A Green Industrial Innovation: Indonesia's Early Experience

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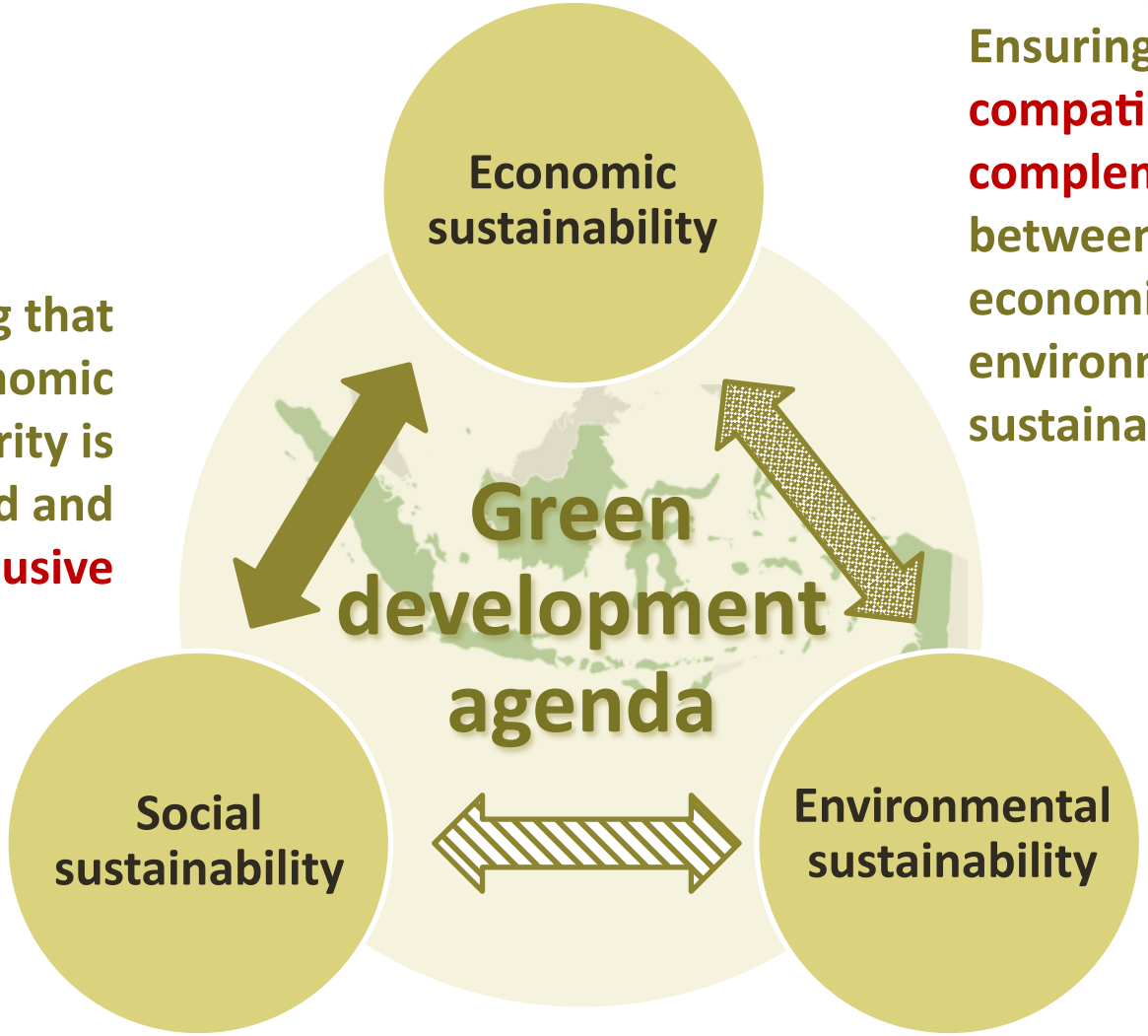
Outline

- The Green Economy Framework and Indonesia's Industry Sector
- Focus on Sustainable Manufacturing in five industries **Cement, Steel, Pulp and Paper, Textiles, Petrochemicals**.
- Challenges
- Recommendation for Priority Reforms and Green Benefit

Green Development Agenda

- **Vision**
- **Rationale**
  - The imperative of adopting a green development agenda.
- **Understanding Challenges**
  - Main challenges in the sector in achieving the goal of green development.
- **Reforms**
  - How to change incentives, investment and information in support of this goal in the sector?
- **Impact**
  - What are the potential green benefits?

Ensuring that economic prosperity is shared and **inclusive**

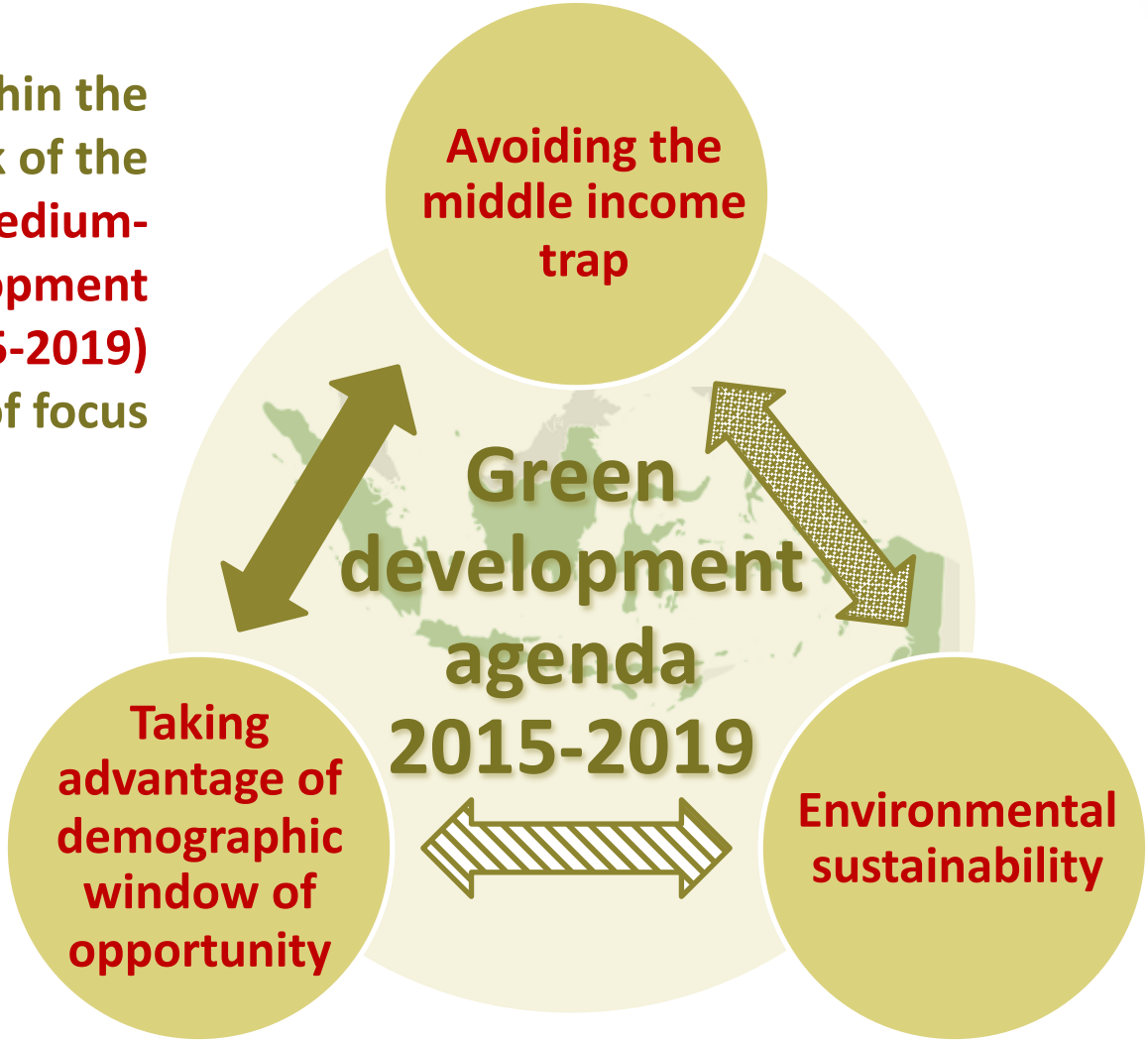


Ensuring **compatibility and complementarity** between economic and environmental sustainability

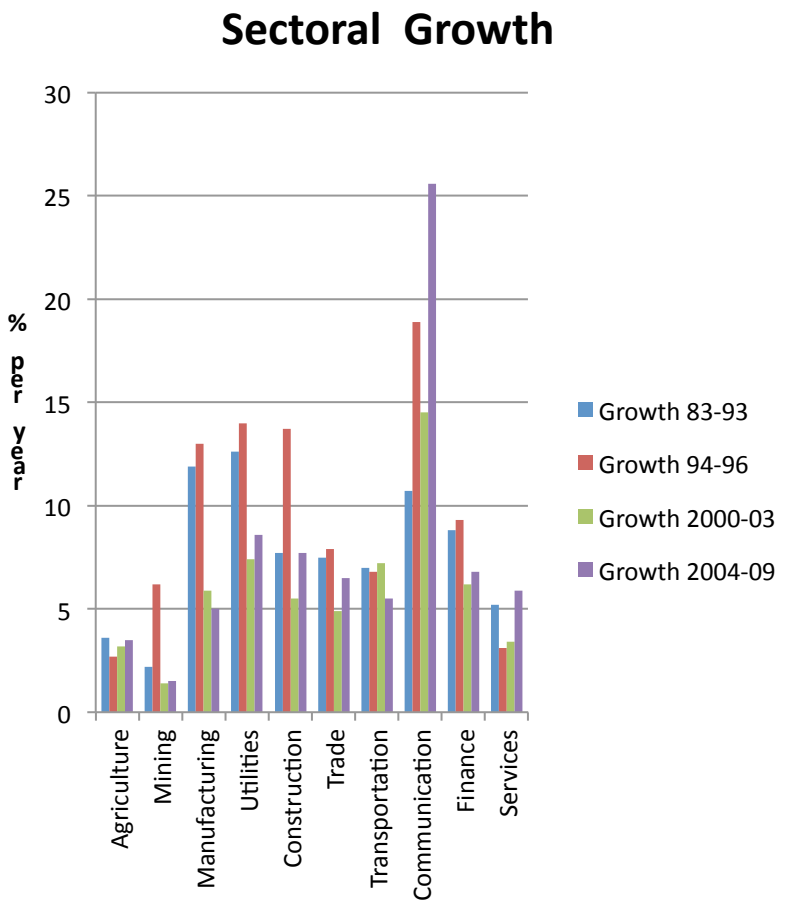
Reinforcing the **synergies** between environmental sustainability and social goals

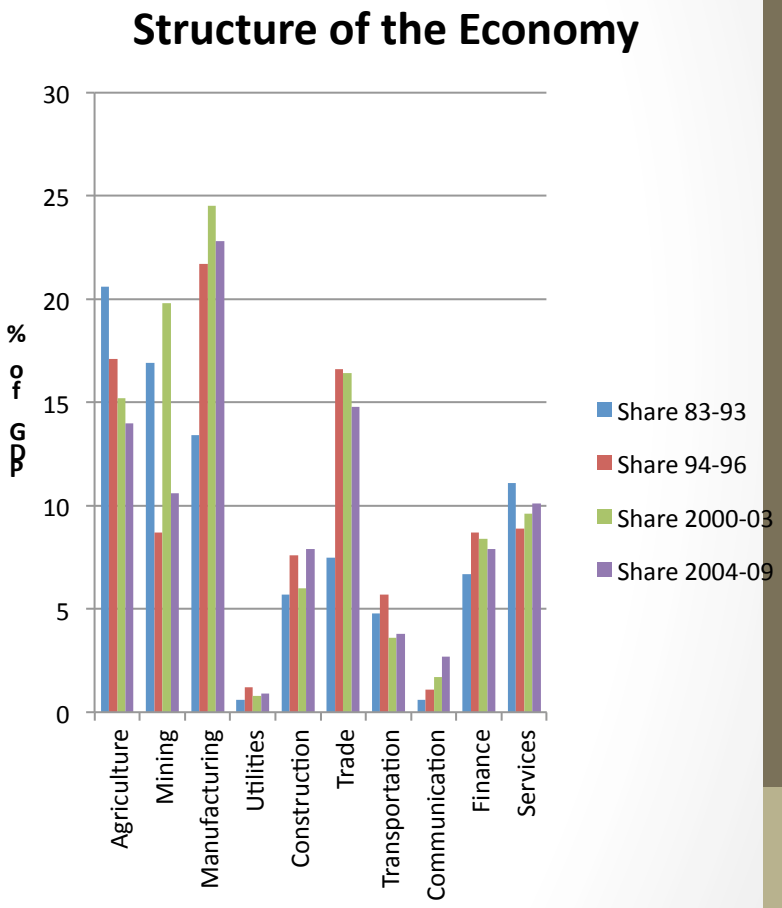
Enhanced quality of indicators

Within the framework of the RPJMN (Medium-Term Development Plan 2015-2019) areas of focus



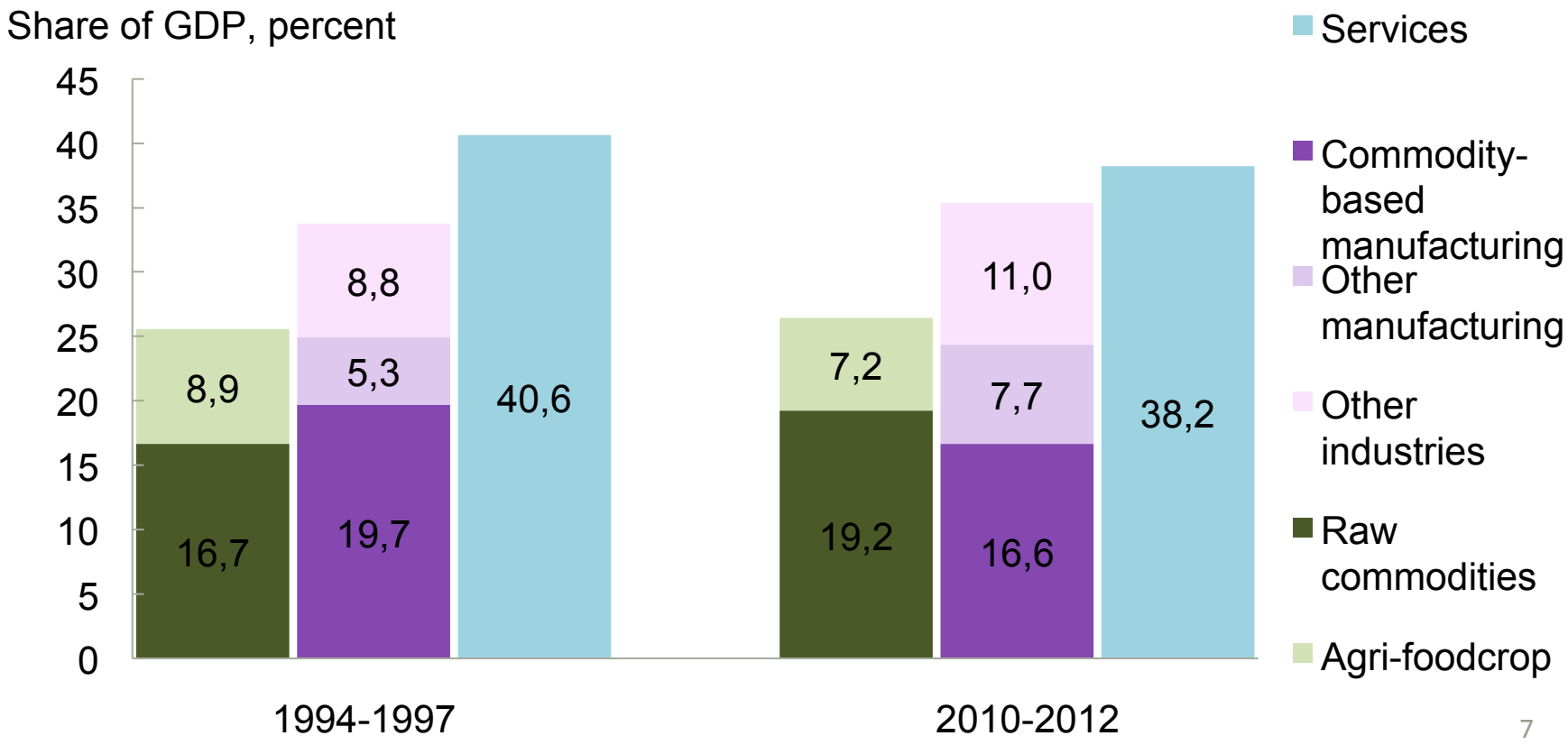
Role of manufacturing: Prime mover of GDP



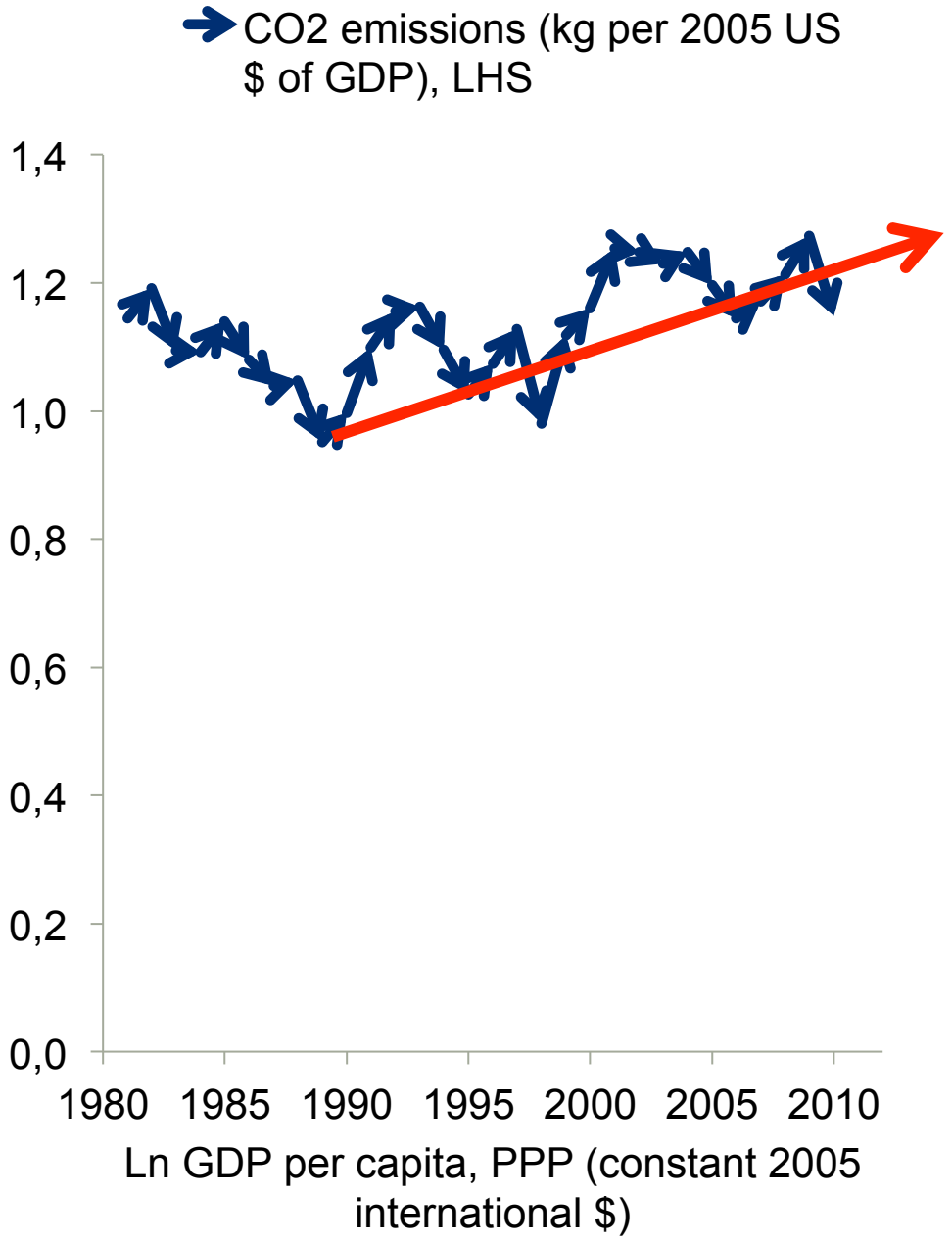


…and overall resource-related sectors remain a sizeable share of the economy ….

- With total resource-based sectors remaining around 35 percent of GDP (and having a rather anomaly recent trend)…..

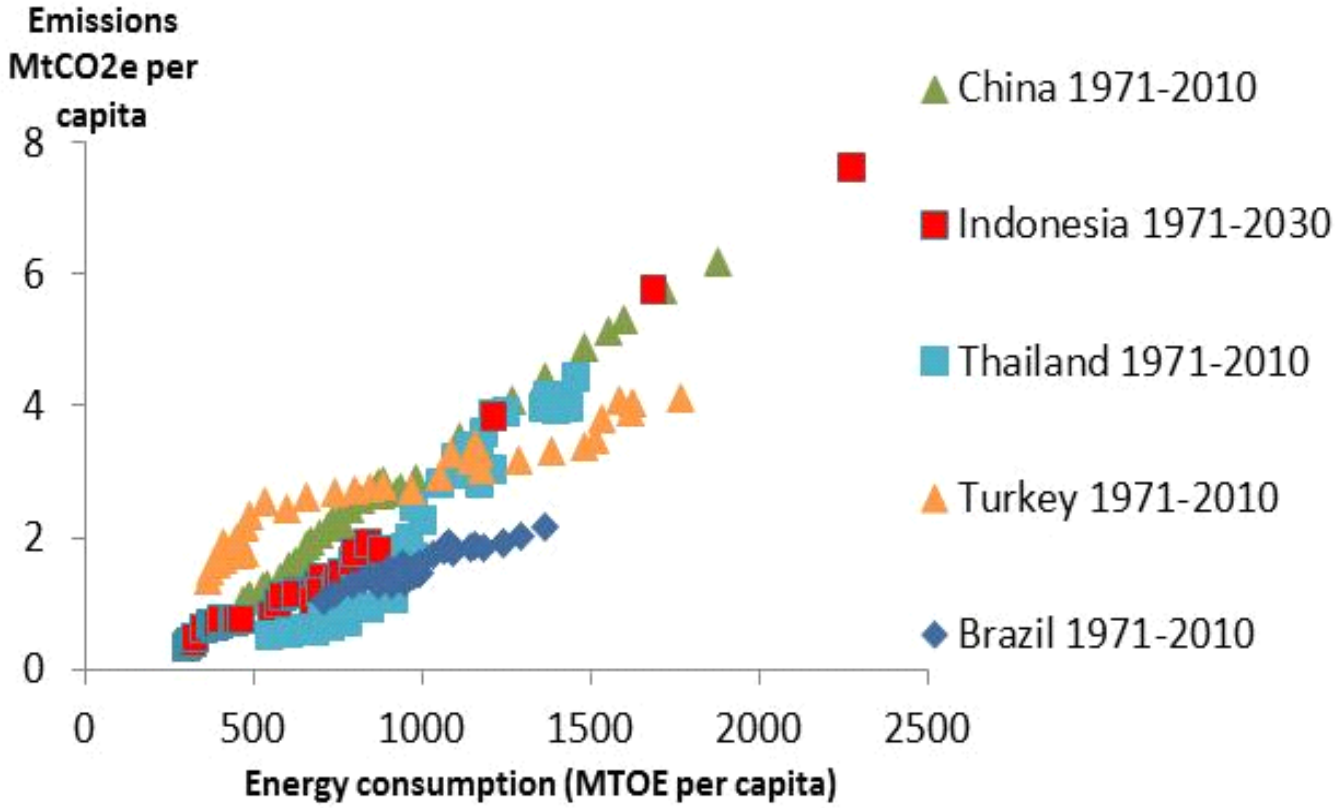


Rationale: Increasing trend in carbon intensity implies increasing risk of loosing future market competitiveness



Especially when the competition is getting their houses in order…..

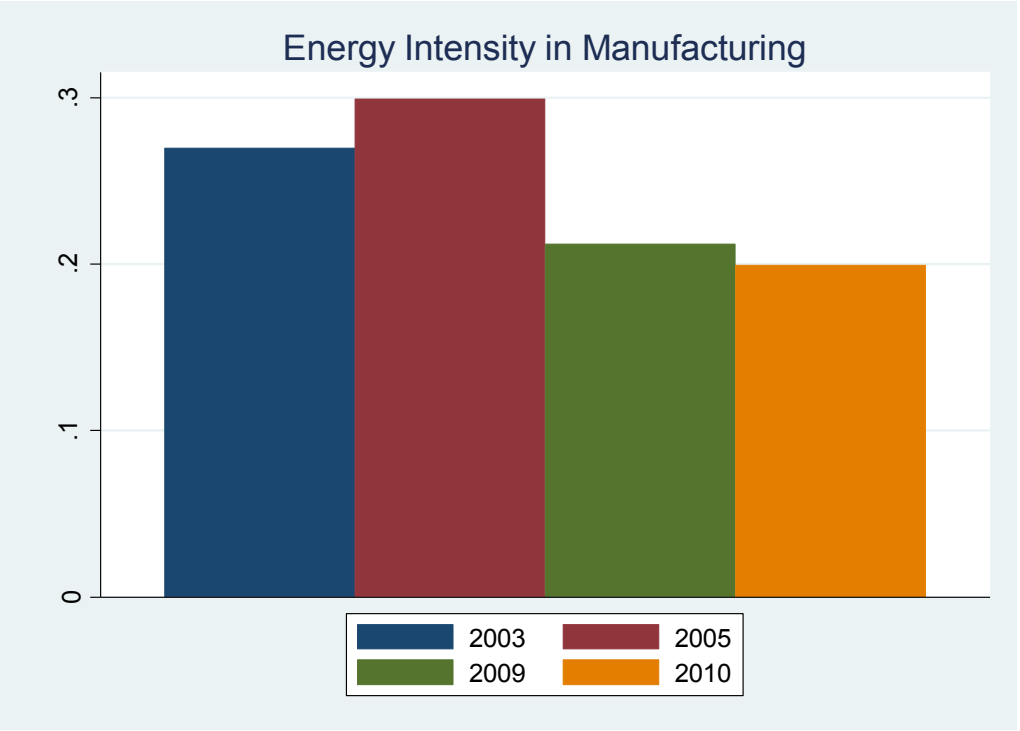
Green development reforms can move Indonesia towards a lower emissions path than the business as usual projections



Source: World Bank calculations and GoI BAU

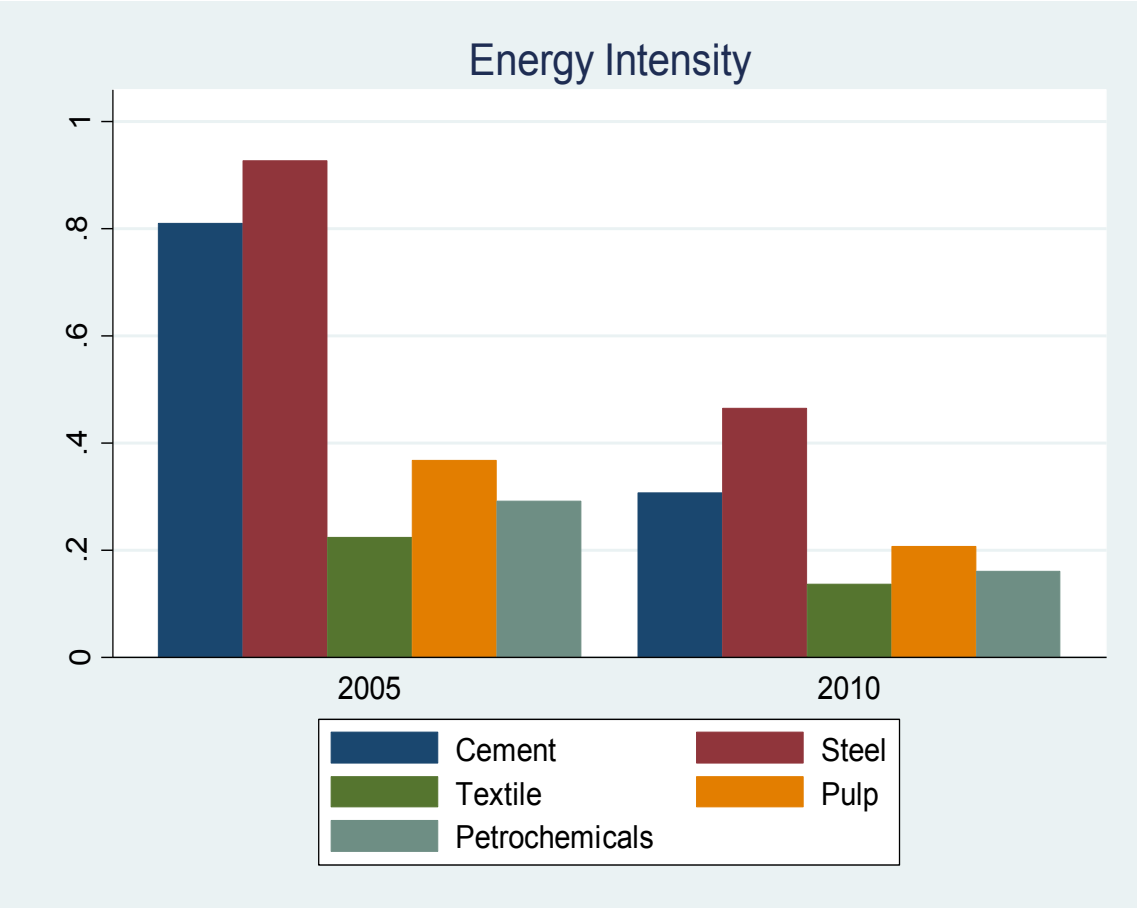
While GHG in overall manufacturing sector is still increasing, the energy intensity in Indonesia's manufacturing sector is decreasing

Across all Manufacturing Industries
2003 - 2010

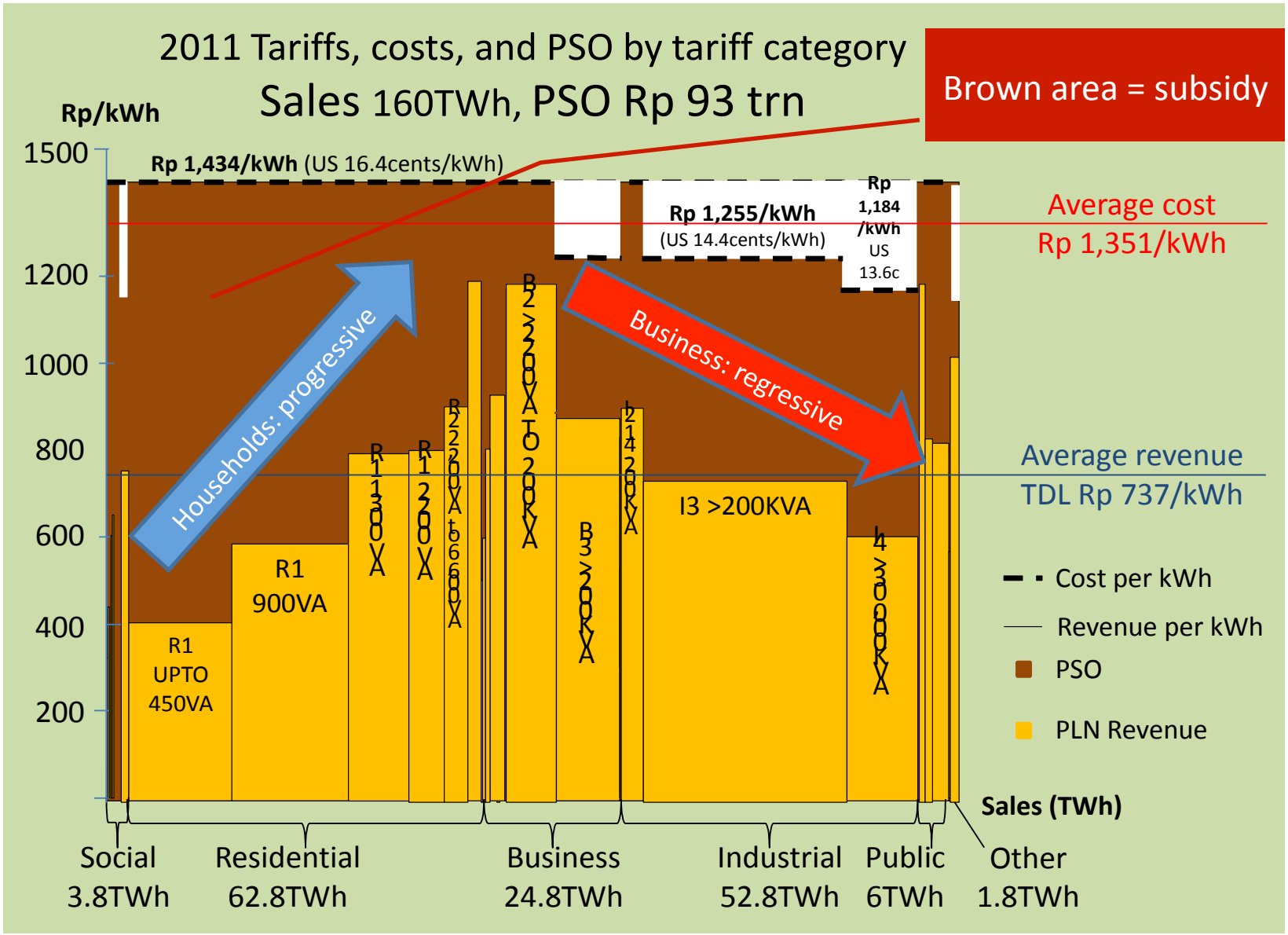


With energy-intensive sub-sectors leading the change…..

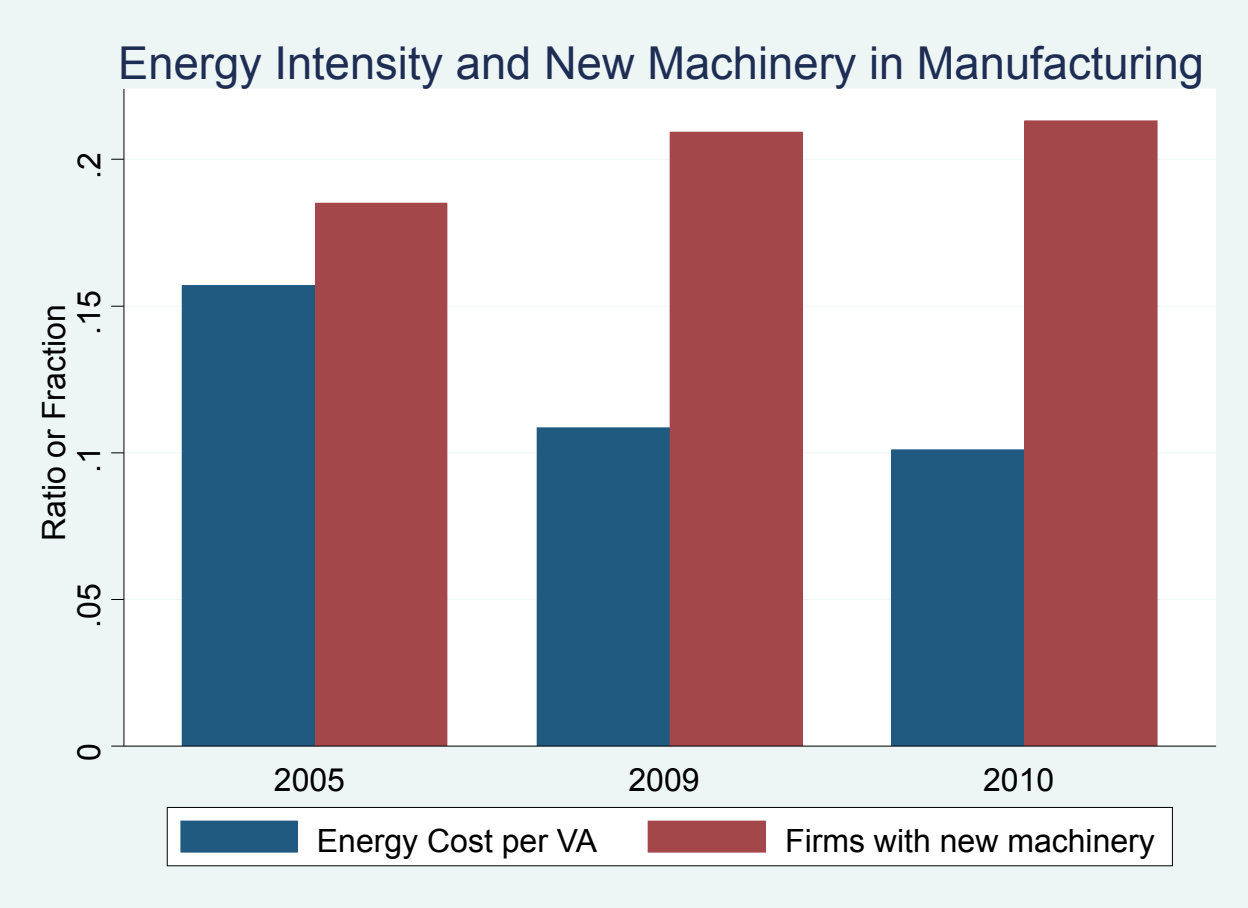
Energy Efficiency Improvements 2005 - 2010



Despite problematic electricity subsidy……

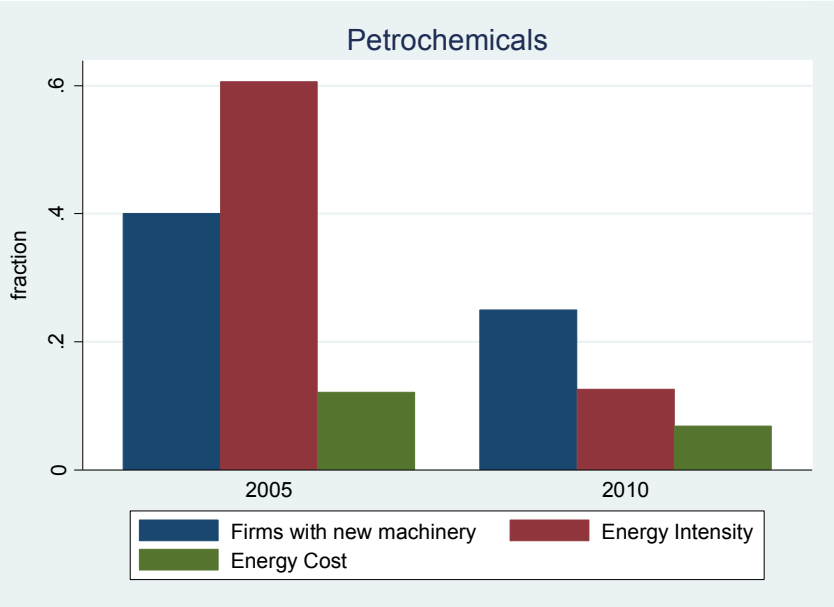


New Technology in Machinery can help Plants Improve Energy Efficiency



Significant Gains also Observed from Energy Efficiency Management

Primarily due to energy efficiency management rather than investment in new technology or machinery



1. Purely new technological solution can be expensive and inefficient.

2. Energy efficiency can be a cost effective solution to maintain high quality output along with reducing emissions.

Lessons

- Large scale manufacturers can cover the technology costs through the saving in energy cost
  - The size may be a determining factor for making the necessary upfront investment
- Government support/facilitation for technology imports is also key to the shift

Challenges

Governance, Investment, Risk Management & Information

1. **"Governance and Regulatory Environment"** (e.g., **lack of green energy sources and incentives for energy savings**.)

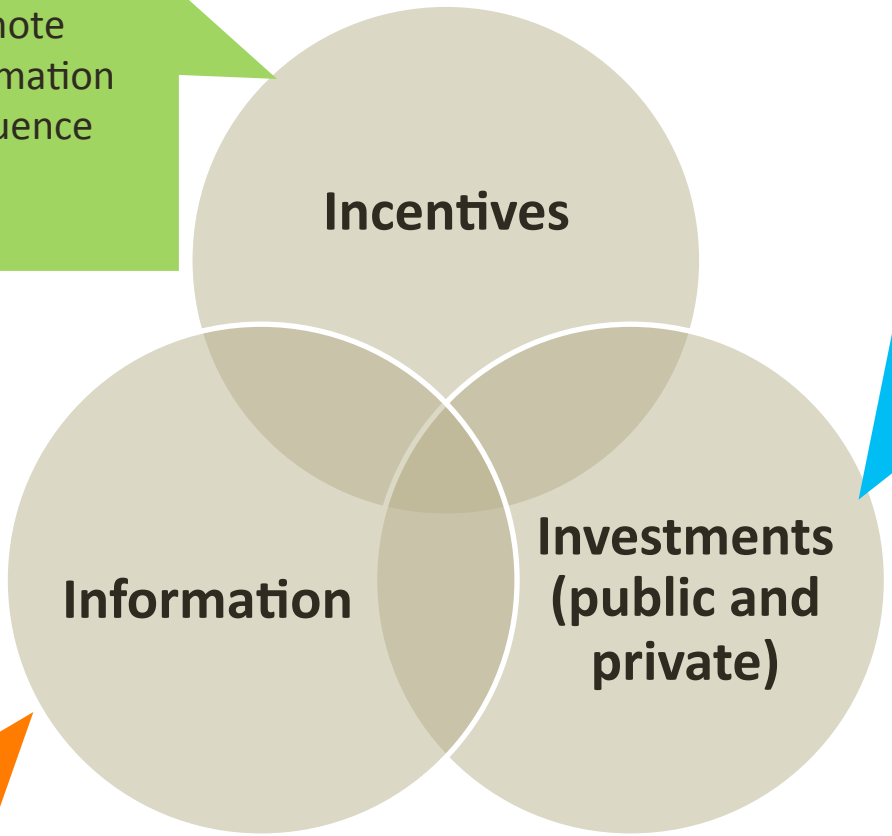
2. **"Public spending and investment",** clear challenge in the ability to implement necessary investments and the broader challenge of improving the quality of public spending. (e.g., **Insufficient promotion of and support to greener production processes**.)

3. **"Risk management"** is an important cross-cutting issue.

4. **"Informational challenges" insufficient monitoring and evaluation of environmental issues, hampering the ability to assess different trade-offs** across the green development pillars.

Focusing on the "3 I's"

It is critical that market and regulatory incentives promote green behavior since information may not be enough to influence the behavior of firms and individuals



Better information is needed on the cost of technology and environmental degradation to ensure that not only policy makers but also individuals can make informed decisions

Innovative financing tools and public support to investment may be required since even when green policies and investments could pay for themselves, they may involve significant upfront costs and require specific financing tools

Source: adapted from Inclusive Green Growth report, World Bank 2012

Recommendation for policy makers	Cost / Trade-offs (Economic, social, political)	Benefits (Economic, social, environmental)
Maintain relatively open environment for firms to import new machinery and technology and access external capital and climate finance		• Easier access to greener technologies: increased efficiency and reduced emissions / pollution • Lower cost of capital
Increase and enforce efficiency standards and regulations for equipment • Textile mills: strong candidates for efficiency standards supported by government or international finance programs	• Potential to hurt competitiveness in the short term • Need for consultation with stakeholders to design relevant regulations	• Increased efficiency and reduced emissions / pollution
Fiscal Policy Interventions: • Tax policy to encourage foreign investment • Low interest loans for efficiency investment • Accelerated depreciation schedule for older equipment • Support Sectoral CDM Programs • Voluntary agreement to exchange fiscal incentives for new efficient technology investments	• Difficult to encourage GHG emission reductions on economic grounds if competiveness declines.	• If appropriately designed could facilitate access to greener technologies • Promote efficiency investments • Reduced GHG emissions and environmental pollution
Invest in fuel efficient processes and cleaner technologies • Fuel switching: encourage co-firing with biomass, alternative fuels, and heat recovery • Ecotec technologies for steel rolling industry	• High upfront investment	• Increased efficiency and reduced emissions / pollution
Improve the reliability of electricity supply from PLN	• High upfront investment	• Lower electricity costs • Reduced emissions

A green banking regulation will also facility speedy transition

Thank you

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