Priming the plastics industry for carbon reporting and legislation

Adrian Wain and Tony Woodford
UL

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12.00 - 12:45
Speaker introductions

**Adrian Wain:** Carbon advisory and solutions lead at UL Environment & Sustainability

- 10 years experience in carbon strategy and reporting
- Leads UL Turbo Carbon program, focussed on supply chain emissions

**Tony Woodford:** Software Sales Exec

- Over fifteen years working in product testing, standards and certification across all industries; to include electrical safety, medical devices, machinery and construction products
- Most recently specialising in sustainability, to include LCA, EPD and reporting/verification against SDG
Aims and Agenda

UL are delighted to share with you an overview of Carbon Management.

The aim of today’s webinar is to share UL’s perspective on carbon management and provide some examples of how to enhance your carbon management program.

The agenda is as follows:

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About UL
UL operates in more than 143 COUNTRIES and across more than 20 INDUSTRIES.

UL reaches more than 2 BILLION GLOBAL CONSUMERS annually with safety messages.

Delivering safety, security and sustainability.

UL’s SUSTAINABILITY CERTIFICATIONS are referenced in 900+ sustainable product specifications or purchasing guidelines around the globe.

UL Marks appear on more than 22 BILLION products globally.

UL has supported 125 YEARS OF INNOVATION from electricity to nanotechnology.

UL software is used by 10,000+ ORGANIZATIONS in OVER 10 INDUSTRIES.
Our People

North America
5,000+ People

Africa, Europe, Latin America, Middle East
3,000+ People

Asia Pacific
5,000+ People

14,000+ ASSOCIATES
190+ FACILITIES
UL’s Environment & Sustainability division works to advance global sustainability, environmental health, and safety through:

- **Certifications and testing** that demonstrate the health and sustainability of products and environments.
- **Advisory services** that apply data driven techniques to support business transition to low carbon and circular economies.
- **Software platforms** that help businesses track and measure environmental, supply chain, health, and safety management and sustainability data.
Carbon Management - Why
Plastic as a climate solution through avoided emissions

Carbon balance of plastics in the EU27

- Production: 180 Mt CO2eq in EU27 (2020)
- End of life: 18
- Substitution: 59
- Fuel saving: 34
- Insulation: -1200
- Prevented food loss: 180
- Renewables components: 200

Source: The impact of plastics on life cycle energy consumption and greenhouse gas emissions in Europe, June 2010. Lower values taken from table “Carbon balance” of the total market of plastic products in the EU27+2 for 2007 and for 2020 (estimated extrapolation) on page 18

- 22% of the Airbus A380 are made of plastics, helping to reduce fuel consumption by 15% over its life cycle
- Traditional material packaging can represent 36% of overall product weight, similar plastic pouches can contribute 3.6% to the total product weight
But still a growing contributor to actual emissions....

- Currently, 6% of total oil production is used by the plastic sector, and it is estimated that it will represent 20% use by 2050. Plastic would represent 15% of global annual carbon budget (up from 1% today) [https://www.no-burn.org/wp-content/uploads/Recycling-is-Not-Enough-online-version.pdf](https://www.no-burn.org/wp-content/uploads/Recycling-is-Not-Enough-online-version.pdf)

- Specifically, the US Environmental Protection Agency (EPA) estimates that each gram of plastic resin generates more than 1.1 grams of CO2 equivalent, while the beverage industry estimates that a 500ml plastics water bottle has a carbon footprint of more than 82g

Source: [https://www.news.ucsb.edu/2017/01/18137/plastic-planet](https://www.news.ucsb.edu/2017/01/18137/plastic-planet)

Anthropogenic climate change

In-situ CO\(_2\) data taken at Mauna Loa, Observatory, Hawaii: Latitude 19.5° N Longitude 155.6° W Elevation 3397m
The pathways ahead of us

Carbon Pathways

- BAU
- INDC
- 2degs

Emissions (GtCO2e)

Year

2000 2015 2030 2045 2060 2075 2090

Temp rise

+5 Degrees C

- 12 billion exposed to heatwaves
- 7 million km2 of cropland decline
- 2 billion exposed to water stress

+3 Degrees C

- 4.5 billion exposed to heatwaves
- 5.7 million km2 of cropland decline
- 1.75 billion exposed to water stress

+2 Degrees C

- 1.3 billion exposed to heatwaves
- 4.2 million km2 of cropland decline
- 1.5 billion exposed to water stress

Projected impacts (2100)

Based on (source) AVOID 2, research funded by the UK Department for Energy and Climate Change (DECC)
Understanding the risks

60% of entities in the S&P500 (with a market capitalization of $18 trillion) hold assets that are at high risk of at least one type of climate-related physical event.


Some of the world’s biggest companies, representing $17 trillion in market capitalization, have said that climate change could cost them almost $1 trillion, much of it within the next five years, with a potential $250 billion write-off of stranded assets.


Unabated climate change leading to global costs equivalent to losing in-between 5 to 20% of global gross domestic product (GDP) each year, now and forever.

https://www.unepfi.org/climate-change/climate-change/
Perspective – climate change and health are interconnected

How might climate change create health issues from:

- Extreme weather
- Heat
- Infectious disease
- Nutrition

How such health issues impact industries?
# Responses to climate risk

## Climate risk disclosure

**What:** Communication on physical and transitions risks from climate change  
**Why:** The investment community tilting towards assets with higher climate resilience  
**How:** Preparing climate risk statements through TCFD frameworks  


## Science-based targets

**What:** Establishment of climate targets that align to 2C or less scenario  
**Why:** Failure to align to the 2C or less scenario will intensify climate risk  
**How:** Defining 5 to 15 year targets that will deliver a 40-72% CO2 reduction by 2050 (2010 b.y.)  

817 companies are taking science-based climate action and 339 companies have approved science-based targets: [https://sciencebasedtargets.org/companies-taking-action/](https://sciencebasedtargets.org/companies-taking-action/)

## Supplier engagement

**What:** Efforts to measure and manage the carbon emissions of suppliers  
**Why:** Supply chain emissions are often five times higher than business emissions  
**How:** Setting targets and providing tools for supplier carbon reduction  


## Mandatory reporting

**What:** Laws and policies requiring carbon reporting  
**Why:** Increase transparency and provide an evidence base for carbon taxes  
**How:** International standards for carbon reporting (14064-1, GHG Protocol)  

How – reporting risk
## Reporting on climate risk is becoming common practice

<table>
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<th>Framework</th>
<th>Audience</th>
<th>Requirements</th>
<th>Schedule</th>
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| Global: Task Force on Climate Related Financial Disclosures | Financial and non-financial organizations with public debt and/or equity | • Recommends voluntary consistent disclosure on climate-related financial risk.  
• Provides a framework for disclosure in financial filings, including suggestions on how to practically assess forward-looking climate-related risk through scenario analysis | Released in 2017 |
| EU: Institutions for Occupational Retirement Provision Directive | Registered EU pension funds | Requires pension funds to:  
• Consider climate and environmental matters in governance, risk and investment decisions.  
• Evaluate environmental, social and governance risks including climate change, resource scarcity and stranded assets  
• Reporting | In effect since 2017, transposed into law in 2019 |
| France: Energy Transition Law, Article 173 on Climate Risk Reporting | Publicly traded financial and non-financial organizations | • Sets out mandatory disclosure requirements of climate risk, including physical risk.  
• Requires all French institutional investors to assess and disclose the climate risk to their investment portfolios | In effect since 2016 |
The Task Force on Climate Related Financial Disclosure

- **Governance** The organization’s governance around climate-related risks and opportunities

- **Strategy** The actual and potential impacts of climate-related risks and opportunities on the organization’s businesses, strategy, and financial planning

- **Risk Management** The processes used by the organization to identify, assess, and manage climate-related risks

- **Metrics and Targets** The metrics and targets used to assess and manage relevant climate-related risks and opportunities

Source: page 4 TCFD report
Physical risks are already accelerating

Physical Risk
- Acute
- Chronic

Examples of Physical Risk

Acute Risks
- Extreme weather events such as hurricanes and wildfires will continue to become more severe

Chronic Risk
- Variations in precipitation and temperatures will lead to long-term changes in water availability

Examples of impacts
- Acute: Wildfire damaging facilities and reducing production
- Acute: Employee absenteeism reducing production
- Chronic: Reduced crop production
- Chronic: Increased utility costs through competition for scarce resources
Transition risks are becoming financially significant

### Physical Risk
- Sea level rise
- Flood & Drought
- Ecosystem loss
- Disease
- Famine
- Casualty

### Transition Risk
- Policy
- Technology
- Market
- Reputation

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#### Examples of Transition Risk

**Policy**
- Domestic political and regulatory developments will continue to drive major carbon pricing developments

**Technology**
- Technological improvements that support the transition to a lower carbon economic system will force the early retirement of assets that are not low carbon

**Market**
- Consumer preference for lower carbon products and services will reduce demand for relatively high carbon offerings

**Reputation**
- More consumer led activism will draw negative attention to sectors that are contributing more to climate change

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#### Examples of impacts
- Higher utility costs
- Emissions taxes
- Operational upgrades
- Fines and Penalties
- Reduced demand
- Lawsuit settlements
- Operational overhaul
- Stranded assets
How – Science Based Targets
The Science Based Targets Initiative is gathering pace

• The Science Based Targets initiative provides a methodology that maps carbon emissions reductions required to stay below two degrees Celsius (and now also below 1.5 degrees C) onto individual companies.

• By the end of 2020, the number of companies that have set science-based decarbonization targets will have jumped by well over 100% from 2019’s total of 754.

• Signups to the Science Based Target initiative have doubled every year since it started in 2015, and 2020 will be an extra-big year thanks to the many companies with expiring 2020 targets.

As of July 7 2020

• 917 companies committed to Initiative

• 402 companies with approved targets

Because adhering to the science needs to be measurable

- **Business as usual**
  -1.6% year on year

- **G20 NDC rate**
  -3% year on year

- **2C scenario rate**
  -7.5% year on year

- **1.5c scenario rate**
  -11.3% year on year

INDC = Intended Nationally Determined Contributions

Based on (source) https://www.pwc.co.uk/services/sustainability-climate-change/insights/low-carbon-economy-index.html
There are 3 main approaches to setting Science Based Targets

1. Absolute targets
   - 10 – 18% per decade (compared to 2010) based on IPCC AR5

2. Value-added approach
   - Generic decarbonisation pathway based on 2°C carbon budget and expected economic growth

3. Sectoral decarbonisation approach
   - Sector-specific decarbonisation pathway based on 2°C carbon budget, expected sector activity and mitigation potential
Depending on the company – The target may include the value chain

- If a company has significant scope 3 emissions (over 40% of total scope 1, 2 and 3 emissions), it should set a scope 3 target.

- Scope 3 targets should be ambitious, measurable and clearly demonstrate how a company is addressing the main sources of value chain GHG emissions in line with current best practice. Scope 3 targets are considered ambitious if they:
  - Lead to absolute reductions in line with a 2D pathway, or lead to intensity reductions in line with 2D pathway.
  - Do not result in absolute emissions growth and reduce physical intensity by at least 2% per year.
  - Reduce economic intensity by 7% year on year.
The majority of emissions for many companies are Scope 3

Ratio of Supply Chain to Direct Emissions

As a result, many companies are setting targets for their suppliers:

**Astra Zeneca**
Supplier CO$_2$ reduction of 20% by 2025 from 2015 and goal to improve primary data collection within value chain.

**Microsoft**
Cut carbon emissions by more than half by 2030, both for direct emissions and for the entire supply and value chain.

**Tesco**
Agriculture and manufactured good suppliers to achieve a 7% absolute reduction in carbon emissions across their business by 2020.
How – Supplier engagement
Supplier engagement on carbon going “beyond compliance”

**Sustainable Agriculture Program & Code.** P16.cS10. Suppliers and farmers must implement a plan to reduce on-farm CO2. **Responsible Sourcing Policy** p31.c 12.6. suppliers must reduce greenhouse GHG emissions and achieve carbon neutrality.

**Philips** **Supplier Sustainability Performance** manual sets out an approach for continuous improvement of supplier sustainability. **Supplier Sustainability Declaration** p12.c8. Suppliers must track and document Scope 1 and 2 emissions.

**Expectations of third parties** cites environmental performance criteria on p.7. Expectations described in more detail within **Sustainability Partner Guide** with sample programs (Ecovadis, CDP) and metrics on p.11 and p.23.
For suppliers to such companies – this means.....

1. Enhance capabilities for carbon measurement
2. Aim to reduce carbon intensity by 7% a year
3. Provide consistent carbon reports to customers
1. Enhance capabilities for carbon measurement

GHG Protocol Scopes

- Scope 1: Emissions from on-site combustion of fuels and combustion of fuels in owned vehicles
- Scope 2: Emissions from the use of electricity generated off-site
- Scope 3: Emissions from upstream or downstream activities beyond operational control

Source: GHG Protocol
2. Reducing carbon intensity by 7% a year

GEVA Scenario 7%

- Emission intensity halved by 2030
- Actual emissions halved by 2039
3. Providing consistent reporting

| Relevance | • Ensure that reported emitting activities appropriately reflect the activity of the organization and that the report meets the needs of the intended audience. |
| Completeness | • Report on all material emitting activities within the designated reporting boundary. Justify any material exclusions. |
| Consistency | • Use consistent methods of activity data collection for robust comparisons of carbon emissions across multiple periods. Document any significant changes to the reported data or the reporting boundary that may affect comparisons. |
| Transparency | • Report emitting activities in a clear and factual manner. Provide supporting evidence for measured activity data where possible and state assumptions used for estimated activity data. |
| Accuracy | • Ensure the conversion of activity data to carbon emissions is systematic and that the best available emission factors are applied. |
How – Mandatory Reporting
Almost 2000 climate laws globally

Source: https://climate-laws.org/cclow
Examples of recently introduced laws

South Africa Greenhouse Gas Emission Reporting Regulations (NGER) and Carbon Tax Act (CTA)

South Africa’s NGER came into effect in 2017, followed by the CTA in June 2019. It is applicable within 40 designated sectors and application depends on whether capacity for on-site combustion of fuel exceeds 10 MW.

For certain sectors the thresholds are defined differently, such as production output, but are intended to have equivalence. If above the threshold, the direct (Scope 1) emissions must be reported following Intergovernmental Panel on Climate Change (IPCC) 2006 guidelines.

For those obliged to report, emissions beyond an allowance are taxed at about US$8 per tonne for a period from 2019 to 2022, the price will then escalate periodically to 2030. Failure to report or pay taxes may be punishable by fine or prison.

Singapore Greenhouse Gas Measurement & Reporting Regulation (M&R) and Carbon Pricing Act (CPA)

The Singapore M&R came into effect in 2017 followed by the CPA in 2019 and is applicable to any facility of a registered corporation that emits more than 25,000 tCO2e per year.

Registered companies in scope must submit a monitoring plan and facility-level emissions reports for both direct energy use and industrial processes at facilities under their operational control. All direct emissions sources must be included in the report even if they are negligible. Added features of the M&R are that it requires the registered company to have a GHG manager with appropriate credentials on their staff and that the emissions report must be verified by an approved third party.

The CPA was introduced in 2019 and applies a tax of US$3.5 per tonne. These prices will be reviewed in 2023 and are expected to rise to between US$7.3 and US$11 by 2030.
Carbon pricing

Carbon Pricing Dashboard

Source: https://carbonpricingdashboard.worldbank.org/
SECR overview
Why SECR and how will it effect me?

- Government commitment is that by 2050 our GHG output must be at least 80% lower than in 1990.

- The plastics industry is perceived as a major contributor to the overall GHG numbers.

- Having a reporting structure like the SECR in place will create a level playing field among organisations in terms of energy and emissions reporting.

- The SECR will provide organisations with the scientific data to be able to react and create opportunities to reduced their impact on climate change.

- Being able to show a year on year decrease in GHG will help make a business more investable and maybe more importantly reduce operating costs.
What is SECR?

• Streamlined Energy and Carbon Reporting Implemented April 1 2019 to replace Mandatory Greenhouse Gas Reporting (MGHG).

• Qualifying conditions are met by a company or LLP in a year satisfying two or more of the following criteria:
  
  • Turnover £36 million or more
  • Balance sheet TOTAL of £18 million or more
  • Number of employees 250 or more

• Exemption if you can evidence that you consume less than 40MWh.

• Reporting requirements largely focus on energy use, associated emissions and efforts to reduce impact.
Do I need to report
## What information do I need to disclose under SECR?

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<th>Scope 1 – Mobile combustion</th>
<th>Scope 1 – Process &amp; fugitive emissions</th>
<th>Scope 2 – Purchased energy consumption</th>
<th>Global energy use in kWh – including Scope 1</th>
<th>Annual GHG emissions + previous year</th>
<th>% of global energy from UK and offshore area</th>
<th>Emissions intensity ratio</th>
<th>Narrative on energy efficiency action</th>
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### Large or LLP

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<th>Scope 1 – Stationary combustion (gas)</th>
<th>Scope 1 – Mobile combustion</th>
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- **Scope 1** – Stationary combustion
- **Scope 1** – Mobile combustion
- **Scope 1** – Mobile combustion
- **Scope 2** – Purchased energy consumption
- **Global energy use in kWh** – including Scope 1
- **Annual GHG emissions + previous year**
- **% of global energy from UK and offshore area**
- **Emissions intensity ratio**
- **Narrative on energy efficiency action**
- **Methodology**
How should I report to SECR?

• The report should be included within the Directors’ Report as part of annual filing obligations.

• For LLPs (where a Directors Report is not issued) a separate “Energy and Carbon Report” shall be issued.

• SECR does not impose a specific reporting template, but does reference reporting structures such as ISO 14064-1 and the GHG Protocol Corporate Standard.

• SECR encourages the reported year of energy and emissions matches the organizations financial year.
What are timelines and potential penalties for SECR?

• For companies with an FY starting on or after April 1 2019 – first disclosure due in 2020.

• For companies with an FY starting before April 1 2019 – first disclosure due in 2021.

• SECR will be enforced by The Conduct Committee of the Financial Reporting Council - penalties for non-compliance have yet to be published.

• However, note that in ESOS and CRC significant fines have been issued, one of over £40,000. See link: https://legislationupdateservice.co.uk/news/15-businesses-hit-with-fines-for-failing-to-comply-with-esos/.
How can UL help me report to SECR?

A simple, fast and affordable online tool for reporting Scope 1 and Scope 2 emissions.

- Simple, Fast, Affordable
- Multi-language
- Multi-facility
- Automated calculations
- ISO 14064-1 report

https://turbo.ul.com/
Conclusions
Key messages

- The plastic industry is a growing contributor to CO2 and climate risk
  - 5 to 20% of GDP at stake

- Science-based action must be taken
  - Reduce emissions by 40-72% by 2050 (2010 base year)

- Engaging the supply chain is key
  - Supply chain to direct emissions ratio of 5.5 : 1

- Climate policy is proliferating
  - Mandatory reporting as a precursor to carbon pricing

- Acting now will cost less than delaying
  - Carbon prices may be above $100 per tonne by 2030
Thank you! Q&A

https://turbo.ul.com/
BPF Webinars: Lunch and Learn
https://bpf.co.uk/events/webinars/lunch-and-learn