability tune is fast becoming one of daily challenges for the micro-business - tendering for both the public sector and corporates is almost impossible unless the micro is sustainable - most ITT's require quality and environmental management systems; getting these involves significant 'opportunity and actual costs' without the certainty of winning the contracts.

Trying to be sustainable by reducing emissions and energy costs is also a real struggle - with a failed energy market for micro's (excessive deposits/ no published tariffs/ unregulated energy brokers etc.) most have disengaged and given up trying to be 'low carbon' - with average energy bills for the micro around £4000 per year switching can only save £50 a year. The Green Deal is 'stillborn', and support from government and energy retailers for reducing consumption has never been in fashion. Support for micro- generation waxes and wanes almost daily - without financial and political certainty micro's will leave well alone! Mandatory EPC's for commercial buildings from 2018 risks reinforcing both the decline of the high street and the refurbishing old buildings - which brings us back to the example above: hopefully we'll be able to come to a mutually agreed understanding with the council of what's sustainable for both the micro and the local economy - the building will be restored, jobs will be created, the conservation area enhanced and micro's will be better understood.

Creating and Realising Shared Value

There is a growing recognition of the business opportunities arising from the transition to a more sustainable pattern of economic activity, and that leading businesses are engaged with creating economic value in a way that also creates value for society by addressing its needs and challenges.

The congruence between many aspects of sustainability and business success is borne out by most academic research, and is echoed in the perceptions of global business leaders with recent research indicating that 62% of CEOs expect sustainability to transform their industry within five years—and 76% believe that embedding sustainability into core business will drive revenue growth and new opportunities¹.

Opportunities to realise shared value arise in many aspects of the ways in which businesses operate and interact with the communities in which they do business. Businesses are integral parts of communities in their operating locations, and in light of the importance of local communities to businesses of all sizes, the Commission heard evidence from leading companies regarding their shared interest in supporting and encouraging the development of thriving communities.



¹ http://www.accenture.com/Microsites/ungc-ceo-study/Documents/pdf/13-1739_UNGC%20report_Final_FSC3.pdf



Contributors to the Commission emphasised the strong alignment between community engagement and business performance, and the range of benefits that derived from active community involvement. New business development generally involves detailed assessments of social requirements and needs alongside assessments of business need. The likelihood that communities have distinctive needs means that a significant proportion of firms' community engagement strategy is devolved to local managers and that central control of such activities is weak relative to other aspects of sustainability.

The potential contribution of business to communities via involvement in education featured prominently in evidence presented to the Commission. Business often has the capacity to support schools and colleges, especially in relation to employability and workplace skills and science and technology education. Actively engaging with schools can support and encourage higher rates of take-up in key fields such as science and technology, help break down gender disparities in specialist fields, and to provide career advice to inform student's employment choices. Such engagements help to improve the pool of skilled potential employees available to companies in shortage fields. Additionally, Commissioners were informed that consistent involvement with teachers and schools can lead to a form of "multiplier effect" whereby the community impacts of firms' initiatives can be maximised by working in partnership with the educational sector.

The biggest impact on the system as a whole can be achieved by collaboration.

As active members of communities, firms' employees are often at the forefront of community involvement initiatives, and many of the key benefits of community engagement are derived from enhanced employee engagement. Commissioners heard evidence regarding the benefits of enhanced internal engagement of employees, and of the critical role of employees in supporting innovation and change in relation to sustainability. In many leading organisations sustainability is seen as a key part of every employee's role and there is a recognition that sustainability objectives should form part of each employee's responsibilities.

Shared value can also be created by addressing productivity and efficiency in firms' value chains through eliminating waste, improving resource efficiency, greater employee motivation and engagement, reduced downtime and business interruption, as well as added resilience and security of supply in relation to key inputs. Commissioners heard numerous examples of companies that had implemented initiatives through which significant benefits had arisen from the development of new processes and practices.

While the opportunities for shared value creation through sustainability are widely recognised, attempts to fully realise these can encounter some significant challenges. One such challenge arises from the business models centred upon increasing sales of products and services that

are still prevalent in many sectors. These pose particular challenges for sustainability where the use or production of products or services is itself associated with social or environmental externalities. Transitions from "stuff-selling" to "needs-meeting" business models are underway in some sectors, but need to be accelerated. A second challenge, discussed in more detail below, relates to the level of development of markets to support and encourage shared value creation. Commissioners heard compelling evidence that short-termism and only partial transparency in financial markets acted so as to systematically undermine longer-term, more sustainable business decisions, and that consumers were rarely strongly motivated to consider sustainability in their purchasing decisions. Government policy has a key role to play in helping to address these challenges to shared value creation.

Page 32 : Find out how Nestlé UK are promoting sustainability throughout the supply chain with their Creating Shared Value programme

Case Study – Diageo

Sustainable Culture

DIAGEO

Diageo, a premium drinks business with brands such as Johnnie Walker and Smirnoff, understands that putting the principles of sustainability and responsibility into practice means accounting for its material, social and environmental impacts in every aspect of its business. The company has set itself an ambitious set of environmental targets to meet by 2015, including improving water efficiency by 30%, reducing carbon emissions by 50% and eliminating waste to landfill.



To help achieve these goals and to increase its use of renewable energy sources, Diageo ensured its £40m Roseisle Scotch whisky distillery in Speyside, which opened in 2010, is one of the most environmentally sustainable Scotch whisky distilleries. The company invested £17m in a state of the art bioenergy plant at Roseisle which uses by-products from the distilling process as a source of renewable energy for the distillery. This investment directly supports the demand for Diageo's whisky brands which continues to steadily increase.

Renewable technologies

Roseisle was the first new major distillery to be built in Scotland for 30 years – and is the first malt whisky distillery to generate renewable energy from its co-products making its environmental impact significantly lower than a distillery of an equivalent size. It has an onsite bioenergy and effluent treatment facility, working in operational partnership with Dalkia Utilities, which is unique in malt distilling. Overall 50% of the distillery's energy demand is met by renewable energy generated in the onsite bioenergy plant. Roseisle Distillery utilises a combination environmental technologies that is unprecedented in distilling, such as biomass boilers to raise steam from the spent grains, and waste water treatment by anaerobic digestion and membrane filtration.



50% of the distillery's energy demand is met by renewable energy generated in the onsite bioenergy plant.



Water consumption has been minimised by introducing a closed loop on the distillery condensers.

Tangible Progress

Recent performance at the Roseisle distillery last year speaks for itself:

- › Approximately 10,000 tonnes of CO₂ per annum is being saved from the use of renewable fuels
- › 3,000 tonnes of CO₂ saved from off-setting fuel at the malting plant
- › Over 50% of the distillery's energy is produced from sustainable renewable sources
- › Water consumption has been minimised by introducing a closed loop on the distillery condensers
- › Environmental impact from effluent discharge is now lower than existing outflow before the distillery was built – Roseisle Distillery therefore has had virtually no environmental impact to the discharge waters
- › Renewable energy is generated by the anaerobic digestion of distillery by-products
- › Roseisle is the first malt whisky distillery to generate renewable energy from all the co-products and has proven the technology for implementation at other sites

Business Drivers

From a strategic business perspective, environmental sustainability is one of Diageo's five key sustainability priorities, ranging from contributing to local economic development to addressing the carbon emissions challenges within its operations. Diageo aims to manage climate change mitigation as part of its overall risk management process.

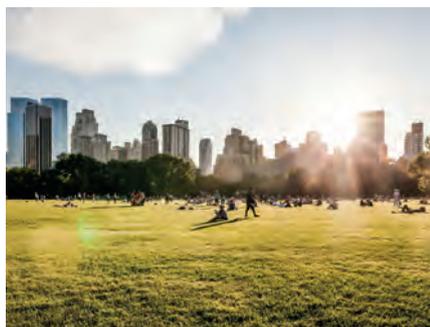
Diageo has been able to grow its business while reducing the environmental impacts associated with its value chain, as well as its risk exposure to energy insecurity and rising costs through:

- › Improving energy efficiency in its operations
- › Generating renewable energy at its sites
- › Sourcing renewable or low-carbon energy
- › Working with partners to reduce carbon from distribution.

Diageo is focused on driving efficient growth; this includes ensuring its production facilities operate at optimum efficiency to support long term growth of the business. Key to this is the environmental performance of its production assets – in terms of carbon, water and waste performance – and its ability to decouple the impact it has on the environment from its continued increase in production to support business growth.

Overall, Diageo's strong environmental sustainability performance is independently recognised – with high rankings in 2014 from The Carbon Disclosure Project, the FTSE4Good index and the Dow Jones Sustainability Indices. It has also made good progress with its environmental targets for 2015 through using industry first green technology, such as that at Roseisle, to help achieve its goals.

The Sustainability Mind-set



A recent survey indicated that 67% of CEOs do not believe that business is doing enough to address global sustainability challenges, and that only 32% believe that the global economy is on track to meet the demands of a growing population within global environmental and resource constraints².

This suggests that there is some way to go to elevate the prominence of sustainability within the mind-set of business leadership. Other recent research highlights the variety of models present among FTSE 100 businesses in relation to how broadly and deeply sustainability is embedded in corporate boards. Most FTSE 100 companies see sustainability as a board-level issue with almost half having a dedicated board committee, 18% discussing sustainability in the board as a whole, 17% electing to rely on a lead board member, 13% establishing a committee reporting to the main board and 3% extending the remit of an existing board committee³. At the same time, this research noted the lack of collective sustainability mind-sets shared across whole boards of directors.

Consistent with these findings, evidence presented to the Commission emphasised the role of strong leadership commitment to driving sustainability throughout businesses as a key enabling condition for achieving improved sustainability performance. Typically, sustainability initiatives

are overseen and communicated by relatively small central teams (perhaps numbering 2-8 people) even in large and geographically dispersed organisations. Therefore, clear leadership from board level coupled with operational teams tasked with driving sustainability throughout business functions and roles are an essential part of achieving sustainable goals.

While clearly important, research and practice has so far emphasised board-level engagement with sustainability and has paid less attention to the conditions under which sustainability is effectively translated into improved practices throughout large and complex organisations. It is recognized that full integration of sustainability throughout the functions and divisions of businesses is rarely achieved, even by the most committed organisations⁴. Reflecting this, Commissioners heard evidence regarding the challenges of broadening implementation of sustainability in large and geographically dispersed organisations, especially in circumstances where operations are

located in developing and emerging economies. Companies face difficult decisions regarding whether and how to harmonise their approach to specific issues globally, and sometimes encounter difficulties in implementing sustainability initiatives across subsidiaries some of which aren't wholly owned.

The tension between strongly leading and managing sustainability centrally and from the top, versus "mainstreaming" sustainability by encouraging and enabling devolved and dispersed ownership and involvement throughout an organisation is faced by many companies. Commissioners heard how some companies were successfully embedding aspects of sustainability into job descriptions, employee objectives, and routine planning and project management processes in an attempt to embed sustainability throughout their businesses.

²http://www.accenture.com/Microsites/ungc-ceo-study/Documents/pdf/13-1739_UNGC%20report_Final_FSC3.pdf

³http://www.bitc.org.uk/system/files/boards_research_-_cranfield_290113_final_0.pdf

⁴Where is 'true north' for sustainable business? Business needs to accelerate the shift from incremental to transformational change, Peter Lacy, Ethical Corporation Oct 2012.

Case Study – Lexmark

Ensuring Sustainability throughout the Business

Lexmark provides a compelling example to demonstrate the circular economy with its toner cartridges.

Lexmark, a US-based global provider of printing and imaging solutions, serving businesses of all sizes in over 170 countries. For the fourth year in a row, Lexmark has been named to CR Magazine’s 100 Best Corporate Citizens list. Lexmark was also recognised on the list of “Top Ten Most Trustworthy Public Companies” by Trust Across America.

The company has reduced its CO₂ emissions by 45% since 2005. One of its core resource efficiency targets is to increase the use of post-consumer recycled plastic content in its toner cartridges to 25% by 2018. During the creation of new toner cartridges, 10% less plastic material is required to be extracted, refined and processed. When this goal is reached, the annual impact will exceed 1,000 tonnes of avoided new plastics. In the EU, the population consumes 91 kg per person of plastic products. Our yearly savings equal the consumption of nearly 11,000 people.

Lexmark laser supplies are manufactured in locations across the globe, in the US, Mexico, China and Poland. Lexmark has a stated goal to

regionally source 80% of its supplies by 2017 – meaning that a toner cartridge sold in the European Union would most likely also have been built in the European Union. This provides jobs for the local economy, creates shorter supply chains to reduce CO₂ impacts and improves product availability for customers.

Since 1991, Lexmark has provided customers with free and easy methods to return their used supplies through its Lexmark Cartridge Collection Program (LCCP). Lexmark follows a zero landfill and incineration policy for the material returned and has a goal to reuse 50% of the material, by weight, by 2018.

Recent research and development efforts have focused on creating even more robust, durable toner cartridge

designs in conjunction with more energy efficient printers. The more durable product enables designated components of the toner cartridges to be reused after being recovered through the LCCP.

Used toner cartridges returned by customers throughout Europe are consolidated, sorted, and shipped to a manufacturing facility in Poland. Using an adapted version of the new cartridge production line, cartridges with up to 90% of reused components can be produced. These cartridges are subject to the same quality tests, utilise the same high performance toner, and are provided with the same limited lifetime guarantee as cartridges with all new components.



Markets & Incentives

Realising the benefits of shared value creation requires the development of markets within which sustainability is transparent, trustworthy, and appropriately valued. Research on end-consumer attitudes to sustainability suggests that sustainability strongly influences few consumers' decisions, that consumers are only willing to pay a premium for sustainably produced products in a small number of sectors, and that many consumers are highly sceptical of the labels that signal commitments to sustainability.



Moreover, positive consumer attitudes to sustainability seldom translate into sustainable consumer behaviour for a variety of reasons⁵. Financial markets also present challenges to sustainability with a survey of financial market economists highlighting that ecosystem services can not readily be incorporated within existing financial models, and that there is no consensus as to how to do so⁶.

Commissioners heard evidence of the variable level of consumer engagement with sustainability and of the relevance of consumer engagement to shaping business sustainability efforts. In some circumstances, especially where there is a significant downstream benefit to consumers in terms of costs incurred in the use of a product or service, strict requirements to improve resource efficiencies were present that contributed to a significant business

case for sustainability.

In other circumstances, especially where final consumers with limited interest in sustainability relative to other product attributes are concerned, the business case for efficiency was correspondingly weakened.

The challenges of mainstreaming sustainable consumption by 'selling sustainability' to consumers is leading to companies exploring the potential of alternative approaches to incorporating sustainability in products and services so that consumers make sustainable choices by default. This approach, sometimes called "choice editing", can lead to significant inroads being made in relation to some social and environmental issues. Commissioners heard evidence that selective approaches to redesigning products by, for example, changing recipes in the food and drink sector, can encourage consumers to make more sustainable choices while delivering business benefit.

The Commission heard particularly powerful evidence regarding the significance of financial markets for sustainability, and the need for financial markets to more fully recognize the extent of value at risk in light of social and environmental change. The supporting conditions and incentives

for actors in financial markets to pay greater attention to sustainability are currently weakened through a combination of a lack of transparency across the financial system, the business models operating in some key linkages in the system, and under-developed literacy in relation to financial sustainability at many points in the business and financial community⁷. Government has a particularly important role to play in influencing transparency across the financial system, and in promoting integrating sustainability reporting by companies, banks, asset managers, stock exchanges, investment consultants and other players in the financial market supply chain that ensure that environmental and social costs are internalised into profit and loss statements.

⁵http://www.saiplatform.org/uploads/Modules/Library/WBCSD_Sustainable_Consumption_web.pdf

⁶<https://c.na3.content.force.com/servlet/servlet.ImageServer?id=015500000015lgsAAE&oid=00D300000000M2BEAU>

⁷http://www.aviva.com/media/upload/Aviva_Roadmap_to_Sustainable_Capital_Markets.pdf

Innovation-Led Sustainability

Innovation is central to achieving sustainability goals. UK government has set out challenging, and legally binding, targets to reduce emissions of greenhouse gases in a series of carbon budgets that mandate a reduction of 34% on 1990 levels by 2020, and a longer term target of an 80% reduction by 2050.

While the UK is currently on course to exceed the requirements of the first two carbon budgets, this is largely attributable to the impacts of recession, and the underlying rate of emissions reduction due to low-carbon measures is less than 1% per year. Increasing resource scarcity and the escalating costs of such scarce resources are stimulating many companies to innovate to find new solutions that are both more sustainable and more profitable. A recent survey found that scarcity of minerals and metals and a scarce energy supply were cited as concerns by 77% and 75% of respondents respectively, followed by water by 57% of respondents and land by 35% of respondents⁸.

Picking up the pace in relation to sustainable innovation is a key part of addressing these challenges. Recent research demonstrates that exceptional performance on sustainability and innovation often go hand in hand, with firms that are sustainability leaders are more than 400 percent more likely to be considered innovation leaders⁹. Moreover, a strategic approach to sustainability can bring business benefits through innovation through the creation of new products and services, new processes, and new business models. Given the potential for innovation to contribute to achieving sustainability, the Commission focused on the

opportunities and challenges involved in achieving innovation-led sustainability.

The Commission heard evidence of the multiple ways in which innovation can contribute to sustainability: through encouraging new product development, by supporting more resource efficient processes, and by leading to the introduction of new business models. Resource scarcity helps drive innovation by shaping how key resources – energy, water, waste, carbon – are used in products and services. These constraints cause organisations to think innovatively. In relation to product innovation the Commission heard evidence that social and environmental challenges create opportunities for the development of their solutions, and that resource scarcity provides design constraints that encourage firms to meet existing needs in innovative new ways. Innovative new products provide significant new business opportunities for the firms that create them, and such firms both contribute to wider social and environmental wellbeing and also create new markets and generate significant wealth. Commissioners were presented with evidence that leading companies were seeking to incorporate environmental or sustainability attributes in all new products, in recognition of their potential market significance.

The Commission was provided evidence on ways in which process

innovations increase resource efficiency substantially in ways that bring economic and environmental benefits. It was highlighted that such innovations do not always involve radical technological innovation, but often arise from new applications and combinations of existing technologies. Additionally, firms can often access the benefits of such innovation by working with partner organisations that help them to develop and implement process innovations. The Commission heard several examples of ways in which leading companies had redesigned production processes to generate environmental benefits, especially by making improved use of waste and production by-products as inputs to products or processes.

Business model innovation offers new opportunities to reconcile sustainability and firm performance, and might be critical to overcoming some of the key barriers to engaging with sustainability – especially shifting the orientation from a product-oriented economy towards a service-oriented economy in which companies retain ownership of products and lease their services to consumers. Such business model innovation is becoming increasingly common in markets where products are long lived, and helps to align producer and consumer incentives to as well as enabling closed-loop resource flows.

⁸http://www.pwc.com/en_GX/gx/sustainability/research-insights/assets/impact-of-minerals-metals-scarcity-on-business.pdf

⁹<http://www.greenbiz.com/blog/2013/10/27/how-sustainability-leadership-drives-innovation>

Case Study – Severn Trent Water

Ensuring a Future Resilience through Innovation



The water sector is pursuing innovation in order to create a more socially, environmentally and financially sustainable future.

It is not that the track record is poor; the sector has a long history of helping to secure the health and economic prosperity of customers and communities.



The challenge now is that a growing population, ageing infrastructure and a changing climate are bringing significant pressures at a time when customers' finances are tight and we need to do more to reduce society's impact on the environment.

At Severn Trent Water, the job of ensuring that the business is run in a sustainable way is that of the Chief Executive downwards. It's not hived off into a discrete department but is fundamental to everyone's role. As Bob Stear, Head of Research and Development, says "The nature of our business is that we have to plan for the long term. Sustainability is not an option, it is core to all our activities."

Severn Trent believes in leading by example. Over the next five years, they're committed to reducing their carbon footprint by 6 per cent, leakage by 6 per cent and bills by 5 per cent. Innovation will be fundamental in meeting these commitments.

Examples of innovation include:

- Severn Trent helped Echologics and Loughborough University develop equipment for the rapid location of leaks in plastic water pipes.
- Their collaboration with Lontra led to the development of an award winning energy efficient blower for effluent treatment.
- Severn Trent is generating more of its own energy. Their new £8.3 million biomethane plant at Minworth will inject enough gas into the grid to supply 4200 homes. In addition, the new Coleshill anaerobic digester plant will transform 50,000 tonnes of food waste into 18 GWh of energy together with a high quality fertiliser.
- Severn Trent has shown that working with partners in their water supply catchments can lead to more sustainable solutions. By helping farmers to improve nitrate and pesticide management the Company can confidently avoid investment in resource intensive water treatment schemes. In the Avon and Leam catchment, for example, Severn Trent has helped farmers reduce the use of slug pellets, or to move to substitute products. This has led to a reduction of metaldehyde exceedances in abstracted raw water by up to 50 per cent.
- Severn Trent is now taking this catchment approach into towns

and cities. In Birmingham, they are working with partners to create an Urban Demonstrator to showcase and prove the effectiveness of technologies which will make water networks smart and help manage water more sustainably. For example, Severn Trent will show how rainwater harvesting and grey water recycling can reduce domestic water use and how sustainable drainage can manage surface water with less reliance on pumps and underground storage. The Demonstrator will help create a pipeline of new products which continue the drive towards sustainability whilst building the UK's reputation and securing economic growth.

Severn Trent is doing a lot, but there is more to be done. Government, regulators and stakeholders can help by providing the flexibility to work more innovatively and by providing the financial and technical assistance to support innovation throughout the water industry supply chain.

Case Study – 3M on Innovation

Taking Responsibility through Innovation



The global population is predicted to reach 9 billion people by 2050 who will all need clean water, breathable air and raw materials for daily life. Creating a more prosperous, sustainable world for a population that is growing at the equivalent rate of a city the size of London every six weeks is a daunting challenge, but not insurmountable.



Most of the additional population will live in the world's cities which will cause huge amounts of stress on infrastructure, power supplies and natural resources such as water. To address this, individuals, businesses, governments and non-profit organisations must work together to overcome the challenges and create sustainable solutions for the future.

Global technology company 3M is working in collaboration with energy companies, academic institutions and city planners to help create innovative solutions for smart energy transmission. These include 3M ACCR (Advanced Composite Conductor Reinforced) – a conducting cable that combines aluminium with composite material to enable it to transmit twice the level of power at half the weight of conventional cabling. This protects the environment as it can be retro-fitted to existing pylons and avoids the need for new infrastructure. 3M has also worked with electricity distribution companies to develop electrical sensor solutions that enable them to upgrade existing MV (medium voltage) grids to 'smart grids'.

Sustainable product innovation is both critical to 3M's business to meet market demand for high quality products that are better for the environment and as part of its commitment to environmental responsibility.

The company works closely with customers spanning a number of key sectors such as automotive, aerospace, health care and telecommunications to develop more sustainable solutions. These include a medical drape made from plant-based renewable sources; optical film that reflects more than 95 per cent of all light and reduces flat-screen TV power consumption by 30 per cent; glass bubbles, or microspheres, used in the creation of lightweight vehicles; and 3M™ Novec™ Engineering Fluid that is thermally stable and non ozone depleting and used in a wide range of applications such as data centre cooling and as a fire suppressant to replace halon and hydrofluorocarbons (HFCs).

As 3M knows, innovation never stands still and 3M scientists are currently working with a progressive 'start-up' company in New York that is committed to eliminating polystyrene in packaging and replacing it with a solution that uses myclic structures to 'grow' packaging that is fully compostable.

3M has a long and proud history of taking responsibility for its own footprint on the planet and set up its Pollution Prevention Pays programme back in 1975, before the term 'sustainability' was popular. This has so far prevented 2 million tonnes of pollution entering the atmosphere and saved the company nearly \$2 billion.

Everything the company does is driven by its vision: technology advancing every company; products enhancing every home; and innovation improving every life. Innovation is the key to solving some of the world's greatest challenges and creating a prosperous and sustainable world for a rapidly increasing population.

Collaboration

Collaboration is one of the keys for advancing sustainability, with leaders from all sectors of society agreeing that solving environmental and social challenges requires unparalleled cooperation¹⁰. Collaboration is increasingly seen as a necessary precursor to solving many social and environmental challenges, especially those that involve cross jurisdictional boundaries and which require systemic changes beyond the capabilities of individual companies or even of an industry.



Collaboration is also increasingly common with the one hundred largest firms in the world being, on average, involved in about eighteen cross-sector partnerships with ‘non-market’ actors¹¹. Governments have seen cross-sector partnerships as innovative ways of producing public goods in collaboration with firms and international organizations such as the United Nations and the World Bank have embraced public-private partnerships as a means of providing global public goods like environmental protection or poverty alleviation. While governments have traditionally used partnerships to build-up ‘hard’ infrastructure such as

roads and water works, they are now increasingly experimenting with using them for ‘soft’ issues. Cross-sector partnerships are also increasingly being adopted by many civil society organisations in preference to a confrontational approach towards firms and governments in order to develop novel solutions to old problems, thereby aiming to increase the efficiency and effectiveness of their activities.

Discussion in the Commission examined views of the relationship between regulation and sustainability, and especially the role of regulation in promoting sustainability through innovation. The evidence presented on the potential impacts of regulation was mixed, with the thought that regulation promoted a “compliance mindset” that undermined “getting into the spirit” of sustainability being voiced.

A further issue raised during discussion in the Commission was the importance of partnerships in helping organisations achieve their resource efficiency goals. Seldom do organisations possess all the resources

and capabilities necessary to fully realise their sustainability ambitions and the Commission heard evidence of the contribution of partnerships of various types to the achievement of resource efficiencies. Working more closely with specialist suppliers, competitors, standards setting bodies at local, national, and supra-national levels, community groups and NGOs, Universities, and government is a core ingredient in supporting improved resource efficiency.

¹⁰<http://nbs.net/wp-content/uploads/NBS-Partnerships-Executive-Report.pdf>

¹¹http://partnershipsresourcecentre.org/website/var/assets/public/publicaties/reports/reports-2010/the_state_of_partnerships_report_2010_-_firms.pdf

Case Study – BHP Billiton

Local Partnerships



BHP Billiton are one of the world's largest extractive organisations, committed to discovery, acquisition, development and marketing of natural resources in a sustainable manner. Working in alliance with Mitsubishi Development Pty Ltd and Mitsui, the BHP Billiton Mitsubishi Alliance (BMA) is boosting opportunities for businesses in the Mackay region, Australia.



BMA's Hay Point Coal Terminal operates a Local Buying Program which offers small businesses in the Mackay region unprecedented access to bid for work.

Established in 2012, the BMA Local Buying Program commenced as a collaborative partnership between BMA and the Mackay Whitsunday Isaac Regional Economic Development Corporation (REDC), and is the first of its kind in the region. BHP Billiton Mitsui Coal (BMC) joined the Program in 2013.

To date, over 391 local businesses across Blackwater, Dysart, Emerald, Nebo, Moranbah and Capella communities have benefitted from the opportunity to supply goods and services to BMA and BMC operations in the Bowen Basin.

Overall, the BMA Local Buying Program has awarded more than \$40 million to small businesses within the local communities of BMA's Bowen Basin operations since 2012. This is in addition to the money BMA spends locally each year as part of day-to-day business in the region.

To complement this activity, in financial year 2014, BMA spent more than \$1 billion with Central Queensland business to support its operations which included over 300 Mackay based suppliers and contracting companies.

The successful Local Buying Community Foundation will also be opened to the Mackay region, to further support the Program and local businesses. The Foundation is funded through the BMA Local Buying Program, with a percentage contribution from BMA for every transaction. Already more than \$500,000 has been contributed to the Foundation.

The money raised by the Local Buying Community Foundation is used to deliver business development programs and networking opportunities.

Overall, the BMA Local Buying Program has awarded more than \$40 million to small businesses within the local communities of BMA's Bowen Basin operations since 2012.

Case Study – Coca-Cola Enterprises

Community Engagement



As a responsible local employer, Coca-Cola Enterprises is committed to playing a positive role in the communities where it operates – working with local partners and supporting the active involvement of employees.

In the past 12 months, Coca-Cola Enterprises invested the equivalent of £2m in community projects in Great Britain – either through direct spending, goods in kind or employee volunteering during work time.

The company believes passionately that it has role to play in helping young people understand more about career opportunities in the food and drink sector – and its award-winning ‘Real Experience’ education programme has been at the heart of its community outreach in Great Britain for more than a decade.

As part of the Real Experience programme, the company has built dedicated education centres at five of its six production sites in this country, giving students the chance to see what modern manufacturing is all about. It has also built a facility at its Continuum Recycling joint venture in Lincolnshire – Europe’s biggest PET bottle recycling plant – providing a unique opportunity for students to see the circular economy in action.



All the education centres are run by qualified teachers offering visits to students aged 12 years and above. The visits are linked to their curriculum studies and help them to make connections between what they learn in school and the operations that are at the heart of one of the world’s leading brands.



The company believes passionately that it has role to play in helping young people understand more about career opportunities



In surveys, 80% of the 15,000 or so students who visited one of Coca-Cola Enterprises' education centres in the past year said the visit helped them to learn more about the importance of STEM subjects within the manufacturing sector. And just as importantly, these centres consistently receive positive feedback from teachers.

As part of its education programme, Coca-Cola Enterprises also runs an annual enterprise competition for secondary schools in 11 regions of the country called the Real Business Challenge. Now in its 11th year, the Real Business Challenge has enabled the company to help more than 70,000 students every year to build their business acumen and creative thinking.

Of those students who took part in this year's competition, 94% agreed that the Real Business Challenge developed skills that increase employability. Importantly, the competition was supported by colleagues across Coca-Cola Enterprises – more than 150 were involved in this year's Challenge as mentors for student teams and they volunteered a total of 1,200 hours.

Since 2011, Coca-Cola Enterprises has invested £4m in its national education programme in Great Britain, which to date has reached over 300,000 young people.

Not surprisingly, the business is a strong supporter of industry and governmental efforts to encourage

young people to think about the careers on offer in the food and drink sector – including the Feeding Britain's Future and See Inside Manufacturing campaigns; National Women in Engineering Day; and the Food and Drink Federation's Taste Success careers initiative. These activities are dispelling some of the myths that surround manufacturing generally and helping young people understand the variety of careers on offer in the food and drink sector.

Since 2011, Coca-Cola Enterprises has invested £4m in its national education programme in Great Britain, which to date has reached over 300,000 young people.

Case Study – BP

Engagement through Young People



Around 40% of young people in the UK do not achieve five good GCSE passes (or equivalent), which restricts their access to sustainable employment after school. With a widening skills gap in the UK, employers such as BP value Science, Technology, Engineering and Mathematics (STEM) subjects. It is estimated that more than one million STEM professionals will be needed by industry in the next 20 years to meet this structural gap in capacity.

STEM subjects are expensive to teach and considered 'harder' by pupils. As such, developing capability is one of the three strands of the '**BP in the Community**' strategy in the UK. BP invests in a focused set of activities that illustrate the industrial context for STEM subjects and aim to engage and inspire young people to continue studying the STEM subjects and careers made possible following study of these disciplines, such as in engineering.





BP have built a range of partnerships which focus on 5 to 19 year olds targeted at helping with skills

BP has contributed £4.3million over five years to create tools and techniques for teachers and museum educators to engage all young people with science



Following a systems based approach to engaging with schools and teachers and other influencers in the development of young people, BP have built a range of partnerships which focus on 5 to 19 year olds targeted at helping with skills including: basic literacy and numeracy; developing a subject knowledge and building their curiosity and enjoyment for learning; forming a strong self-identity around the STEM subjects; supporting their confidence and self-efficacy; and progression into further education, higher education and employment. These projects include:

- › The **Queen Elizabeth Prize for Engineering**, of which BP is a founder donor;
- › **Enterprising Science**, a ground-breaking collaborative research and development programme for science education. Working in partnership with the Science Museum Group and King's College London, BP has contributed £4.3million over five years to create tools and techniques for teachers and museum educators to engage all young people with science;
- › **Project Enthuse** at the National Science Learning Centre began in 2008 and provides bursaries for high quality continuing professional development (CPD) training for teachers in the STEM subjects. As a co-founder BP has supported the training of teachers in over 70% of state funded secondary schools that have attended the National Science Learning Centre;
- › **BP Educational Service (BPES)** was founded in 1968. BPES develops and delivers high quality teaching resources for STEM teachers at both primary and secondary level and more than 6100 secondary and primary schools have used these resources

that illustrate real world contexts for learning;

- › **School Link** is an employee volunteering programme with 190 schools, with its purpose to inspire young people with STEM subjects and business through face-to-face engagement with BP employees and 300 work experience placements;
- › **Ultimate STEM Challenge**, a competition for 11 – 14 year olds in partnership with STEMNET and the Science Museum for younger secondary school students to put STEM skills to the test by tackling some real-world problems;
- › BP is the National Champion for STEM education within the **Business Class programme** from Business in the Community, which brings together a cluster of schools and businesses in a local area, providing a systematic and proven framework for developing those partnerships, rooted in long-term, strategic support and collaborative action.

Resilience

Dr Layla Branicki, University of Birmingham

Sustainability primarily addresses levels of social, economic and environmental wellbeing and considers pathways to achieving greater progress towards these goals. At the same time, the recent Global Financial Crisis, combined with the threat and actuality of extreme weather, climate, and geological events, terrorism and pandemic disease (e.g. H1NI and Ebola) highlight resilience as a potentially critical part of securing sustainability.

To date there is limited organisational-level evidence about the extent to which tensions and trade-offs between the dimensions of sustainability and organisational resilience exist and how they might be reconciled. Increasingly, policy discussions recognise the shared nature of risks posed by both human and natural threats, and there is a growing appreciation that “the resilience of our water, food and energy systems is an essential and neglected part of development”. Anecdotal evidence also suggests that some approaches to delivering social, economic, and environmental goals (e.g. Lean Manufacturing, Just-in-Time sourcing, Offshoring) might indirectly expose companies, individuals, and societies to considerable risks.





It has been argued that resilience is exhibited in organisations that combine capabilities such as adaptability, flexibility and high alertness and yet it is possible that actions taken by organisations towards environmental, economic or social sustainability goals, particularly those that reduce redundancies may decrease resilience. Additionally, limited empirical evidence exists about the potential trade-offs and interdependencies between sustainability and resilience such as organisations prioritising long-term goals (e.g. inter-generational sustainability) over short-term threats (e.g. of an Ebola outbreak). We therefore need greater understanding and more rigorous evidence regarding how business approaches to achieving sustainable prosperity impact the capacity of organisations to anticipate, manage, and respond to extreme events. Recent resilience research has tended to be sceptical of the effectiveness of long term time horizons, formal planning, targeting, and structures in relation in achieving improved levels of organisational resilience, arguing that these are often symbolic activities

that lack effectiveness and /or real organisational commitment. Instead, research argues that organisational flexibility, adaptability, innovativeness, capacity for collaboration, and the availability of slack resources all support greater organisational resilience.

Together, this suggests that research exploring how sustainability and resilience goals interact within organisations is likely to provide valuable insights regarding the circumstances in which trade-offs and complementarities between them exist, and how such tensions might best be managed and overcome to produce sustainable prosperity. It is therefore important to begin to identify the conditions under which organisations can be both more sustainable and more resilient.

Case Study – Tata Consultancy Services

Research Driven Resilience



Tata Consultancy Services (TCS) has collaborated with nearly 50 customers and had over 300 interactions & thought leadership events in the last two years to better understand how businesses can further develop environmental stewardship. They have focused on energy management and one key trend has been companies wanting to move away from fragmented energy management with multiple teams and third parties to a more strategic approach.

In response, TCS has set up a state of the art remote energy services hub which enables customers to take a wholistic approach to bringing down energy costs using process automation and advanced analytics to help minimise investment in capital intensive projects.

Background

TCS is an IT services, consulting and business solutions company. A part of the Tata group, India's largest industrial conglomerate, TCS has over 300,000 of the world's best-trained consultants in 46 countries. They are considered a "big four" global IT services company. TCS was established in the UK in 1975, one of its first overseas offices. Today, it has a significant UK presence with over 10,000 employees and 150 customers.

A shift in customer expectations prompted TCS to look at energy management as a strategic focus area for next generation innovation.

TCS has observed that energy operations for large company users are fragmented across multiple functions such as energy sourcing, energy efficiency, energy billing & payments and energy reporting.

As a consequence silo operations result in uneven flow of data, inability to take timely actions, missed opportunities and duplication of operating costs. On average, the cumulative costs related to energy across all the functions were an additional 25% over a typical organisation's energy bill.

As a result, TCS observed that the total cost of energy is not simply the cost of an organisation's energy bill but also additional operating costs.

For most industries, this total cost of energy is one of the top five operational expenditures, alongside labour, lease, insurance and tax costs.

The industry has begun to recognise this and customers have been focussing on bringing down the total cost of energy.

Whilst the need for such closed loop energy management is now well established, it might not always be realistic to achieve this by merging different organisational functions or by physically integrating 20-30 disparate technology and process systems to talk to each other. This is particularly the case with changing operating conditions, new acquisitions and disinvestments.

Next generation energy management

TCS has taken these industry expectations and limitations into account and devised a pragmatic approach to energy management. It requires no capital expenditure, no new software and no on site infrastructure.

TCS offers its customers a remote energy services centre which takes a life cycle approach to energy management.

1. Here, all the processes such as energy sourcing, energy efficiency, energy billing and energy reporting are managed as a consolidated process. TCS bring it under a single governance structure including relevant organisational functions, existing third party partners and TCS' team of energy experts
2. There is practically no infrastructure set up requirement. This means TCS start at whatever level of maturity the customer is at and we leverage the organisation's existing software or infrastructure. Our remote services hub extracts data from environmental management systems, extended producer responsibility reporting,

TCS has collaborated with nearly 50 customers and had over 300 interactions & thought leadership events in the last two years to better understand how businesses can further develop environmental stewardship



EDF Energy has seen a 16% yearly decline in its energy consumption through the support of TCS' remote energy management operations.



metering systems as well manually gathered data. Our analytics hub correlates the millions of data points and targets saving opportunities, communicating it immediately to the client at its sites or to the different functional units

3. A team of energy auditors, ISO certified consultants and statisticians then directly advise the respective customer teams or the remote sites on a daily basis. The advisers prioritise the top three to five corrective actions to help reduce consumption, enable dynamic sourcing or increase their invoice accuracy.

What is different is that state-of-the-art analytics is combined with a life cycle approach and out of the box innovative saving opportunities.

Examples of how this has been used include an automatic investigation of building assets to highlight design inefficiencies and recommend timely rectification. Data analysis that revealed lighting retrofits at a chain of retail stores resulted in increased footfall and sales.

The Results

EDF Energy has seen a 16% yearly decline in its energy consumption through the support of TCS' remote energy management operations.

Typically, TCS finds a 5% annual reduction in total cost of energy is an expected outcome.

TCS believes this approach to energy management could position sustainability as a mainstream business objective because it helps reduce operating expenses.

Challenges

TCS cautions that whilst this is a highly effective minimum disruption approach, there are challenges:

- Energy supply regulations change by country - and to agree a global energy sourcing strategy can prove complex
- Behavioural change and employee engagement for energy management is easily achieved in large building facilities but can be difficult to standardise across smaller or remote locations

- Unstaffed sites is often written off and therefore difficult to implement change in
- Sites without sub-metering or sites without building management systems are not uncommon and these need to be tackled differently.

Conclusion

In the making is a world class platform which combines TCS digital solutions & big data analytics with tracking and automatic controls which is kept simple for users and is available as a self serve mode and with no on-site installations.

The next stage is to scale up the project to a level of minimum human intervention and enable energy management in remote sites in outlying geographies. The focus will continue to be operational excellence with minimal capital investment.

Supply Chains

Dr Vivek Soundararajan, University of Birmingham

“Value chain emissions” derive from all upstream (supply chain) and downstream (transport, distribution, use etc.) impacts associated with an organisation’s activities. In many cases these value chain emissions account for up to 90% of the total carbon impact of an organisation’s activities, and often around 75% of the greenhouse gas emissions associated with many industry sectors arise in their supply chains.

Moreover, many of the most challenging vulnerabilities to labour issues are most prominent in global value chains. For these reasons, a growing number of leading companies are engaging their suppliers actively in their sustainability initiatives since working with the full value chain offers huge potential to magnify and extend firm’s sustainability impacts. However, the complexity, scale and scope of global supply networks make achieving improved sustainability very challenging. Beyond core supply chain operations sustainability must be integrated into various related organisational activities such as product design, by-products produced during manufacturing and product use, features related to product life such as product life extension, end-of-life and recovery processes, and satisfying stakeholders engaged in all these activities.

In terms of product design, techniques such as life cycle assessment are used to design a product that has minimal environmental impact over its usable life and afterwards. In terms of by-products produced during manufacturing, as a function of process design and continuous improvement, cleaner process technologies, quality

management systems and lean production techniques are used to reduce and eliminate by-products. Producers are increasingly extending their involvement and responsibility for by-products produced during the usage of a product by providing a series of customer services to support and complement sale of their products. Firms are also seeking to extend the life of products so as to avoid using resources to develop new products, using techniques such as remanufacturing. By extending the life of a product, the manufacturers can capitalize on opportunities created by the increased product value. The management of the end-of-life of a product has also been given more consideration. For this, the major focus should be on the initial product design stage. The design stage has great influence on the ways in which the product can be managed through reuse, remanufacture, recycle or disposal. Effective management of the end-of-life depends on effective management of operational function such as design, process and logistics.

More importantly, it also depends on favourable environmental policies, regulations, incentives and

disincentives. In terms of recovery after end-of-life, techniques such as remanufacturing, recycling and refurbishing are used. These techniques however pose an additional level of complexity to existing supply chain design such as increased cost, new set of potential strategic and operational issues, uncertainty associated with the recovery process, and the collection and transportation of the recovered products. In addition to introducing sustainability in the supply chain operations, extended considerations are also given, although at minimal level, to the stakeholders and associated social issues, a notion embedded in the triple bottom line concept.

Commissioners heard evidence regarding the scale and scope of firms’ supply networks, and of the challenges encountered in cascading sustainability throughout these direct supply relationships and the multiple tiers of supply chains. Large companies might typically have many thousands of suppliers distributed globally, and firms generally don’t have the resources or capabilities to closely monitor their supply networks.



Additionally, risks and opportunities are generally asymmetrically located in firm's supply chains, with particular challenges being encountered in less developed and emerging economies, including China. To deal with these challenges, firms are generally taking a risk-oriented strategy to directing resources to supplier selection and relationship management in areas where particular difficulties are anticipated. These approaches direct more resources and involve additional tiers of pre-qualification to reduce the likelihood that firms encounter severe issues (e.g. child labour, forced labour) in their value chains.

While most companies formally codify requirements of their suppliers, it was also emphasised to the Commission that more traditional, adversarial and transactional approaches to exerting influence on supply networks were making way to more collaborative, relational, and developmental strategies for encouraging more sustainable supply chains. Lead buyers are understood to have responsibilities for investing in the development of their global supply networks, directing financial investment, expertise via

consultancy, specialist technology and equipment. Notably, lead buying companies recognise that these approaches deliver a variety of benefits both to themselves and, via spillovers, to competitors. Benefits of active engagement of suppliers in companies' sustainability initiatives include promoting security of supply, enhanced productivity and reduced operational interruption, mitigated reputational risk and a continued license to operate. Given that the benefits of supplier development accrue both within and beyond specific supply relationships, the Commission heard evidence that collaborative industry initiatives that promote industry coordination in supplier development practices to "raise the bar" in the industry globally are particularly effective.

Evidence was presented to the Commission regarding some of the most challenging aspects of achieving sustainability in supply chains – in particular, dealing with corruption and very dispersed supply chains oversight of which can be very costly. Contrary to popular understanding, evidence provided to the Commission emphasised the ambiguity and

uncertainty associated with divining exactly when corruption was taking place, or when it might take place, and the role this plays in complicating the diagnosis and response to these issues. Companies reported that they had experienced situations where operating in particular spheres was deemed impossible because of corruption.

Sustainability is being integrated into company operations but sustainability must be more fully incorporated into the entire production and post-production system. Although this would increase the complexities associated with identifying and coordinating with different stakeholders, companies must commit to change their extant practices and develop new systems of production and management.

Case Study – Nestlé UK

Supply Chain Strategy



Nestlé's approach to sustainable business practice is called Creating Shared Value. They believe that, to create long-term value as a business there must also be value for society and the communities in which Nestlé operate. Sustainability is the foundation of Creating Shared Value.

For Nestlé, sustainability means 'protecting the future'. As a business, Nestlé is addressing the sustainability of supply as a necessity so that it can continue to make and sell products like KitKat and Nescafé. As such, Nestlé is seeking to ensure its supply chain is resilient, efficient, and, importantly, creating value for all involved.

A UK-based illustration of how Nestlé works with suppliers to improve the quality and quantity of supply and help them to address its environmental impact is their work with UK dairy farmers.

The liquid milk in products such as KitKat, Aero, Yorkie or Quality Street comes from Ayrshire cows. Similarly, Nestlé uses milk from Cumbrian cows in Nescafé Cappuccino products. Nestlé buy milk from the biggest UK-owned farmer cooperative - First Milk. They provide milk to two factories; Dalston in Cumbria and Girvan in Ayrshire.

Nestlé established a sustainability partnership with First Milk in 2011. The aims are to help farmers to become more sustainable in farming practices.

The approach is simple; the farmer signs up to become a Nestlé farmer, which allows the farm attendance at a number of workshops during the year to help develop sustainability principles to implement on the farm.

In return for this commitment to sustainability, Nestlé pays the farm a higher price than the average 'farm-gate' price in the UK. This can create a loyal supply chain and has a positive impact on the environment.

Through Nestlé's partnership with First Milk, more than 65 farmers have taken part so far in workshops accredited by the Royal Agricultural College, which cover a range of topics such as herd health, business management, water and good environmental practices.

The workshops are well received and have led the milk supply group to reduce its total greenhouse gas emissions by 5.1% - the equivalent of 23,000 tonnes of carbon saved. The figures were calculated by The E-CO2 Project, which provides detailed energy and carbon assessments for farms, using a carbon footprint calculator accredited by the Carbon Trust.

In addition, Nestlé have now developed more advanced sustainability working groups with the farmers that are not just learning new skills but implementing them and sharing experiences. The programme today includes helping the farmers implement improved, sustainable methods for feed, improve the biodiversity of their farms and encourage wildlife on their land. Nestlé also works with them on helping to reduce the carbon footprint of every litre of milk we buy.

Seven of the farmers have now committed 65 acres of land to develop biodiversity programmes. This follows the lead of Nestlé's Girvan factory which has a wildflower meadow to attract butterflies and other species to the site.

This approach helps farmers focus on more sustainable and profitable ways of producing milk while Nestlé can secure a long-term supply of a top quality product with appropriate fat and protein levels, in the assurance of knowing exactly where the milk comes from – something customers and consumers increasingly expect of producers and retailers.

One further aspect of sustainability is finding a way to ensure future generations want to become farmers. As such, Nestlé works with First Milk on a number of initiatives to make farming attractive to younger people, particularly those that may not have been brought up on farms.

Nestlé has started exploring the idea of apprenticeships and even 'job swaps' in addition to developing a Farmers Leadership programme. The aim is create an inspiring programme that identifies, nurtures and develops the next generation of dairy leaders and those who are most likely to implement innovative change in the way that they operate.



Fraser Brown, Sales Director – Export & Trading, First Milk:

"The partnership with Nestlé benefits our farmers, the local community around Girvan and Dalston and the wider environment.

Nestlé's commitment to a relationship built on the foundations of a short sustainable supply chain is a vision which First Milk and its British farmer owners fully share. The progress which has been made on resource efficiencies, carbon reduction and the exciting new opportunity of biodiversity meadows has only been possible as a result of the unique way in which this partnership works."

Gilmour Lawrie of Sandyford Farm is a dairy farmer who helps to supply Nestlé's Girvan site. Gilmour said:

"We joined the partnership because we thought it was a great opportunity for farmers to work together."

Since joining, Gilmour says he's made the farm more environment-friendly.

"As part of the partnership's biodiversity programme, I've set aside two acres for the wildlife project to attract butterflies and other propagates."

Robert Craig of Cairnhead Farm is a Nestlé Milk Plan farmer supplying Dalston. He's very much in favour of our scientific approach. Robert said:

"Milk is almost a by-product of really good grassland management. We're constantly monitoring the grass and we walk the farm twice a week measuring grass growth.

The figures then go into a computer program to help us decide where the cows should graze, along with the control and management of their feed."

Environmental Regulation and Competitiveness

Professor Mathew Cole, University of Birmingham

For many years the conventional wisdom has argued that increasing the stringency of environmental regulations will damage industrial competitiveness. Perhaps the most famous example of this viewpoint is provided by George W Bush's refusal to ratify the Kyoto Protocol climate change agreement on the grounds that to do so would damage US competitiveness.

A significant body of work now questions this conventional wisdom. If stringent regulations (relative to those in the developing world) have damaged the competitiveness of the manufacturing sector then we would expect this to be reflected in international trade and/or foreign investment flows. For example, in a country with stringent regulations we might expect to see declining net exports in certain pollution intensive industries or increasing foreign direct investment to low regulation countries from those industries.

A large number of economic studies have tried to assess if differences in regulations do indeed influence trade or investment flows. The vast majority find no, or only very limited, evidence. A number of possible reasons for this lack of evidence have been suggested, including the fact that pollution intensive (highly regulated) industries are typically physical capital intensive and not sufficiently mobile to relocate overseas to developing countries (where physical capital may also be relatively scarce). Also, most international trade occurs between developed countries which tend to have similar levels of regulations.



Furthermore, environmental regulation costs tend to be relatively low and are unlikely to exceed more than 2-3% of an industry's total costs even in the most pollution intensive industry. Finally, it is possible that stringent regulations might stimulate innovation in firms which may actually enhance competitiveness (the so-called Porter Hypothesis).

Recent work examining US and Japanese trade patterns has shown that regulations do actually have a small influence on trade but only when the analysis focuses on (i) trade flows with the developing world only (ii) the most mobile pollution intensive industries and (iii) those pollution intensive industries with the highest regulation costs. These studies conclude that regulations have no widespread effect on competitiveness but rather they affect only a very small subset of firms and industries^{12,13}.

At the level of the economy as a whole such impacts are likely to be relatively small. The lack of evidence of large scale competitiveness effects is

also generally supported by research examining the impact of environmental regulations on jobs.

The only study to examine the impact of UK environmental expenditure costs on employment levels in manufacturing industries found no statistically significant link between the two¹⁴. For the US, studies by Morgenstern et al.¹⁵ and Berman and Bui¹⁶ find no evidence to suggest that regulations have adversely affected industrial employment, and the former actually finds weak evidence that regulations may have resulted in a small net increase in employment.

However, studies by Henderson¹⁷, Kahn¹⁸ and Greenstone¹⁹, again for the US, indicate that industries located in US counties with stringent regulations have experienced job losses, or at the very least lower employment growth rates, relative to industries in less regulated counties.

Finally, a number of studies have examined the impact of US plant-level pollution control costs on the productivity levels of those plants.

These studies have tended to focus on the most pollution intensive industries, typically steel mills²⁰, paper and pulp mills^{21,22} and oil refineries^{24,25}. Although results are somewhat mixed, several of these papers have found evidence of a small negative impact of pollution control costs on productivity levels. It should be remembered that these studies are focusing on those industries most likely to experience such productivity impacts. It is unlikely such effects would be experienced in the many less regulated industries. As far as I am aware there are no studies of the impact of UK pollution control costs on productivity.

In conclusion, while regulations should be implemented carefully and in a cost-efficient manner, claims that they will have widespread economic impacts appear to be wide of the mark. When we also consider the significant benefits that we derive from environmental regulations, the cost-benefit analysis moves even further in the direction of net benefits.

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Case Study – Aviva Investors

Responsible Investment Solutions



Aviva has been around for over 300 years and prides itself on creating a legacy for its customers and stakeholders, and developing for itself a sustainable future for the next 300 years. Steve Waygood, Chief Responsible Investment Officer from Aviva Investors considers different avenues to promoting responsible investment in this case study.

Aviva believes that the Capital Markets Union should include, from the very start, a long term, sustainable vision on investment and working practices in business to ensure that the lessons of the financial, economic and social crisis have been learnt, both in the EU and globally.

We believe that we have both a commercial interest and a duty to participate in this debate.

Our commercial interest is because climate change and other issues arising from unsustainable development will affect the way in which our business assesses risk. The assumptions we make underpin the insurance products that our industry provides, for example when property is affected by severe flooding. These sustainability changes potentially make significant proportions of the economy uninsurable, as they are too much of a risk. They therefore shrink the market we can work with.

In addition, the issues of good corporate governance and sustainable economic development have a clear material impact on the long term success of the companies and economies in which we invest. In short, it is in our customers' interests that

companies and economies are sustainable.

Policy-makers have a duty to the well-being of current and future generations, as well as to the environment upon which we all depend. As asset owners and asset managers, we believe we and others in our industry have a legal duty to do what we can to protect and enhance the value of client assets. We think this includes helping policy-makers address the key sustainability challenges within our capital markets and the broader economy.

Over the coming decades we see a new strategic risk to European and global economic growth from two sources:

1. *Unsustainable economic activity that assumes unlimited natural resources. This creates a fundamentally flawed pricing system in capital markets.*
2. *Capital markets that are systematically short-term. This magnifies the problems associated with a flawed pricing system.*

We are therefore very pleased to see the inclusion of sustainable economic growth and climate change among President Jean-Claude Juncker's ten

priorities. We believe that whilst good progress has been made by the EU institutions, there is more that can be done.

To that end, the purpose of this paper is to make specific suggestions policy-makers to help them ensure that the opportunity is not missed to put capital markets and economic growth onto a more sustainable and integrated basis through a Sustainable Capital Markets Union (SCMU).

To tackle these challenges our recommendations fall into four broad areas and should be seen a basket of policy interventions that will act in concert to complement and reinforce each other - not a menu.

Better information, better companies, better growth

The more of the right information that is available to investors about companies, the better the investment decisions.

For instance, Investment banks should be required to include a view on a company's performance on corporate governance, corporate sustainability, culture and ethics when they make recommendations to investors regarding their Buy, Sell and Hold recommendations.

If they are not required to do so, our experience to date suggests that the conflicts of interest in this sector of the capital markets will encourage them not to comment on this information for fear of losing lucrative corporate clients and thus discouraging companies to act in a sustainable way.

Reward for long term success not failure

Short-termism remains in incentives for those in the financial sector. We need to align incentives with long term performance and sustainability.

For instance, fund managers should be required to allocate at least 5% of the research commission budget to ESG research from sell-side brokers, or explain why they have not done so. This would reward sell-side brokers for conducting this analysis, further building the small but influential market in this area.

Capital for sustainable growth

Aviva believes growth has to be robust and sustainable. EU policy-makers can help create that environment.

For instance, to take the market further and deliver its full potential for sustainable development, critical policy issues are emerging for the 'green bonds' market, including common standards to ensure market integrity,

tax incentives to encourage inflows and credit enhancement to enable institutional allocations. Efforts to restart "good securitization" should crucially incorporate the sustainability dimension.

Globally, the spotlight is growing even brighter on the world's largest asset class – the US\$100trn bond market, which provides essential financing for governments and corporates to fund long-term investment. Governments, for example in Brazil and India, are upgrading their fiscal & regulatory incentives to encourage investments in 'infrastructure bonds' – and the EU's Project Bond initiative has considerable potential for expansion. A potential pillar of this is the green bond market which raises ring-fenced financing for investments in clean energy and resource efficiency. Global 'green bond' issuance has so far reached USD24bn in 2014, compared with USD11bn for the whole of 2013. As Aviva we have also worked with the UK's Green Investment Bank which helps create public-private partnership investment into infrastructure. This is worth exploring at an EU level.

Increasing responsible ownership

Increasingly, we are all owners of companies through our pensions. It is crucial we all understand how our money is used to influence and encourage responsible investment.

For Instance, an EU stewardship standard should be built for asset managers that can be used by institutional asset owners as well as individual investors and their advisors to ascertain whether certain minimum standards and procedures in stewardship are being adhered to by an asset manager.

Such a standard could be modelled on the successful EU Eco-management and Audit Scheme (EMAS), which paved the way for ISO 14001. It would be voluntary and management systems based. This would allow asset owners to assess easily which asset managers are well positioned to exercise responsible investment and stewardship commitments.

A combination of regulatory intervention and soft guidance can be used to help ensure that all the incentives in the capital markets are for companies to act in the interests of the long-term sustainability of the economy.

By ensuring that financial incentives are aligned, transparency is created so that the European public is engaged and so that growth measures are targeted towards sustainable investment. This will create a sustainable capital markets union that will be robust enough for the future.



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Conclusion and Summary Points

The Industry and Parliament Trust Sustainability Commission, in association with the University of Birmingham, has heard from a range of major UK companies about the challenges they face and the benefits to be gained from addressing their contributions to sustainability across their activities. Parliamentarians, businesses, academic researchers, and civil society representatives have all discussed their own experiences – both the challenges and the opportunities. Below is a summary of some of the key points raised by presenting companies, academic research, and the Commissioners.

- Leading businesses are benefiting hugely from their engagement with sustainability, and further innovation, collaboration, and integration will continue to generate significant economic returns while helping meet social and environmental objectives
- Business has an absolutely central role to play in achieving a prosperous, socially just, and environmentally sustainable future. While many leading businesses are making significant strides in incorporating sustainability into the full range of their activities, there remains work to do: (i) in “spreading the word” from these leading businesses to peers that are currently less fully engaged with sustainability; (ii) more fully integrating sustainability across the range of functions and activities within businesses so that a sustainability mind-set is a part of the DNA of 21st century business
- Government should play a central role in supporting broader and deeper engagement with sustainability through creating an improved enabling infrastructure, especially via transparency across financial markets and by encouraging investments in innovation
- Greater collaboration across industry, and between business, government and civil society organisations is essential to advancing sustainability. Pooling of skills and expertise will enable social and environmental issues to be addressed more effectively, and will maximise the efficiency of business and government investments in sustainability
- Companies can and should encourage sustainability and co-operation across their supply chain by encouraging more collaborative, relational, and developmental strategies instead of more traditional, adversarial and transactional approaches to exerting influence on supply networks
- Capital markets must be reformed to encourage sustainable behaviour. Incentives should be reformed to reflect the importance of sustainability over short-term investments and changes to global listing rules to reflect sustainability could provide greater market information to shareholders
- In particular, Governments can encourage integrating sustainability reporting by companies, banks, asset managers, stock exchanges, investment consultants and other players in the financial market supply chain that ensure that environmental and social costs are internalised into profit and loss statements.

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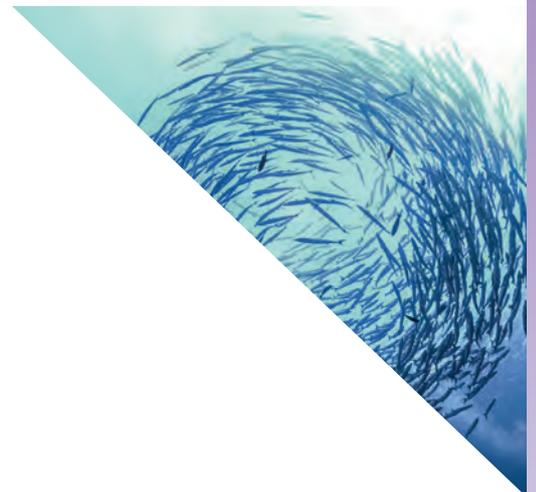
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