Feasibility of Enhancing India's Nationally Determined Contribution

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Background

- Evaluate the political feasibility to implement and enhance Nationally Determined Contributions (NDCs) such that the rise of global temperature is limited to 2°C above pre-industrial levels (or less).
- Apply the KAPSARC Toolkit for Behavioral Analysis (KTAB) to simulate the domestic collective decision-making processes (CDMP) within each the top 5 emitters, as well as the global CDMP among Paris Agreement signatories. Six independent, but related studies:
  - India
  - China
  - European Union (EU)
  - US
  - Russia

KTAB is a platform to build models of CDMPs.

- e.g. bargaining, generalized voting models, political decision making, and more.
- The KTAB model used in this study simulates how actors strategically attempt to influence each other to obtain the best possible outcome, from their perspective.
- Actors include political leaders, advocacy groups, and all relevant stakeholders.
- The simulation utilizes game theoretic and decision theoretic principles to capture the "bargaining" process, i.e. the evolution of advocacy over time with respect to some issue.
- Data are collected through structured interviews with subject matter experts.

Introduction

Factors affecting India climate change policy

- Ranks 3rd in total GHG emissions
- large population and high rate of poverty, India is among the countries with the lowest per capita emissions
- among the most vulnerable countries to climate impacts
- Indian government must also consider improved energy access and sustained economic growth.

Climate Actions in India

- 2008:National Action Plan on Climate Change (8 National Missions)
- 2009:Copenhagen Pledge: to reduce the emissions intensity of its GDP by 20-25 % by 2020 compared to the 2005 level
- 2015: 33 states introduced state action plan for climate change.
- 2015: India introduced its first NDC and committed to reduce the emissions intensity of its GDP by 33 to 35 percent by 2030 compared to the 2005 level with 7 other commitments.

Process for Developing NDC by India

- Multiple consultations with Ministries, NITI Aayog, State governments, Industry Associations, Civil Society Groups, Academic Institutions and Think tanks
- Complex GHGs emission modellings studies carried out by MoEFCC
- Consultations with members of PM Council on Climate Change
- Prime Minister level consultation with Ministers
- Based on existing & contemplated plans, policies & programs
- National & State Action Plans for Climate Change lay the foundation
- Planning ahead over a 15year frame– instead of 5 year

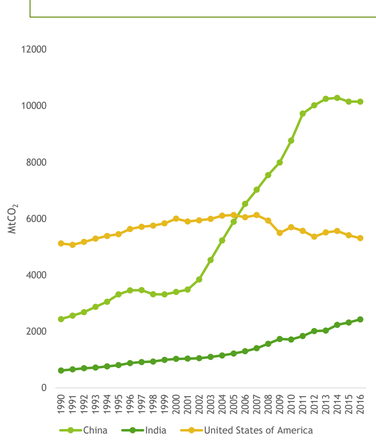


Figure 1. Fossil fuel CO2 emissions

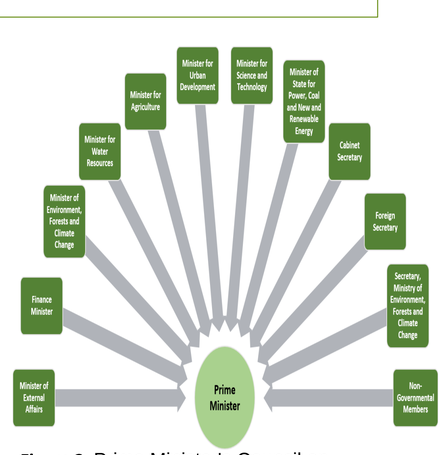
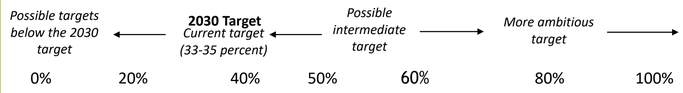


Figure 2. Prime Minister's Council on Climate Change

Method

This study will evaluate the political feasibility of reaching an new agreement on the mid-century target. How ambitious or conservative India's target will be?

What are stakeholders' positions on India's 2050 target to reduce emissions intensity of its GDP?



The data for this study was collected through interviews with 8 subject matter experts in New Delhi on May 2018. We identified the key actors involved in the decision-making process for our specific question. The list of actors for this study included the relevant ministries, energy companies, energy industries and think tanks involved in climate change policy making in India.

Position: Defined as the actors' advocacy with respect to support for or opposition to a more ambitious emissions reduction target in the next framework package?

Influence: the relative degree of political power for each actor.

Salience: the relative priority each actor assigns to the new emissions reduction target as compared with other issues over which it must exert influence.

Results

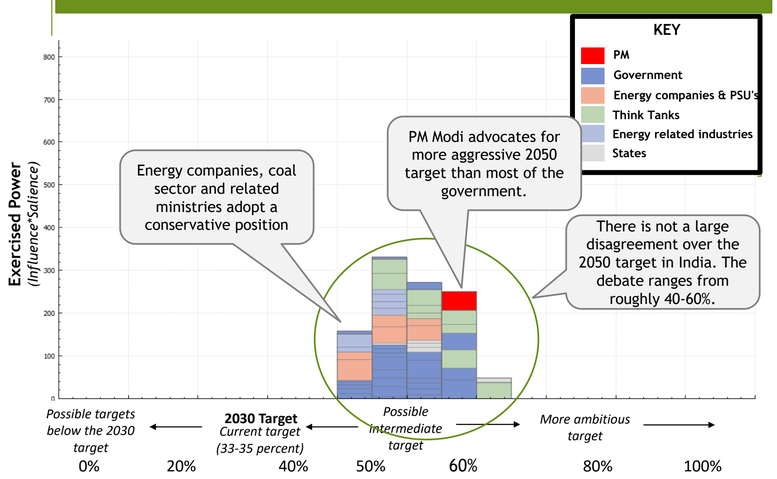


Figure 3. Position Spectrum of Actors, Weighted by Exercised Power at turn 0

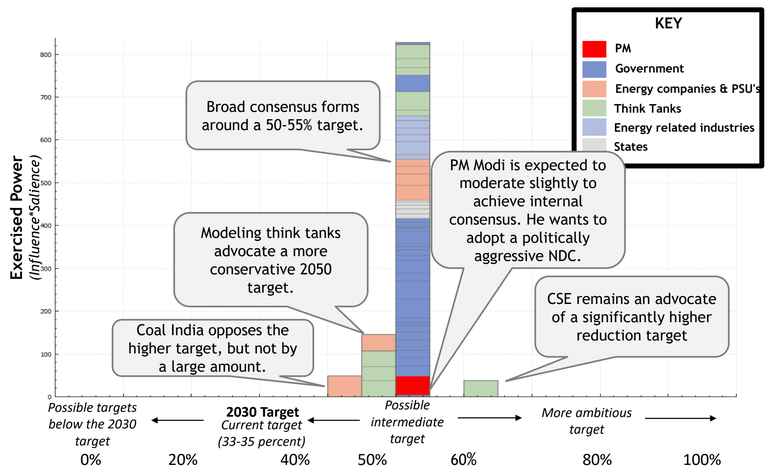


Figure 4. Position Spectrum of Actors, Weighted by Exercised Power at turn 15

Table 1. Baseline Dataset: Weighted Average of Expert Inputs

Actor	Influence	Position	Salience
President	18.4	45	27.4
Vice President	16.4	45	27.4
Prime Minister	81	55	54
Lok Sabha	74	47	33
Raj Sabha	61	47	32
Bharatiya Janata Party (BJP)	53	54	31.4
Indian National Congress (INC)	34	52	27.4
External Affairs	49	51	29
Commerce and Industry	52	49	39
Finance and Corporate Affairs	42	51	34
Agriculture and Farmers Welfare	30	44.6	23
Human Resource Development	31	52	34
Science and Technology Earth Sciences Environment Forest and Climate Change	68	55.6	65
Coal and Railways	70	51	60
Road Transport and Highways Shipping and Water Resources River Development and Ganga Rejuvenation	48	52	39
Petroleum and Natural Gas and Skill Development and Entrepreneurship	64	47	46
Chemicals and Fertilizers and Parliamentary Affairs	35	43	34
Ministry of Steel	39	43	32
Heavy Industries and Public Enterprises	35	43.4	24
Ministry of Rural Development Ministry of Panchayati Raj Ministry of Mines	27	44	24
MoS Power and New and Renewable Energy	46	55	60
MoS Labour and Employment	34	46	27
MoS Development of North Eastern Region	24	44.5	15
MoS Department of Atomic Energy and Space and Personnel Public Grievances and Pensions and Prime Ministers Office	30	48	32
MoS Ministry of Chemicals and Fertilizers	33	46	27
Gujarat	27	60	39
Karnataka	30	53	38
Maharashtra	26	50	35
Tamil Nadu	20	52	36
Uttar Pradesh	17.5	48	26
Coal India	74	43	66
National Thermal Power Corporation	62	47	62
Ministry of Power PSUs	60	52	58
Ministry of Petroleum and Natural Gas PSUs	46	49	58
Ministry of Coal PSUs	35	41.25	51
Department of Atomic Energy PSUs	36	50	44
Petroleum and chemicals industry	27	43	41
Coal industry	47	44	65
Steel industry	38	47	43
Cement industry	36	49	43
Mining industry	34	46	50
Agriculture industry	30	45	38
Central Power Research Institute (CPRI)	34.2	50	39.2
The Energy and Resources Institute (TERI)	60.4	57.2	70.8
National Institution for Transforming India (NITI)	62.1	55.8	62.5
World Wide Fund India (WWF)	32.8	54.7	54.2
Indian Environmental Society (IES)	35.3	57.2	59.2
Centre for Science and Environment (CSE)	53.3	62.2	70.8
Center for Policy Research (CPR)	49.2	55.5	65.8
Center for Study of Science, Technology and Policy (CSTEP)	52.5	48.8	72.5
Integrated Research and Action for Development (IRADE)	46.3	46.3	70
Council On Energy, Environment and Water (CEEW)	48.8	50	75

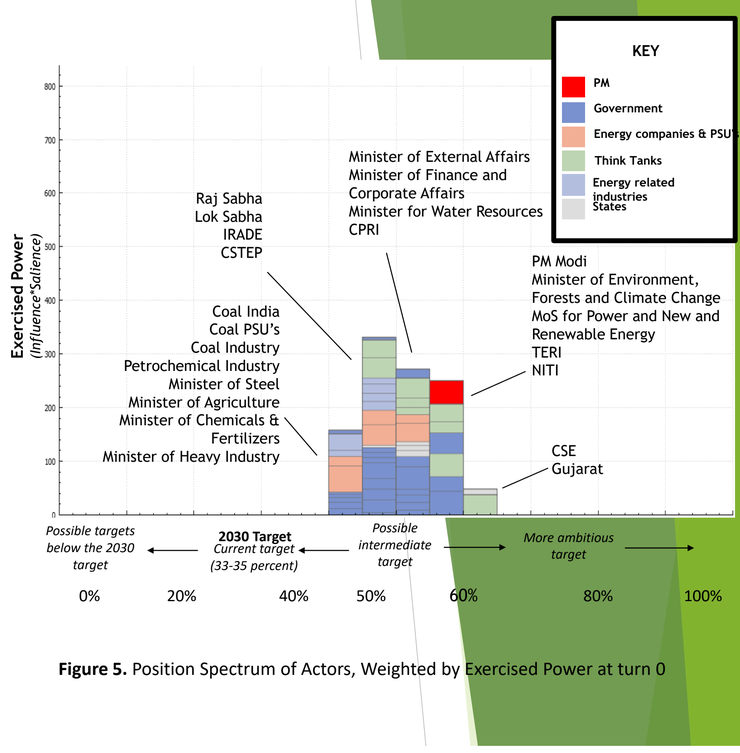


Figure 5. Position Spectrum of Actors, Weighted by Exercised Power at turn 0

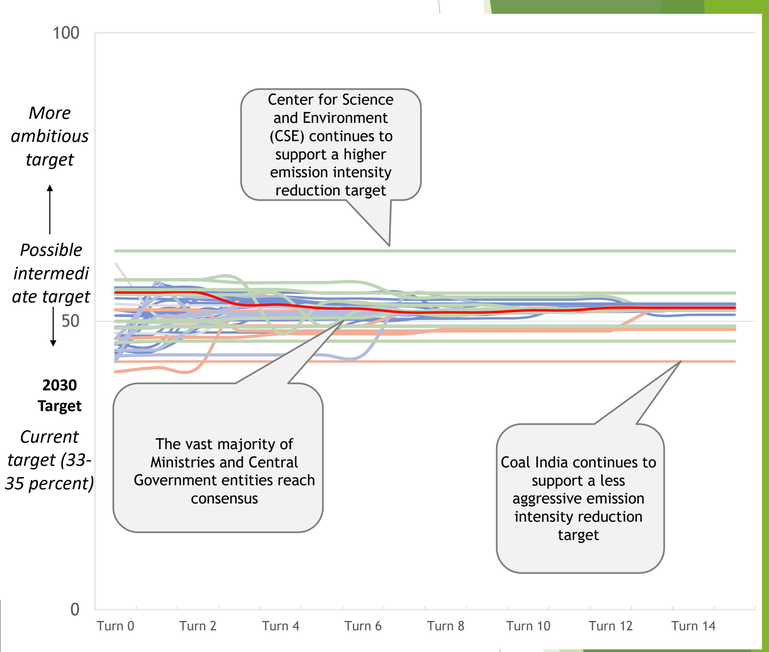


Figure 6. Simulated Change in Actor Positions, by Turn

Conclusions

- Coal India position remains conservative towards increasing the energy intensity target.
- Energy PSUs and energy-intensive sectors initially advocate limited enhancement of the target, but they soon join the consensus with influential actors. (Ministries)
- Think Tanks involved in modeling of energy intensity targets argue for a more achievable target. The Prime Minister builds consensus for a more aggressive target because of political ambitions.
- As a less influential actor in the policy framework with high salience, CSE remains an advocate for a substantially larger reduction target.

This desire for geopolitical positioning is balanced against the primary policy objectives: energy access to the entire population while guaranteeing economic growth. As a result, climate change is a secondary objective.

Although India's plans and policies on promoting renewable energy and energy efficiency are commendable, a strong institutional framework is needed to implement these policies while at the same time building up capacity and raising awareness of the risks posed by climate change. Furthermore, the active participation of Indian states is needed in order to achieve India's climate targets.

Independent organizations play a crucial role in shaping climate policy, and their efforts have led to more progressive climate change policies. Nevertheless, the challenge remains for India to develop policies that marry the need for sustainable development while at the same time addressing the climate.

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