

# The Policy Climate

CPI Webinar, May 2013  
Presented by David Nelson



CLIMATE  
POLICY  
INITIATIVE

BRAZIL  
CHINA  
EUROPE  
INDIA  
INDONESIA  
UNITED STATES

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The Policy Climate provides an overview of the status of policy related to climate change in five of the largest carbon emitting regions



Three objectives for The Policy Climate:

1. Inform policy makers and others about the broader global picture of climate change policy from the perspective of policy, economics, and institutions
2. Provide a basis to learn about what works in policy and what doesn't
3. Set priorities for analysis to help improve policy

The Policy Climate provides an overview of the status of policy related to climate change in five of the largest carbon emitting regions



## Conclusions:

Policy relevant to climate change is being enacted and growing across the world

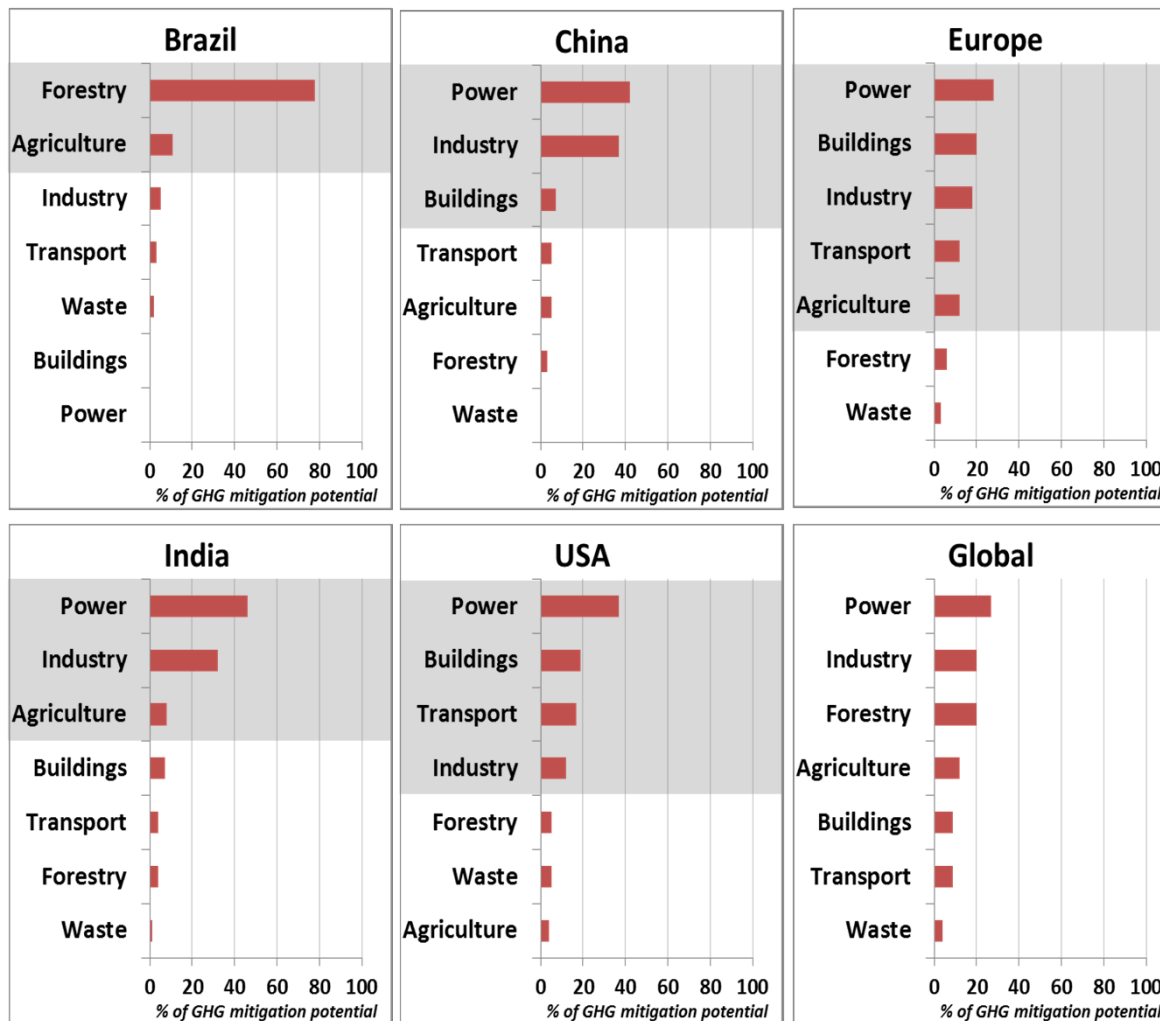
This policy is at several levels of government: national, provincial, and local

There is plenty of experience to learn from

Despite abundant policy, the impact still appears to be small relative to the challenge

## The Policy Climate focuses on the most important sectors and policy areas in each region

Ranking of GHG Mitigation Potential Within Covered Regions

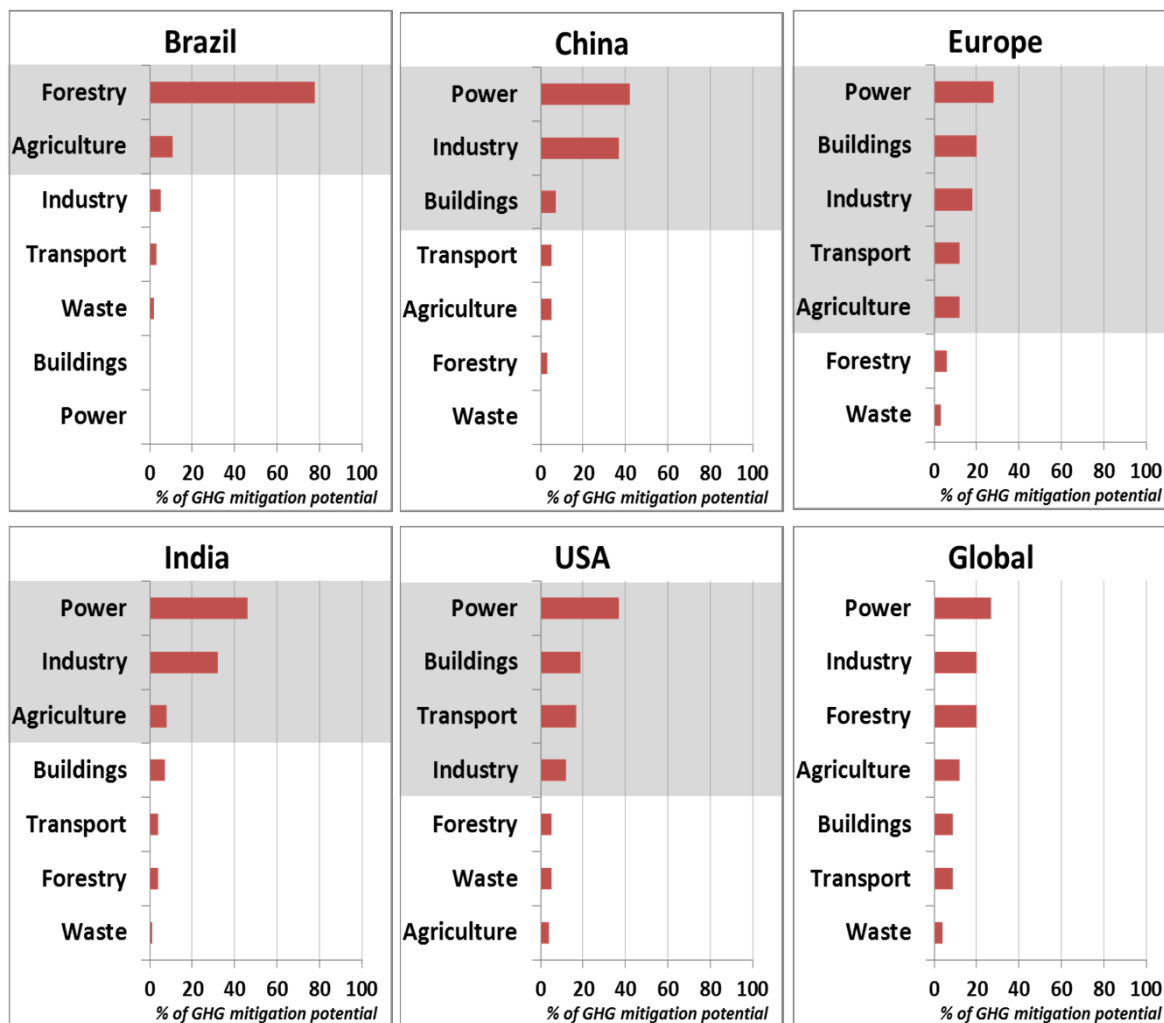


Within each region/sector we ask:

1. How have emissions changed?
2. What have been the drivers of this change?
3. What has been the relevant policy and how has it evolved?

## The Policy Climate focuses on the most important sectors and policy areas in each region

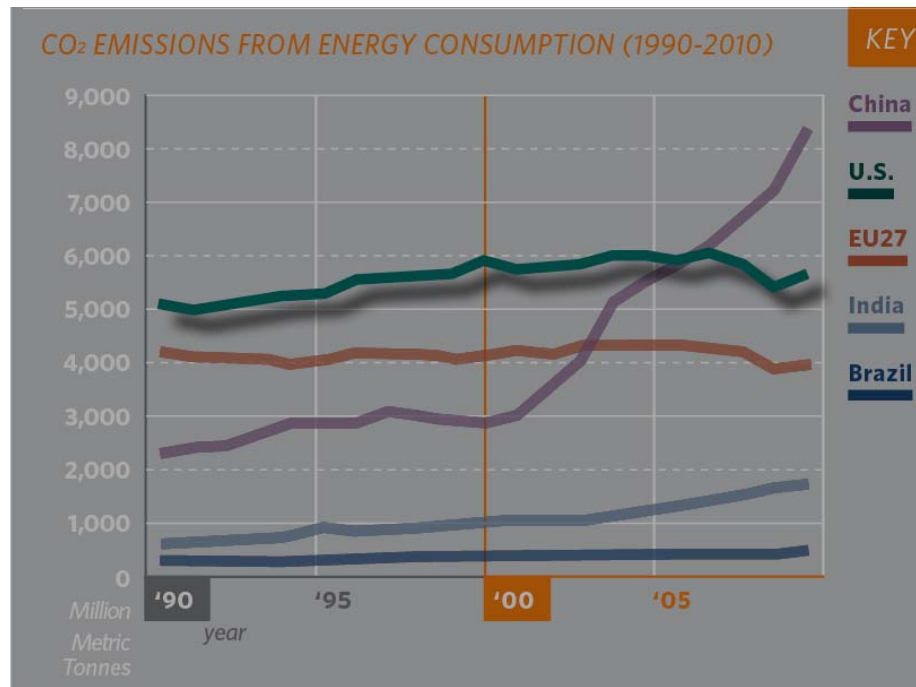
Ranking of GHG Mitigation Potential Within Covered Regions



In this presentation we will cover:

1. Regions
2. Sectors
3. Innovation
4. Conclusions
5. Questions

Each region faces very different underlying challenges

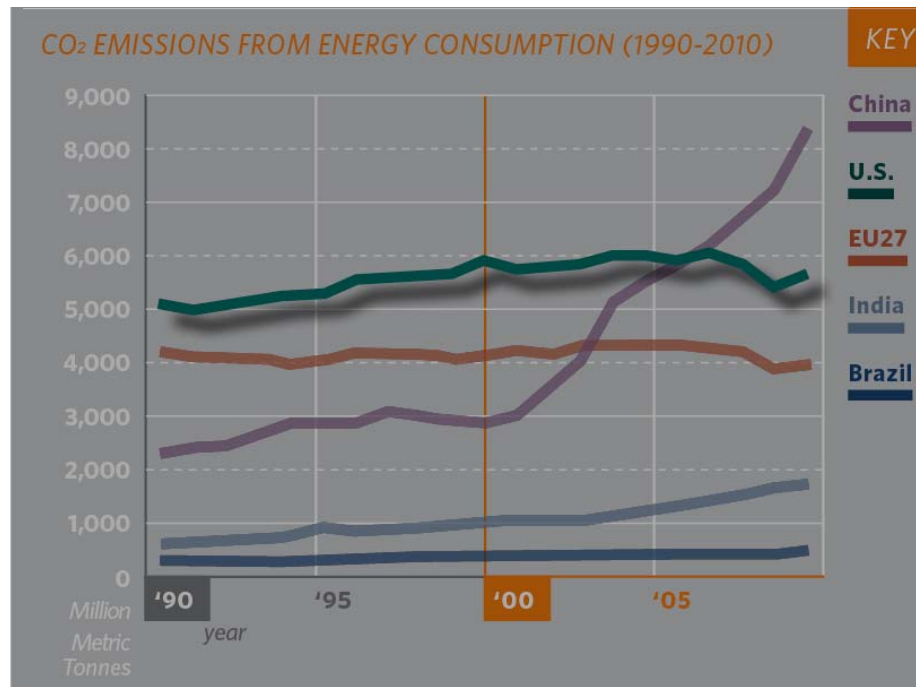


## Brazil – Protecting forests through policy

- Vast natural resource endowment
- In the early 2000's, land use change accounted for 75% of net CO<sub>2</sub> emissions
- Policies saved 62,000 km<sup>2</sup> of forest in the late 2000's
- Command and control policies have worked best, but may not work as well for smaller scale deforestation



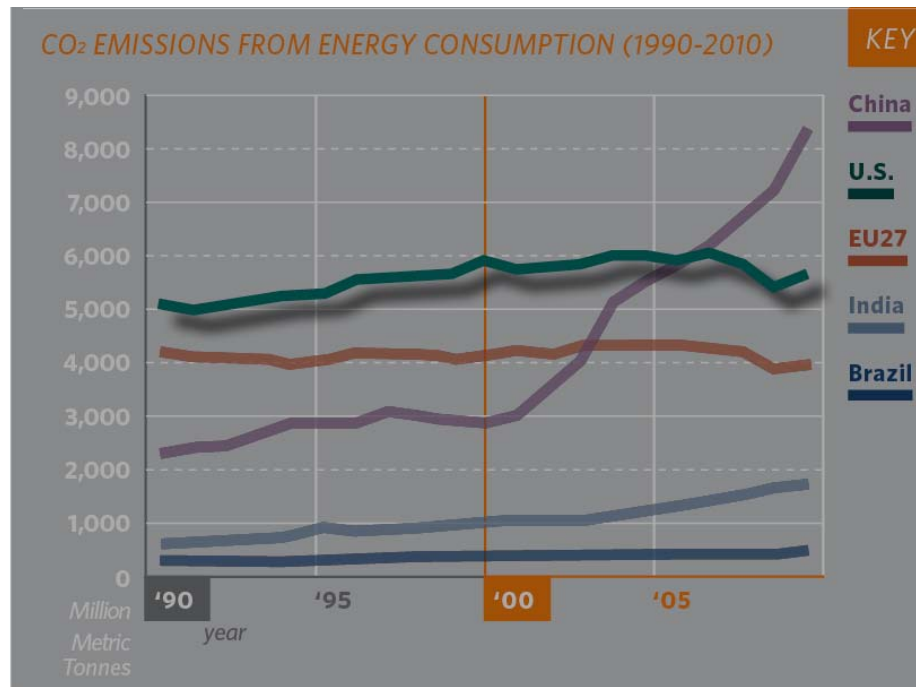
Each region faces very different underlying challenges



## China – Pursuing low-carbon growth policy at an unprecedented scale

- Infrastructure led growth fed by coal fired electricity has overwhelmed all else
- Substantial policy efforts in energy efficiency and renewable energy have led to important improvements
- Early retirement of old, inefficient coal fired power plants alone is saving more than 100 million tonnes CO<sub>2</sub> per year

Each region faces very different underlying challenges

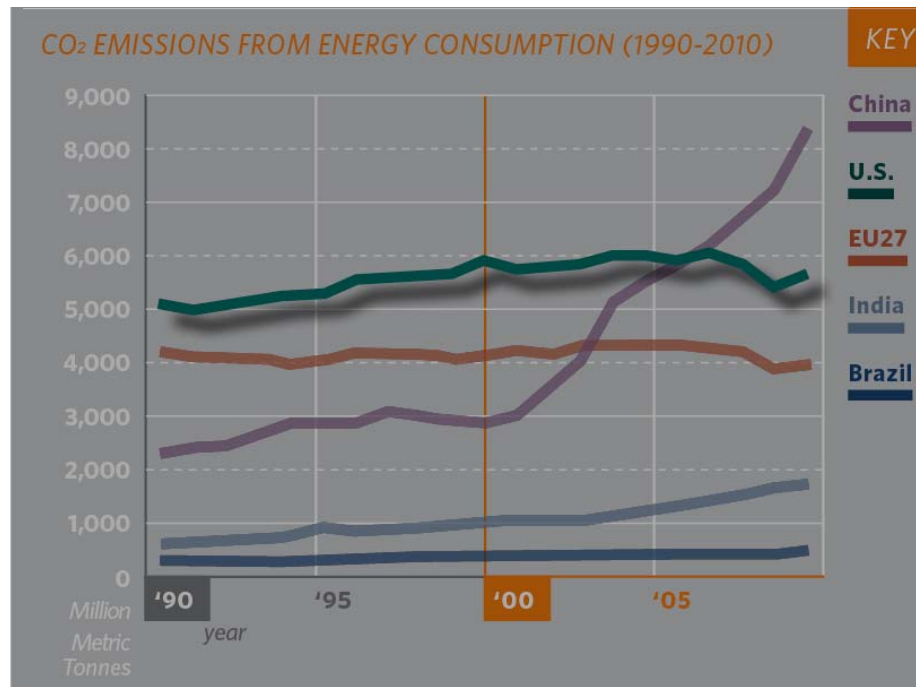


## Europe – Making policy for climate's sake

- The EU Emissions trading system has been supported by an array of other policies to achieve slowing declining emissions
- Slower growth, and recently the economic recession, have helped reduce emissions growth



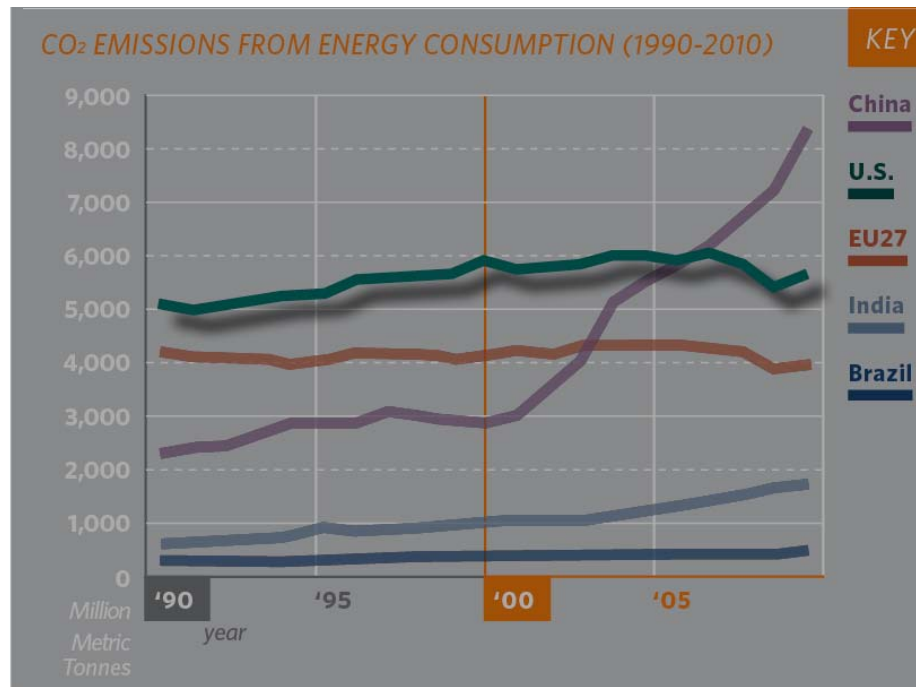
Each region faces very different underlying challenges



## India – Balancing climate policy and development

- Economic development is a primary concern as is rural poverty
- Immature financial markets have impeded the effectiveness of many Indian policies
- Nevertheless, India has made significant policy efforts in areas like renewable energy, although implementation varies from state to state

## Each region faces very different underlying challenges



### US – Making progress despite political gridlock

- US emissions have been declining despite a lack of an overall national climate policy
- Policy has contributed through a “messy, but useful” combination of state and federal initiatives
- However, economic factors, including recession and the emergence of cheap natural gas, are probably the most important factors

## ... Nevertheless, there are common themes and challenges they face when it comes to policy

Climate policy is policy first, climate second – Climate objectives must fit with other national policy objectives

Weaving together national, provincial, and local policies

When to use incentives versus mandates

Applying umbrella policies versus targeted policies

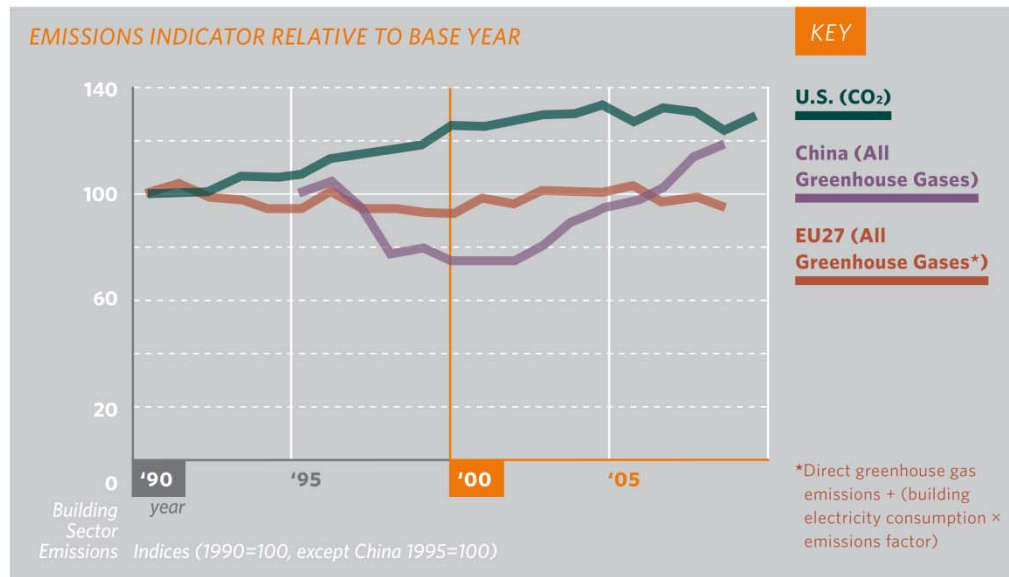
Using different policies for large actors than for small actors

Designing policies for implementation

- Getting the institutions right
- Building policies for finance and investment
- Data, monitoring and verification

Adapting international experience to local conditions

## Buildings: In all regions, buildings emissions suggest a race between rapidly improving efficiency and growing floor space



### CHINA

Significant policy action, particularly in improving the efficiency of district heating, decreasing the use of coal for household heating, and instituting better building codes was overshadowed by growth in floor space and residences connecting to the grid and using more appliances

Chinese policy addressed building use, but except for the district heating program, most of China's signature energy efficiency programs were directed towards industry

### U.S.

Emissions grew as new construction and IT boomed and added to energy demand

Policy activity started early, but emissions continued to grow until energy efficiency policy increased and new sources of demand slowed after 2000

Policy activity was mostly at state level, using utilities as facilitators

Commercial sector was particularly quick to adopt more efficient technologies

### EU

Policy activity began early

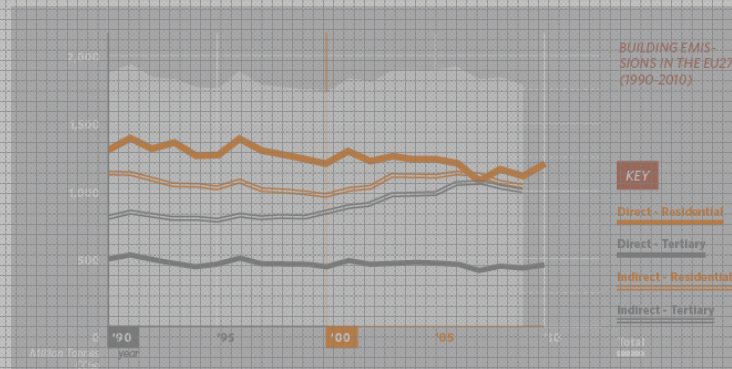
Carbon efficiency benefited from fuel switching and improved building envelopes (insulation, etc)

As a result, emissions plateaued in the early 1990s

Household sector efficiency improved particularly rapidly, but overall consumption was impacted by growth in floor space and demand from new appliances

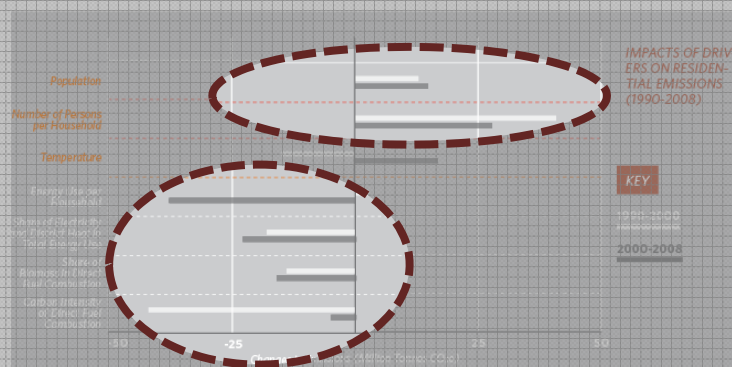


The EU and US exemplify this race, but the impact of new types of appliances muddies the story

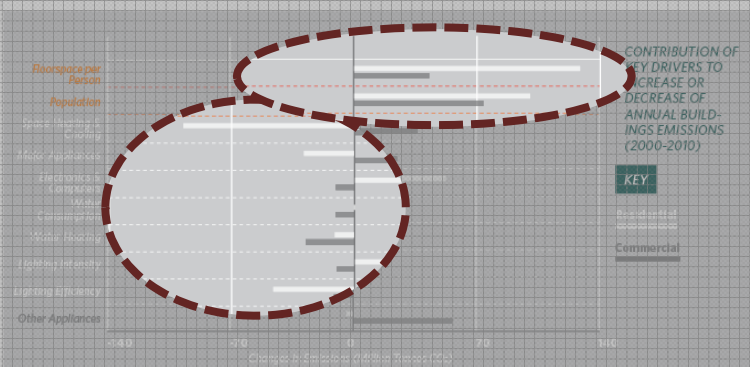


**EU** **US**

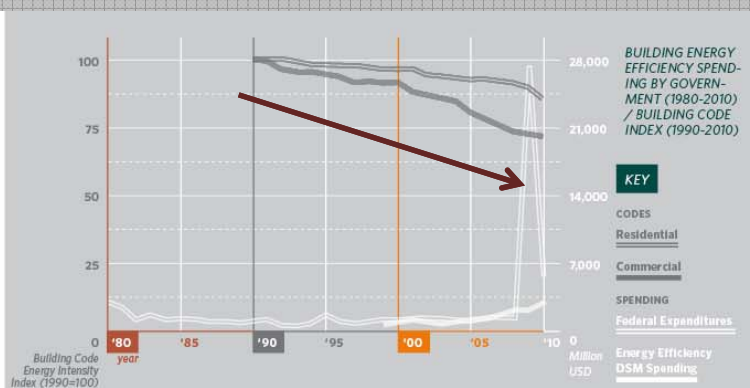
### EMISSIONS & OUTPUT



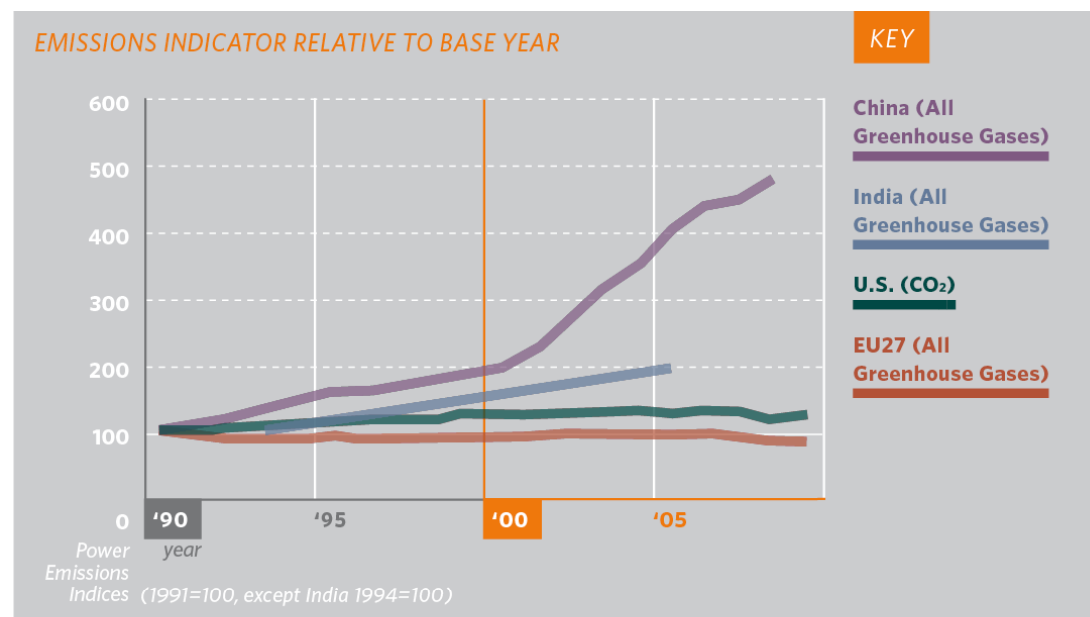
### EMISSIONS DRIVERS



### POLICY



## Power: Economic growth dominates the emissions growth pattern



### INDIA

Indian electricity demand did not grow quite as fast as China's, but was also fueled mainly by coal, both domestic and imported

Renewable sources were just beginning to have an impact

### U.S.

Increased nuclear output more than offset increased generation from coal to keep emissions from rising rapidly in the 80s and 90s. More recently, falling gas prices and the threat of tightening regulation on coal plants led to a switch from coal to gas. Falling demand due to the recession played a part in the recent fall in emissions, as did the growth in renewable energy

### EU

Policies like the EU Emissions Trading System and the Large Combustion Plant Directive altered the economics of coal fired generation, but unlike the U.S., gas prices remained high, limiting switching

The increase in nuclear output was a significant driver over the last decades, and more recently, the growth in renewable energy began to have a significant impact, as did the decline in demand due to the financial crisis

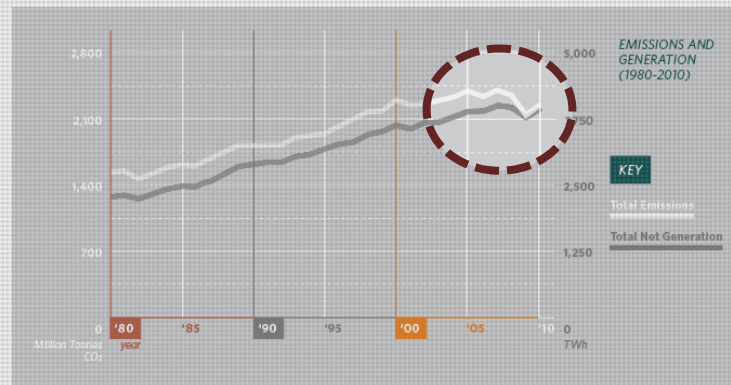
### CHINA

Despite concerted efforts to diversify Chinese power generation, unprecedented growth in electricity generation was fueled mainly by coal, which remained China's cheapest and most abundant fuel

The efficiency of China's power plants improved rapidly and significant renewable and nuclear generation was built, which kept Chinese emissions from rising even faster



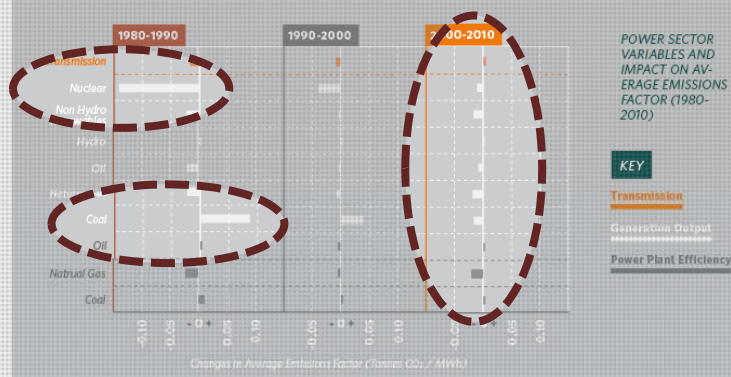
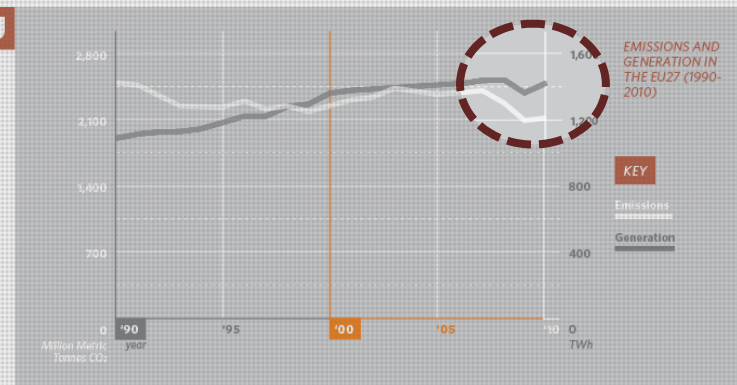
In developed countries a combination of many policies and technologies is leading to stable or falling emissions



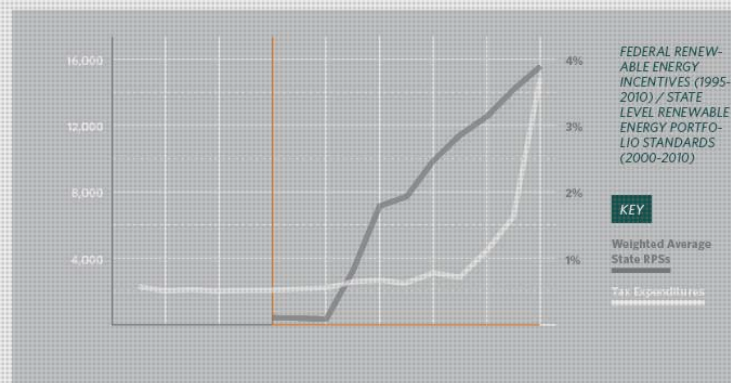
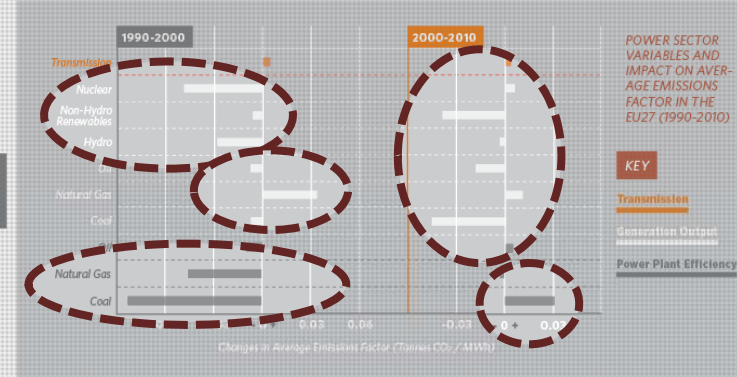
**US**

**EMISSIONS & OUTPUT**

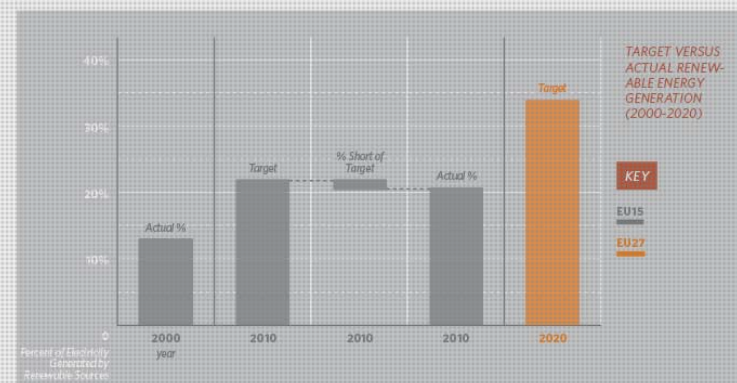
**EU**



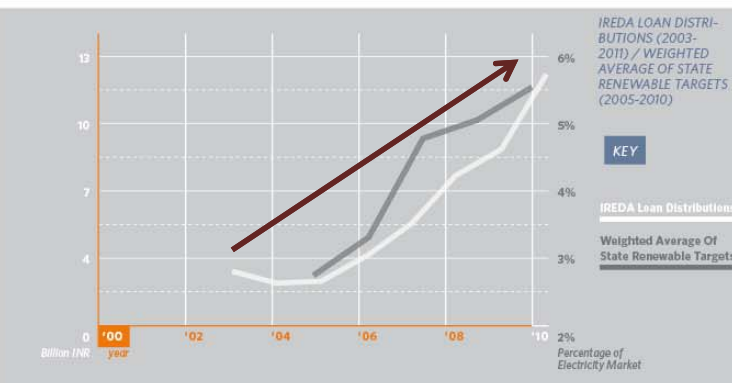
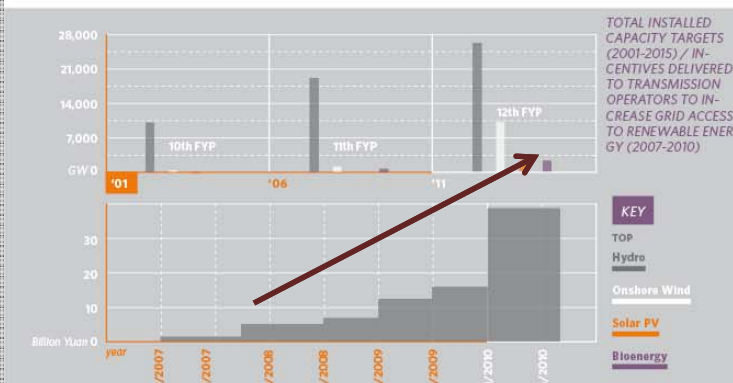
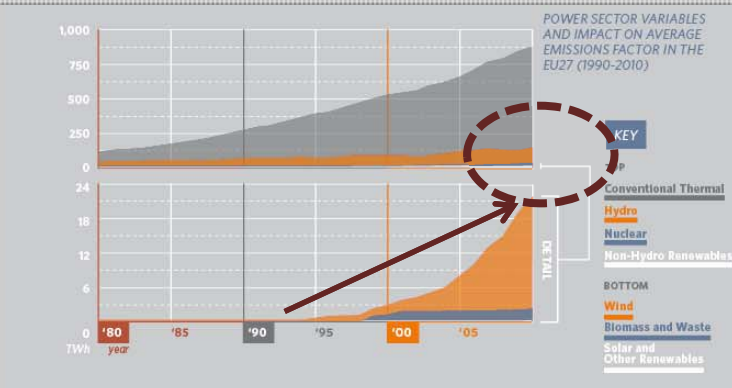
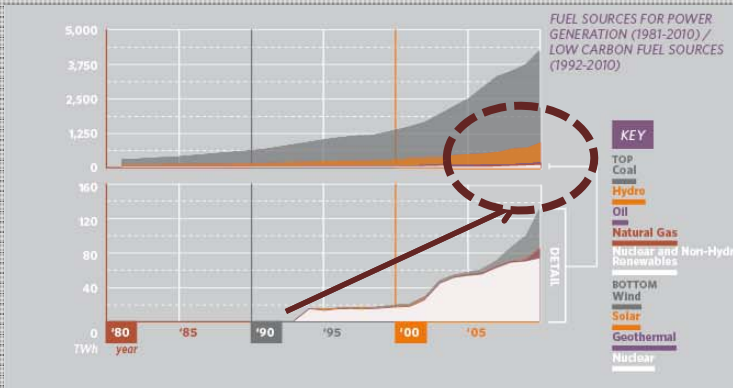
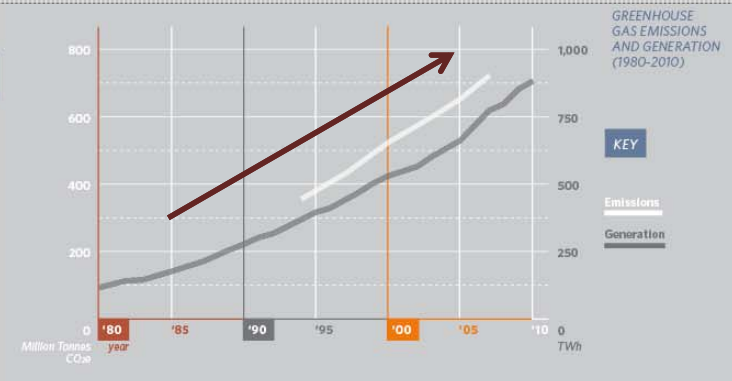
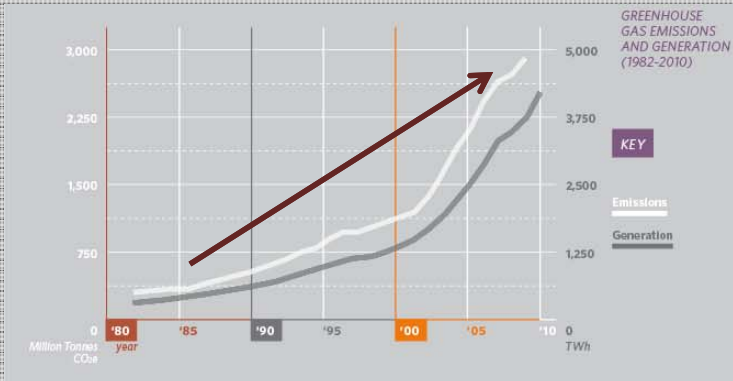
**EMISSIONS DRIVERS**



**POLICY**

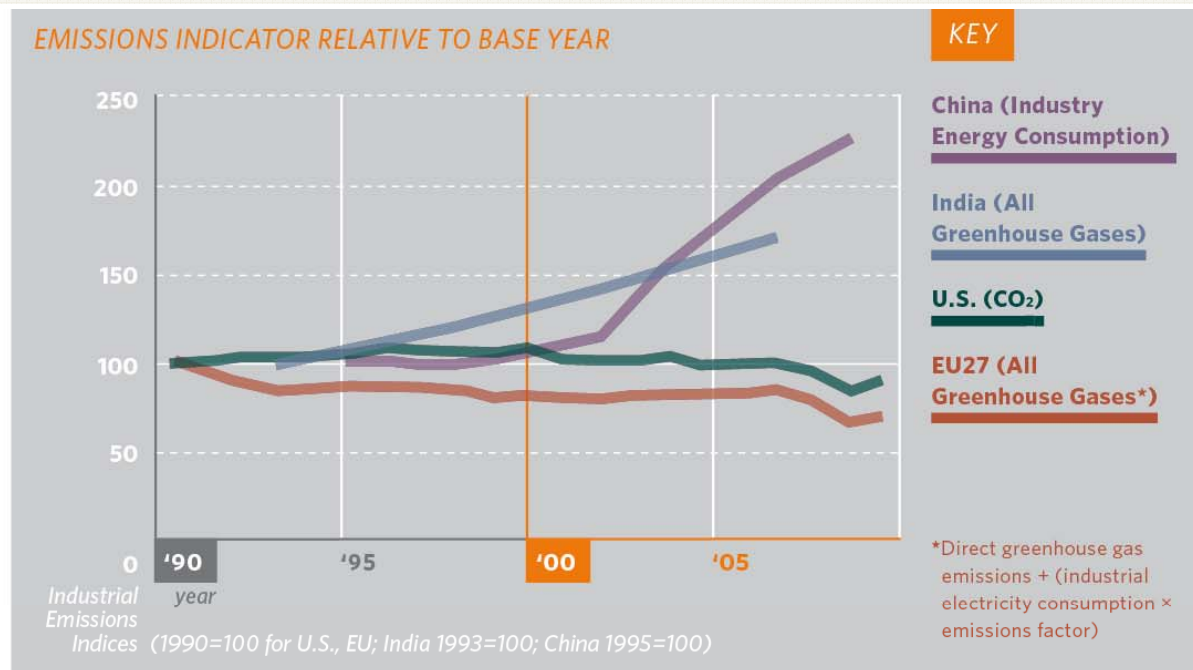


# India and China are pursuing aggressive renewable energy strategies, but their impact is still small compared to that of growth





## Industry: Like power, industrial emissions have been driven by the scale and style of economic growth



### INDIA

Large differences between sectors and energy efficiency policy just developing

National energy efficiency policy is set to accelerate with the Perform, Achieve, Trade system—an energy efficiency certificate scheme

Energy intensity fell in some, but not all sectors, as new facilities geared up for industrial growth in India

### U.S.

No coherent national industrial carbon policy, but energy efficiency policy at the state level, market forces including rising energy prices, and outsourcing of some industrial production to other countries facilitated decline in emissions

### EU

The EU Emissions Trading System combined with rising fuel prices, outsourcing of production, and a number of member country level programs to improve efficiency

Other Europe-wide programs, such as a Combined Heat and Power Directive and the Large Combustion Plant Directive targeted certain sectors within industry

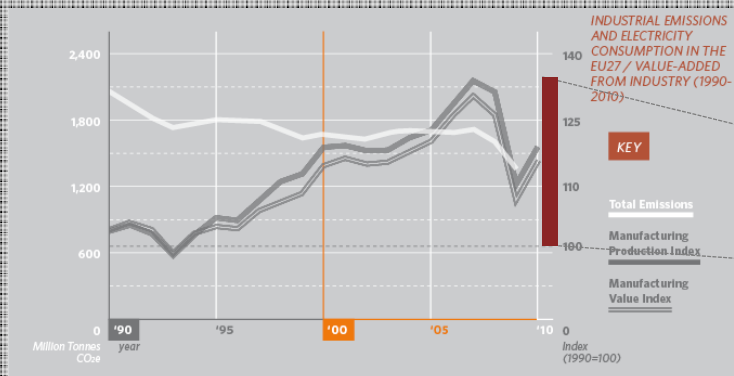
### CHINA

Concerted policy effort targeted a reshaping of the industrial energy consumption landscape and initial emphasis on the largest industries

Decline in carbon intensity, but from a very carbon intensive starting point

The sheer growth of industrial production overwhelmed efficiency improvements

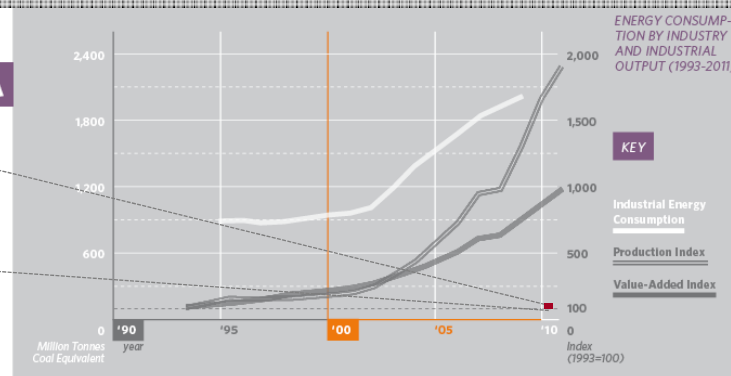
# Emissions intensity is falling in both developed and developing economies, with significant policy support in the EU and China



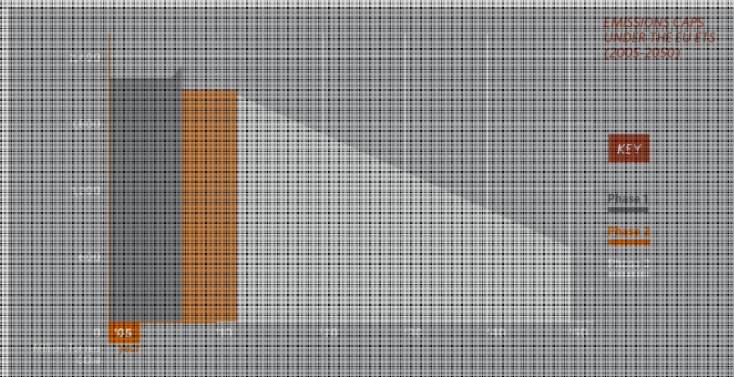
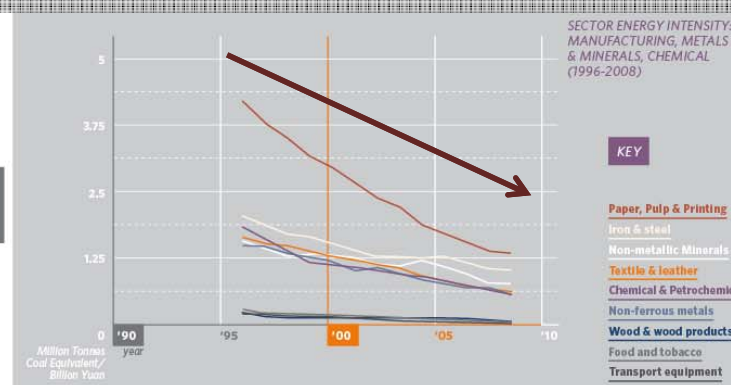
**EU**

**CHINA**

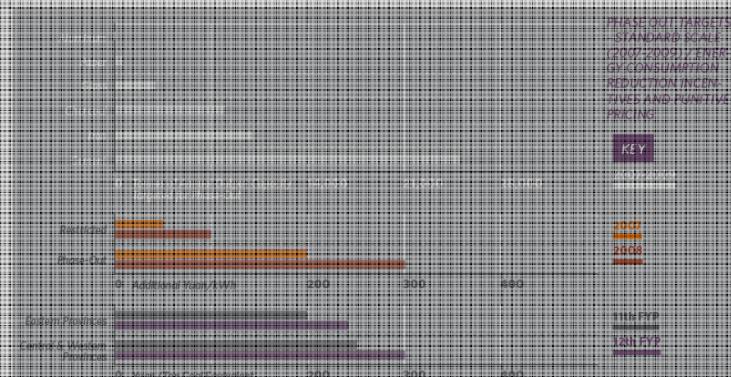
**EMISSIONS & OUTPUT**



**EMISSIONS DRIVERS**

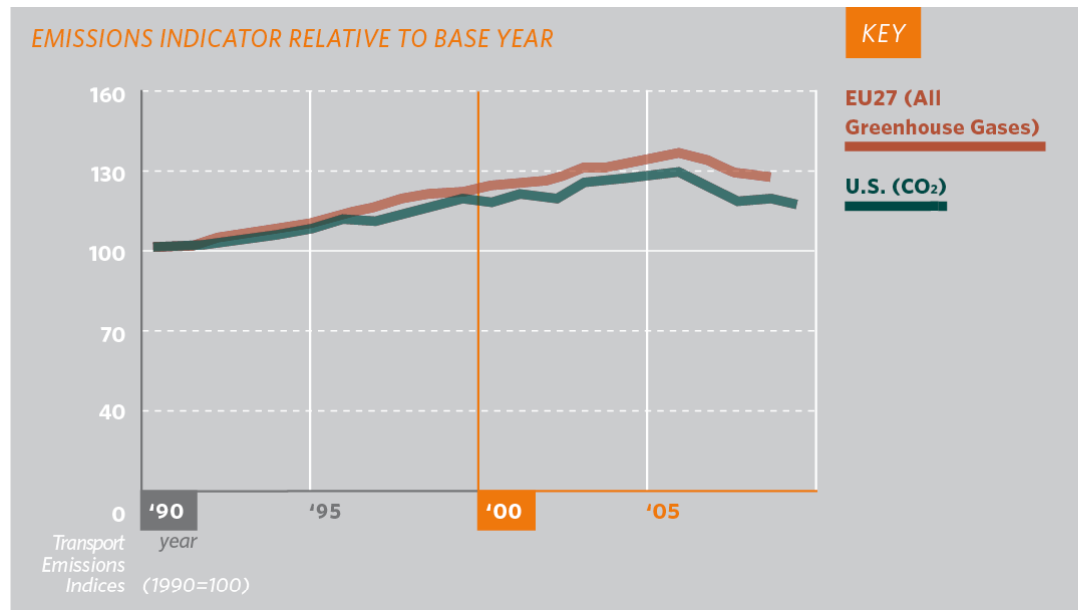


**POLICY**





## Transport: Relative emissions growth has been similar between the EU and US, but the US began from a much less efficient starting point



### EU

High taxes on petrol and diesel fuel were in place before 1990, leading to a relatively smaller and more efficient vehicle fleet

Taxes, on average, peaked around the turn of the century. Fuel price movements had greater relative impact on total prices as pre-tax fuel costs rose

The EU generally taxed petrol more than diesel, overcoming the usual cost advantage of petrol and encouraging a switch to diesel for passenger vehicles

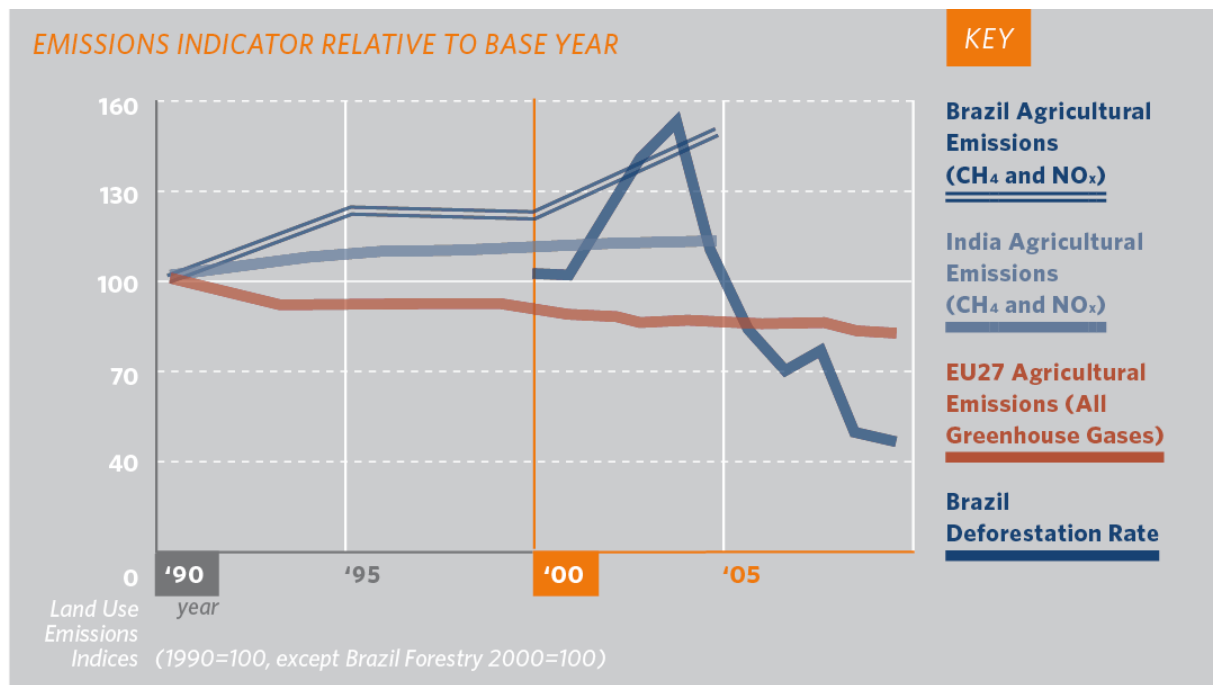
### U.S.

Fuel taxes and fleet efficiency standards did not change after the early 1990s

Meanwhile, significant improvements in transmission and engine efficiency were offset by increasing weight across passenger vehicles classes and increasing SUV share of the passenger fleet

With lower taxes and lower mileage vehicles, rising fuel prices had a larger relative impact on the economics of transport in the U.S. than in Europe

## Land Use: Brazilian deforestation stands out as the biggest change in land use emissions



### BRAZIL

#### DEFORESTATION

Significant ramp-up in Brazilian land use policy in the mid-2000s and lower agricultural commodity prices led to a dramatic decline in deforestation rates

Large-scale deforestation was all but eliminated by the end of the decade; small-scale deforestation persisted

#### AGRICULTURE

Brazil increased planned rural credit under subsidized rates in the 2000s, conditioning credit on compliance with environmental requirements

Approximately half of government support for Brazilian agriculture was in the form of fixed capital formation credit in the late 1990s and 2000s. The other half was more traditional subsidization tied to production quantities

### EU

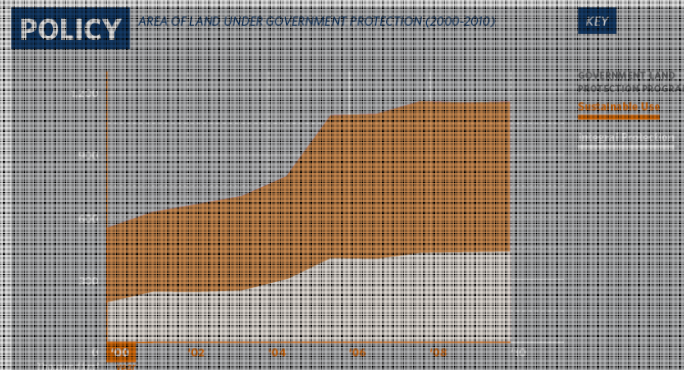
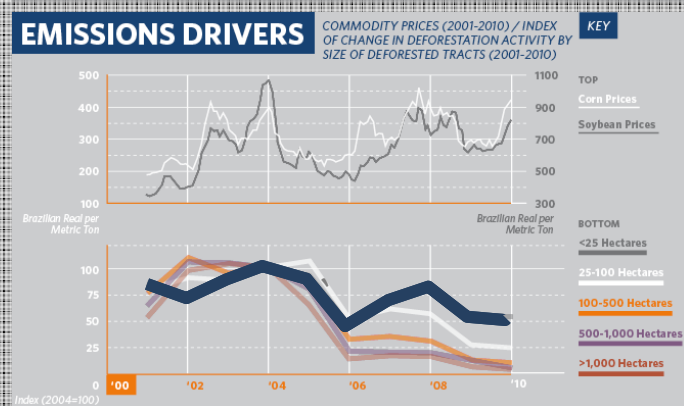
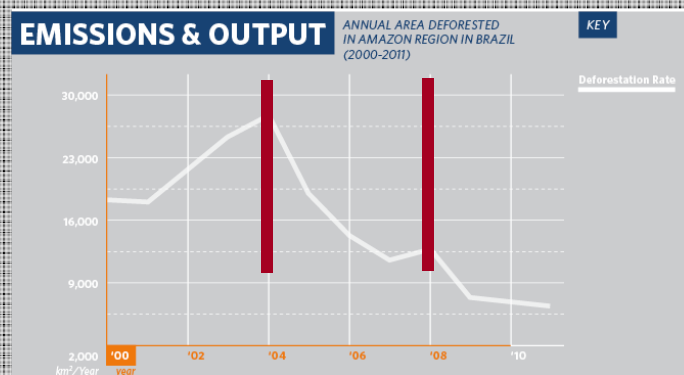
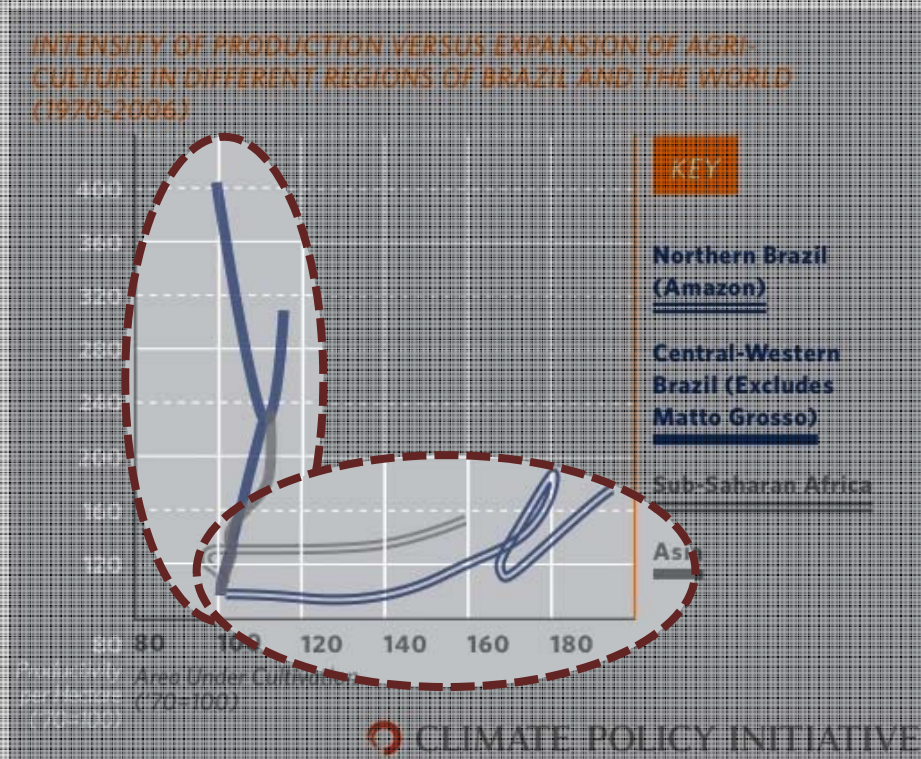
Europe's Common Agricultural Policy reforms in the early 1990s aimed to reduce cultivated land area. The reforms in the 1990s and 2000s shifted subsidies from a price support structure towards direct farm support. Environmental compliance increased in importance in awarding government support in the 2000s

### INDIA

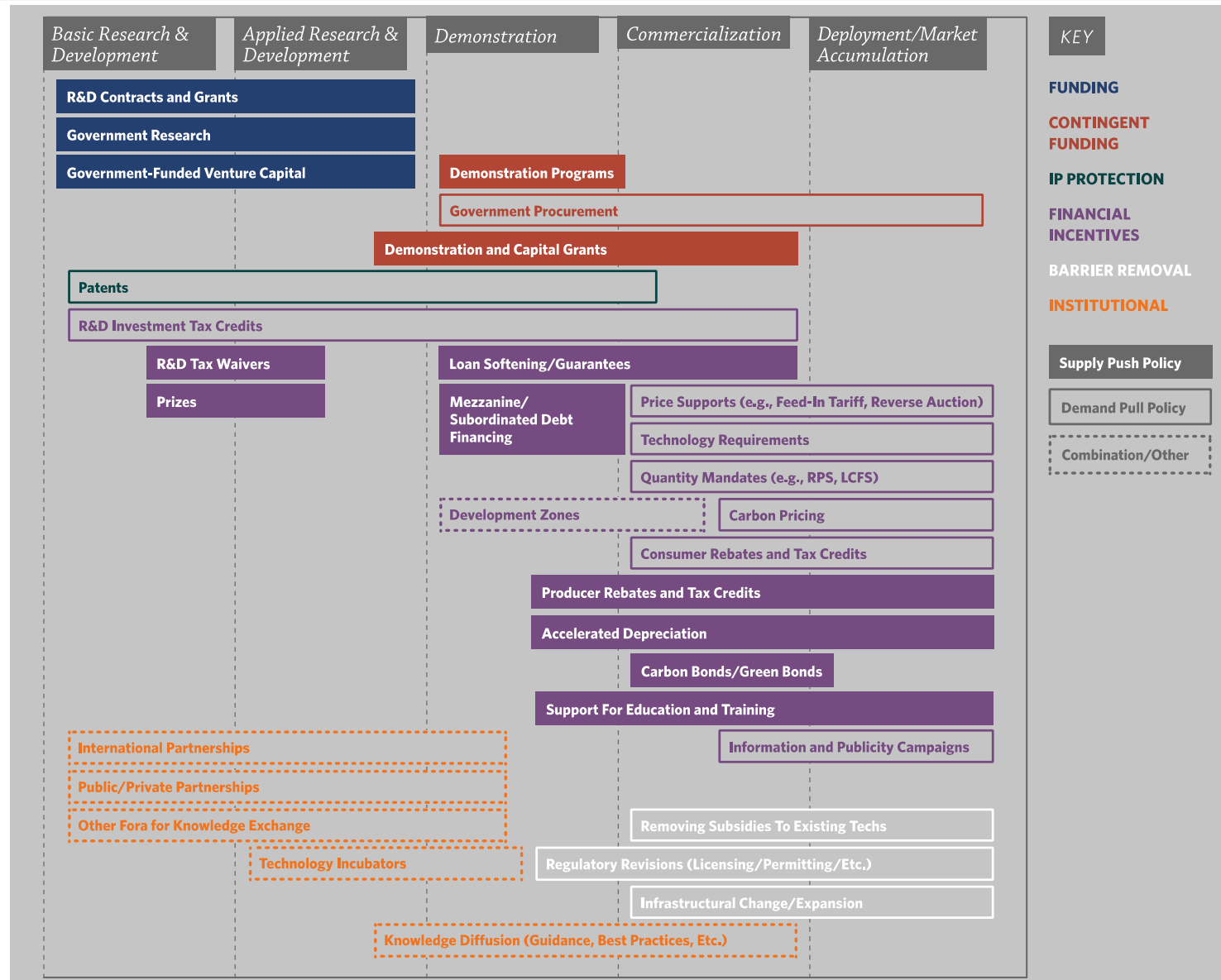
India had lifted most agricultural commodity export bans and accelerated removal of import restrictions by the late 1990s. Over the 2000s, agricultural policy emphasized mechanization and efficient resource use and conservation in agricultural practices



Policy support in the Amazon region of Brazil has been a major contributor to slowing deforestation rates



## Innovation: A wide range of policy tools are being deployed across the range of innovation stages



## Conclusions

Policy relevant to climate change is being enacted and growing across the world

This policy is at several levels of government: national, provincial and local

There is plenty of experience to learn from, including important themes and areas

Despite abundant policy, the impact still appears to be small relative to the challenge

Questions?

[www.PolicyClimate.org](http://www.PolicyClimate.org)

For more info, contact:

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