Carbon Transparency Initiative

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ClimateWorks

Carbon Transparency Initiative

Highlighting the progress towards building a low-carbon economy through analysis of the driver metrics underpinning decarbonization.

METHODOLOGY

Trends and forecasts

Learning from historic trends while also forecasting technological, policy and economic shifts underway

Leading Indicators

Both a sector and region analysis of driver and outcome metrics allows a view into the drivers of decarbonization

Transparency

Data, assumptions and calculations are open and transparent, addressing many of the pitfalls of "black-box" calculations

RESEARCH PARTNERS

Bloomberg New Energy Finance, Climate Action Tracker, International Council on Clean Transport, International Energy Agency, McKinsey, World Resource Institute and Regional Foundations EF-USA, EF-China, ECF, and LARCI

PEER REVIEWERS

Instituto Nacional de Ecología y Cambio Climático, Lawrence Berkeley National Laboratory, Grantham Institute, Stockholm Environmental Institute, Council on Energy, Environment and Water, and California Environmental Associates
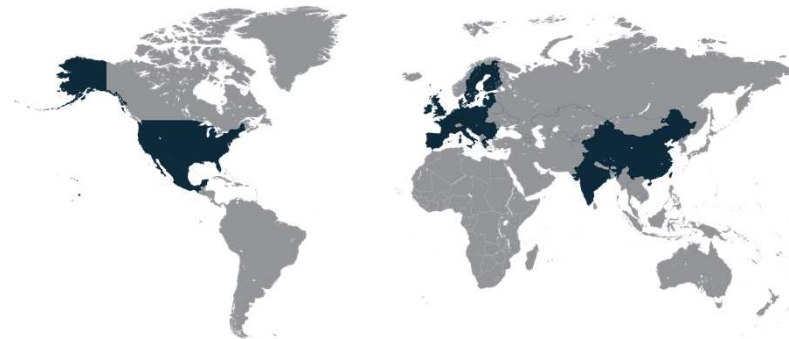
A bottom-up assessment of emissions and energy
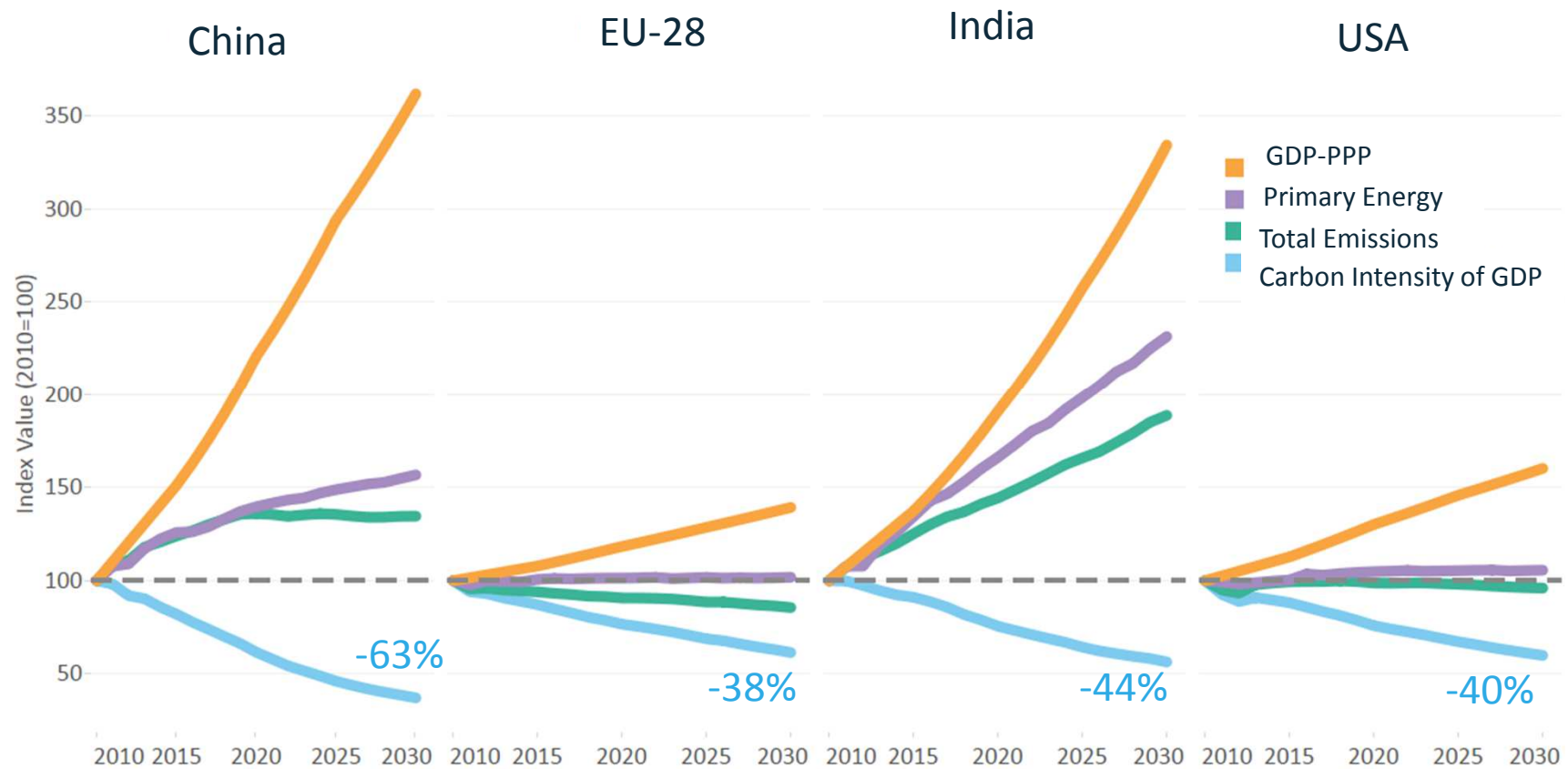
The model constructs a national inventory of emissions from sector-based activity and intensity metrics.

Economy wide

National Inventory

Sectors

Sub sectors

Driver metrics

Intensity   Activity   Comparisons
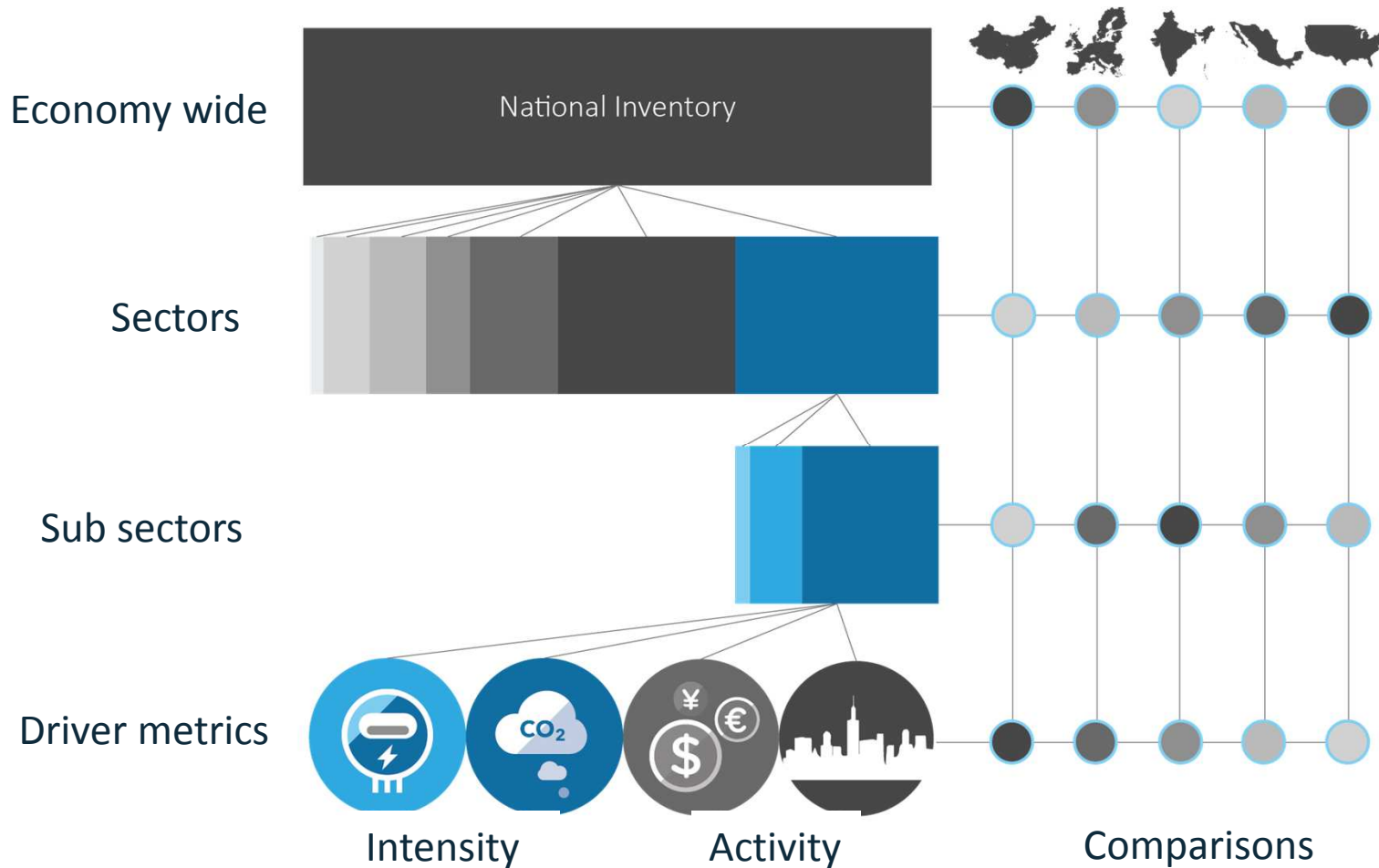
Decoupling emissions from GDP

Patterns of growth differ and a sector-based analysis helps understand why.
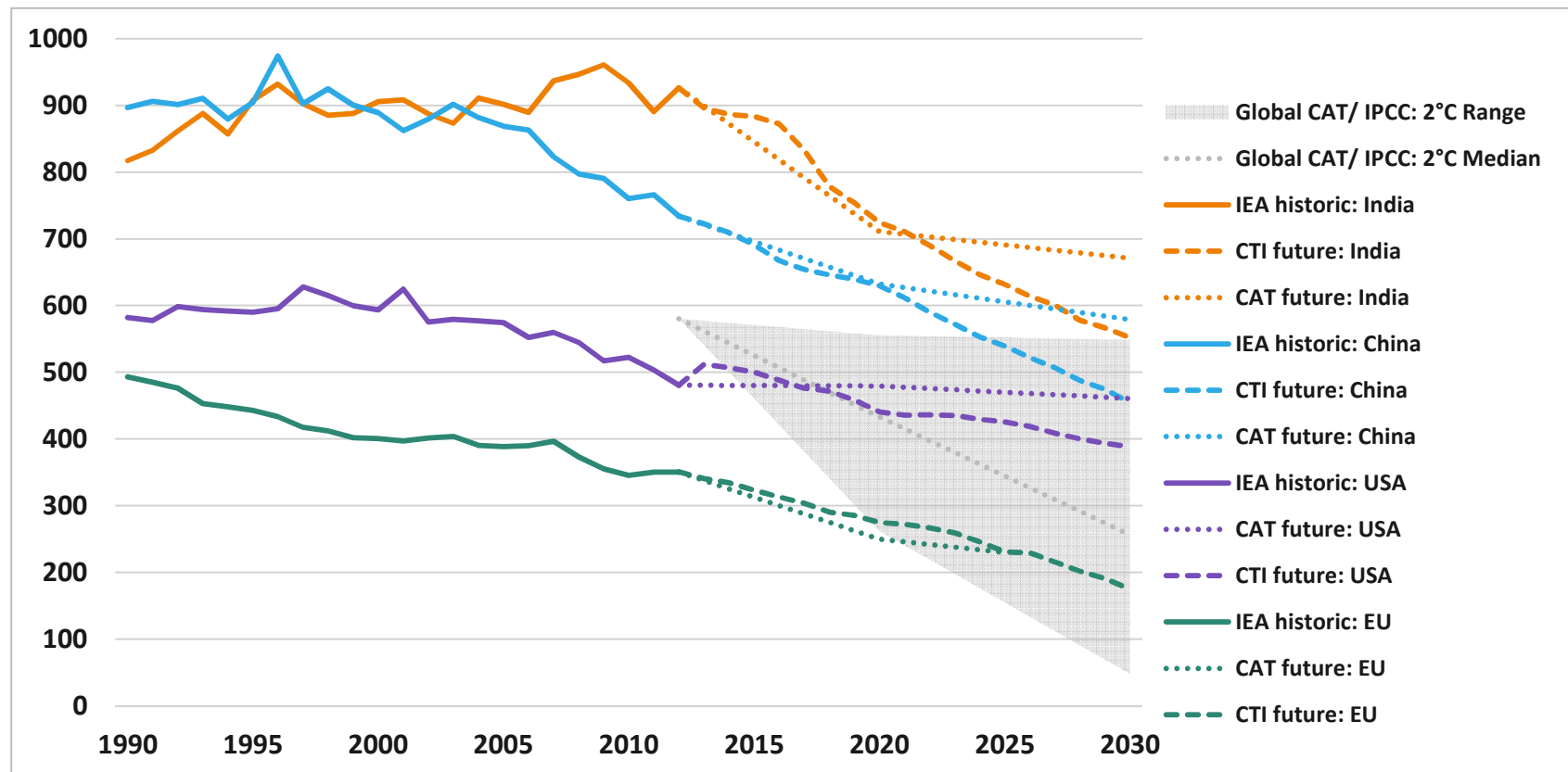
Decline in power sector carbon intensities

Increased penetration of RE and a partial switch from coal to gas generation

Emission Factors: Four regions compared to a global 2°C pathway (gCO_2e/kWh)

Legend:
- Global CAT/ IPCC: 2°C Range
- Global CAT/ IPCC: 2°C Median
- IEA historic: India
- CTI future: India
- CAT future: India
- IEA historic: China
- CTI future: China
- CAT future: China
- IEA historic: USA
- CAT future: USA
- CTI future: USA
- IEA historic: EU
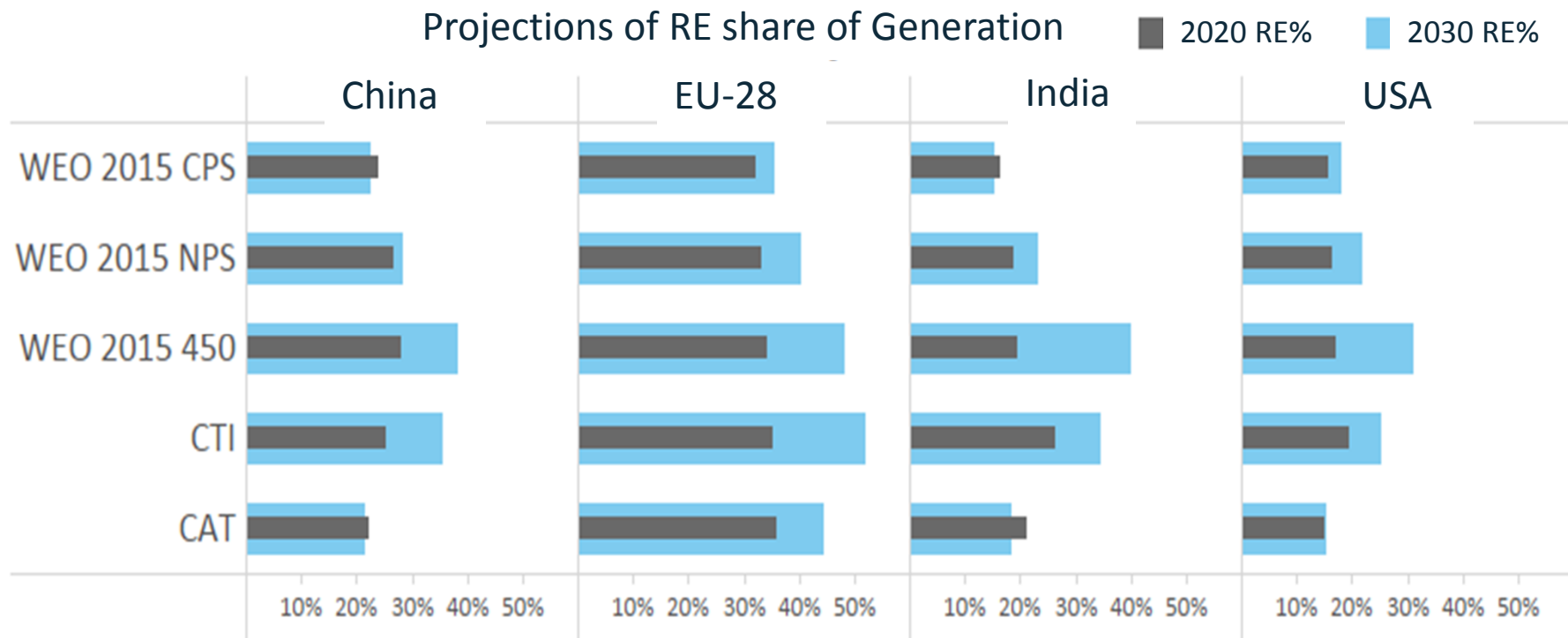- CAT future: EU
- CTI future: EU

Growth of Renewables – A success story?

CTI projections on par with a WEO 2°C scenario.

- Based on Bloomberg New Energy Finance analysis – depends on **market forces, assumed lowered costs of technology and wider diffusion.**
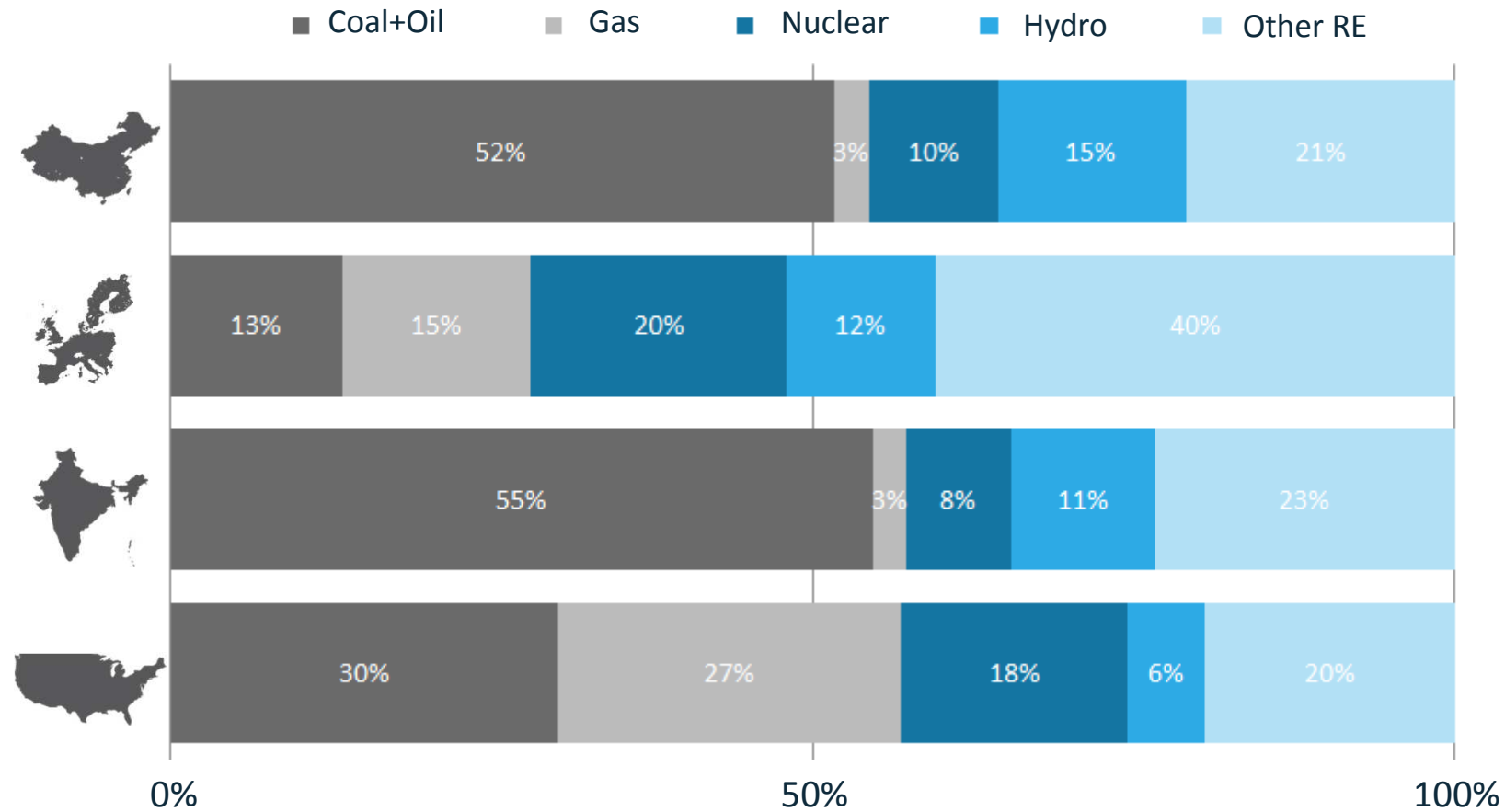

Projections of RE share of Generation ■ 2020 RE% ■ 2030 RE%

RE includes hydro, geothermal, biomass, wind and solar

Power Focus: Generation Share in 2030

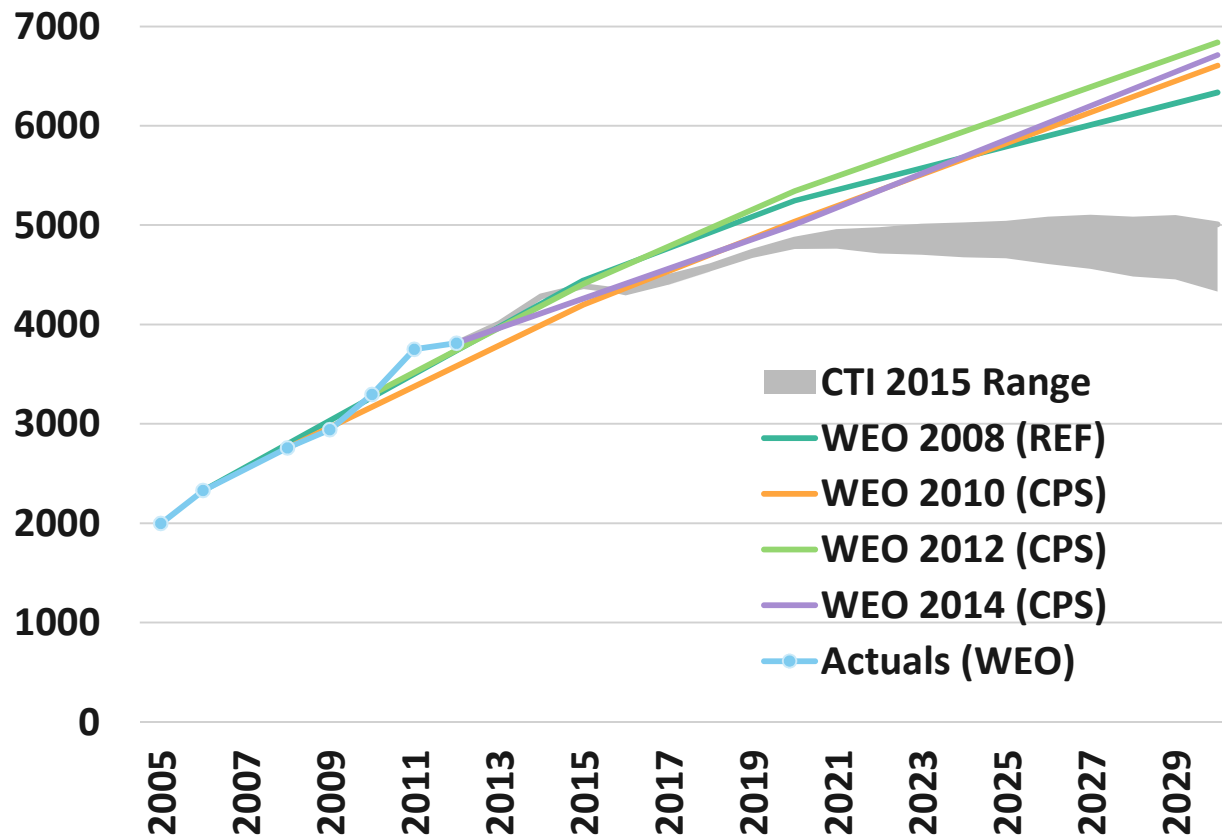Despite progress in RE, fossil share dominates in some countries

Structural Transformation in China
Can it tip the fossil share?

Projections of coal generation in China (TWh)

CTI projects a faster decline in coal share of generation due to **lower demand from industry**,

BUT

This is still **50-73% higher than that of WEO's 2°C pathway**.

Some hope though with reform in country's electricity distribution prioritizing power generation from wind and solar.

Transport emissions are growing

GHG emissions from transport for 4 regions (Gt CO$_2$e)
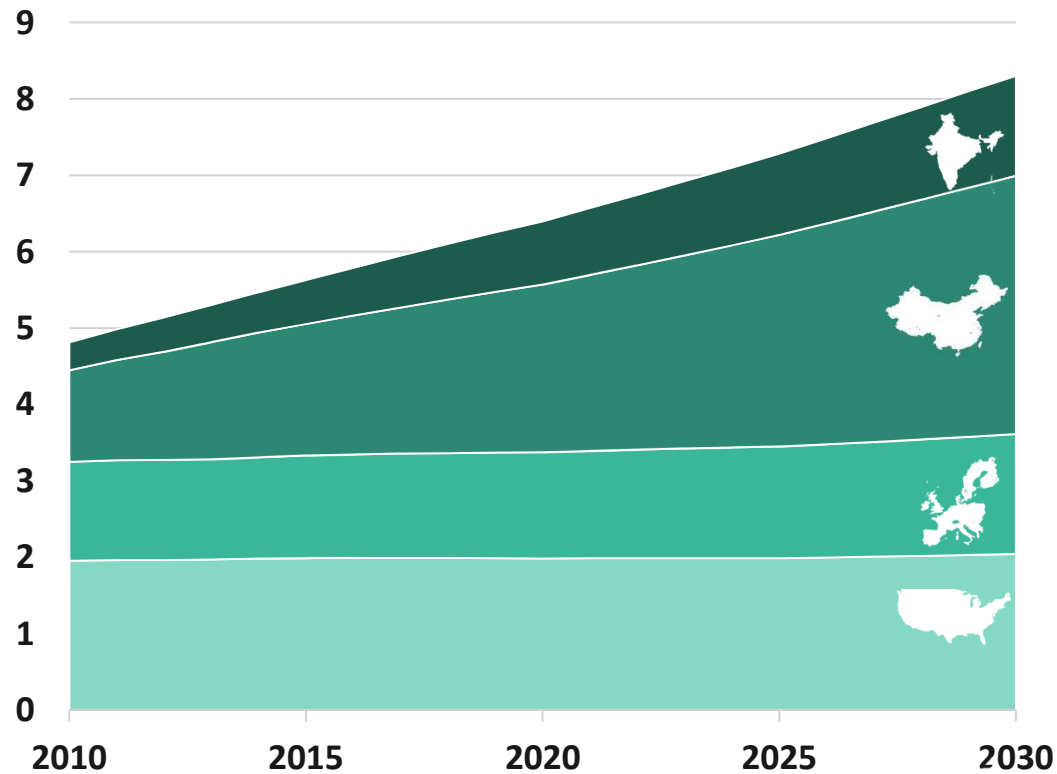
Between 2010 and 2030 transport emission grow by 2.8% per year in China, EU, India, and US.

- Driven by large growth in India (6.6% per year) and China (5.3% per year).
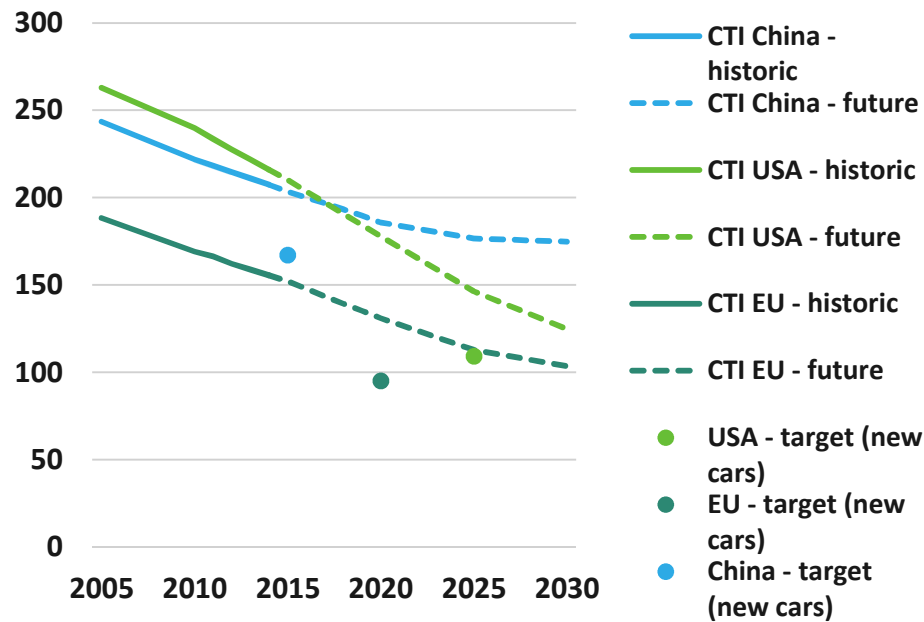
Decrease in emissions may be possible

Depends on types of fuel efficiency standards adopted across countries

Growth in zero carbon technologies

Emissions Intensity of LDV (gCO$_2$/vkm)

- CTI China - historic
- CTI China - future
- CTI USA - historic
- CTI USA - future
- CTI EU - historic
- CTI EU - future
- USA - target (new cars)
- EU - target (new cars)
- China - target (new cars)

Share of electric vehicles (% of total fleet)

- CTI EU - historic
- CTI EU - future
- CTI China - future
- CTI USA - historic
- CTI USA - future
- IEA ETP 2014 Global 2DS

Note: the ETP 2DS target is for a global share of new electric drive vehicles to reach around 4% and this will differ across geographies.
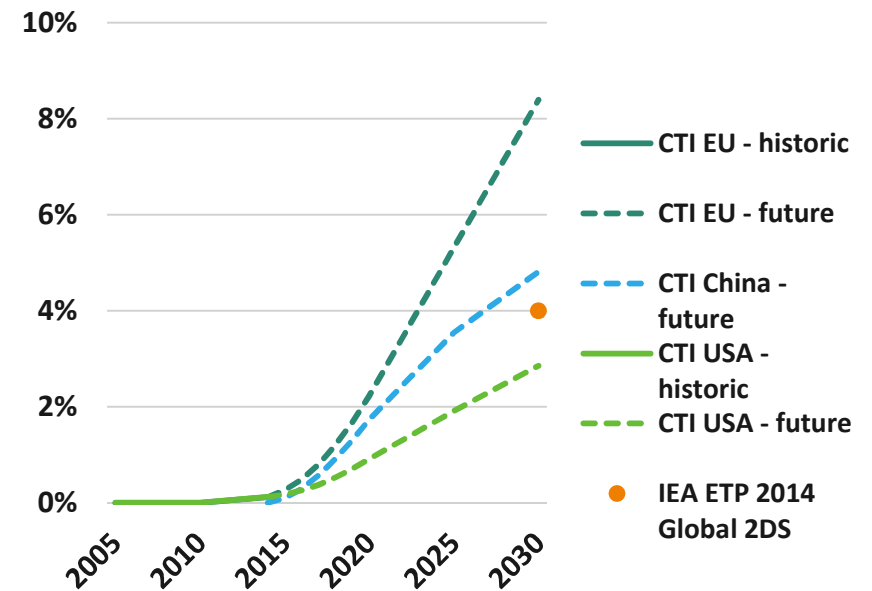
New Report: "Faster & Cleaner"

How decarbonization in the power and transport sectors is surpassing predictions and offering hope for limiting warming to 2C."

Faster & Cleaner

HOW DECARBONIZATION IN THE POWER & TRANSPORT SECTORS IS SURPASSING PREDICTIONS & OFFERING HOPE FOR LIMITING WARMING TO 2°C

November 2015

Research by ClimateWorks, NewClimate Institute, Ecofys, and Climate Analytics

ClimateWorks and Climate Action Tracker (NewClimate, Ecofys & Climate Analytics)
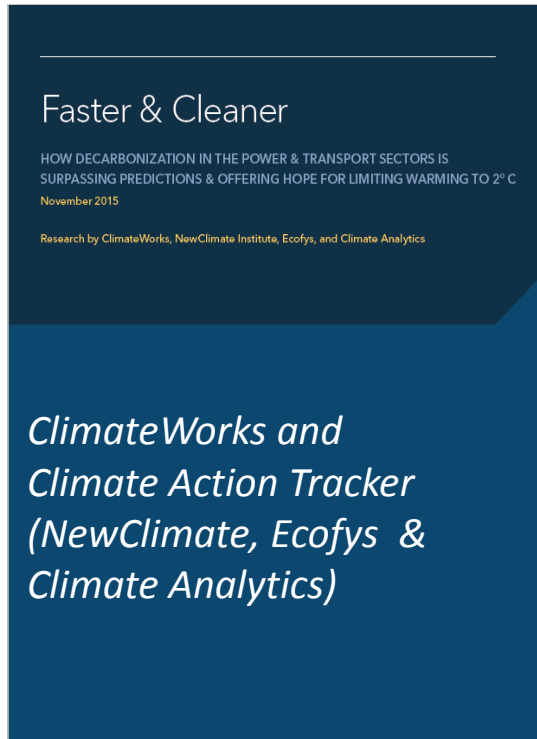
Decarbonization of the power sector is happening, and faster than predicted

>   Wind and solar growth has dwarfed forecasts; CTI's predicted RE generation in 4 regions are close to WEO's 2°C scenario.

>   CTI predicts coal consumption in China will peak (2016 -2020) but will be higher than WEO's 2°C scenario.

Passenger vehicle fleets are 1/6th less carbon-intense in the US and EU today than in 2005.

>   If best-practice emissions standards were implemented more broadly, global emissions could be on a 2°C compatible rate of improvement for the next decade.

http://www.climateworks.org/report/fastercleaner/

ClimateWorks: Casey Cronin, Surabi Menon, Seth Monteith, Dan Plechaty
NewClimate Institute: Markus Hagemann, Niklas Höhne, Sebastian Sterl
Ecofys: Pieter van Breevoort, Karlien Wouters;   **Climate Analytics**: Bill Hare, Niklas Roming, Fabio Sferra

Will we be on track with INDC targets?

Solar and wind capacity: India's INDC versus CTI forecast
2022 Capacity in GW
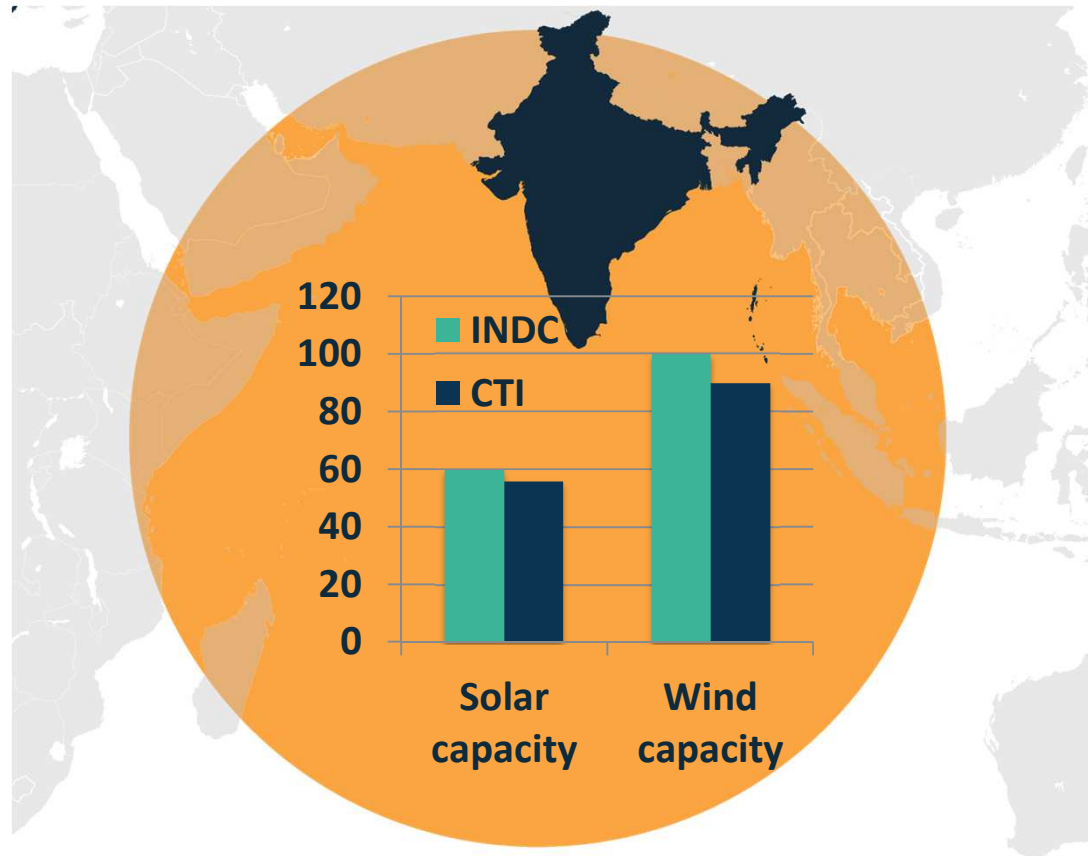
Transformative coalition of countries with right policy incentives could accelerate market uptake to technology, spur transformation and catalyze decarbonisation.

Thank you for your time!

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Illustrative example for the US: Are we on track with INDCs?

US GHG emissions: New Policies versus INDC Target Preliminary Analysis

GHG Emissions (Mt CO$_2$e)

7000
6500
6000
5500
5000
4500
4000

2015 2020 2025 2030

- **Heavy Duty truck standards**
- **Methane ruling**
- **Clean Power Plan**
- **INDC target**