

## **India GHG Program**



The India GHG Program is a voluntary industry-led partnership to measure and manage greenhouse gas emissions. The Program was recognised in India's INDCs.

- The Program provides: Internationally recognised, locally relevant GHG measurement and accounting tools
  - Customised training and capacity building initiatives

Chirag Gajjar | World Resources Institute

indiaghgp.org



ABOUT WRI India | WRI India is a research organization that turns big ideas into action at the nexus of environment, economic opportunity and human well-being.

OUR MISSION | To move human society to live in ways that protect Earth's environment and its capacity to provide for the needs and aspirations of current and future generations.



## **WRI POSITIONING**











## 27 policies/actions in 20 countries/cities





## **Regional GHG Programs**





## **Objectives of GHG Programmes**

Programme Objectives	Australia	California	Canada	European Union	France	Japan	United Kingdom	United States
Support GHG management and mitigation	$\checkmark$	~	-	~	~	$\checkmark$	$\checkmark$	~
Improve data quality & consistency	$\checkmark$	$\checkmark$	~	~	-	-	$\checkmark$	~
Inform existing policies, market mechanisms and national inventories	✓	√	✓	✓	√	✓	✓	~
Provide information to stakeholders	✓	✓	✓	-	~	✓	✓	~



**Pillars** 

## **India GHG Program**

#### **Program Pillars – Working with Non-state actors**

Trainings and Capacity Building

Sectoral Tools and Guidance development Benchmarking Peer Interactions Best Practices

Policy Dialogue



## Why Programme for Non-state actors

#### **Decoupling Emissions from Growth**

INDIA: EXPECTED EMISSIONS



#### **Integral to the NDC Elements**

80%

India's total emissions come in from Energy & Industrial sectors – both being key areas of Business.

41%

India's total installed power generation capacity with the private sector.

'Total Green House Gas (GHG) emissions excluding land-use change and forestry (MtCO2e)

The various GDP growth assumptions are a constant annual average for 2016-30  $\,$ 

Source: IMF, World Resources Institute (WRI) and Mint calculations



#### Corporate Stewardship on Low Carbon Measures

Increasingly Businesses in India have been scaling-up action towards low carbon operations and growth.

40+

## 10+

Businesses working increasing RE in their energy mix by >50%

10 80

<mark>49+</mark>

Businesses formally reporting to CDP on Climate Change 100+

Businesses formally measuring their emissions using GHG Protocol Businesses working on an Internal Carbon Price On an average, the Indian Industry reduces  $\sim 150-165$  million tCO<sub>2</sub>e per year compared to

compared to business as usual

Large Businesses Incorporated Science Based Targets to drive ambitious ER

64



## **Member Companies Demography**





## **Driving Ambitious Corporate Actions**



Indian Railways 50% Reductions

in transport related emissions by 2030

# Mahindra & Mahindra

\$10 / tonne Carbon Price

Achieve 25% reductions in emissions

Godrej & Boyce Carbon

## Neutrality

By 2020-21



## **Driving Ambitious Corporate Actions**



# Tata Chemicals

## Internal Carbon Price

Adopted Internal Carbon Price in 2016

# Delhi Airport

Achieved Carbon Neutrality

ln 2016

# Infosys

## 100% RE

Reduce emissions intensity of operations by 55.4% per employee by 2018



### **Milestones**





## What is Global Warming?

Most of this radiation is absorbed by the Earth and therefore **warms** it

> Some energy is radiated back into space by the Earth in the form of infrared waves

Some of this outgoing infrared radiation is trapped by the Earth's atmosphere and **warms** it

**More** of this outgoing infrared radiation is trapped by the Earth's atmosphere and **warms** it

Solar radiation in the form of light waves passes through the atmosphere



## **Anthropogenic Emissions**

..... "change of climate that is attributed directly or indirectly to human activity that alters the composition of global atmosphere and which is **in addition** to **natural** climate variability observed over comparable **time** periods."



Article 1, UNFCCC



## What is Climate Change?

- Climate is the average weather at a given point and time of year, over a long period (typically 30 years).
- We expect the weather to change a lot from day to day, but we expect the climate to remain relatively constant.
- If the climate doesn't remain constant, we call it climate change.
- The key question is what is a significant change and this depends upon the underlying level of climate variability.
- Crucial to understand difference between climate change and climate variability...



## **Effects of Temperature Change**



Source: https://www.ipcc.ch/pdf/assessment-report/ar5/wg1/WG1AR5\_Chapter01\_FINAL.pdf



## **Observations of Climate Change ... 1**



#### Sea level rise

Global sea level rose about 17 centimetres (6.7 inches) in the last century. The rate in the last decade, however, is nearly double that of the last century

#### Warming oceans

The oceans have absorbed much of this increased heat, with the top 700 meters (about 2,300 feet) of ocean showing warming of 0.302 degrees Fahrenheit since 1969.



Source: http://climate.nasa.gov/evidence/



## **Observations of Climate Change ... 2**



#### **Global temperature rise**

All three major global surface temperature reconstructions show that Earth has warmed since 1880.

- 1. National Oceanic and Atmospheric Administration
- 2. Climate Research Unit and Hadley Centre
- 3. NASA Godard Institute for Space Studies

#### Shrinking ice sheets

The Greenland and Antarctic ice sheets have decreased in mass. Data show Greenland lost 150 to 250 cubic kilometers (36 to 60 cubic miles) of ice per year between 2002 and 2006, while Antarctica lost about 152 cubic kilometers (36 cubic miles) of ice between 2002 and 2005.



Flowing meltwater from the Greenland ice sheet

Source: http://climate.nasa.gov/evidence/



### **Mother nature**



• Source: Conservation International, https://www.youtube.com/watch?v=WmVLcj-XKnM



## **Climate Change and Risk**

## Climate Variables

(e.g. temperature, rainfall, etc.)

## Change in Climate Variables

(e.g. more "very hot" days)

## Impact

(e.g. higher electricity demand for cooling)

## Risk

(e.g. inability to meet peak demands)



#### Responding to climate change involves a two-pronged approach:

 ✓ reducing and stabilizing the levels of heat-trapping greenhouse gases in the atmosphere ("mitigation"); and adapting to the climate change already in the pipeline ("adaptation")

Companies have a role in both climate change mitigation and adaptation.

#### **Mitigation**

Focuses on limiting the speed and scale of climate change. It has typically received the most attention in policy circles, such as debates over carbon pricing as a mechanism to reduce GHG emissions across the economy.

#### **Adaptation**

Involves adjusting to actual or expected climate change effects. This includes managing risk and exploiting opportunities.



## India's INDC to UNFCCC





India's INDC

Increase the Non-fossil

fuel energy share

# Reduction in emissions intensity of GDP



## **Enhancing Forest Carbon Sink**

To create additional carbon sink of 2.5 -3 billion tonnes of  $CO_2$  equivalent through additional forest and tree cover (increase of about 680 - 817 million tonne of carbon stock)



## **Climate Risk Management**

Manage Climate risks like any other Business risks Managing may require internal capacity building

Stakeholder engagement is essential Uncertainty is not a reason for inaction



What risks and opportunities does your organization face?

# You cannot manage a risk if you deny it exists, or don't see it coming."

Jeffrey Williams, Director, Climate Consulting, Entergy Corporation



## **Thank You**

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The programme is actively promoted by:

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We duly acknowledge the support of:





