UK Government

Bureau of Energy Efficiency
Ministry of Power, Government of India

Knowledge Exchange Platform
Transmitting Knowledge through Best Practices

Accelerating Smart Power and Renewable Energy in India (ASPiRE): Sectoral Workshop

Net Zero Textile Manufacturing
Measuring, Reducing & Reporting

By Catherine Bottrill, CEO

pilio

Senior team.

The founders have over 40 years combined experience in energy and environmental management.

Catherine Bottrill

CEO / Co-founder

Dr. Russell Layberry

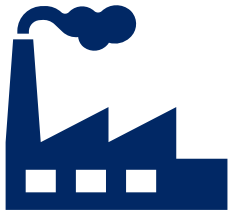
CSO / Co-founder

OXFORD UNIVERSITY INNOVATION

Spun-out of Oxford University in 2011

Assisting the textile & apparel sector on the path to net zero

Supply chain mapping



Factory energy audits

Carbon footprint

Fashion insetting

The Climate Challenge

The GHG impact and challenge for the textile & apparel sector

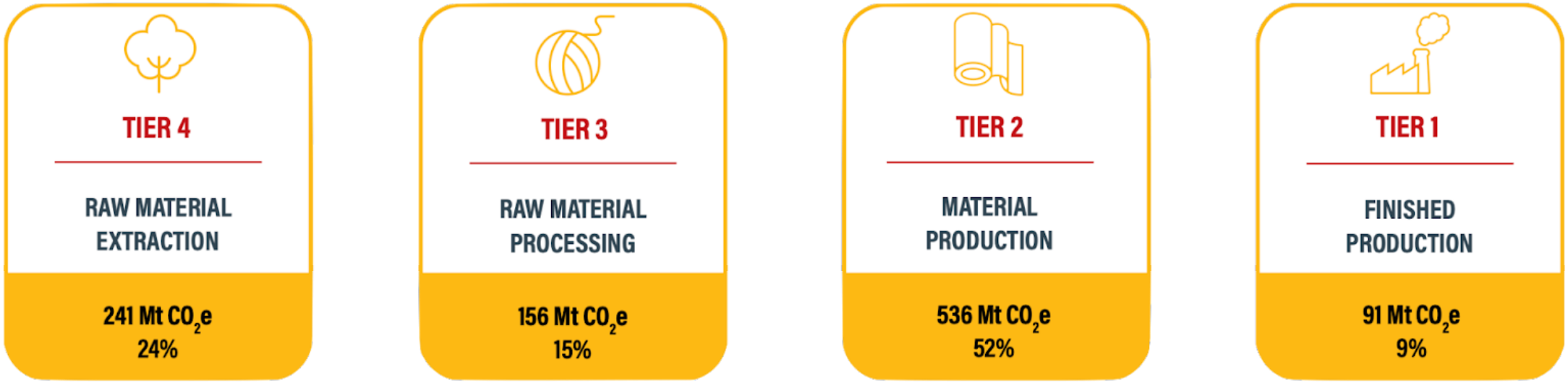
1 Giga tonne CO_2e / year

2%

Of total global emissions.

96%

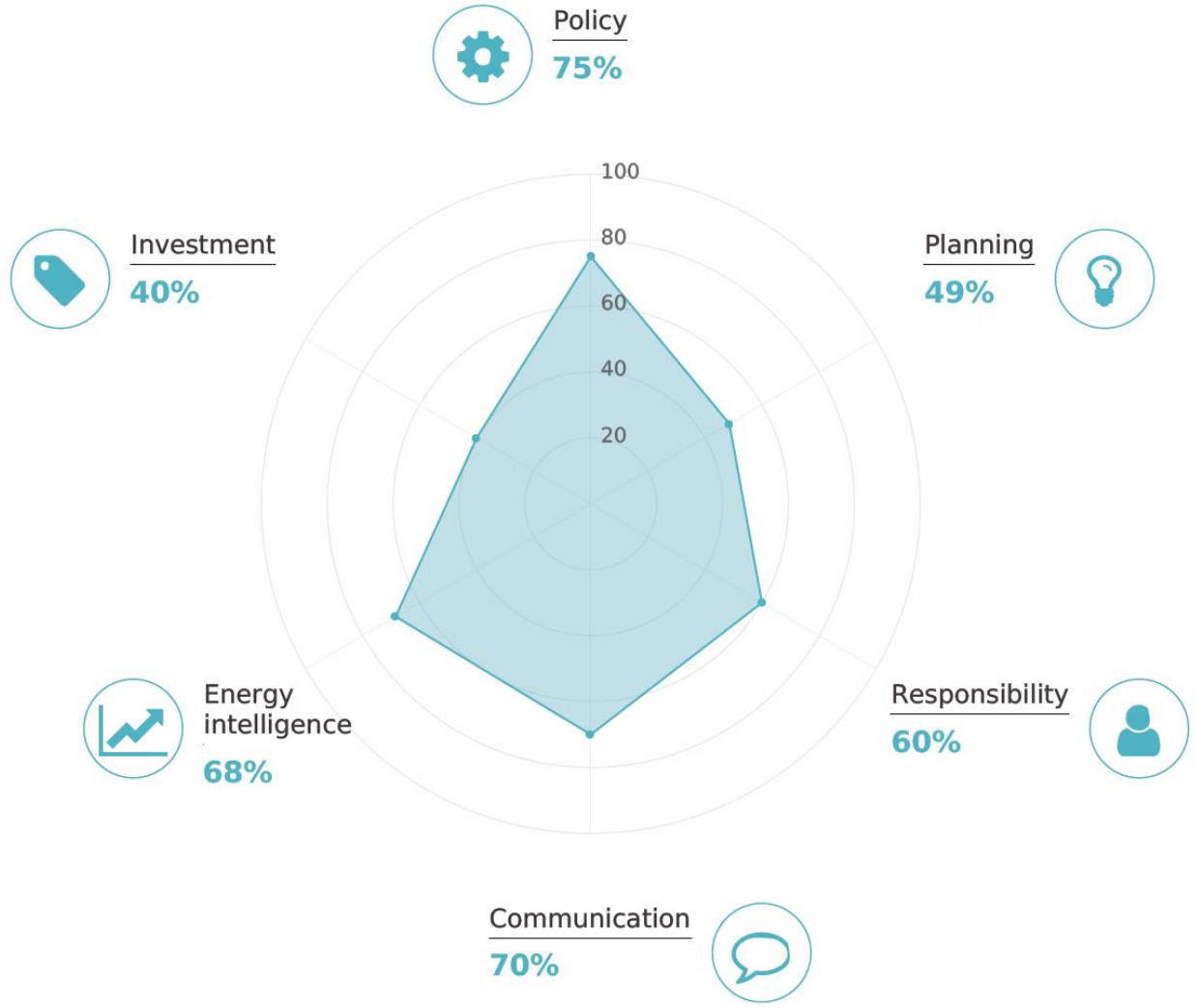
From supply chain impact.



World Resources Institute, 2021


Developing a net zero path necessitates decision-making that responds and adapts to…
uncertainty
reputation
technology
cost
legislation
resources
science

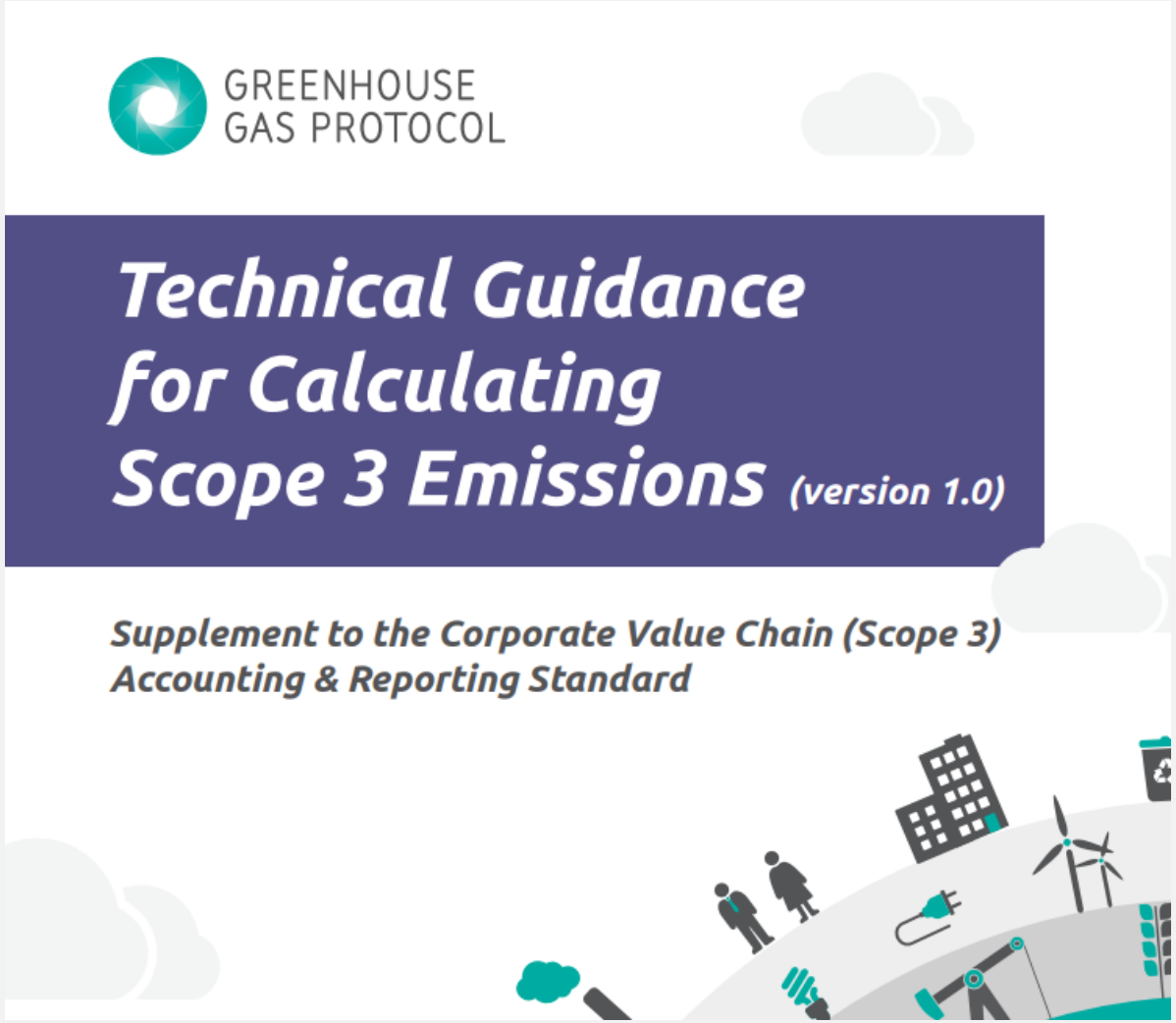
Therefore, taking a holistic approach is important for achieving net zero



Measuring

GHG emissions in India’s textile manufacturing sector

GHG Accounting Guidance



GHG Emissions Scopes

Scope 1

directly burned fuels eg: natural gas, diesel, petrol, kerosene etc.

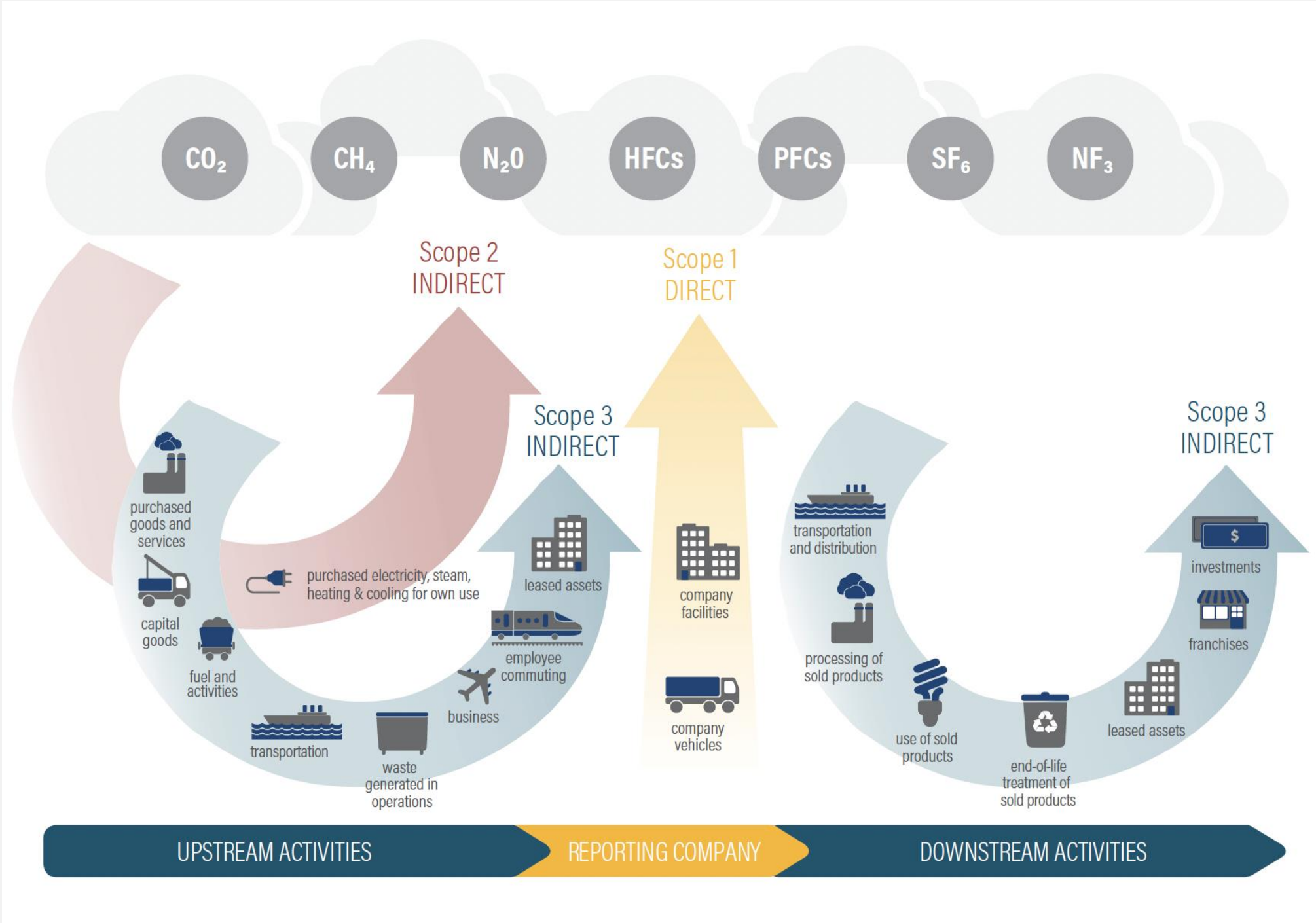
other direct emissions eg: CFCs, HFCs, methane, SF6 etc

Scope 2

Indirectly burned fuels e.g.: electricity, heat networks

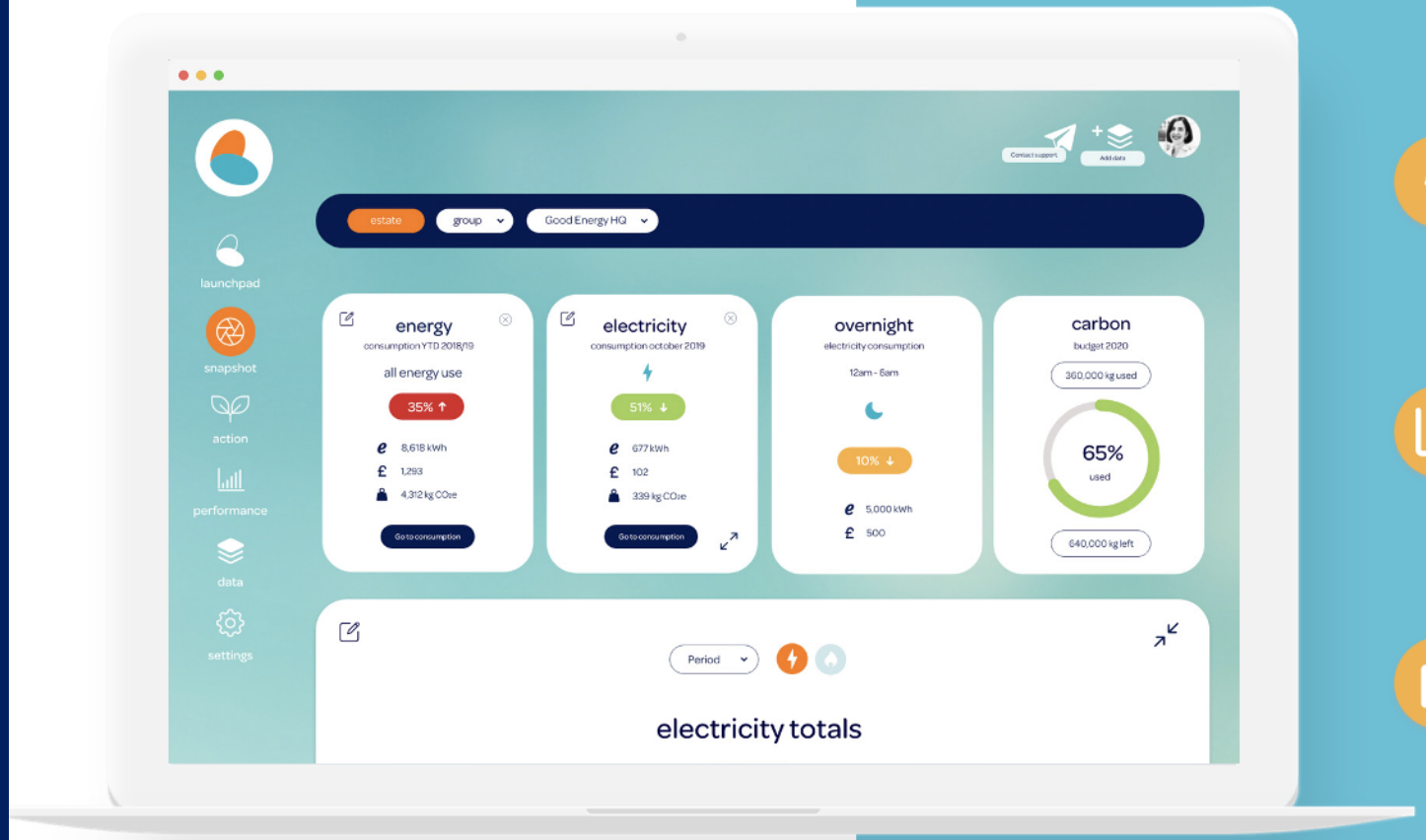
Scope 3

Upstream and downstream supply chain emissions – indirect emissions which occur due to the activities of your business


CO_2
CH_4
N_2O
HFCs
PFCs
SF_6
NF_3
Scope 2
INDIRECT
Scope 1
DIRECT
Scope 3
INDIRECT
Scope 3
INDIRECT
purchased goods and services
capital goods
fuel and activities
transportation
waste generated in operations
business
employee commuting
leased assets
purchased electricity, steam, heating & cooling for own use
company facilities
company vehicles
transportation and distribution
processing of sold products
use of sold products
end-of-life treatment of sold products
leased assets
franchises
investments
UPSTREAM ACTIVITIES
REPORTING COMPANY
DOWNSTREAM ACTIVITIES

Software

ENERGY MANAGEMENT



Process energy data

Easy connection and importing

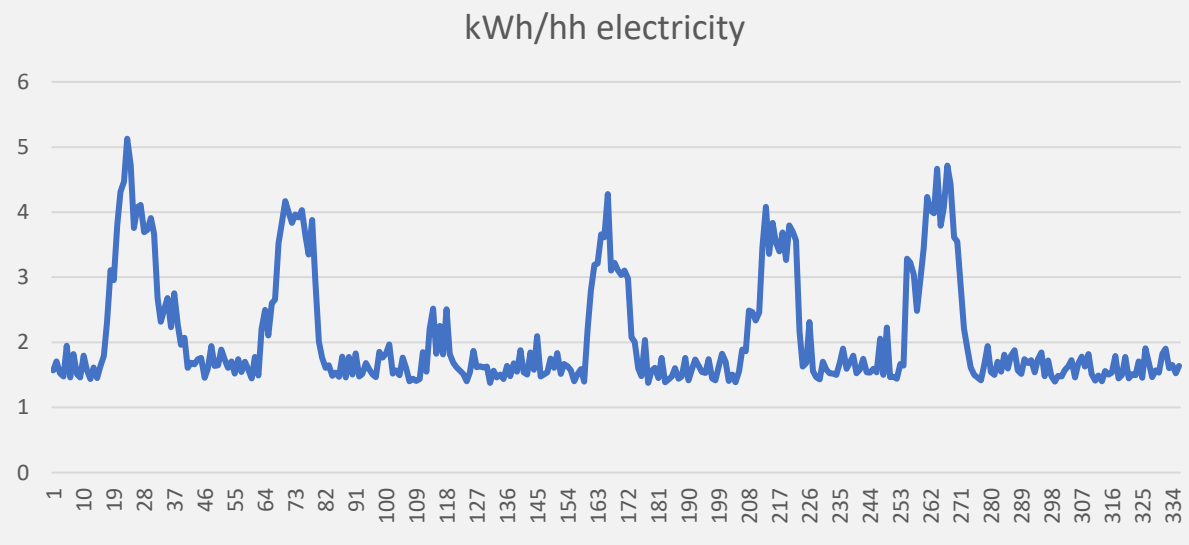
Performance analysis

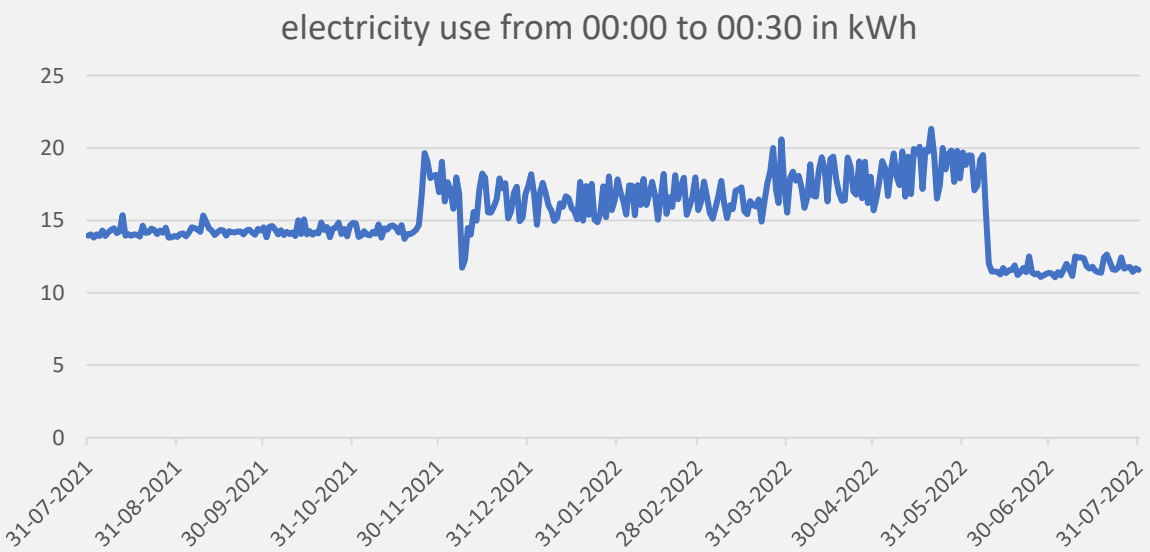
Individual facilities and the portfolio

Energy reports

Monthly and annual reports

Energy and Carbon Monitoring





Reducing

GHG emissions in India’s textile manufacturing sector

Net Zero

Net zero refers to a state in which the greenhouse gases going into the atmosphere are balanced by removal out of the atmosphere.

- Reduce emissions – Conservation, energy efficiency, fuel switching
- Offset emissions - Reducing GHG emissions (including through avoided emissions), or increasing GHG removals through activities external to an actor
- Insetting - Reducing GHG emissions (including through avoided emissions), or increasing GHG removals through an actor’s scope 1, 2, or 3 emissions

Scope 1 and 2 Reduction

- Good energy management
- LED lighting
- Variable speed drives
- High efficiency motors
- Evaporative cooling
- Solar panels (PV)

Reducing operational energy use

Signage on equipment

BMS scheduling (weekly)

Building close routines (a member of staff at lock up)

Automatic systems

Staff engagement

The easiest method. A single member of staff switches off every piece of equipment that needs to be off at building close.
Can be enhanced by stickers - red, green.

Scope 1 and 2 Decarbonisation

- Electrification (remove fossil fuels from process heating)

- Direct electrical heating, biomass/biofuels, heat-pumps

Reporting

GHG emissions in India’s textile manufacturing sector

ISO 14064 – Emissions Counting

The ISO 14064 standard provides governments, businesses, regions and other organisations with a complementary set of tools for programs to quantify, monitor, report and verify greenhouse gas emissions.

The ISO 14064 standard supports organisations to participate in both regulated and voluntary programs such as emissions trading schemes and public reporting using a globally recognised standard.

PAS2060 – carbon neutrality

PAS 2060 is a specification detailing how to demonstrate carbon neutrality produced and published by the British Standards Institution.

The carbon footprint measurements should include 100% of Scope 1 and Scope 2 emissions, plus all Scope 3 emissions that contribute more than 1% of the total footprint.

The entity must develop a Carbon Management Plan.

Offsets:

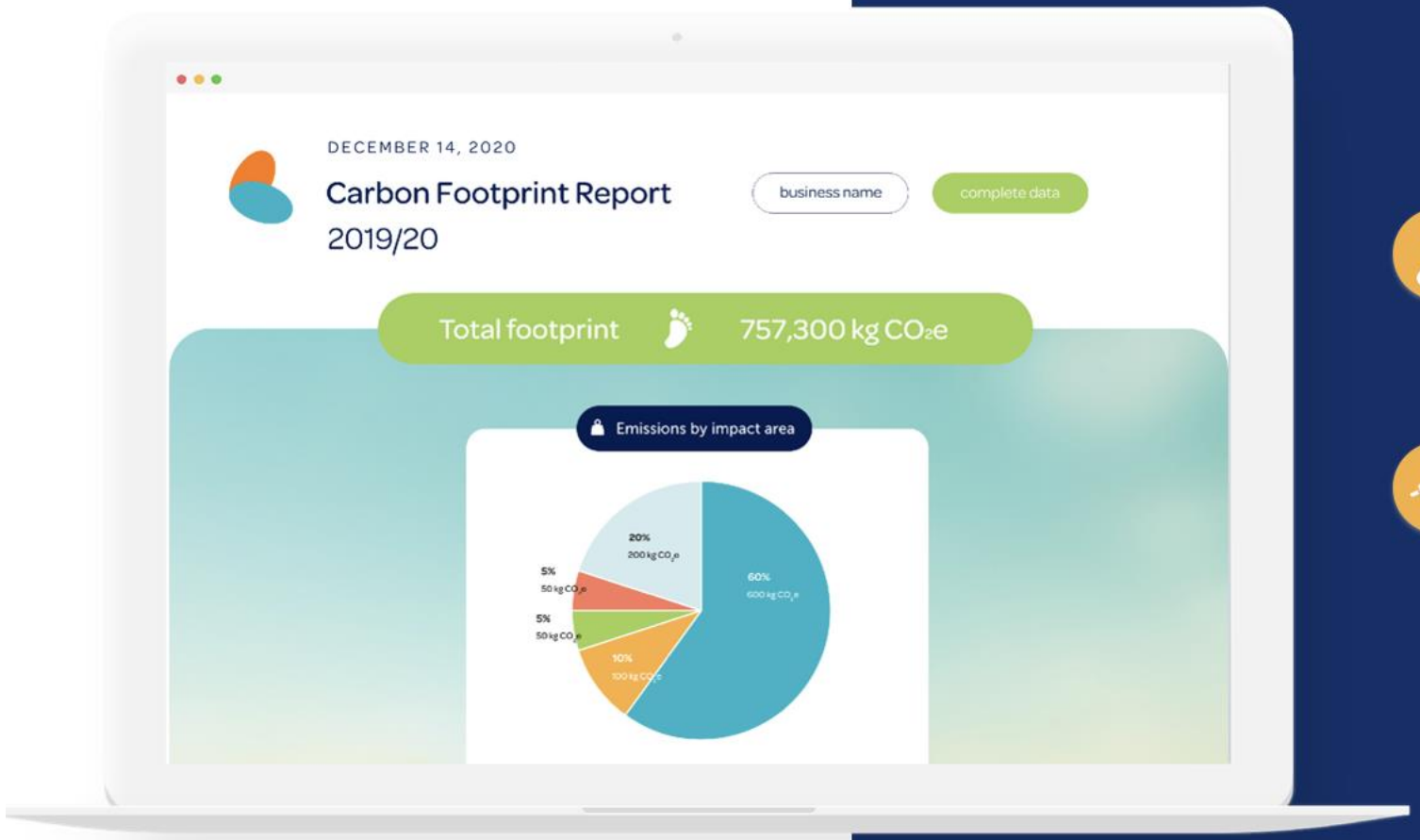
- From one of the PAS 2060 approved schemes (for example the Verified Carbon Standard).
- Genuinely additional (i.e. reductions that would not have happened anyway).
- Verified by an independent third party to ensure that emission reductions are permanent, avoid leakage (so that emissions are not increased in another area as a result of the project reductions) and are not double counted.

Science-based Targets

- Kering commits to reduce scope 3 emissions from purchased goods and services 40 percent per unit of value added within the same time frame.
- Levi Strauss & Co. also commits to reduce absolute scope 3 emissions from purchased goods and services 40 percent by 2025 from a 2016 base year.
- Marks & Spencer commits to reduce scope 3 GHG emissions by 13.3 metric tons of carbon dioxide equivalent between 2017 and 2030.
- Target Corporation commits that 80 percent of its suppliers by spend covering all purchased goods and services will set science-based scope 1 and scope 2 targets by 2023.
- Tesco also commits to reduce its scope 3 GHG emissions 17 percent by 2030, using a 2015 base year. The emissions categories covered by the scope 3 target are purchased goods and services (supply chain), fuel- and energy-related activities, upstream transportation and distribution, and waste generated in operations.

Software

CARBON FOOTPRINT REPORTS



Total carbon footprint

Your footprint across your portfolio

Impact analysis

Scope 1, 2 & 3 emissions by source

Thank you.

www.piliogroup.com
Catherine@piliogroup.come
info@piliogroup.com