Securing low-carbon growth strategies in India: Understanding potential policy incentives and barriers through expert analysis

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Aspirations of India’s climate and development policy

Climate Policy

• NAPCC targets & missions: securing energy & resources, arresting ecosystems degradation and climate change
  – Adaptive capacity & mitigations
• Commitment of reducing emission intensity of economy
• Advocating UNFCCC’s Article 2 and Article 3.1 (C-DR)

Development Policy

• Sustaining a rapidly developing economy
  – Macro-economic Issues
  – Globalisation and International Trade
• Inclusive Growth
• Poverty alleviations
India’s emission outlook

- Emits 4.9% of global GHG e-, lowest per-capita in the world - 1.18 tonnes of CO$_2$e, $1/4^{th}$ of global average of 4.38 tCO$_2$e, less than $1/10^{th}$ of those of most developed nations.
- India becomes third largest emitter around 2015. However, India’s contribution in global cumulative emission from 1900-2005 is only 2% (China- 16%, US 25%, EU27-18%).
- CO$_2$ emission jumps from 27 Gt to 42 Gt (Reference Scenario) from 2005 to 2030 globally. China and India account for 56% of this increase (IEA, 2010).
  - In the alternate scenario (efficiency improvements, structural changes in economy and fuel-switching), it becomes around 34 Gt in 2030.
  - India reduces e- by 0.9 Gt.
- In 2030, per-capita e-will double from 2005 level, but will remain only $1/5^{th}$ of the OECD (WRI, 2012).
Development reality

• Raising QoL of almost half a billion people to decent levels
  – 1/3rd of global poor
  – 300 million survive on less than 1$ a day, 69% people make only 2$ a day (World Bank, 2012)
• Energy – ‘quality’ and ‘access’ is a big challenge
  – Per-capita use of electricity is 700 kwh, less than 1/4\textsuperscript{th} of global average of 2752 kwh
  – Bridging the demand-supply gap – 400 million no electricity, peak dd deficit of 13%, T&D losses 30%
  – need 300GW in next 5 years
• Dependence on imported fossil-fuels up by 40% at the end of 12\textsuperscript{th} FYP
### Expert opinion on low-carbon inclusive growth in India

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Senior experts from following organizations were interviewed: DFID, MoEF, TERI, CII, FICCI, Winrock International India, CSTEP, DHI, Prayas, Ecolibrium

(Government: 12%; Research and Policy think tanks: 36%, Academia: 32%, Industries: 20%)
Inclusive growth

• There is no consensus on definition of inclusive growth –
  - The concept is vaguely described, and there are no guidelines as to how it can be made operational.
  - the contribution of low-carbon initiatives being undertaken on inclusive growth is currently unclear.

• Low-carbon initiatives don’t sufficiently exploit co-benefit opportunities of climate mitigation and inclusive growth
Development vs Climate Change

• More than one third of the experts felt that poverty and lack of basic infrastructure are the top two most serious problems constraining India’s growth.

• About 63% of the respondents feel that India should first focus on developmental needs regardless of restricting carbon space as development needs are huge.

• About 16% respondents feel that a determined effort to bring down carbon intensity will impose a high cost burden on India’s economy and constrain growth.
  – 21% remain neutral and 63% disagree.
Low-carbon inclusive growth

• About 73% of the respondents believe that low-carbon growth priorities can be integrated with inclusive growth for better development outcomes.
  – 27% respondents feel that it is better to focus them separately rather than integrate into one objective.

• About 60% respondents feel that investment in low-carbon initiatives will bring about poverty reduction
  – 21% feel that it will reduce poverty more than marginally.
  – Close to 16% of respondents think that investment in LC will not cause poverty reduction.
Institutional set-up to deal with climate actions

• Only 5% of the respondents observe that local bodies and city governments have adequate institutional set-up to deal with climate responsive strategies/actions.
  – 58% respondents felt there is insufficient institutional set up, while 32% feel that there is no institutional set up at all.

• Institutional crisis will expose the climate governance offering a chance for retrofitting and renewal.
Current levels of climate actions and programs being undertaken by different stakeholders

- **Central Government**: 73.68%
- **State Government**: 42.11%
- **ULBs/Municipalities**: 47.37%
- **NGOs**: 57.89%
- **Citizens**: 52.63%
- **Private**: 21.05%

- Doing too much
- Doing about the right amount
- Doing, but not sufficient
- Not doing at all
- Don't know
## Barriers to low-carbon growth

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<td>B</td>
<td>Limited access to private capital</td>
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<tr>
<td>C</td>
<td>Split incentives – cost/benefit mismatch</td>
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<td>D</td>
<td>Cleaner and new technology has negative externalities</td>
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Coalition matrix

Levels of importance

Most important

Coalition matrix

Barriers to low-carbon growth

A
B
C
D
E
F
G
H

Least important

0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
International partnership and support

• 47% of the respondents disagree on a treaty that requires India to legally cut its emissions at the end of the second commitment period (2017).
  – 32% remain neutral while 21% support on binding agreements at the end of Kyoto’s 2nd comm. period

• 80% of respondents support India’s position on getting financial and technical assistance from Annex 1 countries on the basis of historic climate burden and equity.
Performance of international partnership and support in India’s GHG mitigation efforts

- International partnerships: 52.63% Very successful, 42.11% Moderately successful, 5.26% Inadequate
- Bilateral and multilateral funding: 26.32% Very successful, 73.68% Moderately successful, 10.53% Inadequate
- Technology transfer and deployment: 15.79% Very successful, 84.21% Moderately successful, 21.05% Inadequate
- CDM finance: 10.53% Very successful, 15.79% Moderately successful, 10.53% Inadequate
Top low-carbon options that India should adopt considering inclusive growth targets and carbon space requirements in the future
GOAL: reduction of GHG emissions and energy intensity in transport sector and promotion of inclusive growth

CRITERIA

ESE: Emission Standards and Fuel Efficiency
- Improving the emission standards and fuel efficiency (miles/liter) of new vehicles (A1)

TIPR: Tax, Incentives and Pricing Regulation
- Introduction of carbon-efficient electric and hybrid vehicles (A2)
- Promoting congestion pricing to reduce traffic volume/density (A3)
- Parking regulation through enhanced fees/zoning (A4)

PTI: Public Transport Infrastructure
- Raising road taxes and emission taxes depending upon vehicle type (A5)
- Better and affordable public transport such as metro rails and metro buses (A6)

ITLP: Integrated Transport-Land use Planning
- Better transport corridors within the urban city and non-urban inter-city transport (A7)

FTM: Freight Transport Management
- Better integration of transport planning and land use - zoning, scheduling and space coordination (A8)
- Developing bicycle lane in new urban areas and promoting non-motorised transport (NTM) (A9)
- Shifting freight transport from road to railways (A10)

ALTERNATIVES
A1: improving the emission standards and fuel-efficiency (miles/liter) of new vehicles
A2: introduction of carbon-efficient electric and hybrid vehicles
A3: promoting congestion pricing to reduce traffic volume/density
A4: parking regulation through enhanced fees/zoning
A5: raising road taxes and emission taxes depending upon the vehicle type
A6: better and affordable public transport such as metro rails and metro buses
A7: better transport corridors within the urban city and non-urban inter-city transport
A8: better integration of transport planning and land-use zoning, scheduling and space coordination
A9: developing bicycle lane in new urban areas and promoting non-motorised transport (NMT)
A10: shifting fright transport from road to railways

Figure: Weights of criteria for evaluation of the transport policy

Figure: Relative priorities for alternate policy options for reducing emission and energy intensity in transport sector as well as promoting inclusive growth
Conclusions

• India’s low-carbon intensity in part is due to
  – Inherently low-carbon lifestyle patterns, high use of NMT and public transport, energy and infrastructure poverty

• India’s energy-related emissions are basically subsistence emissions and need to grow to alleviate poverty and raise QoL standards
  – BAU trends don’t favour inclusive growth.
  – Low-carbon initiatives don’t sufficiently exploit co-benefit opportunities of climate mitigation and inclusive growth
• The trends of declining carbon and energy intensity will continue, however, weakened by unsustainable patterns of development
  – High growth of private vehicles, western life styles and models of growth, persistent inefficiency in the electricity supply
• Some promising initiatives have been taken to initiate low-carbon growth –
  – RES, EE, demand management
  – Sizable potential for low-carbon growth is yet untapped
Low-carbon inclusive growth can reduce poverty and inequality

The emission impact of the more inclusive growth is unclear.
- Some sectors do better than others
- With prioritized investments in power, transport and housing sector – the growth could be more inclusive.

Inclusive Growth

- Affordable public transport
- Clean Cooking stoves
- Non-motorised transport
- Off-grid RE
- Energy efficient affordable housing
Thank you!

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