Upstream point of obligation for emissions trading in India

- Lessons from New Zealand

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Presentation Roadmap

Introduction

- The Indian Context.
- Plan Carbon reduction schemes in India.
- Upstream vs. Downstream in the Indian Context.

Analysis

- Lessons from other Emissions Trading Schemes.
- Pros and Cons of Upstream ETS in India.

Conclusions

- A compilation of results.
- Concluding thoughts.

The Indian Context

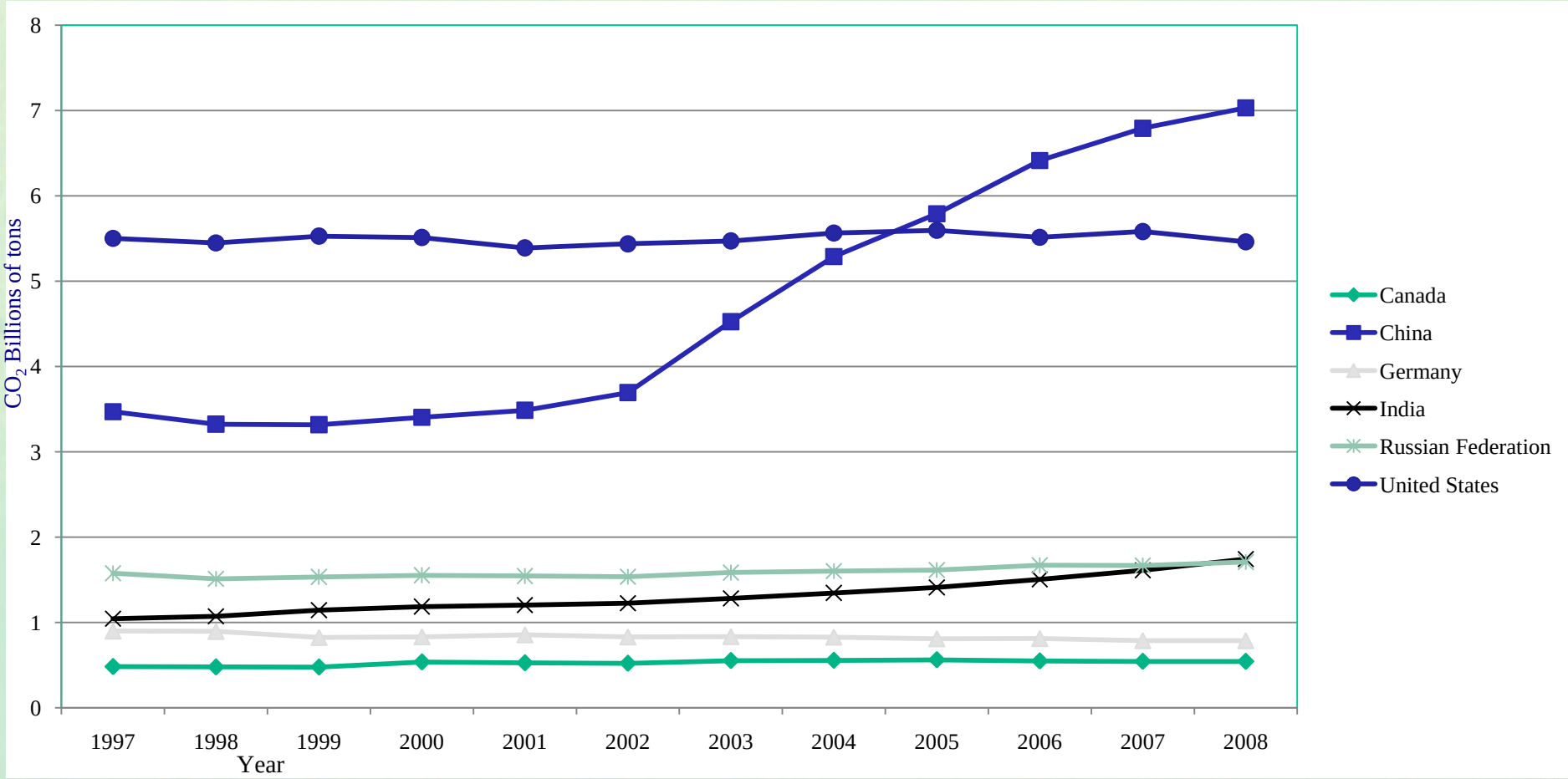


Figure 1: Total Carbon Dioxide emissions (United Nations Statistics Division, Millennium Development Goals indicators)

India is now the third largest emitter of CO_2 in the world.

The future?

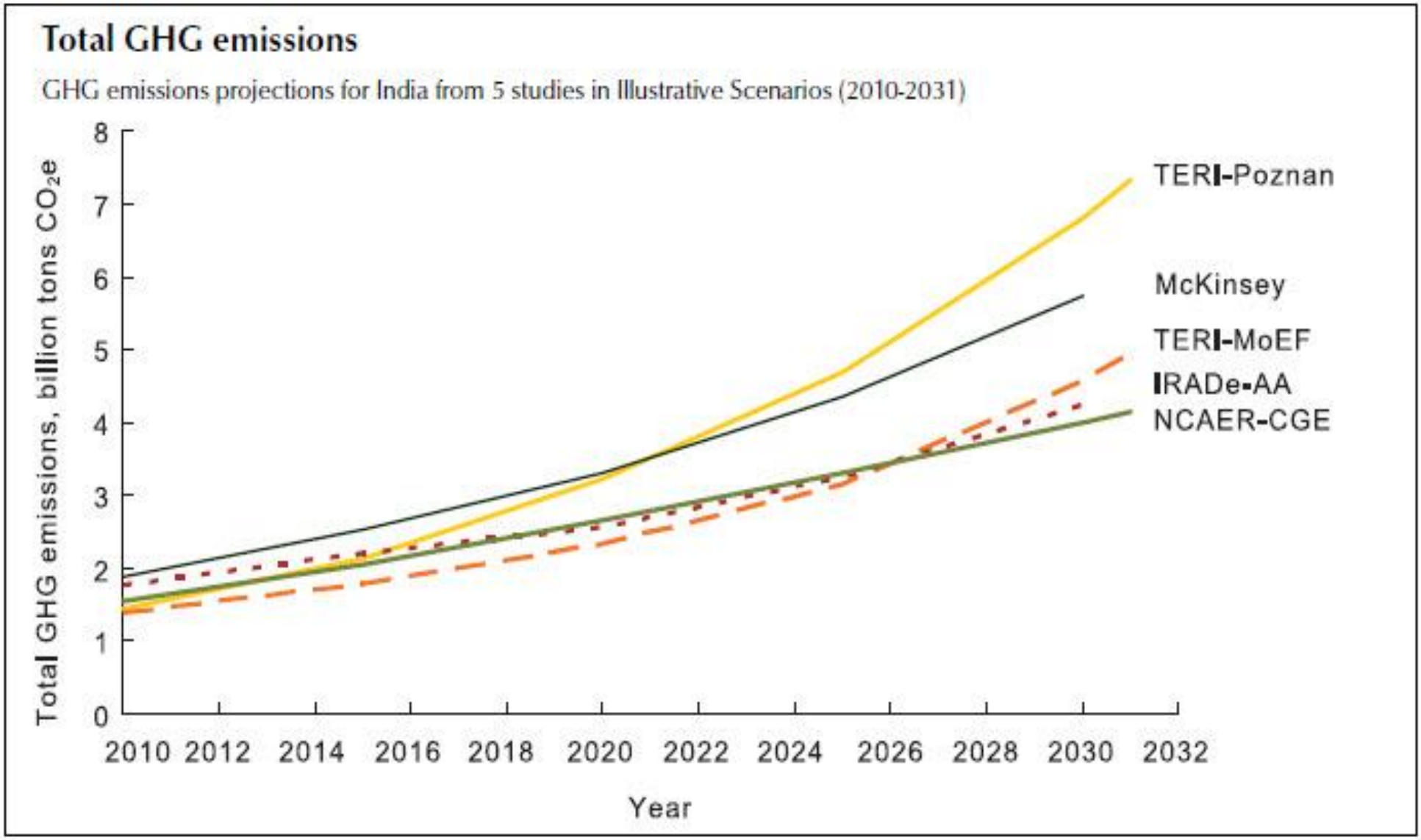


Figure 2: Future projections of emissions

The low-hanging fruit of abatement

Reduction of 0.12 billion tones over the next ten years for less than \$25 Mg^{-1} (Garg et al., 2003).

However, this is true only given the right Policy Design.

Developments in India

Stated Targets:

Reduce Carbon Intensity (emissions per unit of GDP) by 20-25% by 2020.

Measures:

- Perform, Achieve and Trade.
- Bureau of Energy Efficiency.
- Emissions Trading Pilot Program.

Perform, Achieve and Trade

- Program for increasing energy efficiency and thereby reducing emissions.
- Trading to begin in 2014.
- To cover 50% of the fossil fuel use in India covering 500 of the largest energy users (30,000 Metric tones of Oil Equivalent).
- Large emitters are given “Energy saving certificates (ESCerts)” for emissions below baseline.
- Trading: If your energy efficiency is higher than expected, you get ESCerts. If your Energy efficiency is lower than expected, you have to buy ESCerts.

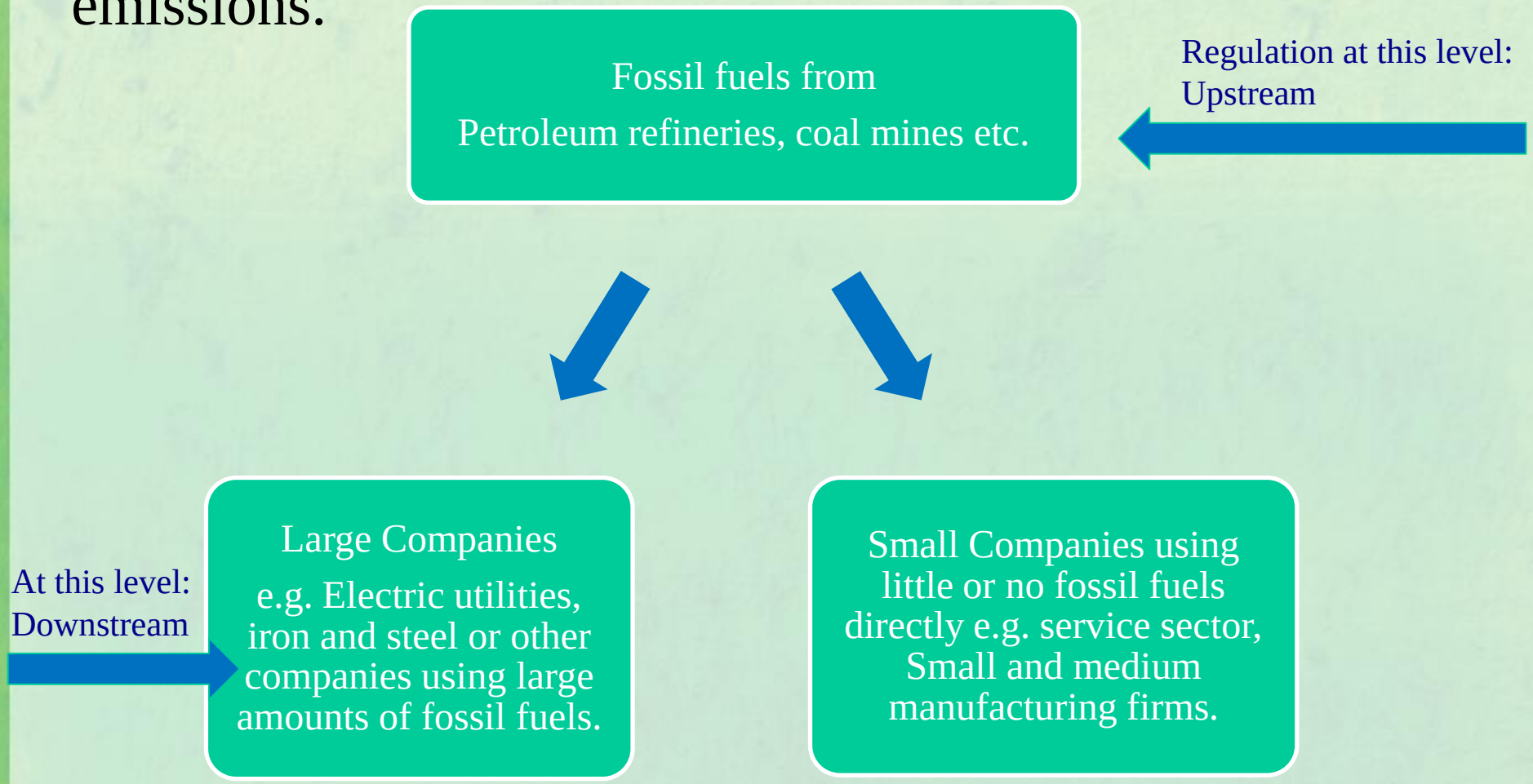
Planned Emissions Trading Pilot

- Downstream emissions trading Pilot Program.
- Emissions monitors in each plant.
- Was planned for the later part of 2011.
- Future in question after Environment Minister was changed.

Is the downstream option the best possible option?

Upstream vs. Downstream

- Point of Obligation: The level of the supply chain at which entities are required to report information relating to emissions.



Points of Analysis- A roadmap

Comprehensive Coverage	Maximize emissions covered.	Prevent Leakage	Ensure Equity
Price and signal Pass-through	Price should pass through to emitters	Ensure equity	Signal Pass-through
Transaction costs	Reduce costs of administration	Use existing infrastructure	
Ease of subversion	Prevent manipulation of the system	Ensure compliance	

1. Comprehensive Coverage

Why do we want to cover as many sources as possible?

1. Avoid Leakage

   If only certain sources are covered, production and consumption will just shift to other sources. No or little actual abatement will be achieved.

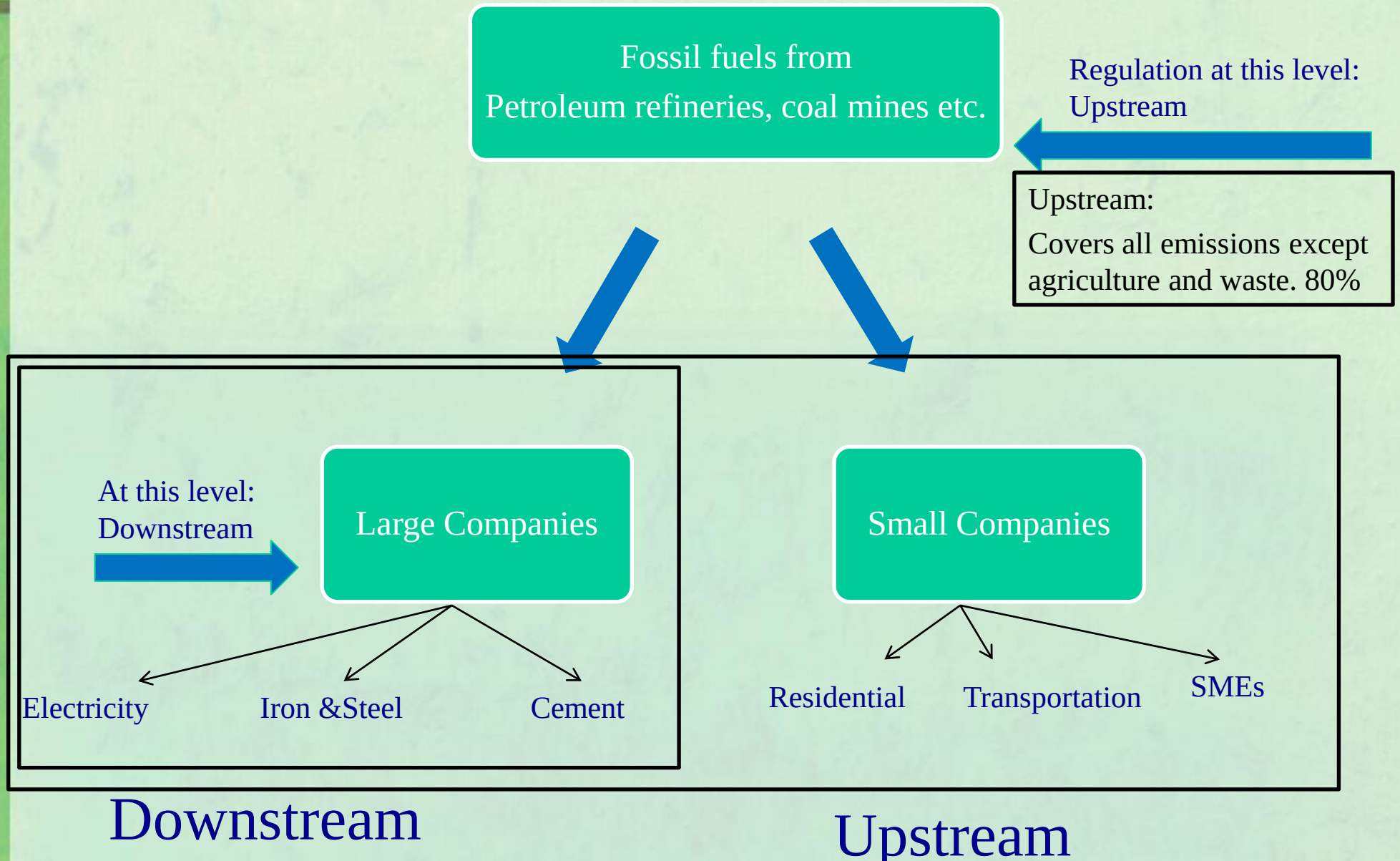
2. Ensure equity

   Poor people should not be affected disproportionately by increasing coverage. If some sources of pollution are left out based on their scale, it might not be fair to larger sources.

3. Efficiency

   Low-cost opportunities for emissions abatement should be availed on all levels and in all sectors so that emissions are reduced at lowest possible cost.

1. Comprehensive Coverage



1. Comprehensive Coverage

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a. Maximizing emissions covered

- India has 26 million Micro, Small and Medium Enterprises, 24 million of which are unregistered. Too many point sources to regulate.
- On the other hand, one single company Indian Oil manages 10 of India's 19 refineries.

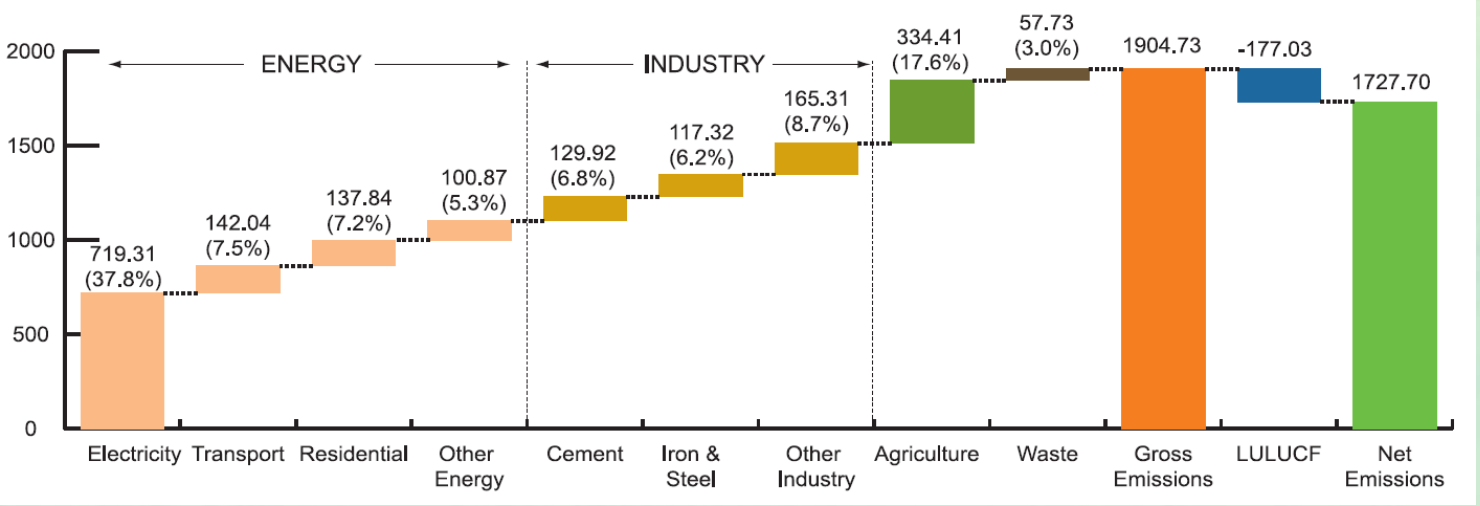


Figure 3: India's emissions inventory 2007

Downstream: Up to 50% coverage is feasible.

Upstream: Up to 80% coverage.

1. Comprehensive coverage- Efficiency Impacts

- If more emissions are covered, economic theory suggests that it is more likely that abatement will be lowest possible cost.
- More comprehensive coverage will also ensure that abatement at one source leads to overall abatement and not just shifting to another source.

1. Comprehensive Coverage

b. Leakage

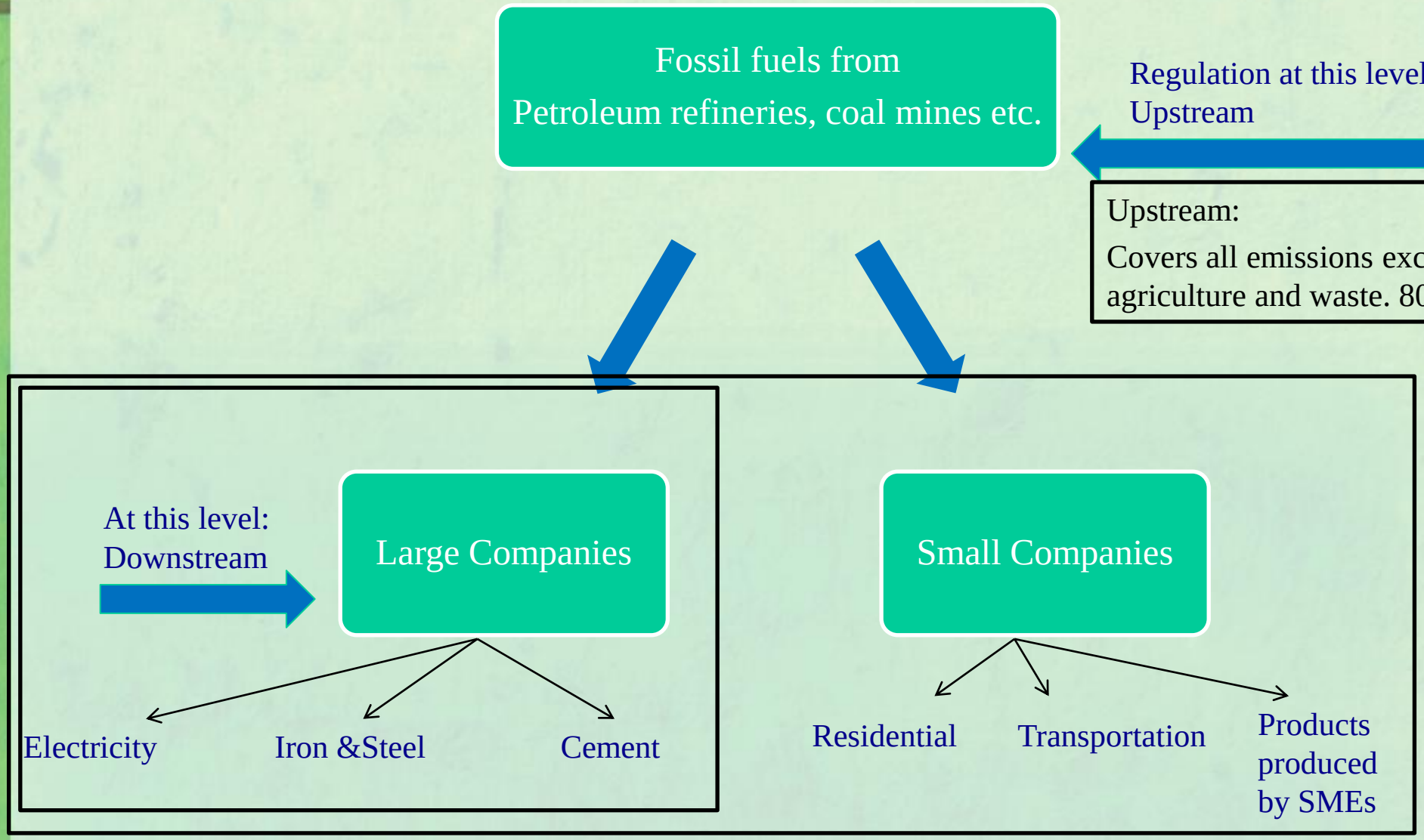
- Cross firm Leakage: Downstream for large firms will cause cross-scale leakage, leakage to smaller firms.

  Possible solution: Output based allocation. However, difficult to accomplish in the case of many small firms. E.g. Tomato growers in New Zealand.

c. Cross-scale Uniformity and fairness

- In downstream, only large consumers of energy are covered.
- Is it fair to target large consumers only?

1. Comprehensive Coverage



1. Comprehensive coverage- equity impact?

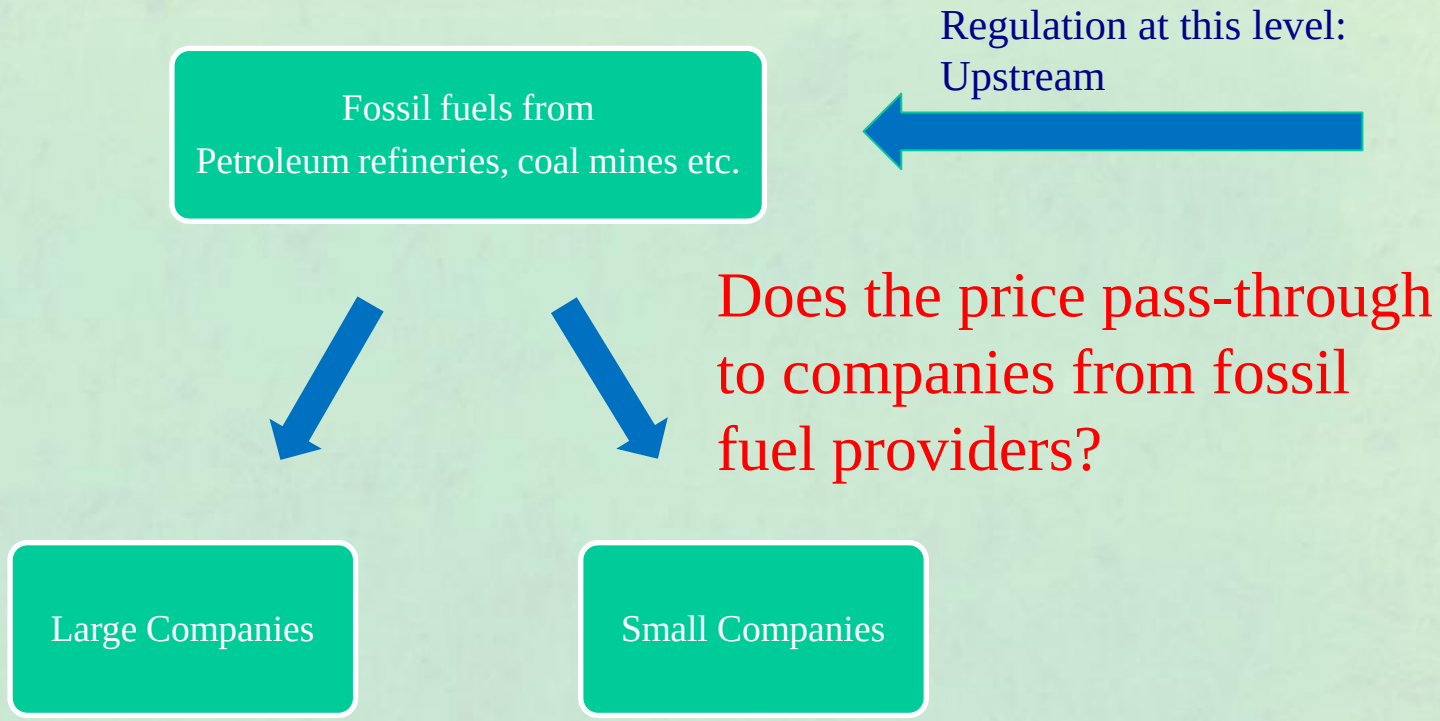
Does more comprehensive coverage disproportionately affect the poor?

- Mostly, the new emissions covered are not used by the poor. Fossil fuel-based transportation, residential energy use.
- People below the poverty line in India are living on less than Rs 560 per month (14.6 NZD).
- Moreover, many of these markets are already regulated.
- New Zealand's solution: Permits may be allocated at points other than the Point of Obligation.
- The benefits of the sale of the permits could be re-distributed to the poor.

2. Price pass-through

Why is this important?

- This is a common argument against upstream emissions: The price must be put on emitter since they are the ones in a position to abate.
- If the price does not pass-through to emitters, then there is no abatement- the whole scheme fails?



2. Price Pass-through

Does the Price of emissions reach the emitters?

- In a perfectly competitive market, the point of obligation does not affect the economic incidence.
- Price of carbon will finally pass through to the emitter.
- If there are barriers to price pass-through, emissions will not be reduced in upstream system.
- Barriers to price pass-through: Regulated utility markets in India. However, the effects of this regulation are the same for upstream and downstream points of obligation.

In terms of price pass-through: Upstream = Downstream

2. Price Pass-through

- What about pass-through of signals?

Economists think about signals as only prices. However, what about getting peoples attention by regulating them?

The argument goes that emitters are more likely to pay attention if they are regulated directly.

However, is form-filling the best way to get people's attention?

More research required.

3. Transaction Costs

a. Costs of monitoring

- Monitoring at the firm or emitter level (Downstream) could be costly.
- More officials will be required to administer it.
- Firms and officials will have to be trained.

Continuous emissions monitor checking

3. Transaction costs

b. Existing infrastructure

The current plan focuses on CEMs placed in factories- Raising costs.

There is an existing set-up for reporting fossil fuels in India.

Existing schemes like PAT could be accounted for separately- a “Hybrid system”

Hybrid system: Make fossil fuel providers as the point of obligation but account separately for large companies.

4. Ease of Subversion

- Corruption in India: India is ranked 87th in the world.
- The chance of subversion can be reduced by reducing number of intermediaries, making information available and enforcement mechanisms.
- Larger companies are less likely to indulge in petty corruption.
- However, larger companies are more likely to try to influence the policy process in their favor.

Point of consideration	Sub-point	Upstream	Downstream	Result
Comprehensive coverage	Maximum possible coverage	80% coverage.	50 coverage.	Upstream is preferable.
	Leakage	International Leakage in low-wage sectors.	Domestic, cross-sector leakage.	Upstream.
	Cross-scale uniformity	Uniform across scale.	Unfair to large firms.	Upstream.
Price Pass-through	Does the Price reach emitters?	Yes	Yes	Same.
	Signal pass-through.	Emitters get only price signal to decrease emissions.	Emitters get price signal as well as attention.	Downstream.
Transaction costs	Costs of monitoring	Lower.	Higher.	Upstream.
	Existing Infrastructure	Uses existing infrastructure.	New infrastructure required.	Upstream.
Ease of subversion	Corruption	Lobbying for favorable allocation.	Petty corruption.	Upstream. Largely speculation.

Conclusions

- Upstream or Hybrid system is preferred because:
  - Covers more emission sources.
  - Transaction costs are lower.
  - Uniform across scales.
  - Avoids leakage.
  - Reduces chances of petty corruption.
- Given that the largest 500 firms are already covered by PAT, Hybrid system may be best.
- Lessons from NZ may provide an important roadmap.

Thank you! Questions? Comments?

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