INDIA GHG PROGRAM

Promoting profitable, sustainable and competitive businesses.

Setting Reduction Goals

Collaborating across the value chain

Key Points

- Primary Approach: Use of Forecasting and Backcasting methods to develop scenarios
- When companies choose to track performance or set a reduction target, companies shall:
  - Choose a base year and specify their reasons for choosing that particular year
  - Develop a base year emissions recalculation policy that articulates the basis for any recalculations *(If need arises)*
  - Recalculate base year emissions when significant changes in the company structure or inventory methodology occur

Setting a GHG Emissions Reduction Target

- **Around 75% of globally top companies report some form of reduction target**
- **Company target setting is motivated by market forces, not scientific requirements (only)**
- **Reduction targets are used**
    - to identify inefficiencies in corporate operations
    - to achieve cost savings
    - stimulate innovation
    - to minimise climate change risks
    - to benchmark against competitors
    - satisfy stakeholder demands.
    - positive impact on the environment and staff motivation
- **Getting to your carbon goal should be an incremental process**
    - involving a multitude of steps, measures, and projects
    - to help keep you on track, interim goals with accompanying dates should be established against which you can measure progress

Target Boundary

- Which GHGs
- Which geographical operations
- Which Direct and Indirect Emission Sources
- Separate Targets for Different Types of Businesses

Target Boundary

Target Boundary	Advantages	Disadvantages
A single target for total scope 1 + scope 2 + scope 3 emissions	• Ensures more comprehensive management of emissions across entire value chain • Offers greater flexibility • Simple to communicate • Does not require base year recalculation for shifting activities between scopes	• May provide less transparency • Requires same base year for scope 1, 2 and 3

Target Boundary

Target Boundary	Advantages	Disadvantages
A single target for total scope 3 emissions	• Ensures more comprehensive management of emissions across entire value chain • Simple to communicate	• May provide less transparency • Requires base year recalculation for shifting activities between scopes

Target Boundary

Target Boundary	Advantages	Disadvantages
Separate targets for individual scope 3 categories	• Allows customization of targets for different categories • Provides more transparency for different each category • Easier to track performance of specific activities	• Multiple targets difficult to manage • May result in 'cherry picking' • More complicated to communicate • May require base year recalculation for outsourcing or insourcing

Target Type

Target Type	Examples
Absolute Target	• Reduce total scope 3 emissions by 10% from 2012 levels by 2017 • Reduce scope 3 emissions from use of sold products by 20% from 2012 levels by 2017
Intensity target	• Reduce scope 3 emissions per unit of revenue by 25% from 2012 levels by 2017 • Improve the energy efficiency of sold products by 30% from 2012 levels by 2017

Setting a GHG Emissions Reduction Target

- Absolute targets (more popular) vs Intensity based
- CO^2-equivalent targets (most popular)/Energy efficiency/Energy consumption targets
- Wide range of targets is not directly comparable and it is difficult to judge the impact
- Absence of a standard framework for setting emissions reduction targets has led to a patchwork of company specific targets, which have developed from individual company priorities and market forces
- Need for harmonization???
  - **One Size fits all won't work**
  - Cross-industry approach, is not a favoured option within a voluntary process
  - Sector and company differences could result in skewed data or incentives and reduce transparency if one target methodology was applied across the board

Setting a GHG Emissions Reduction Target

The Bigger Picture

- Every company should set a CO^2-e reduction target (or could be translated to a CO_2 equivalents)
- Targets must have clear baseline and target years
- Governments need to agree clear medium and long term reduction goals in light of scientific recommendations, e.g. the IPCC Reports *(over and above market factors)*

Examples of Targets

Company	Target Description	Placement of Target in Product Cycle			Focus of Target		Nature of Target	
		In-plant	Purchased Electricity[11]	Product Use	GHG	Energy	Absolute	Relative
ABB	Energy	•	•			•		•
	GHG	•	•		•		•	
	EPDs[12]			•	•	•		•
Alcoa	GHG	•			•		•	
Baxter	Energy Efficiency/GHG	•	•		•	•		•
BP	GHG	•			•		•	
CH2M Hill	Energy		•			•		•
Deutsche Telekom	Energy	•	•			•	•	
DuPont	GHG	•			•		•	
	Energy Use	•				•	•	
	Renewable Energy		•			•		•
Entergy	GHG	•			•		•	
IBM	Energy Efficiency[13]	•				•		•
	Climate Savers[14]	•	•		•			•
	Energy Star®			•		•		•
	PFC (to 2002)	•			•			•
	PFC (in 2010)	•			•		•	
Intel	PFC	•			•		•	
Interface Inc.	Energy	•	•			•		•
Ontario Power Generation	CO_2	•			•		•	
Rio Tinto	GHG	•			•			•
Rohm and Haas	Energy	•				•		•
Shell	GHG	•			•		•	
	Energy	•				•		•
TMMNA	Energy	•				•		•
TransAlta	GHG	•			•		•	
UTC	Energy	•	•			•		•

The Coca-Cola Company

- Manufacturing: 'Grow business but not the carbon' (system wide; all bottling companies included) by 2015; baseline of 2004
- Complimentary target: 5.7 million metric tonnes CO2-e below 2004 levels (aggregate target for all countries) by 2015; baseline 2004
- Annex I (industrialised countries and countries in transition) countries: CO_2-e 5% absolute by 2015; baseline 2004

GlaxoSmithKline plc

- 20% CO_2-e indexed to net operating revenue (adjusted for constant exchange rates) by 2010; baseline 2006
- 45% CO_2-e indexed to net operating revenue (adjusted for constant exchange rates) by 2015; baseline of 2006

IBM

- CO_2: 12% absolute by 2012; baseline 2005
- PFC: 25% absolute by 2010; baseline 1995
- Energy consumption (incl. fuels): 3.5% absolute on annual basis; baseline is reset annually

L'Oréal

- CO_2-e 2% absolute annual (internally also indexed to denominators, including finished product), baseline is reset annually
- Energy consumption 5% indexed to production unit

Microsoft

- 30% CO_2-e indexed to revenue by 2012; baseline 2007
- Industry goals: Challenge to computing industry with Climate Savers Computing Initiative to reduce absolute GHG emissions by 54 million metric tonnes (24 million metric tonnes per year) by 2010

Nokia

- Minimum of 10% by 2009; baseline 2006
- Minimum of 18% by 2010; baseline 2006
- Ensure that all our key suppliers set energy efficiency and CO_2 reduction targets
- Set CO_2 reduction targets for logistics service providers

PepsiCo UK

- No direct GHG emissions reduction target
- 25% reduction of energy intensity per unit of production by 2011; baseline 2008
- Entire UK business supplied with renewable energy, including manufacturing and distribution by 2023

Accounting for reductions over time

Method	Description
Inventory Method	• Accounts for GHG reductions by comparing changes in the company's actual emissions inventory over time relative to a base year
Project Method	• Accounts for GHG reductions by quantifying impacts from individual GHG mitigation projects relative to a baseline

Quantifying changes in scope 3 emissions over time

Change in emissions from a scope 3 category =
Current year emissions from the scope 3 category – Base year emissions from the scope 3 category

Calculating change in GHG emissions and emission intensity

GHG emission intensity for year 2012 = A kg of CO2eq/ton of product

GHG emission intensity for year 2013 = B kg of CO2eq/ton of product

Actual production for year 2012 = Y tons of production

Actual production for year 2013 = Z tons of production

Percentage change in GHG emission intensity =

Corresponding change in GHG emissions =

Calculating change in GHG emissions and emission intensity

GHG emission intensity for year 2012 = A kg of CO_2eq/ton of product

GHG emission intensity for year 2013 = B kg of CO_2eq/ton of product

Actual production for year 2012 = Y tons of production

Actual production for year 2013 = Z tons of production

Percentage change in GHG emission intensity = $\frac{A - B}{A} \times 100$ = ……%

Corresponding change in GHG emissions = (A kg of CO_2eq/ton x Y tons)

–(B kg of CO_2eq/ton x Z tons)

= ……kg of CO_2eq

Recalculating Base Year Emissions

Companies are required to recalculate base year emissions when:

- Structural changes in the reporting organization (merger, acquisition, outsourcing etc.)
- Changes in calculation methodologies, improvements in data accuracy or discovery of significant errors
- Changes in categories or activities included in scope 3 inventory

Setting the Target Level

- Relationship between GHG emissions and business metrics
- Effect of major reduction opportunities on total GHGs
- Future of company in relation to GHG emissions
- Relevant growth factors that drive investment strategy
- Any existing environmental/energy plans, changes of product or service that affect GHG trajectory
- Previous investments in energy and other GHG reduction

The Action Plan

I. **Macro Design Decisions**
   - Top-Down Versus Bottom-Up
   - Relationship with Other Sustainable Development Activities
   - Trading and Offsets
   - Research and Development

II. **Implementation**
   - An environmental management system
   - Incentive systems
   - Reinforcement of commitment by senior management
   - Partnerships

The Action Plan

III. Assessment of Results

- Assessment of uncontrollable factors
- Systematic analysis of the costs of emissions or energy use reduction
- Assessment if the target against the long-term vision of the company

IV. Summary of Results Achieved to Date

- Tracking targets
- Actual cost of implementation versus forecast

V. Lessons Learned

The Action Plan

Company	Target	Examples of Activities in the Action Plan
ABB	Energy	Install timers on rooftop extraction fans
	GHG	Recycle heat from process water
	Environmental Product Declarations	Provide life-cycle environmental impact information on products
Entergy	GHG	Increase new gas-fired generation; increase power plant operational efficiency; external offset projects
IBM	Energy Efficiency	New filter fan unit design for clean room
	Climate Savers	Upgrade IT equipment at IBM's own sites
	PFC	Process optimization, emissions recovery research
	Energy Star®	Product technological advancements, lower power use design such as advanced "sleep mode"
Shell	GHG	GHG recovery; natural gas cogeneration; elimination of flaring
	Energy	Refinery and natural gas processing plant efficiency improvements
TMMNA	Energy	Recovery and reuse of waste heat form painting booth ventilation systems; conversion of electric ovens to gas ovens
UTC	Energy	Energy efficiency guidelines for common applications such as lighting and compressed air

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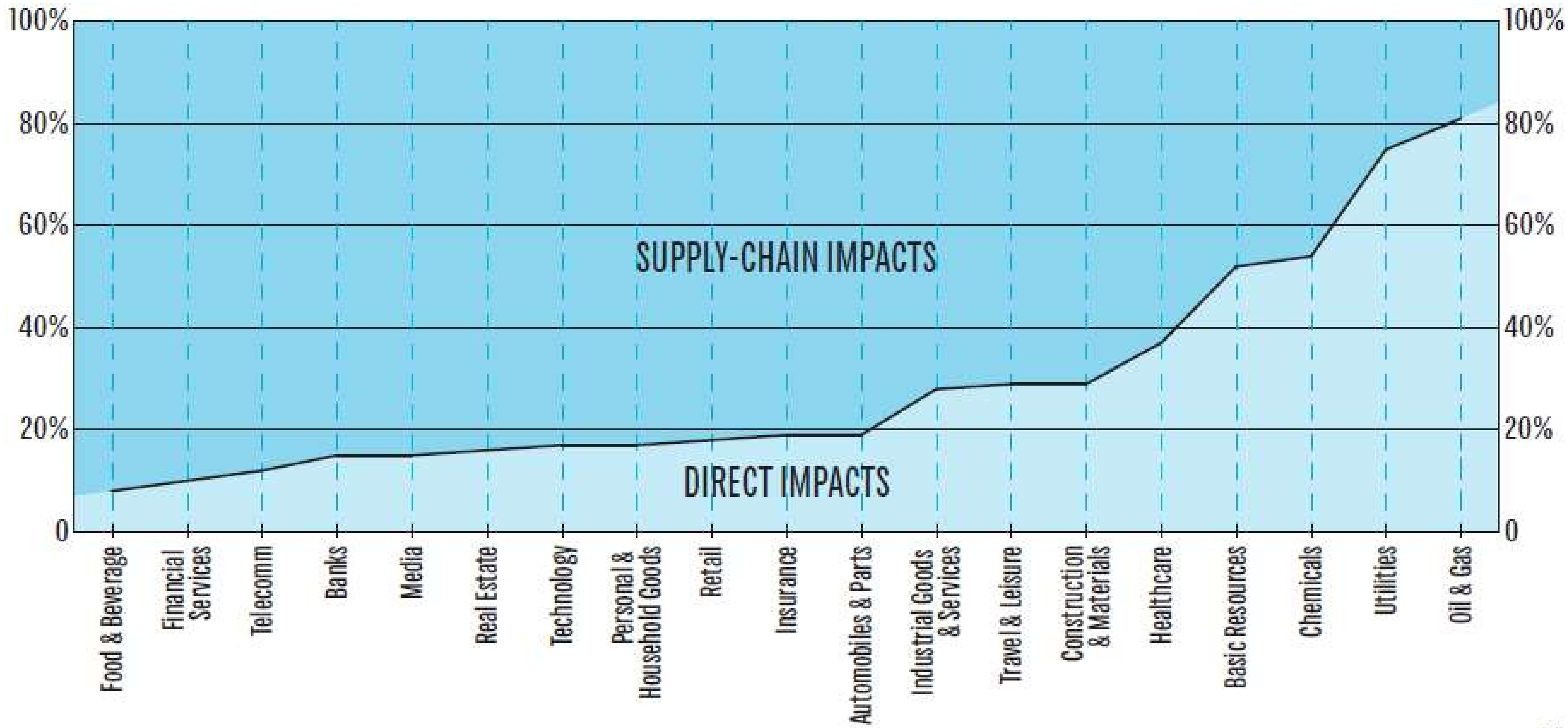
Why Supply Chain??

- Climate change is a material risk to supply chains across industries
- More than 50% of an average corporation's carbon emissions typically come from the supply chain (CDP)
- Supply chain is one of the most critical areas of opportunity to develop climate resilience, both through emissions reduction and developing adaptive capacity

Why Supply Chain??
Direct Vs. Supply Chain Impacts



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Why Supply Chain??

Main areas of supply chain climate risks:

1) the physical risk to suppliers' assets and operations

2) the risk of reduced availability or increased costs of inputs

3) the risk of changing regulations in sourcing or distribution markets

4) the risk of climate-related disruptions in communities that impact supplier workforce availability and productivity

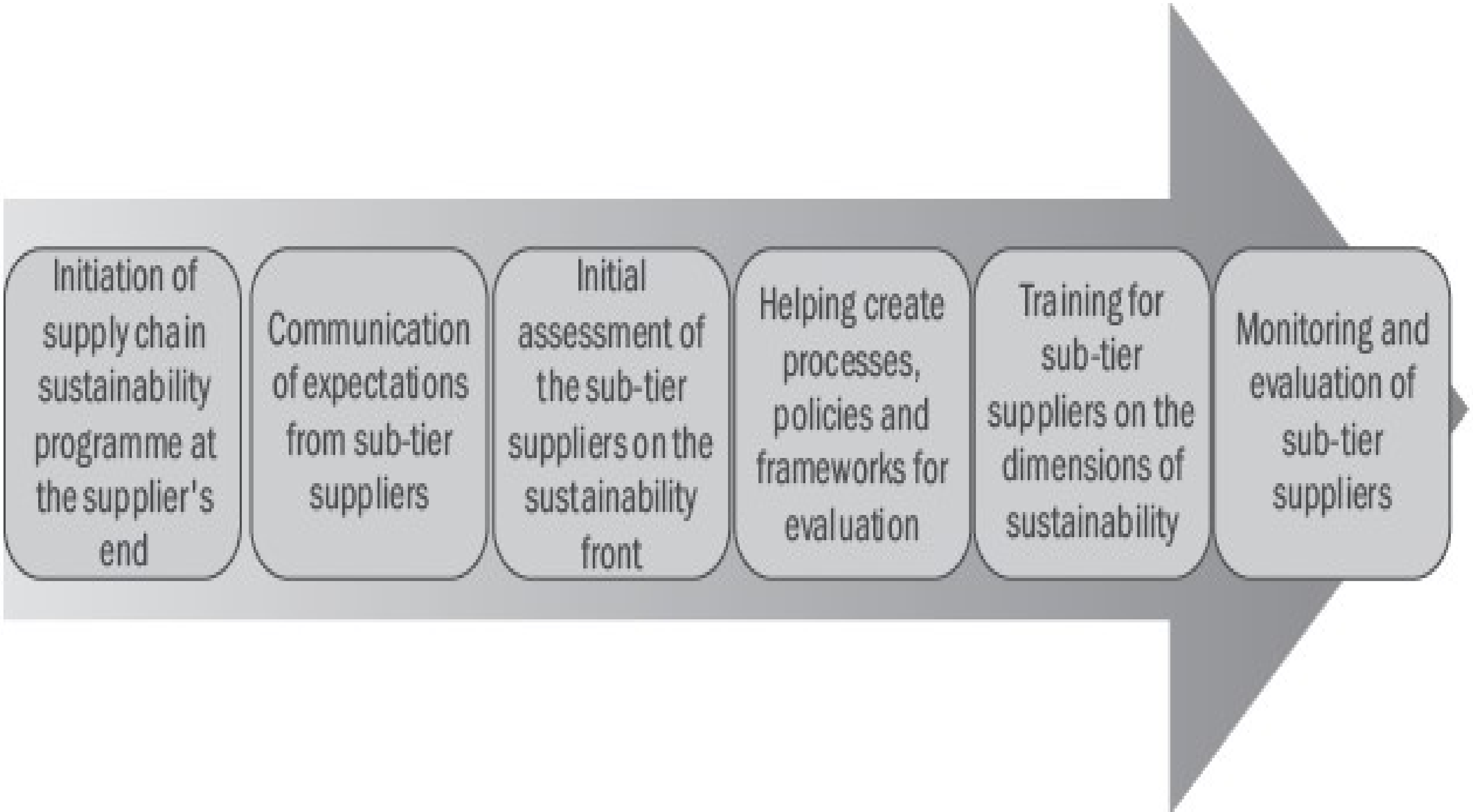
5) stakeholder, or reputational, risk

Building Climate-resilient Supply Chains

- Step 1: Identify Supply Chain Priorities
  - areas of a particular supply chain that offer the greatest opportunity for creating supply chain resilience, and include both areas of high GHG emissions and areas of high climate vulnerability
- Step 2: Take Action and Develop Targets
  - Considering the urgency of climate change, companies are setting targets and taking action in tandem
  - take action by encouraging or requiring suppliers to get involved with climate resilience programs or asking them to disclose their own climate performance
- Step 3: Evaluate Impact Monitoring
  - evaluating, and reporting helps a company understand how well different actions are contributing to achieving targets, effectively addressing climate priorities, and whether there is any need for a company to amend its approach
  - companies can put in place robust metrics, and consider developing bolder reporting practices

Supply Chain Risks	Opportunities for Mitigation (Emissions Reduction)	Opportunities for Adaptation
Physical Risks	**Encourage supplier participation in renewable energy programs and adoption of energy-efficiency measures** **Move to low-carbon transportation methods**, including green freight initiatives to reduce emissions of black carbon	**Encourage and enable suppliers to build infrastructure** to minimize the consequences of exposure to climate change risks (e.g., flood defenses or seawalls)
Input Risks	**Consider material substitutions** to lower-GHG raw materials and inputs **Educate buyers and suppliers** about how to reduce emissions in the production of inputs and raw materials	**Build infrastructure** to minimize the consequences of exposure to climate change risks (e.g., flood defenses or seawalls) **Adopt new technology** and processes to reduce the climate impacts of key raw materials and inputs **Diversify and/or identify new sources** for raw materials and inputs
Regulatory Risks	**Support legal reform** that will encourage or require businesses to reduce emissions	**Support legal reform** that enables or incents investment in resilience
Labor and Community Risks	**Educate the local community** around farms or production sites about how to reduce their emissions	**Invest in gender initiatives** **Look for opportunities for institutional capacity-building**
Stakeholder Risks	**Educate suppliers** about how to train their workforces	**Make investments** in local early warning systems, health care, and education **Invest in biodiversity** and **ecosystem services** **Develop social safety nets**

The Action Plan – engaging with supply chain



Summary

- Base year: the year in history against which an organization’s emissions are tracked over time

- Define your organization’s recalculation policy
  - Define significance threshold to trigger base year recalculation

- Recalculate for
  - structural changes
  - changes in calculation methodology
  - discovery of significant errors