

“Sustainable Technology for Sustainable Government”

Integrating Sustainability in Technology
UK Authority Media

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Department
for Environment
Food & Rural Affairs

Defra is the government department responsible for environmental protection, food production and standards, agriculture, fisheries and rural communities in the United Kingdom of Great Britain and Northern Ireland.

Our Mission

to make our air cleaner, our water purer, our land greener, and our country healthier.

- 50 million tonnes of e-waste (technology waste) are produced each year.
- meeting national and global recycling targets could create new jobs, for example 20,000 potential new jobs in the UK economy.
- The world could see over 1 billion climate migrants by the end of the century.
- Emissions from the technology sector, the same as the aviation sector – if not more.
- Digital technologies could help reduce global carbon emissions by up to 15% – or one-third of the 50% reduction required by 2030.
- 25 Million people are estimated to be in forced labour.
- 152 million children are estimated to be victims of child labour.
- \$150 billion dollars is estimated to be made per year in illegal profits from forced labour.
- ICT industry consuming 50% – 60% of the world's tantalum and close to 26% of its tin,
- 9% of the gold mined each year.
- You can easily recover 7 grams to 9 grams gold from whole 1 kg graphic ic chips of the laptop
- 2kg of gold - £78 400



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Sustainable ICT Playbook

Defra's Industry Guide for helping businesses achieve sustainable outcomes

Sustainability in information and communication technology (ICT): a Defra guide

A Defra guide to help businesses create a greener, more sustainable future through information and communication technology (ICT).

Published 21 October 2019

From: [Department for Environment, Food & Rural Affairs](#)

Documents



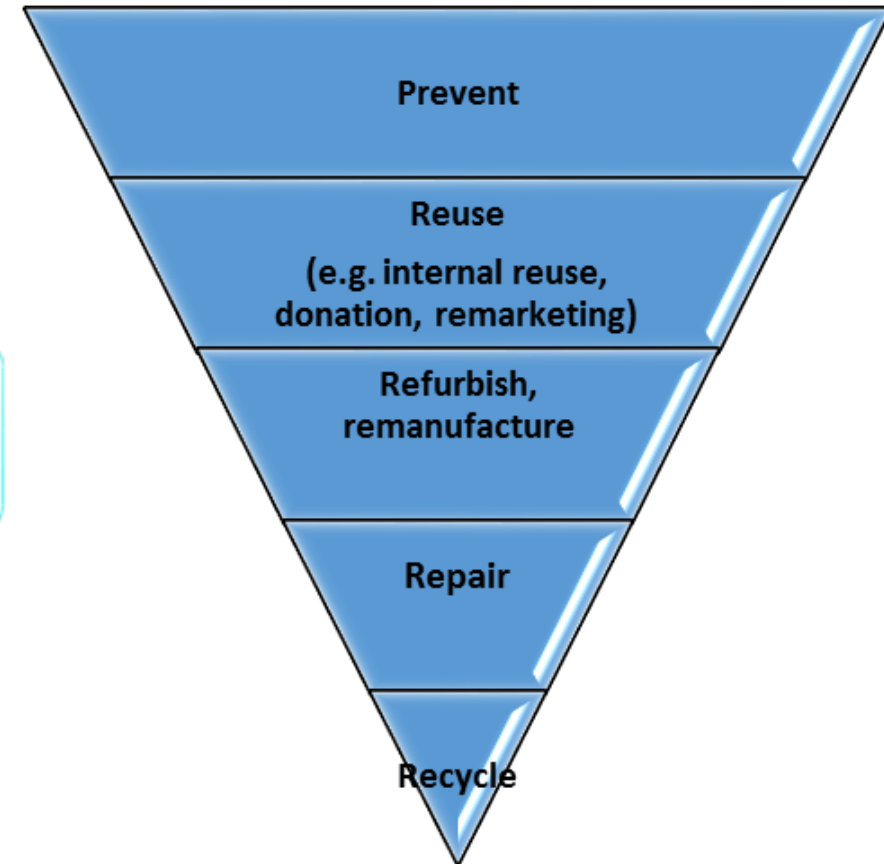
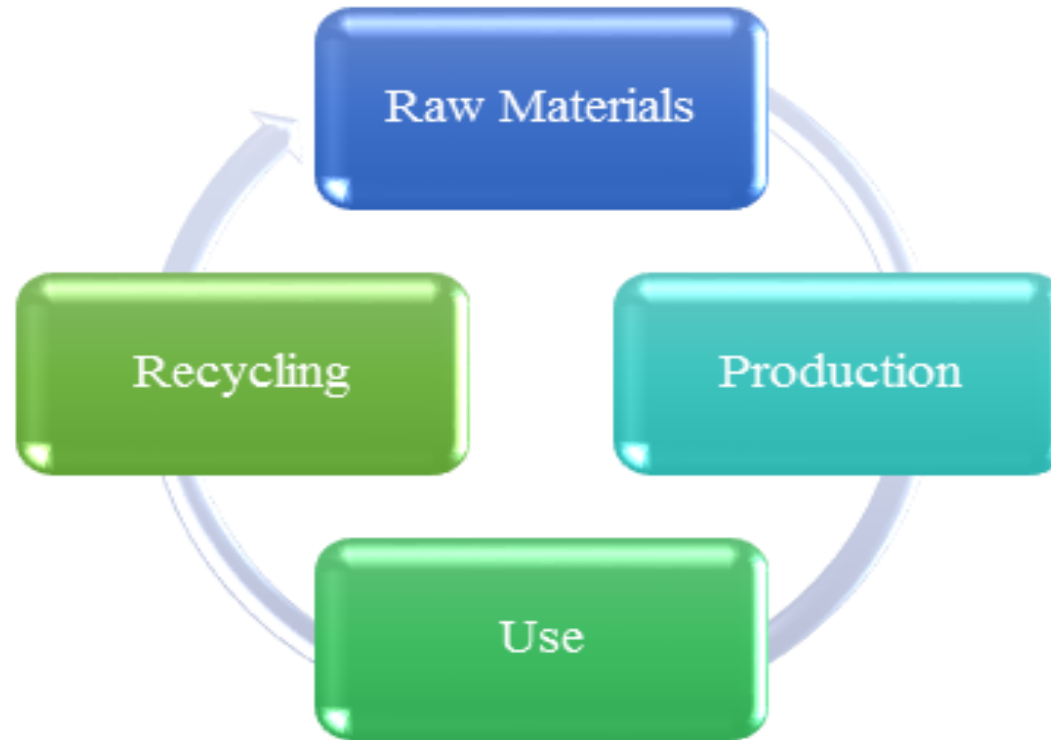
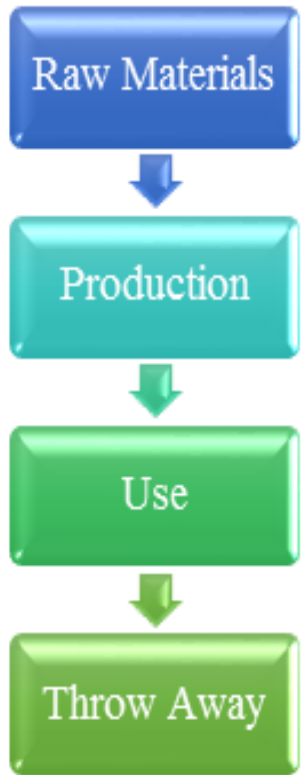
[Helping businesses create a greener, more sustainable future through ICT](#)

PDF, 1.45MB, 32 pages

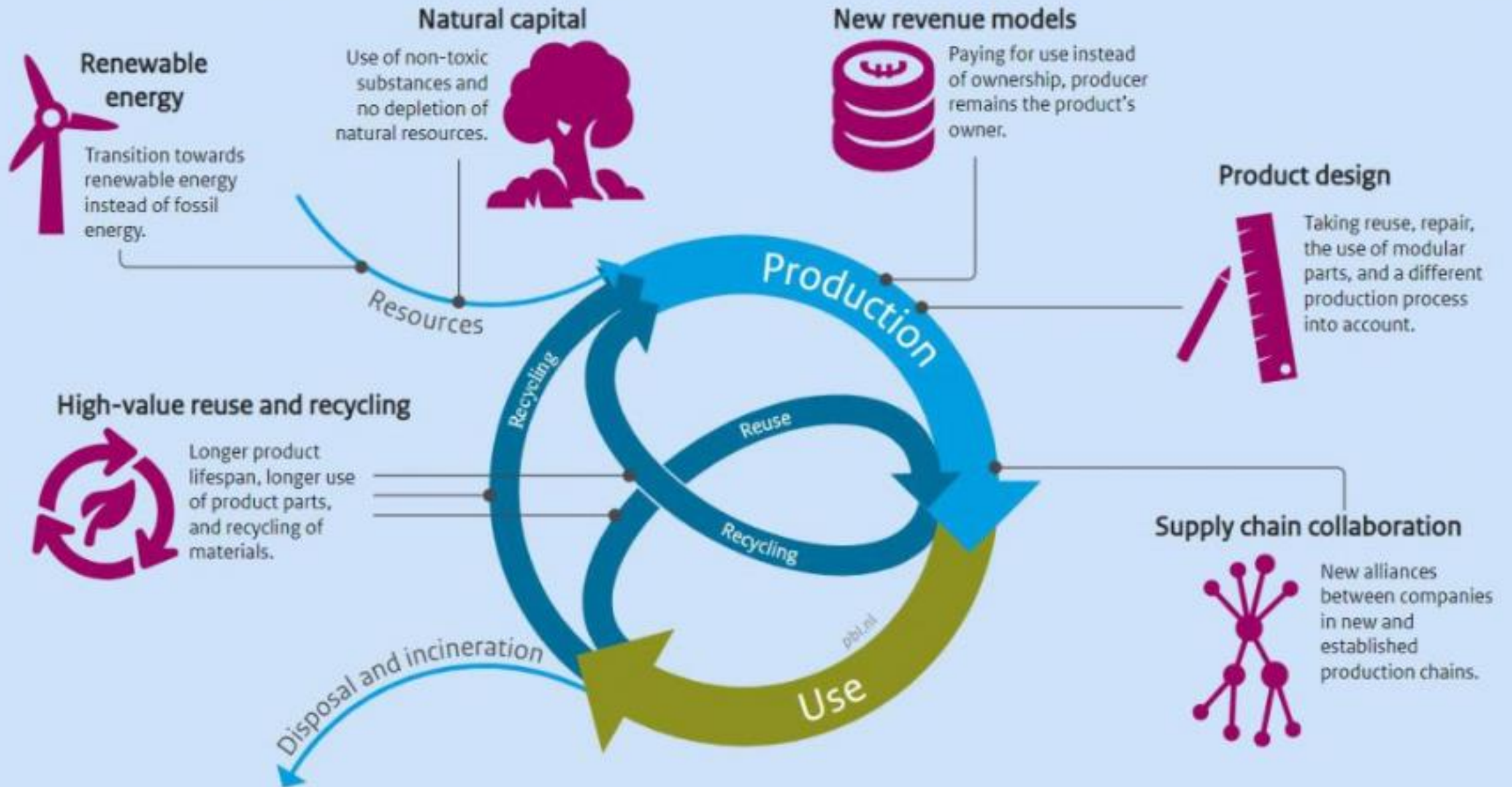
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Circular Economy

A way of eliminating waste through reduce, reuse and recycle



Elements of a circular economy



Circular Economy

Case study ahead of COP21 UN (2015)

It analysed the effects of three strategies underpinning a circular economy: renewable energy, energy efficiency and material efficiency. It concluded that by 2030, carbon emissions could be cut by almost 70% if a key set of circular economy policy measures were adopted.

Ecological Footprint

Laptops, PCs & Tablets



Networks



Phones & Telecomms



Printers



Data Centres



Other devices



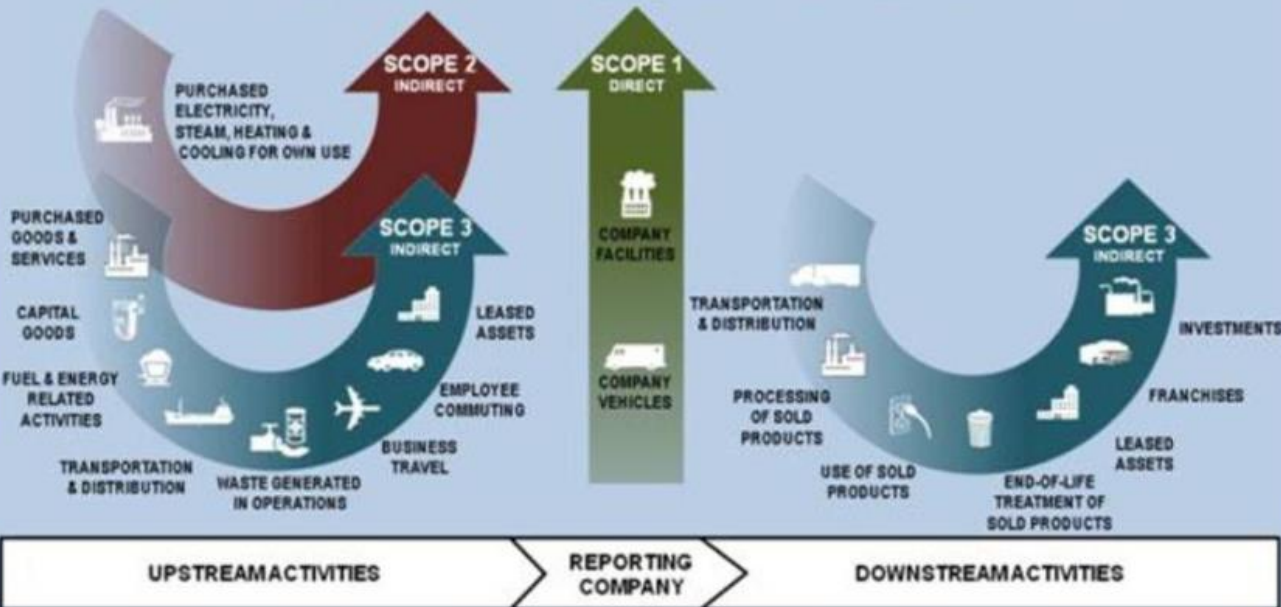
E-Waste



IT-related Travel



CO₂ CH₄ N₂O HFCs PFCs SF₆

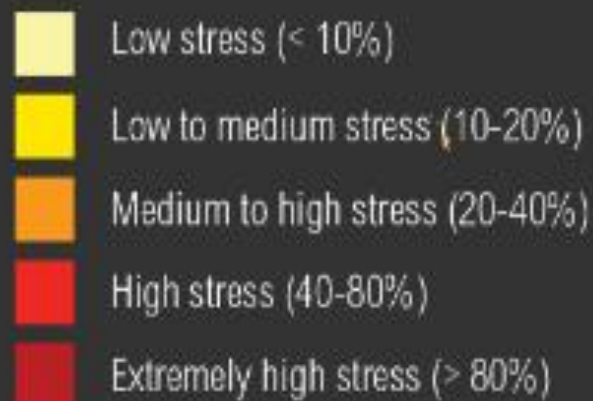


In order, the most abundant greenhouse gases in Earth's atmosphere are:

- Water Vapour (H₂O 3 plus atoms)
- Carbon dioxide (CO₂ ... 3 plus atoms)
- Methane (CH₄ ... 3 plus atoms)
- Nitrous oxide (N₂O..... 3 plus atoms)
- Ozone (O₃ ...)
- Chlorofluorocarbons (CFCs)
- Hydrofluorocarbons (includes HCFCs and HFCs)

WATER STRESS BY COUNTRY

ratio of withdrawals to supply



This map shows the average exposure of water users in each country to water stress, the ratio of total withdrawals to total renewable supply in a given area. A higher percentage means more water users are competing for limited supplies. Source: WRI Aqueduct, Gassert et al. 2013

Cloud

example questions to ask

- Is the cloud supplier observing good energy management practices?
- Are they certified?
- Are the relevant processes integrated into the overall organisational management system?
- Can they provide you with reports on your energy consumption
- Is the energy used by the supplier generated from renewable sources i.e. wind, solar or hydro-electric?
- Are they ethical, do they treat their staff well and listen to their staff

What consumes the most energy and therefore emissions

- **Travel** – Audio, VC, Cycle, Walk, Car sharing, electric etc.
- **Servers** (Data Centre or Cloud) – reduce energy demand with renewable and carbon neutral sources, software, decommission legacy, operations and management
- **Networks** – renewable and carbon neutral sources, efficient products
- **PC's and Desktops** – renewable and carbon neutral sources (infrastructure) Power management, data
- **Imaging** (printers – tend to be shared hence lower than PC's), power management, renewable and carbon neutral sources and infrastructure
- **AV (VC's)** - tend to be shared hence lower than PC's), power management, renewable and carbon neutral sources and infrastructure



....Social Sustainability and Ethics....

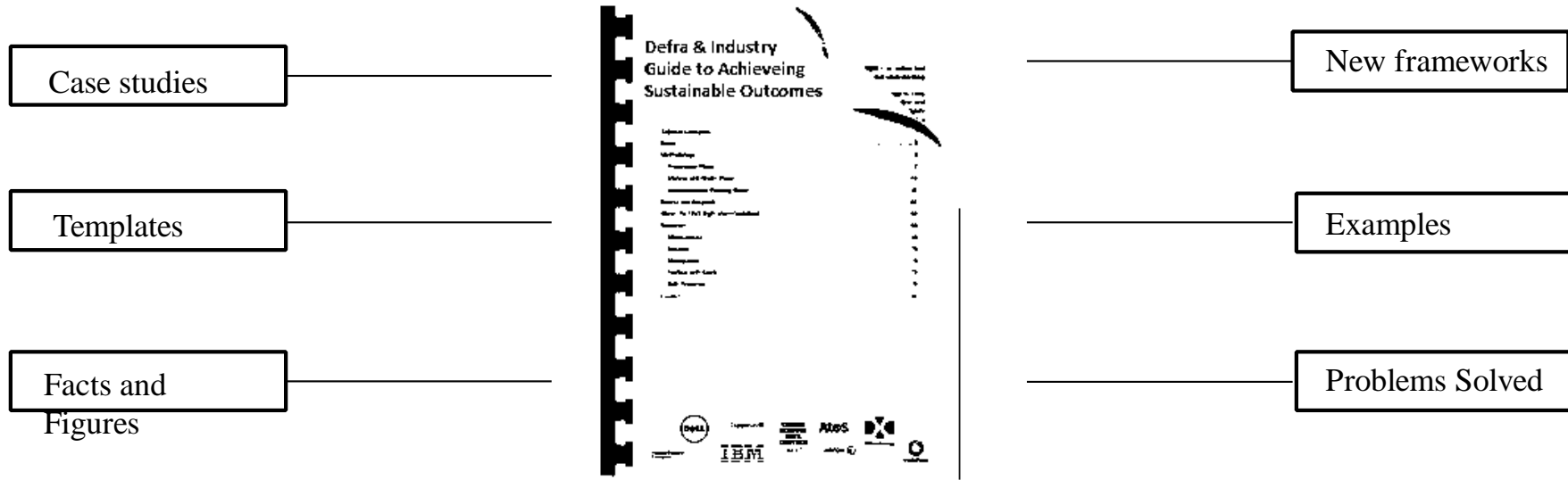


Social sustainability

- Supplier Charter or Code of Conduct (Alignment with OCED and UNGC framework on supply chain due diligence)
- Risk intelligence
- Impact assessments
- Cost-Benefit Analysis (does that include natural, social, financial, human, physical, intellectual – bearing in mind that your natural capital will sit in all areas)
- Identify, assess and audit
- Tracing and tracking
- Child rights

Publication Update – April 2020

“A Defra & ICT Industry guide “Helping Businesses Achieve Sustainable Outcomes”



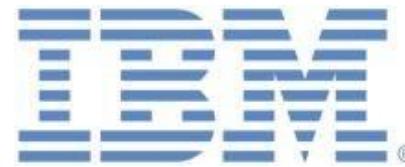
Download an updated version of the guide in April
this will have all the tools and latest guidance



United Nations
Educational, Scientific and
Cultural Organization



Responsible Business Alliance
Advancing Sustainability Globally



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THE CHIPPERY

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OPEN

THURSDAY
12:38
BLACKBURN

Human being are causing these problems, its amazing
what we can achieve when we decide to be the
solution!

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Chair Defra e-Sustainability Alliance
PhD Researcher

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