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Deutsches Institut für  
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# Latecomer development in a 'greening' world

## Introduction to the Special Issue

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- Governments are increasingly subscribing to low carbon narrative (climate neutrality pledge by 2050 by over 110 governments, substantiated by Green Deals, e.g. EU)
- Upcoming discussion of measures such as carbon border adjustments
- Increasing number of successful lawsuits against governments (Germany, Netherlands) and enterprises (Shell) by citizens and NGOs
- Investors are increasingly pushing enterprises towards environmental protection (DivestInvest initiative, investor votings at shareholder meetings of Chevron, Exxon...)
- International institutions are buying into low carbon narrative (World Bank, IMF, IEA etc.)
- Other environmental dimensions receive less attention (e.g. biodiversity)

# Strategies for developing countries



**Our question:** In the face of upcoming paradigm change, which strategy should developing countries pursue to achieve economic catching up? ,Greening and growing now' or ,Growing first, cleaning up later'?

"Greening now" may...	"Cleaning up later" may ...
<ul style="list-style-type: none"><li>• Avoid irreversible environmental damage and the accumulation of costs to restore environmental equilibria,</li></ul>	<ul style="list-style-type: none"><li>• In the short run retain employment and competitiveness in polluting industries / attract investments from countries with more stringent regulations,</li></ul>
<ul style="list-style-type: none"><li>• Lower the costs of switching socio-technical pathways,</li></ul>	<ul style="list-style-type: none"><li>• Avoid opportunity costs of green investments, prioritize other welfare-enhancing investments,</li></ul>
<ul style="list-style-type: none"><li>• Reduce dependence on resource imports and economic volatility,</li></ul>	<ul style="list-style-type: none"><li>• Greening may happen automatically with structural transformation away from industry and towards services.</li></ul>



“Greening now” may...	Evidence in Special Issue
<ul style="list-style-type: none"><li>• Lower environmental risk premiums in capital markets,</li></ul>	<ul style="list-style-type: none"><li>• <b>Kling et al.</b> in the WD SI show that vulnerability to climate change increases the cost of debt and restricts access to finance, both for countries and individual firms, thereby hampering the development prospects of many developing countries even further.</li></ul>
<ul style="list-style-type: none"><li>• Increase fiscal space through environmental fiscal reforms (and induce efficiency, upgrading, and other growth-spurring investments by firms),</li></ul>	<ul style="list-style-type: none"><li>• <b>Amann et al.</b> find that a removal of energy subsidies and subsequent increase of energy prices in Oman leads to firm upgrading and efficiency increases.</li></ul>

# Strategies for developing countries



“Greening now” may...	Evidence in Special Issue
<ul style="list-style-type: none"><li>• Trigger early mover advantages and open up new employment opportunities,</li></ul>	<ul style="list-style-type: none"><li>• <b>Zeng et al.</b> show that eco-industrial parks in China improved not only environmental performance but also competitiveness of firms in these parks.</li><li>• <b>Altenburg et al.</b> (under review): China’s early investments in electric cars and buses and the related traction battery supply chain increased competitiveness of its automotive, bus and battery industries.</li></ul>
<ul style="list-style-type: none"><li>• Provide preferential access to international green funds and trade opportunities,</li></ul>	<ul style="list-style-type: none"><li>• <b>Brandi et al.</b> analyse preferential trade agreements and show that provisions to liberalize trade in environmental goods and services increase green exports from developing countries, in particular if they are already well positioned in these goods.</li></ul>



“Greening now” may...	Evidence in Special Issue
<ul style="list-style-type: none"><li>• Reduce the risk of asset stranding, and</li></ul>	<ul style="list-style-type: none"><li>• <b>Ansari and Holz</b> find considerable risks of asset stranding for the Chinese coal sector as well as the Middle Eastern and Latin American crude oil sectors.</li></ul>
<ul style="list-style-type: none"><li>• Make best use of existing sustainable resources.</li></ul>	<ul style="list-style-type: none"><li>• <b>Probst et al.</b> look at an international RE investment support scheme (GET FiT, Global Energy Transfer Feed-in Tariff), show it has spurred additional investment and decreased power outages in Uganda, thereby enabling increases in firm productivity.</li><li>• <b>Nechifor et al.</b> show that China could gain a cumulative ~590-820 billion USD in GDP by 2030 by adopting steel recycling practices.</li></ul>



Careful design of policies according to country context is key to reap opportunities and mitigate risks:

- **Lema et al.** explore whether RE projects in Africa by Chinese investors create economic co-benefits. They conclude that co-benefits are currently rather small, but could be increased by including provisions for knowledge and capability transfer, creating backward and forward linkages with local industries, and building capacities in infrastructure development which can be used beyond the domain of energy.
- Unless fossil fuel subsidies are removed, in the case of Oman (**Amann et al.**), firms will not make the performance-improving investments.
- **Nechifor et al.** find that for reaching the higher end of GDP gain range, China would need to implement a comprehensive industrial policy mix aimed at improved recycling practices and more adaptive downstream sectors.



- **Zeng et al.** show that strong governmental support and concrete accreditation standards were key to the success of Chinese eco-industrial parks;
- **Siddiqi et al.** show that municipal waste to energy systems can be made self-sustaining investments in Karachi and Delhi if accompanied by policies, such as feed-in tariffs, payments for avoided pollution, and higher waste collection fees.
- **De Melo and Solleder** show that *international* policy matters as well by analysing the effects of differences between lists of environmental goods in WTO negotiations on trade opportunities of developing countries.
- **Mindset change to systematic co-design is needed:** Currently, Ministries of Environment often draft environmental regulations that may burden firms, and Ministries of Trade and Industry design industrial policies that treat the environment as an externality. In most cases, ambitious environmental policies can pay off economically if they are designed to reap economic co-benefits from the very beginning.

# Contributions to the Special Issue



## Latecomer development in a “greening” world: Introduction to the Special Issue

Anna Pegels, Tilman Altenburg

## Leveraging private investment to expand renewable power generation: Evidence on financial additionality and productivity gains from Uganda

Benedict Probst, Lotte Westermann, Laura Díaz Anadón, Andreas Kontoleon

## China’s investments in renewable energy in Africa: Creating co-benefits or just cashing-in?

Rasmus Lema, Padmasai Lakshmi Bhamidipati, Cecilia Gregersen, Ulrich Elmer Hansen, Julian Kirchherr

## The impact of climate vulnerability on firms’ cost of capital and access to finance

Gerhard Kling, Ulrich Volz, Victor Murinde, Sibel Ayas

## China’s green transformation through eco-industrial parks

Douglas Zhihua Zeng, Lei Cheng, Lei Shi, Wilfried Luetkenhorst

## Switching it up: The effect of energy price reforms in Oman

Juergen Amann, Nicola Cantore, Massimiliano Calí, Valentin Todorov, Charles Fang Chin Cheng

## Steel in a circular economy: Global implications of a green shift in China

Victor Nechifor, Alvaro Calzadilla, Raimund Bleischwitz, Matthew Winning, Xu Tian, Arkaitz Usubiaga

## Do environmental provisions in trade agreements make exports from developing countries greener?

Clara Brandi, Jakob Schwab, Axel Berger, Jean-Frédéric Morin

## Barriers to trade in environmental goods: How important they are and what should developing countries expect from their removal

Jaime de Melo, Jean-Marc Solleder

## Between stranded assets and green transformation: Fossil-fuel-producing developing countries towards 2055

Dawud Ansari, Franziska Holz

## Urban waste to energy recovery assessment simulations for developing countries

Afreen Siddiqi, Masahiko Haraguchi, Venkatesh Narayanamurti



Thank you!

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