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State of Environmental Clearances in India

Procedures, Timelines and Delays across Sectors and States

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A report on 'State of Environmental Clearances in India: Procedures, Timelines and Delays across Sectors and States'.

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The detailed data for analysis for this research has been accessed from the website of Ministry of Environment, Forest and Climate Change. The authors take no responsibility of any errors and omissions in the downloaded dataset, as well as of any mistaken conclusion based on incorrect data. Given the validity of data, the authors take full responsibility of the report and various aspects of it.

The Council on Energy, Environment and Water (http://ceew.in/) is an independent, not-for-profit policy research institution. CEEW addresses pressing global challenges through an integrated and internationally focused approach. It does so through high quality research, partnerships with public and private institutions, and engagement with and outreach to the wider public. The International Centre for Climate Governance has ranked CEEW as India's top climate change think-tank two years in a row. In 2014, the Global Go To Think Tank Index ranked CEEW 1st in India in three categories.

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ABOUT CEEW

COUNCIL ON ENERGY, ENVIRONMENT AND WATER

The Council on Energy, Environment and Water (http://ceew.in/) is an independent, not-for-profit policy research institution. CEEW addresses pressing global challenges through an integrated and internationally focused approach. It does so through high quality research, partnerships with public and private institutions, and engagement with and outreach to the wider public. The International Centre for Climate Governance has **ranked CEEW as India's top climate change think-tank two years in a row**. In 2014, the Global Go To Think Tank Index ranked CEEW **1st in India in three categories**.

In four years of operations, CEEW has engaged in more than 60 research projects, published more than 35 peer-reviewed policy reports and papers, advised governments around the world over 80 times, engaged with industry to encourage investments in clean technologies and improve efficiency in resource use, promoted bilateral and multilateral initiatives between governments on more than 30 occasions, helped state governments with water and irrigation reforms, and organised more than 75 seminars and conferences.

CEEW's major completed projects: 584-page National Water Resources Framework Study for India's 12th Five Year Plan; India's first report on global governance, submitted to the National Security Adviser; foreign policy implications for resource security; India's power sector reforms; first independent assessment of India's solar mission; India's green industrial policy; resource nexus, and strategic industries and technologies for India's National Security Advisory Board; $125 million India-U.S. Joint Clean Energy R&D Centers; business case for phasing down HFCs; geoengineering governance (with UK's Royal Society and the IPCC); decentralised energy in India; energy storage technologies; Maharashtra-Guangdong partnership on sustainability; clean energy subsidies (for the Rio+20 Summit); reports on climate finance; financial instruments for energy access for the World Bank; irrigation reform for Bihar; multi-stakeholder initiative for urban water management; Swachh Bharat; environmental clearances; nuclear power and low-carbon pathways; and electric rail transport.

CEEW's **current projects include**: the Clean Energy Access Network (CLEAN) of hundreds of decentralised clean energy firms; the Indian Alliance on Health and Pollution; low-carbon rural development; modelling long-term energy scenarios; modelling energy-water nexus; coal power technology upgradation; India's renewable energy roadmap; energy access surveys; energy subsidies reform; supporting India's National Water Mission; collective action for water security; business case for energy efficiency, and emissions reductions in the cement industry; assessing climate risk; modelling HFC emissions; advising on run up to climate negotiations (COP-21) in Paris.

CEEW's **work covers all levels of governance**: at the national level, resource efficiency and security, water resources, and renewable energy; at the global/regional level, sustainability finance, energy-trade-climate linkages, technology horizons, and bilateral collaborations, with Bhutan, China, Iceland, Israel, Pakistan, Singapore, and the US; and at the state/local level, CEEW develops integrated energy, environment and water plans, and facilitates industry action to reduce emissions or increase R&D investments in clean technologies.

ABOUT THE AUTHORS

Dr Vaibhav Chaturvedi

Dr Vaibhav Chaturvedi is a Research Fellow at CEEW. Prior to CEEW, Vaibhav worked as a Post Doctoral Research Associate at the Joint Global Change Research Institute (JGCRI), collaboration between the Pacific Northwest National Laboratory, USA and the University of Maryland, College Park, USA. He holds a PhD in Economics from the Indian Institute of Management Ahmedabad, India and Masters in Forest Management from the Indian Institute of Forest Management Bhopal, India.

His research is focused on Indian and global energy and climate change mitigation policy issues- carbon dioxide emission stabilization pathways, low carbon and sustainable energy policies, modelling energy demand, and water-energy nexus within the integrated assessment modelling framework of the Global Change Assessment Model (GCAM). Vaibhav's recent work includes analyzing nuclear energy scenarios for India, Indian HFC emission scenarios, climate policy-agriculture water interactions, transportation energy scenarios, model evaluation, investment implications for the global electricity sector, and modelling the building sector energy demand scenarios for India. Vaibhav has been actively involved in global model comparison exercises like Asian Modelling Exercise (AME) and Energy Modelling Forum (EMF).

At CEEW, Vaibhav's research focuses on India within the domain of energy and climate policy, mid-range and long-range energy scenarios, HFC emission scenarios, urban energy demand pathways, and energy-water inter relationship. He has been actively publishing in leading international energy and climate policy journals.

Vaibhav Gupta

Vaibhav Gupta is a Programme Officer at Council on Energy, Environment and Water (CEEW). At CEEW, his research engagements primarily focuses on national energy and resource security perspectives such as critical minerals for India’s manufacturing economy, strategic industries and enabling technologies for India’s sustainable development, vulnerability in India’s energy supply needs etc.

Prior to CEEW, he has worked with Gujarat Mineral Development Corporation Limited (A government of Gujarat undertaking) as an environmental engineer at opencast lignite mining project(s) in Kutch region. He has extensive experience in planning environment management system and evaluation of aspect and impact of mining activities on the environment. He did his Masters in Environmental Science & Engineering from Indian School of Mines, Dhanbad, where he was part of a team in design of particulate emission control system for beehive coke oven industries situated in Dhanbad city, enabling them in meeting the prescribed standards of pollution control board.

He holds a post graduate diploma in Environmental Law from National Law University of India and is associated with “Mining Engineers association of India” as a life member.

Dr Nirmalya Choudhury

Dr Nirmalya Choudhury is an Associate Fellow with the Council on Energy Environment and Water. He is currently a faculty with the Tata Institute of Social Sciences. He completed his Doctoral Studies from the Technical University of Berlin on hydropower development in India and its implications on social and environmental sustainability. He was also a part of an international research group within the German think-tank, the German Development Institute (DIE), and worked on sustainable hydropower development and its social and environmental implications in Brazil, China, India and Turkey. He has written extensively on electricity, hydroelectricity in India, environmental impact assessment and public involvement on environmental decision-making. His research has been published as policy papers and as peer-reviewed journal articles.

In India he has worked with the International Water Management (IWMI) in the IWMI-Tata Water Policy Programme. His work in the IWMI-Tata Water Policy Programme focused on institutional reform in the Indian irrigation sector, specifically on the role of thepanchayats, irrigation cooperatives and Water User Associations in decentralised irrigation management. He is experienced in designing multi-location research in partnership mode and has experience in undertaking field research in around ten states in the country. He also has experience of working with leading development cooperation agencies in the country. He has worked with the Sir Ratan Tata Trust in their Central India Initiative programme and later worked with the Collectives for Integrated Livelihood Initiatives. During this period he worked on water-centric livelihood enhancement programmes for the tribal population in Central India, particularly on the restoration of traditional flow irrigation systems in the region.

Sonali Mittra

Sonali Mittra was a Junior Research Associate at the Council on Energy, Environment and Water (CEEW), India and is currently working with the Observer Research Foundation as an Associate Fellow. Her work in the past few years has been dedicated to the nexus between energy-water security, specifically transboundary water management and diplomacy, hydropower, and environmental security. Before joining CEEW, Sonali was working with Chatham House, London as the project consultant and India-lead for Sino-Indian Water Collaboration project. Her recent research interests include: National water governance strategies, participatory approaches to water management, political sociology of water, water conflicts, water diplomacy and South Asian water tower.

She co-edited a book: Perspectives on Water - Constructing alternative narratives in 2012 published by the academic foundation, delineating different case studies from South Asia to assess present socio-economic realities that surround water management. She has been a regular editorial contributor to the Energy News Monitor (Observer Research Foundation) on topics of hydropower and renewable energy. She has authored policy recommendation reports and academic papers on Ganga and Indus basin.

Sonali has done her graduation in Botany Hons from Sri Venkateswara College, Delhi University. She completed her masters in Environmental Impact Assessment and Management from University of Manchester, United Kingdom. Sonali holds a post graduate diploma in Environmental Law and management from Indian Law Institute, New Delhi, India. She has worked as editor trainee for IPR drafting and interned with Mont Riont Foundation, Alzheimer's Research Institute, Switzerland.

Dr Arunabha Ghosh

Arunabha Ghosh is CEO of the Council on Energy, Environment and Water (CEEW), an independent, policy research institution in India. Arunabha conceptualised and has led CEEW (http://ceew.in), since its founding in August 2010, to the top-ranked climate think-tank in India for the last two years in a row. In 2014 CEEW was ranked first in India across three categories in the Global Go To Think Tank Index. With experience in 35 countries and having previously worked at Princeton, Oxford, UNDP and WTO, he advises governments, industry and civil society around the world on: energy and resources security; renewable energy; water governance; climate governance (including financing and technology); energy-trade-climate linkages; and international regime design. He is a World Economic Forum *Young Global Leader*, Asia Society *Asia 21 Young Leader*, and fellow of the *Aspen Global Leadership Network*. He is also a founding board member of the the Clean Energy Access Network (CLEAN). He writes a monthly column, Inflexion Points, in the *Business Standard*.

Dr Ghosh is member of Track II dialogues with the United States (co-chair of the taskforce on economic relations for the Aspen Strategy Dialogue), Bhutan, Israel, Pakistan and Singapore. He formulated the Maharashtra-Guangdong Partnership on Sustainability. Dr Ghosh is associated with Oxford's Global Economic Governance Programme and Oxford's Smith School of Enterprise & the Environment. He was Global Leaders Fellow at Princeton's Woodrow Wilson School and at Oxford's Department of Politics and International Relations. He was Policy Specialist at the United Nations Development Programme (New York) and worked at the World Trade Organization (Geneva). He is on the Board of the International Centre for Trade & Sustainable Development.

One of his most recent publications is *Three Mantras for India's Resource Security*, on the foreign policy imperatives for India. Others include: *Understanding Complexity, Anticipating Change* (India's first report on global governance, submitted to the National Security Adviser); *National Water Resources Framework Study* (for India's 12th Five Year Plan); *Strategic Industries and Emerging Technologies* (for the National Security Advisory Board);

Laying the Foundation of a Bright Future (first evaluation of India's solar mission); *Making the UN Secretary General's Climate Summit Count*; *India's Resource Nexus* (also for NSAB); *Governing Clean Energy Subsidies*; *RE+: Renewables Beyond Electricity*; *Urban Water and Sanitation in India*; *Institutional Reforms for Improved Service Delivery in Bihar* (on irrigation); *Harnessing the Power Shift* (on climate finance); *International Cooperation and the Governance of Geoengineering* (for the IPCC); *Collective Action for Water Security and Sustainability*; and three UNDP *Human Development Reports*. He has also led research on trade, intellectual property, financial crises, development assistance, indigenous people, extremism and conflict.

Dr Ghosh has presented to heads of state, India's Parliament, the European Parliament, Brazil's Senate, and other legislatures; trained ministers in Central Asia; and hosted a documentary on water set out of Africa, *Diary of Jay-Z: Water for Life*, honoured at the Webby Awards. His op-eds have appeared in the *Times of India, The Hindu, India Today, Indian Express, Financial Express, Mint, Seminar, and Tehelka*. He has delivered public lectures in several countries, and commented on All India Radio, ABC (Australia), BBC, CNN-IBN, NDTV (India) and Voice of America, among other broadcasters.

Arunabha has been consulted by the Asian Development Bank, Commonwealth Secretariat (London), DFID (UK), IDRC (Canada), International Energy Agency, International Finance Corporation, IPCC, Oxfam International, Transparency International, UK Ministry of Justice, USAID, and the World Bank. He co-chaired the international governance working group for the UK Royal Society's Solar Radiation Management Governance Initiative. He has been an Editor of the *Journal of Human Development and Capabilities*.

Arunabha holds a doctorate and M.Phil. in international relations from Oxford (Clarendon Scholar and Marvin Bower Scholar); an M.A. (First Class) in Philosophy, Politics and Economics (Balliol College, Oxford; Radhakrishnan Scholar); and topped Economics from St. Stephen's College, Delhi University.

Rudresh Kumar Sugam

Rudresh Kumar Sugam is a Junior Research Associate at the Council of Energy, Environment and Water (CEEW), India. He has around five years of working experience in the water sector. He has done several projects involving extensive primary and secondary research. Recently, he completed a project focussing on drivers of Collective Action for Water Security and Sustainability. He has done a project on urban water management in India, which involved a series of multi-stakeholder round table discussions for identifying challenges and opportunities in the urban water sector in India. He also conducted an evidence-based research for the Minor Water Resources Department, Government of Bihar exploring institutional reforms that are required in minor irrigation to achieve agricultural growth targets set by the State. He has worked as Project Executive in Asian Consulting Engineers Pvt. Ltd., Delhi, where he has executed several projects of "Source Vulnerability Assessment and Source Water Protection Plan" for the coca cola bottling plants located in different states

of India. His interest areas include food-water-energy nexus, land use planning, impact of climate change on water resources, integrated watershed management, and sustainable development.

His educational qualifications include a Post Graduate degree in Water Resources Management (gold medalist) from The Energy and Resources Institute (TERI) University, Delhi and a B.Sc. in Botany from Kirori Mal College, University of Delhi. His post-graduate dissertation was on estimating storm water pond nitrogen and phosphate removal efficiency with the Yale School of Forestry and Environment Studies, Yale University, United States. He has done trainings on Hydrological Modelling and SWAT modelling in National Water Academy, Pune and IIT-Delhi, respectively. He has done a Post Graduate Diploma in Urban Environmental Management & Law from WWF and NLU, Delhi. Recently, he participated in an Indo-Bangladesh IUCN sponsored two weeks programme Water Futures II: A Dialogue for Young Scholars and Professionals to understand and debate on trans-boundary water management concern.

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EXECUTIVE SUMMARY

Trade-off between economic development and environmental protection becomes critical for any country aspiring for high growth for achieving development objectives. Within India, "Green clearances", an instrument to balance this trade-off, has been subjected to severe criticism for deterring the industrial development process and impacting economic growth. How much truth is there to such perceptions? Which aspects of the process of securing environmental and forest clearance need attention and how can these be addressed? Are there particular states or industries where the challenges are more acute? This study was undertaken to comprehend these contours of development.

We start with describing the environmental clearance process as it stands. We then provide our definition of 'delays' for providing objectivity to our analysis, without ascribing any value judgement to our definition. This is followed by results from our analysis across industrial sectors (industry, mining, coal mining, thermal power, infrastructure, construction, hydropower and nuclear power) and states (Andhra Pradesh, Bihar, Chhattisgarh, Gujarat, Jharkhand, Karnataka, Maharashtra, Madhya Pradesh, Tamil Nadu, Uttar Pradesh, West Bengal, and the north-eastern states taken together). Our research analyses the state of environment clearances at two levels. First, we analyse the average time taken by projects for getting the required "green clearances" through macro-data analysis. For this we analyse the detailed database of approved (8055) and uncleared (3119) projects available from the website of Ministry of Environment, Forest and Climate Change. The database spans project applications between 2003 and 2014 July. Second, we investigate the reasons for the delays in the environmental clearance process by conducting a textual analysis of the last five meetings of Expert Appraisal Committee (EAC) held in between 2013-2014. Here we focus on bottom up information from a sample of 120 projects for understanding the key reasons for delays in the environmental clearance process. We then provide a list of highly polluting industry as per the government's classification and finally highlight key problems based on our analysis and recommendations to address these.

The key findings of our research are:

- Though a majority of projects across sectors and states get environmental clearance within a year, for projects that don't get approved, the time taken for clearance is huge.
- For projects facing clearance delays, the process of collecting the required data and information, conducting Environmental Impact Assessment (EIA), and required document submission requires most time and is the reason for major delays across sectors. The stage up to approval of Terms of Reference (ToR) and the stages after submission of documents for final clearance take relatively shorter time.
- A large part of projects across sectors, especially under the industrial category (90%), are pending due to forest clearances.
- In the north-eastern states of India, more than 50% of projects have been rejected, returned or withdrawn under the forest clearance process.

- As per our definition of delays i.e. 940 days, 40-60% of projects in thermal power, hydropower, coal mining and nuclear power sectors have faced delays during the stage of EIA, public hearing and submission of required data and information to the committee.
- In Bihar, Chhattisgarh, West Bengal and north-eastern states, 60%-70% of projects have been in the clearance pipeline for at least two years since their date of application, and many of these have been in the waiting process for more than three years.
- As per our definition of delays i.e. 940 days, at least 40% projects in Chhattisgarh are facing delays.
- From the textual analysis, it was evident that the delays in the clearance process cannot solely be blamed on the extant laws or administrative barriers.
- Non-compliance with the TOR, incorrect information submission, insufficient data analysis and submission of wrong format and out-dated forms etc featured regularly across the 120 projects reviewed in the EAC meeting reports.
- Delay in approval from other ministries or departments as per the project requirements caused significant postponement especially for coal mining, hydropower and nuclear power projects. These approvals ranged from that of SPCB, Ministry of Coal, state revenue departments, Panchayat Committees etc.

Our recommendations are centred around the three main problems that we identified: (i) major delays happening after the grant of ToR and during the process of data/information collection for EIA, conducting public hearing and required document submission; (ii) issues related to the public hearing process, and (iii) issues related to information management for effective delivery of the environmental clearance process. Following are our key recommendations:

i. Creation of an Environmental Clearance Service Cell within MoEFCC to assist project developers in adhering to the specified guidelines as per the ToR, to assist in getting clearances across various departments and ministries, and as a manager of detailed information system aimed at regular monitoring and analysis of projects at the individual level and from a macro perspective.
ii. Overhauling the public hearing process to a longer term public participation process that seeks to build public trust, address concerns and institutionalizing EIA follow up process for smoother conclusion of the public participation process
iii. Creation of an Environmental Clearance Information System (ECIS) within MoEFCC for regular reporting, analysis and monitoring of projects, both at the level of individual projects and all projects taken together within different categories.

1. INTRODUCTION

India's manufacturing sector has struggled to increase its contribution to GDP (at 15%) and infrastructure investments have also not kept pace with the need. This economic stagnation is perceived by many to be a result of stalled project activities and hurdles in the investment process, despite increasing opportunities for domestic and foreign investment. How much truth is there to such perceptions? Which aspects of the process of securing environmental and forest clearance need attention and how can these be addressed? Are there particular states or industries where the challenges are more acute?

This document provides an assessment of the state of environmental and forest clearances as prescribed under respective Acts, with the larger aim of identifying key bottlenecks in the complete chain of applying for and securing clearance for industrial and infrastructure projects. The scope of this evaluation is only limited to the dimensions of "green clearances" (environmental and related clearances) which are required before any project activity commences. Our research analyses the state of environment clearances at two levels. First, we analyse the average time taken by projects for getting the required "green clearances" through macro-data analysis. For this we analyse the detailed database of approved (8055) and uncleared (3119) projects available from the website of MoEFCC. The database spans project applications between 2003 and 2014 July. Second, we investigate the reasons for the delays in the environmental clearance process, by conducting a textual analysis of the minutes of the Expert Appraisal Committee (EAC) meetings held in 2014. Here we focus on bottom up information from a sample of 120 projects for understanding the key reasons for delays in the environmental clearance process.

We begin with highlighting the process of clearance as it exists, define 'delays' for our analysis, analyse delays at the level of industrial sectors and states, analyse reasons highlighted in the EAC meetings for delays across sample projects, provide a list of polluting industries, and finally suggest interventions for addressing the key problems and challenges our research has highlighted.

2. PROCESS OF GREEN CLEARANCES

The term "green clearance" applies in the context of clearances required with aim of protecting the environment and ecology and to sustain it for the future. The applicability of such clearances depend upon the operation's size as well as location of the project activity under consideration. CEEW identifies the following clearances as under "green clearances", as illustrated in Figure 1:

A. **Environmental Clearance (EC)**: In India any new developmental project activity or expansion of existing projects across a range of sectors, is required to obtain a prior EC from the central government or the State or Union territory Environment Impact Assessment Authority (SEIAA), whichever is applicable[1].

B. **Forest Clearance (FC)**: Any project activity which involves diversion of a forest land and is unavoidable to carry without diversion, requires this clearance under the Forest (Conservation) Act, 1980.

C. **Wildlife Clearance (WC)**: Any project activity falling either in the core zone (for projects of social welfare/ national importance only), or the buffer zone comprising ten km radii of the core zone boundary (this varies with each protected zone), requires prior wildlife clearance before applying for the environmental clearance. The National Board for Wildlife (NBWL) finally appraises the projects requiring WC through its time to time standing committee meetings. Information on the frequency of standing committee meeting for the review of pending projects is unavailable publicly, and is unspecified as per our understanding. The expiry of tenure for previous committee members made it non-functional since September 2013 till present,[2] when a new committee is formed very recently in September 2014.This itself represents avoidable process delay due to the system inefficiency in appointment of new committee, where 233 projects are still pending for wildlife clearance[3] and hampered to proceed for further clearance procedures.

   The clearance under **Coastal Regulation Zone (CRZ)** notification, being highly site specific, has not been considered as a part of this analysis.

[1] As per the process specified under Environment Impact Assessment (EIA) notification, 2006 provided by Ministry of Environment & Forest and Climate Change (MOEFCC)

[2] Live mint (2013), "Many projects delayed as wait for new wildlife board continues," available at http://www.livemint.com/Politics/d5kv5IuSPcpxTD2C3ubCgN/Many-projects-delayed-as-wait-for-new-wildlife-board-continu.html ; accessed 02 September 2014.

[3] The pioneer (2014), "NBWL RECONSTITUTED WITHOUT MANDATORY NON-GOVT MEMBERS?," available at http://www.dailypioneer.com/nation/nbwl-reconstituted-without-mandatory-non-govt-members.html; accessed 30 September 2014.

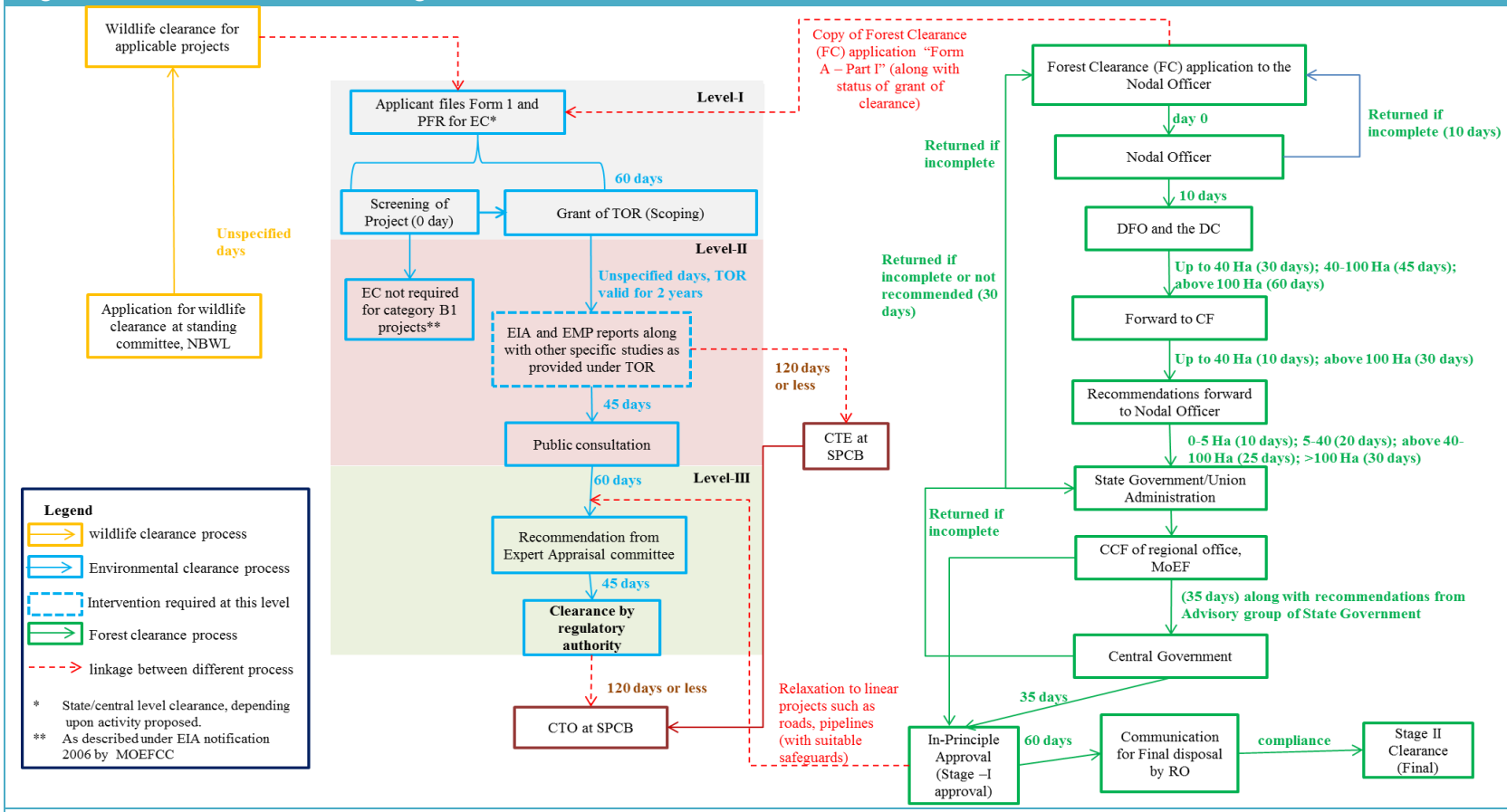
Figure 1 depicts the process of green clearance in India and the inter-linkage between them.

- There are three important committees- Standing Committee under National Board for Wildlife (NBWL), Forest Appraisal Committee (FAC), and Expert Appraisal Committee (EAC). All have fixed tenure.
- If a proposed project qualifies for wildlife clearance, prior wildlife clearance has to be obtained, before applying for the environmental clearance.
- The forest clearance process can run in parallel to the environmental clearance process; however the applicant has to show proof of the forest clearance application while applying for the environmental clearance.
- Stage I (in principle approval) of forest clearance entails getting go ahead from respective committees and departments as deemed by the law. Stage II is the final approval towards forest clearance after the applicant transfers required funds for compensatory afforestation (against the diverted land) followed by allotment of land to the project proponent.
- Stage I Forest Clearance is mandatory to obtain conditional environmental clearance[4] from the EAC. Grant of forest clearance is subject to Stage II being cleared.
- Environmental Impact Assessment (EIA) is a part of the environmental clearance process. EIA has to be conducted by a National Accreditation Board of Education and Training (NABET) accredited agency on behalf of the project proponent. A project proponent can apply for consent to Establish (CTE) from the respective State/UT Pollution Control Board (SPCBs) on the basis of baseline monitoring data and proposed project activities mentioned in the EIA report.
- After obtaining environmental clearance from MoEFCC, project proponent is required to further obtain a 'Consent to Operate (CTO)' i.e. permission to start production from the respective SPCBs.[5] SPCBs monitor the project's environmental performance during the operational lifetime of the project. Each project is required to renew CTO periodically as prescribed by the SPCB.

[4] Conditional subject to grant of forest clearance within stipulated timeline along with undertaking towards safeguarding ecological interests

[5] As prescribed under The Water (Prevention & Control of Pollution) Act, 1974 and The Air (Prevention and Control of Pollution) Act, 1981.

Figure 1: Process flow for various green clearances



Abbreviations used: (a) PFR – Pre-Feasibility Report; (b) TOR – Terms of reference; (c) EC – Environmental Clearance; (d) EIA – Environmental Impact Assessment; (e) EMP – Environmental Management Plan; (f) SPCB – State Pollution Control Boards; (g) CTE – Consent to Establish; (h) CTO – Consent to Operate; (i) NBWL – National Board for Wildlife; (j) DC – Deputy Collector; (k) CF – Conservator of Forest; (l) PCF – Principle Chief Conservator of Forest; (m) CCF – Chief Conservator of Forest; (n)DFO – Divisional Forest Officer; (o) RO – Regional Office

Note: The Wildlife Clearance process as a prerequisite for the Environmental Clearance process for applicable projects has not been detailed here.

Source: CEEW analysis based on primary data from MoEFCC,2014

3. DEFINING DELAYS

Is there a way to define delays in the environmental clearance process? Popular press has always highlighted industry's and government's perception that projects are being delayed. However, there is no definition of 'delays'. In our research we try to bring some objectivity in this subjective discussion and define what is meant by delays. We calculate the 'threshold' number of days for the environmental clearance process by adding specified maximum time to be taken across various levels from the date of proposal to the final clearance. Following are the specified days

Level as per our study	**Specific tasks**	**Maximum no. of days**
Level I	Grant of ToR since proposal application date	60
Level II	EIA and other scoping studies under as per the ToR	Unspecified but ToR validity up to 2 years or 730 days
	Public consultation process	45
Level III	Recommendation from Expert Appraisal Committee	60
	Clearance by regulatory authority	45
	TOTALTIME TAKEN	940 days

Hence we take 940 days as a threshold for categorising whether projects are delayed or not. This objectification should not be taken as our value judgement about what is a 'good' or 'acceptable' duration within which projects should be cleared. The threshold identification simply gives a benchmark to evaluate the time taken across projects. However, we do understand that different stakeholders will define 'delays' in their own ways and hence throughout our analysis we have clearly specified the number of days/years taken across sectors and major states. Readers should make their own judgement about 'delays' associated with the environmental clearance process.

4. STATUS OF DELAY ACROSS INDUSTRIAL SECTORS

4.1 Key messages

- Analysis of approved projects (from 2003-2014) indicates that 90% of the projects in construction, hydropower and industry sectors have been approved within a year of the application.
- For projects facing clearance delays, the process of collecting the required data and information, conducting Environmental Impact Assessment (EIA) and public hearing, and document submission require most time and is the reason for major delays across sectors.
- The stage up to approval of Terms of Reference (ToR) and the stages after submission of documents for final clearance take relatively shorter time.
- Forest clearance (at least Stage I) is an essential prerequisite for the grant of final environmental clearance and our analysis shows that these take a long time. For example, 52% of all applications filed in 2010 are still awaiting clearances.
- The generic category of industry (including many different sub-category of industries like steel, cement, chemicals, paper & pulp) has 90% of projects pending forest clearance for applications filed between 2003 and 2014.
- For approved projects, nuclear power projects and infrastructure projects have taken the most time across sectors for getting environmental clearance, though median time taken is still less than one year for them.
- For projects that are awaiting clearances, the time taken for finishing required processes as per ToRs and required document submission has a large variation across sectors, from 440 median days for the infrastructure sector to more than a 1000 median days across hydropower, coal mining, thermal power and nuclear power projects.
- As per our definition of delays i.e. beyond 940 days, 40%-60% of projects in thermal power, hydropower, coal mining and nuclear power sectors in all likelihood will face a delay for undertaking Environmental Impact Assessment (EIA), public hearing and submission of required data and information to the committee.
- For projects where required documents have been submitted to the Environmental Appraisal Committee (EAC) and are awaiting clearances, most industry, infrastructure and thermal power projects have been waiting for more than five months and in the case of mining, coal mining and hydropower most projects have been waiting for eight months for getting final environmental clearance.

4.2 Methodology

Data was accessed from the website of the Ministry of Environment, Forest and Climate Change. 8055 projects were approved between 2003 and 2014, and 3119 projects were awaiting clearance as of 10 September 2014,of which 2768 projects were in the clearance process after grant of ToR. Our analysis of projects awaiting clearances includes only these 2768 projects which are in the pipeline post the grant of ToR. In the database, the first project application for projects that have been approved, is dated 2003, and first project application

for projects awaiting clearance after issue of ToR is dated 2006. Similarly 5526 projects were granted forest clearance and 4877 project applications since 2003 await clearance.

For environmental clearance, broader categories of projects were analysed. These are: construction, hydropower, infrastructure, mining, coal mining, nuclear power, thermal power and industry. The last category 'industry' is an aggregation across numerous sub industrial categories like chemicals, steel, cement, paper and pulp, textiles, etc.

Three metrics were derived and compared across industrial categories: a) For approved projects, median number of days between project application date and project final environmental clearance; b) For projects awaiting clearance, median number of days between project application date and date of document submission (or 10 September 2014 if the required documents have not been submitted): this indicates the time taken for data and information collection, EIA process, public hearing, and required document submission; and c) For projects awaiting clearance, median number of days between date when required documents have been submitted and the current date: this indicates the time taken even after project documents have been submitted in the last few months. We have then categorised the projects awaiting clearance into different years, which tells us the extent of delays across sectors. We compare these indicators through graphs for highlighting the key results of our analysis.

4.3 Results and discussions

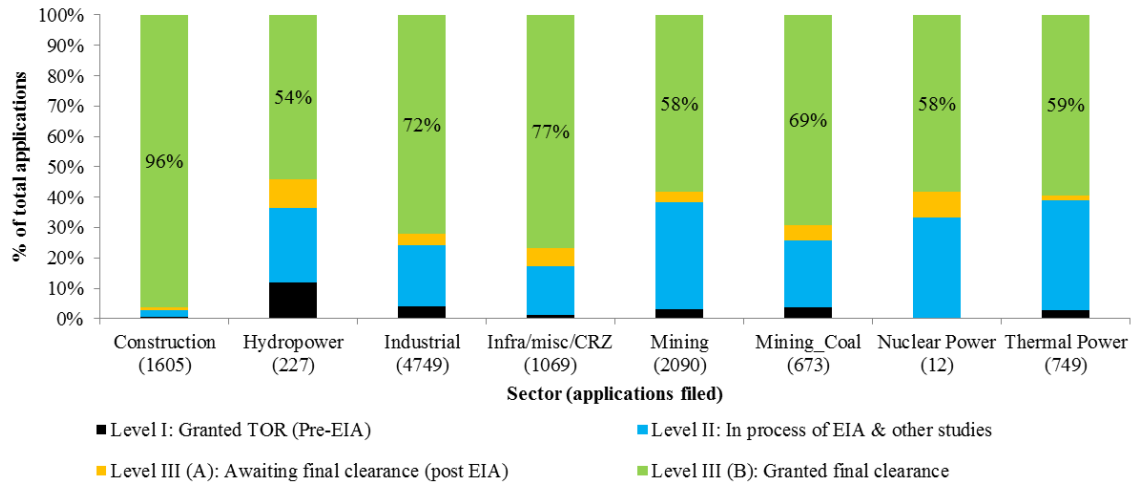
The process of environmental clearance can be broadly divided into three levels-

- Level I: Application granted with TOR from the MoEFCC
- Level II: Application under process of EIA, public hearing and allied studies as specified by TOR
- Level III (A): Application awaiting final clearance after submission of necessary documents to the EAC
- Level III (B): Application granted with final clearance

The first and the third level take relatively shorter time, although these are also in excess of 60 days and 105 days specified for these stages. However, the longest delays are experienced during the process of information gathering, data collection, environmental impact assessment (EIA), public hearing, etc. all of which lead to delays in submitting documents to the EAC (Figure 2).

It should be evident from Figure 2 that most of the projects, which have applied for environmental clearance since 2003 have already been granted clearance. In fact, in the construction sector this is most evident. For other sectors, the proportion of projects granted clearance varies from 55% to 75%.

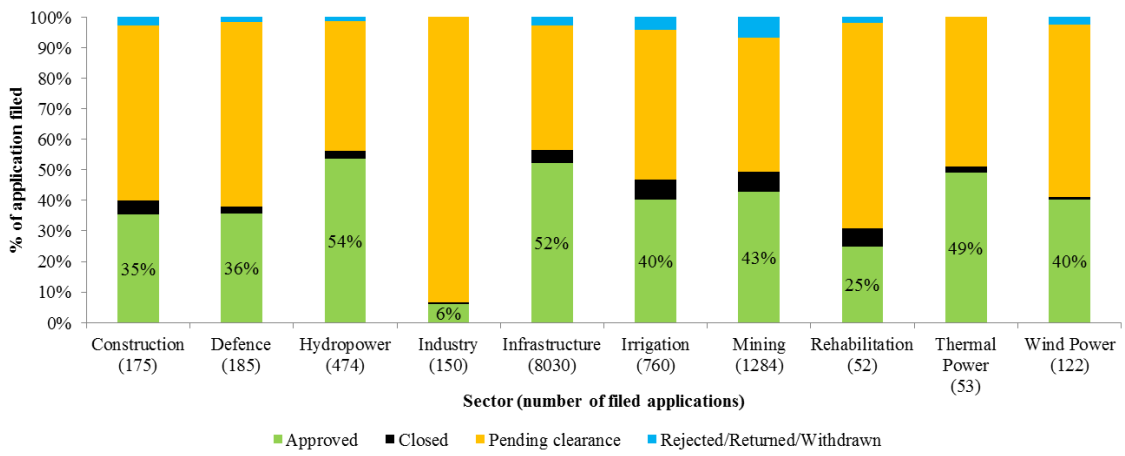
Figure 2: Percentage share of projects approved and awaiting environmental clearance at different stages of process across various sectors (projects filed since 2003 onwards till July 2014)



Source: CEEW analysis based on primary data from MoEFCC,2014

Forest clearance is an important part of the process and final environmental clearance cannot be given unless Stage-I forest clearance has been granted. The process of getting forest clearances is a big hurdle. A large number of projects across sectors have pending forest clearances (Figure 3). In fact the generic category of industry, which includes a variety of industrial sub-categories like chemicals, iron and steel, cement, paper & pulp, etc. has taken the biggest hit from the process wherein 90% of the projects are pending approval. The lowest proportion of pending projects is in the hydropower sector where only 40% of the projects are awaiting forest clearance. Generally speaking, 40%-60% of projects are anticipating forest clearance. Our indepth analysis reveals that 35% of projects applications filed in 2009 and 52% of project applications filed in 2010 are still pending forest clearance till date. The number is obviously much higher for recent years.

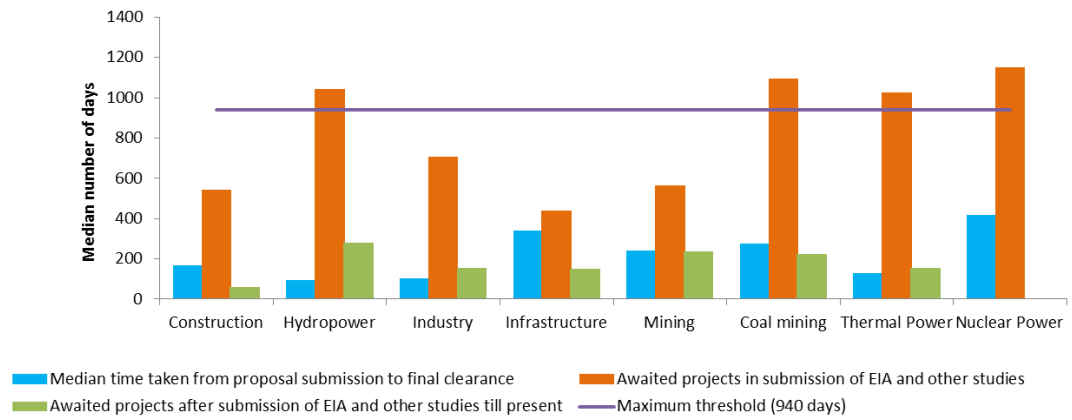
Figure 3: Percentage share of projects approved and awaiting forest clearance across various sectors (projects filed since 2003 till August 2014)



Source: CEEW analysis based on primary data from MoEFCC,2014

From our analysis, we studied both projects which have been granted clearance as well as projects awaiting clearance. In a way, these are two different databases. For projects that have been cleared, nuclear power and infrastructure projects have taken maximum time (Figure 4), respectively 417 and 340 median days for getting final clearance. Industrial and hydropower projects have taken just around 100 days each, the median days taken for final clearance across sectors range from 93 to 417 days.

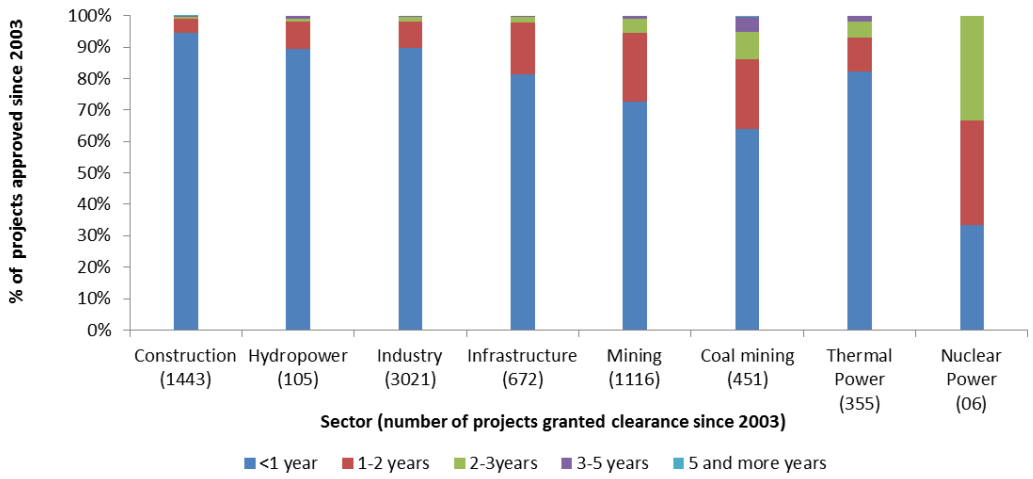
Figure 4: Median time span for sector specific projects in submitting required documents, awaiting for clearance, getting final clearance, and associated delays with respect to maximum threshold (for projects filed in 2003 and onwards)



Source: CEEW analysis based on primary data from MoEFCC,2014

For the projects that have been granted environmental clearance, our analysis (from 2003-2014) indicates that 90% of the projects in construction, hydropower and industry sectors have been approved within a year of the application (Figure 5). And this is true for 60% of projects across industrial sectors, apart from nuclear power plants. There could be two potential arguments for a large number of projects getting cleared so early. On one hand, most of these projects are either small or requiring capacity expansion of already existing activities and are not expected to have a significant environmental impact, and hence could have been cleared soon. Other reason could be that the clearance process might have been compromised for acquiring clearance. However, there is no concrete evidence to support these arguments. For getting more insights into the process, we focussed on projects awaiting clearances. Our motivation for studying projects awaiting clearance is that this is the set of projects that are argued as being stalled for a long time and are impacting investor confidence. Analysing these projects will give us most relevant information on the time taken for projects across sectors and states.

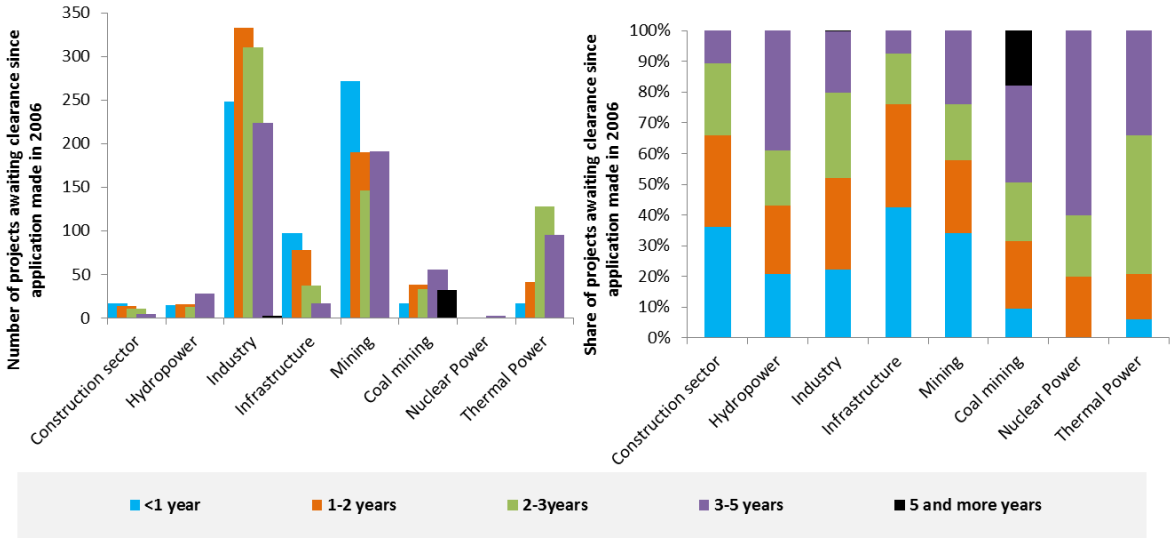
Figure 5: Time taken for projects applied since 2003 across sectors for getting environmental clearance



Source: CEEW analysis based on primary data from MoEFCC,2014

Figure 6 gives information on the median time taken by uncleared projects from the date of application to getting data and information, completing EIA, public hearings, etc. and finally submitting required documents. Figure 6 provides a categorisation based on the number of years taken for this process. The time taken for required document submission is huge across sectors, from 440 median days for infrastructure sector to over a 1000 median days across hydropower, coal mining, thermal power and nuclear power projects (Figure 4). In the thermal power, coal mining and nuclear power sectors, projects are likely to be in the clearance pipeline for at least a year, which might extend to anywhere over 3-5 years. No nuclear power project has taken less than a year, and 70%-80% of projects in thermal power, coal mining and nuclear power sectors have been in the process for at least two years. However as per our categorization of delays of 940 days, coal mining (50% projects), nuclear power (60% projects), hydropower (40% projects) and thermal power (30% projects) sectors are the sectors requiring special attention.

Figure 6: Time taken from application date to required document submission for projects applied since 2003 and awaiting environmental clearance by sectors



Note: The analysis is performed over the applications filed in 2003 and onwards, however the most recent project awaiting clearance is provided for year 2006. This proves either the earlier filed projects being cleared/rejected or data is missing for those years.

Source: CEEW analysis based on primary data from MoEFCC,2014

For projects where required documents have been submitted and are awaiting clearances, already five months have passed for most industry, infrastructure and thermal power projects, and almost eight months have passed for most mining, coal mining and hydropower projects (Figure 4). This delay could also be due to the national election period; however this cannot be concluded with certainty.

5. STATUS OF DELAY ACROSS STATES

5.1 Key messages

- The proportion of approved projects (from 2003-2014) is highest in Tamil Nadu (83%), Maharashtra (81%) and Gujarat (75%); while it is the lowest for Jharkhand (57%) and West Bengal (62%). Thus there is difference across states in terms of share of approved projects for applications under review since 2003.
- In the north-eastern states of India, more than 50% of projects have been rejected, returned or withdrawn under the forest clearance process.
- Share of projects granted forest clearance ranges from 37%-38% in Maharashtra and Madhya Pradesh (MP) to 62% in the case of West Bengal.
- For approved projects, states that have taken the most number of median days in granting final environmental clearance are MP (213 days) and Jharkhand (250 days). The shortest time has been taken by Uttar Pradesh (UP [97 days]) and Bihar (102 days). However, from the information available we cannot conclude that states with shorter periods for clearances are necessarily more efficient or have necessarily followed all due processes.
- In Jharkhand, 38% of total projects have taken at least a year for getting final environmental clearance. MP is close with 28% projects taking more than a year for approval. For Bihar however, 95% projects have got environmental clearance within a year.
- In terms of proportion of projects awaiting clearance, Tamil Nadu appears to be most positive with 37% of projects with less than one year of waiting time followed by Andhra Pradesh, Maharashtra and Gujarat at 26%.
- In Bihar, Chhattisgarh, West Bengal and north-eastern states, 60%-70% of projects have been in the clearance pipeline for at least two years since their date of application, and many of these have been in the waiting process for more than three years.
- As per our definition of delays i.e. 940 days, at least 40% projects in Chhattisgarh are facing delays.

5.2 Methodology

Data was accessed from the website of the Ministry of Environment, Forest and Climate Change. We focused only on bigger states and the north-east region as a whole assuming that most of the project applications are made in these states/regions. Under each state, all the industrial sectors have been covered. Between 2003 and 2014, 5666 projects were approved in these states, and 2227 projects were awaiting clearance as of 10 September 2014, of which 1942 projects were in the clearance process after grant of ToRs and the rest are currently awaiting ToRs. Our analysis of projects awaiting clearances includes only these 1942 projects which are in the pipeline post the grant of ToRs. In the database, the first project application for projects that have been approved is dated 2003, and first project application for projects

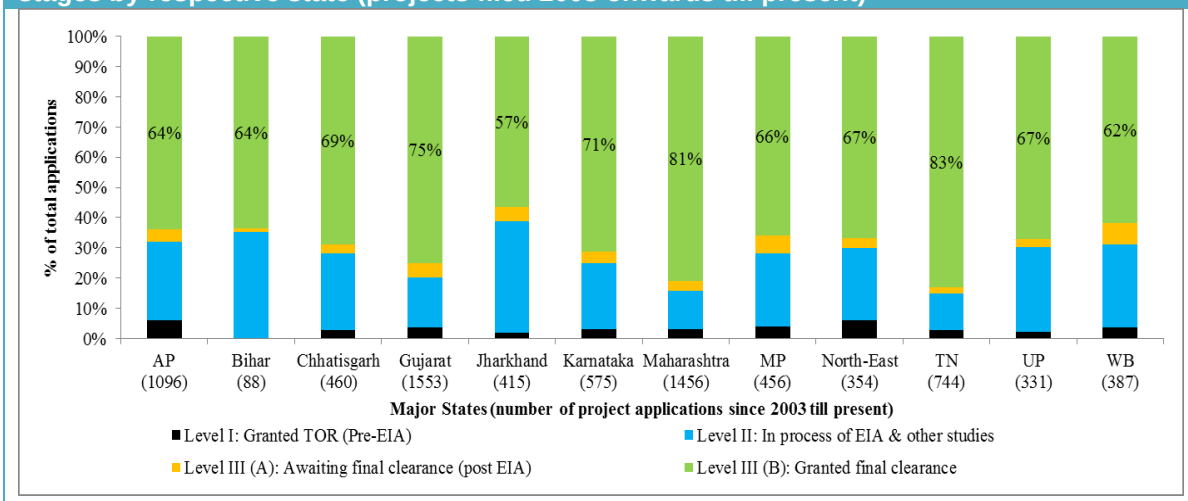
awaiting clearance after issue of ToR is dated 2006. Similarly 2404 projects were granted forest clearance and 2206 project applications applied since 2003 awaited clearance.

Three metrics were derived and compared across states - a) For approved projects, median number of days between project application date and project final environmental clearance, b) For projects awaiting clearance, median number of days between project application date and date of document submission (or 10 September 2014 if the required documents have not been submitted); this indicates the time taken for data and information collection, EIA process, public hearing, and required document submission; and c) For projects awaiting clearance, median number of days between date when required documents have been submitted and the current date: this indicates the time taken even after project documents have been submitted in the last few months. We have then categorised the projects awaiting clearance into different years, which tells us the extent of delays across sectors and states. We compare these indicators through graphs for highlighting the key results of our analysis.

5.3 Results and discussions

States differ in terms of their development challenges as well as their stock of natural resources. Coal is distributed across few eastern states in India, while untouched forest and biodiversity is located in the north-eastern part of India. As states seek to enhance their development, the pressure on natural resources within them grows.. This section reviews the results for the state of environmental clearances across Indian states.

Figure 7: Share of projects approved and awaiting environmental clearance across different stages by respective state (projects filed 2003 onwards till present)



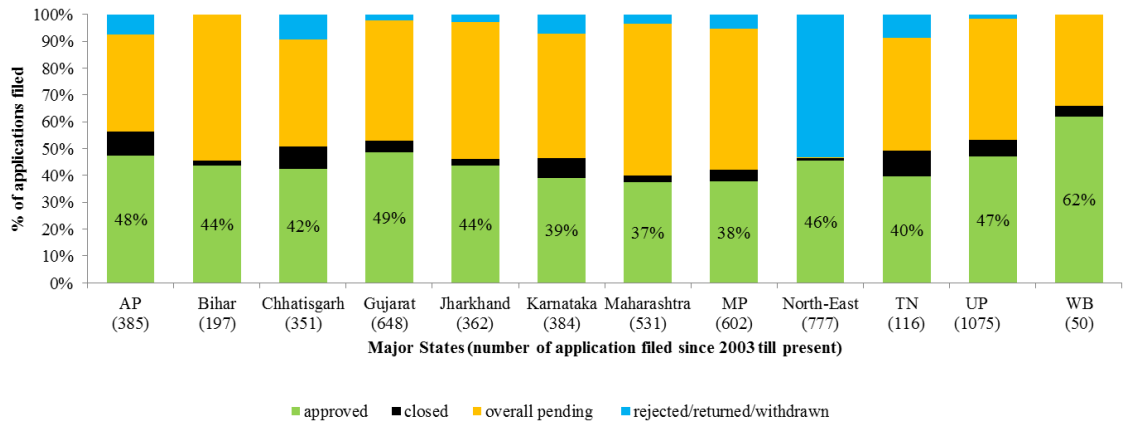
Source: CEEW analysis based on primary data from MoEFCC,2014

The share of approved projects across states shows significant variation (Figure 7). While the proportion of approved projects is highest in Tamil Nadu (83%), Maharashtra (81%) and Gujarat (75%), it is lowest for Jharkhand (57%) and West Bengal (62%). Across states also we see that the process of granting ToRs as well as the process post submission of documents

does not take a lot of time. It is the process of collecting data and information, completing EIA and conducting public hearings, which takes the maximum time.

The state of forest clearances shows that generally speaking 50%-60% projects are pending (Figure 8). This includes projects, which have been in the pipeline since 2003. As was highlighted in the industry level analysis, forest clearance is a process where large delays take place, irrespective of the state. Despite variation across states, forest clearance is a major issue for all states.

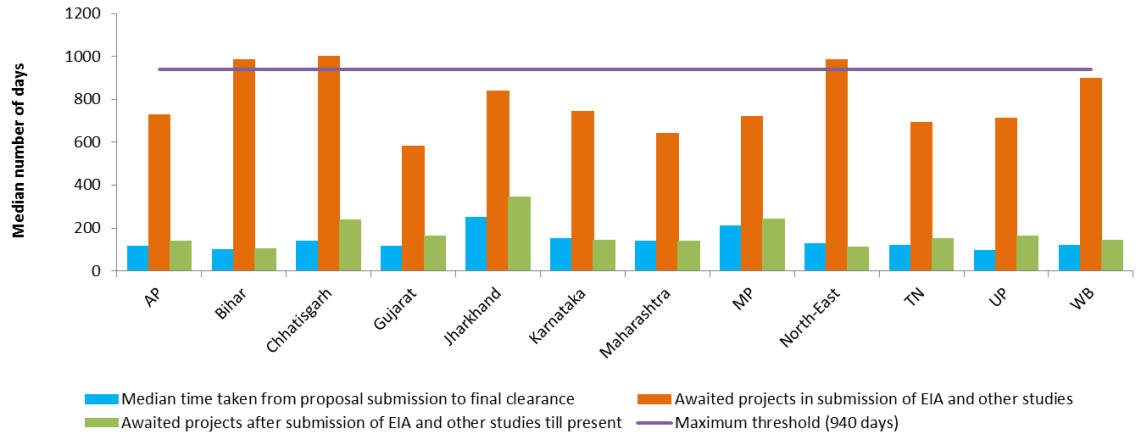
Figure 8: Share of projects approved and awaiting forest clearance across different stages by state (projects filed from 2003 onwards till present)



Source: CEEW analysis based on primary data from MoEFCC,2014

For projects that have been approved, there are significant differences in the time taken across states (Figure 9). The number of days are lowest for UP and Bihar, around 100 median days. In Jharkhand the approval process takes a median of 250 days. It should be highlighted that in the north-eastern states 50% projects have been rejected during the forest clearance process. This could be related to the type of projects, or the biodiversity in the project area. The north-eastern region is a biodiversity hotspot and this could be a reason for a large number of projects not getting forest clearance. We know that, due to many reasons, coal mining related projects face maximum delays. As many coal mining related projects are for the state of Jharkhand, this state witnesses the highest delays. In MP, the high number could be related to forest clearance related delays, though this claim needs to be substantiated through detailed state level data analysis, which is outside the scope of present analysis, and publicly available data.

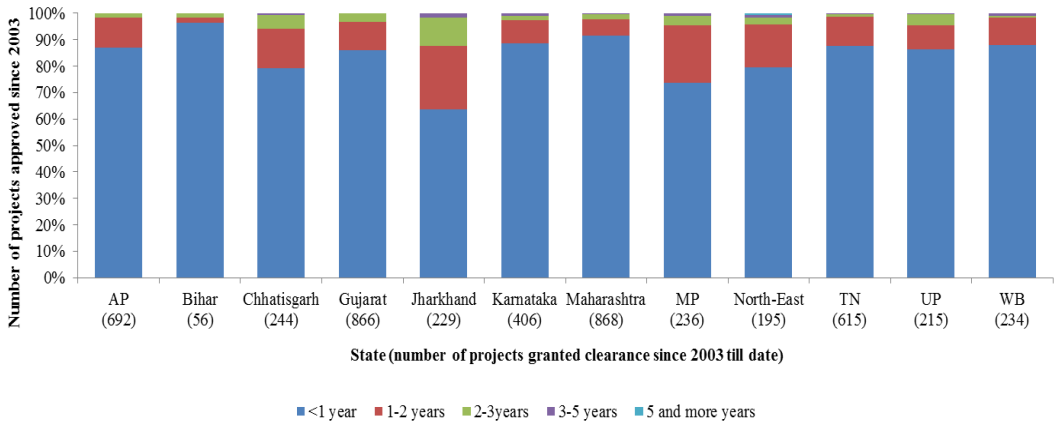
Figure 9: Time taken for required documents submission, final clearance, and associated delays across states



Source: CEEW analysis based on primary data from MoEFCC,2014

In fact, apart from Jharkhand and MP, at least 80% of the projects get cleared within a year across all states (Figure 10). For MP, the share of projects approved within a year is 72%, while for Jharkhand this share is only 62%. In other words, at least 38% projects in Jharkhand have taken between 2-5 years for getting environmental clearance.

Figure 10: Time taken for projects applied since 2003 across states for getting environmental clearance

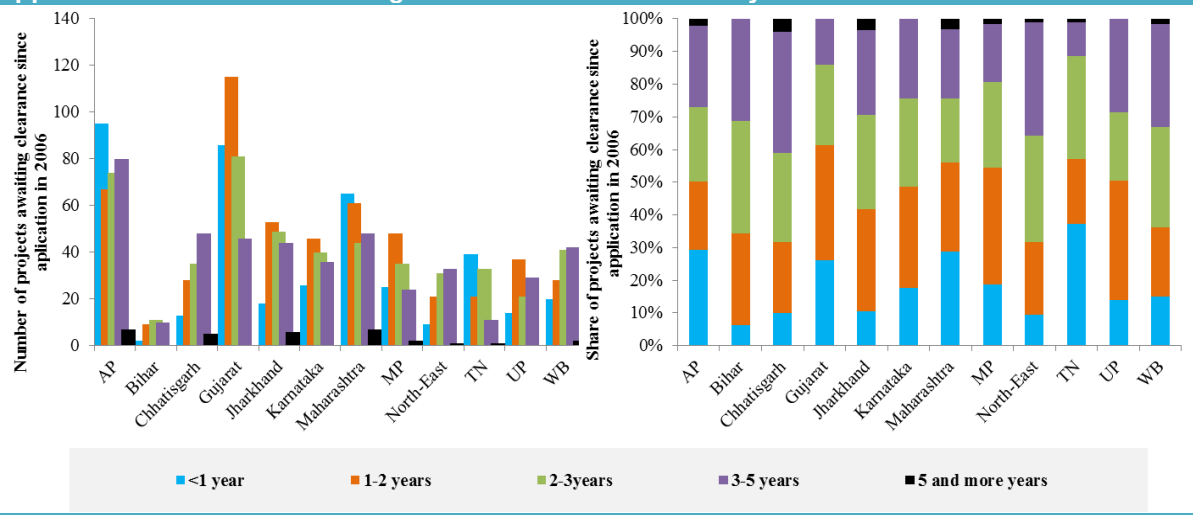


Source: CEEW analysis based on primary data from MoEFCC,2014

Interestingly, there is a lot of variation across states in the time taken for finishing the required data/information collection, EIA and public hearing, and submitting the required documents across states (Figure 9 and Figure 11). For Gujarat, the median number of days between the date of application for uncleared projects until the present is 586 days. States in the higher range are Jharkhand, West Bengal, Bihar, north-eastern states, and Chhattisgarh, in which median the waiting period since application is over 1000 days. The high variation

could be reflecting administrative efficiency at the state level but could potentially also be reflecting natural resource availability and management challenges across different types of projects within a state. It would be wrong to conclude one way or another without much deeper institutional analysis.

Figure 11: Time taken from application date to required document submission for projects applied since 2003 and awaiting environmental clearance by states



Note: The analysis is performed over the applications filed in 2003 and onwards, however the most recent project awaiting clearance is provided for year 2006. This proves either the earlier filed projects being cleared/ rejected or data is missing for those years.

Source: CEEW analysis based on primary data from MoEFCC,2014

In terms of the proportion of projects awaiting clearance, Tamil Nadu appears to be the most positive with 37% of projects with less than one year of waiting time followed by Andhra Pradesh, Maharashtra and Gujarat at 26% (Figure 11). In Bihar, Chhattisgarh, West Bengal and north-eastern states, 60%-70% of projects have been in the clearance pipeline for at least two years since their application date. As per our definition of delays i.e. 940 days, at least 20% projects have been delayed across states except for Gujarat and Tamil Nadu. In Chhattisgarh, 40% projects are facing delays. Very few projects, however, have been waiting for more than five years. It can be concluded with certainty that there is definitely variation across performance at the state level. The reasons for these though are unclear at best.

6. ASSESSING REASONS FOR THE DELAYS: REVIEWING EAC MEETING MINUTES

6.1 Key messages

- Out of the 120 projects reviewed (of the last five EAC meetings between 2013-14), a quarter of the projects filed for 'extension of TOR validity'. Most of these projects were unable to comply with the TOR conditions within the stipulated time-frame of 2 years.
- Submission of inadequate or incomplete information in the application submitted by the project proponent was found to be the major cause of delay in granting environmental clearances. Instances of non-compliance with the TOR, incorrect information submission, insufficient data analysis and submission in the wrong format and out-dated forms were observed regularly.
- Delay in approvals from other ministries or departments, as per the project requirements, caused significant postponement for granting environmental clearances, especially for coal mining, hydropower and nuclear power projects. These approvals were mainly from that of State Pollution Control Board (SPCB), Ministry of Coal, state revenue departments, Panchayat Committees etc.
- Land acquisitions were found to cause delays particularly in river valley, hydropower and infrastructure projects. The administrative, legal and financial inefficiencies in the process of land acquisition caused major delays in these sectors.
- Forest clearance issues were found to be most prominent for thermal power, mining and industrial sectors.
- A large number of projects were deferred by the project proponent in the mining sector for reasons unspecified in the EAC meeting minutes.
- A large number of delays were found to be caused by the absence of the project proponent from the EAC meeting. In other cases, the project proponent requested for deferment of review for their application for reasons unknown at present.
- Public hearing issues listed in the minutes of the meeting included deferral caused due to general elections, non-incorporation of the recommendations from the public hearing and administrative delays by SPCB in conducting the public hearing.
- 14% of the projects requested for the extension of EC validity on account of delay in commencement of the project activity, mostly due to internal reasons.
- Internal financial issues faced by the project proponent, in certain cases, were mentioned to interrupt the review process. Loan approvals from banks, the ongoing financial crisis, market downturn etc. were some specific reasons mentioned. Within the range of internal issues, legal cases including PILs were reported to cause further adjournment of the application procedures.

6.2 Methodology

Environmental clearances have been subjected to criticism regarding delays, procedural inadequacies and inefficiency in balancing the trade-off between economic development and environmental protection. In order to understand the reasons for the delays, a textual analysis

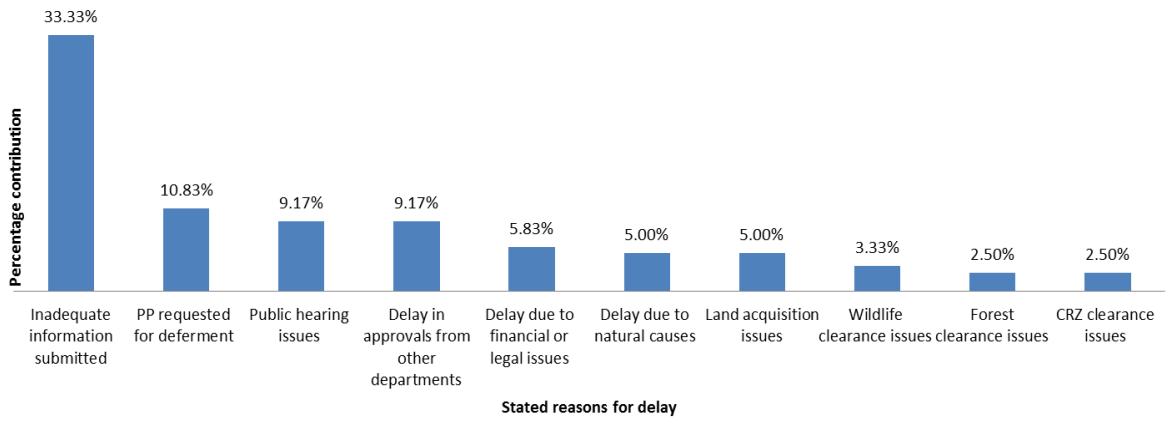
was conducted of the minutes of the Expert Appraisal Committee (EAC) meetings[6] for seven different sectors including: thermal power projects, coal mining, infrastructure and construction, industry, nuclear power, river valley and hydroelectric projects. The analysis was conducted to understand the major reasons for delay in granting environmental clearances and identify the sector-specific reasons for deferment of the environmental clearance process. For conducting the textual analysis, 120 projects were arbitrarily selected from the EAC meeting minutes (last five meetings conducted between 2013-14) falling under the category of seven sectors appraised by MoEFCC. From the details of the EAC meetings, reasons for delay and deferment were analysed and coded in order to quantitatively arrive at a logical conclusion. Out of the 15 'reasons' for which preliminary coding was done, 10 were shortlisted based on their frequency of occurrence. In order to simplify the analysis, similar approach was adopted for selecting 10 main states which accounted for the maximum number of applications for EC.

6.3 Results and discussions

As highlighted in earlier sections based on the dataset results, the largest delays happen during the process of data and information collection, EIA process, public hearing, and required document submission. This result is substantiated with the key findings from our review of the meeting minutes. Submission of inadequate or incomplete information in the application submitted by the project proponent was observed to be the major cause of delay in granting the environmental clearances (Figure 12). There were instances of non-compliance with the TOR, incorrect information submission, insufficient data analysis and submission of wrong format, out-dated forms etc. This was applicable to one-third of all the projects. Other main issues highlighted were delays in approval from other departments, delay in public hearing process, and requests for deferment by the project proponent. Incomplete submission of information or incorrect understanding of the process also led to requests for reconsideration and extension of ToR, as well as reconsideration and extension of the environmental clearance.

[6]These meeting appraise, evaluate and assess the applications for finally granting the environmental clearances.

Figure 12: Reasons highlighted in EAC meetings regarding delay of projects (from the minutes of the last five monthly meetings conducted)



Note: The above graph is based on the data pertaining to last five sector-wise EAC meetings (2013-2014).

Source: CEEW analysis based on primary data from MoEFCC,2014

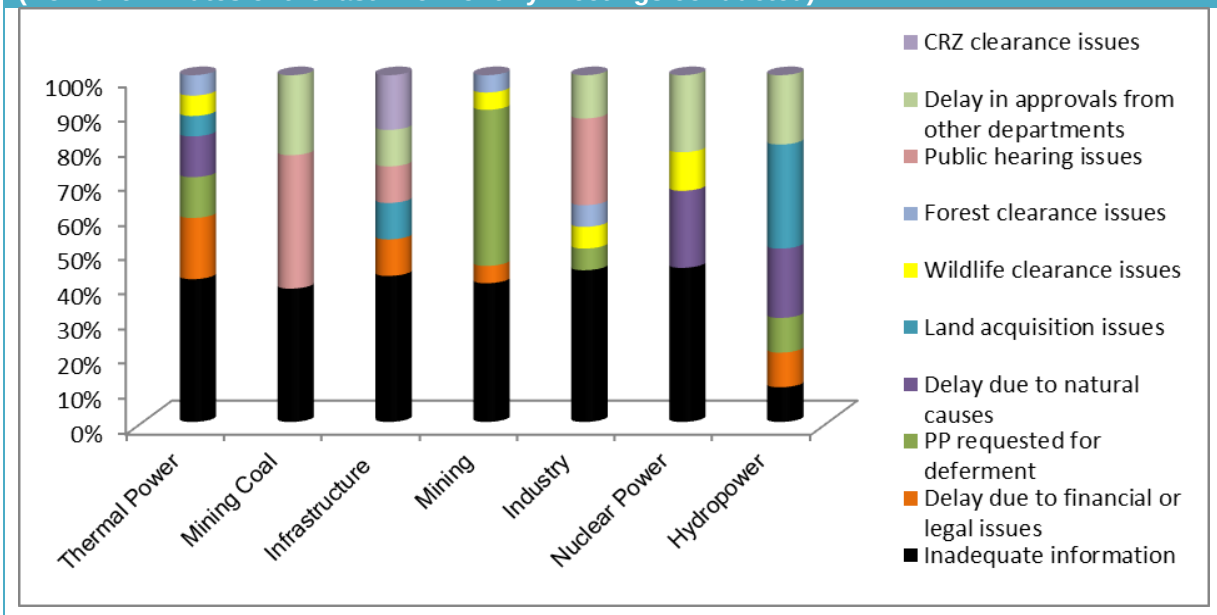
Delay in approval from other ministries or departments as per the project requirements caused significant postponement especially for coal mining, hydropower and nuclear power projects (Figure 13). These approvals ranged from that of SPCB, Ministry of Coal, state revenue departments, Panchayat Committees etc. Public hearing was highlighted as a challenge in coal mining and industrial projects. The issues listed in the minutes of the meeting included deferral in public hearing caused due to general elections, non-incorporation of the recommendations from the public hearing and administrative delays by SPCB in conducting the public hearing. It should be noted here that public hearing is an important part of the process, and as our sample is limited to few projects, the results are at best partial in nature. This is a general issue, even though within our sample this issue has been highlighted for only a couple of sectors.

Land acquisition was a major issue especially for hydropower projects. This is understandable as these projects lead to large scale submergence and impact on the livelihoods of the local people. Many such projects face local resistance, which results in delays in the land acquisition process. Infrastructure projects also were affected by this issue to an extent. Forest clearance was another issue that was highlighted from our large dataset analysis. Many projects have not been granted forest clearance even after at least 3-4 years in the pipeline. Although our macro data highlights this being an issue across sectors, the minutes of EAC meetings conducted between 2013-14 highlight it mainly for the mining, thermal power and the industrial sector.

Another interesting reason that needs to be highlighted is the role played by the project proponent. A large number of delays were caused by the absence of the project proponent from the EAC meetings. In the minimum, this is something that should be avoided. Also, in

some cases, the project proponent requested for deferment of review of their application. This was especially so for the mining sector. Though the reasons are unspecified in the meeting minutes, these could be due to many policy uncertainties and judicial pronouncements related to the mining sector, which has created significant uncertainties over these investments.

Figure 13: Reasons highlighted in EAC meetings regarding delay of projects across sectors (from the minutes of the last five monthly meetings conducted)



Note: The above graph is based on the data pertaining to last five sector-wise EAC meetings (2013-2014).

Source: CEEW analysis based on primary data from MoEFCC,2014

Finally, 15% of the projects requested for the extension of EC validity on account of delay in commencement of the project activity, mostly due to internal reasons. Internal financial issues faced by the project proponent, in certain cases, were mentioned to to request an interruption of the review process. Loan approvals from banks, financial crisis, market downturn etc. were some specific reasons mentioned. Within the range of internal issues, legal cases including PILs were reported to cause further adjournment of the application procedures.

In other words, delays in clearance cannot solely be blamed on the extant laws or administrative barriers. The capacity of project proponents and consultants is equally important to ensure correct data are submitted and public hearings are conducted in a legitimate manner.

7. CATEGORISATION OF THE MOST POLLUTING INDUSTRIES

In the Forty Sixth Conference of the Chairmen and Member Secretaries of State Pollution Control Boards (SPCBs)/Pollution Control Committees (PCCs) held at New Delhi on July 14, 1998, the Chairman, Central Pollution Control Board (CPCB) set up a Committee to formulate proposals regarding uniform consent procedure to be followed by SPCBs and the PCCs.[7]

All polluting industries have been listed under three major categories- Red, Orange and Green, in order of most polluting to least polluting. In 2010, inventorization of the most polluting (red) large and medium industries was done, falling under 17 broad categories. Although, it was mandatory for these units to have been allowed only if they had the requisite pollution control facilities, there latest compliance status is being verified. The detailed list of categories under each category as per the MoEFCC is given below.[8]

7.1 Red category

According to the current definition, Grossly Polluting Industries mean 'Industries discharging effluents into a water course and

a) Handling hazardous substances or
b) Effluent having BOD load of 100 kg/day or more or
c) A combination of (a) and (b).

Following is the list of industries under the Red Category, divided into two sub categories:

7.1.1 Industries identified by the Ministry of Environment & Forests, Govt. of India as heavily polluting and covered under the Central Action Plan, viz.

1. Distillery including Fermentation industry
2. Sugar (excluding Khandsari)
3. Fertiliser
4. Pulp & Paper (Paper manufacturing with or without pulping)
5. Chlor alkali
6. Pharmaceuticals (Basic) (excluding formulation)
7. Dyes and Dye-intermediates
8. Pesticides (Technical) (excluding formulation)
9. Oil refinery (Mineral oil or Petro refineries)
10. Tanneries

[7] Ministry of Environment and Forest, 1999. Uniform Consent Procedure Rules, 1999. Available at: http://envfor.nic.in/legis/ucp/ucprules.html Accessed on 20 September, 2014.

[8] Central Pollution Control Board, 2010. 'Inventorization of 17 category/GPI/Red category Industries'. Ministry of Environment and Forest, Government of India. 2010.

11. Petrochemicals (Manufacture of and not merely use of as raw material)
12. Cement
13. Thermal power plants
14. Iron and Steel (Involving processing from ore/ scrap/Integrated steel plants)
15. Zinc smelter
16. Copper smelter
17. Aluminium smelter

7.1.2 Industries manufacturing the following products or carrying out following the activities

1. Tyres and tubes Vulcanisation/Retreading/ moulding)
2. Synthetic rubber
3. Glass and fibre glass production and processing
4. Industrial carbon including electrodes and graphite blocks, activated carbon, carbon black etc
5. Paints and varnishes (excluding blending/mixing)
6. Pigments and intermediates
7. Synthetic resins
8. Petroleum products involving storage, transfer or processing
9. Lubricating oils, greases or petroleum - based products
10. Synthetic fibre including rayon, tyre cord, polyester filament yarn
11. Surgical and medical products involving prophylactics and latex
12. Synthetic detergent and soap
13. Photographic films and chemicals
14. Chemical, petrochemical and electrochemicals including manufacture of acids such as Sulphuric Acid, Nitric Acid, Phosphoric Acid etc
15. Industrial or inorganic gases
16. Chlorates, perchlorates and peroxides
17. Glue and gelatine
18. Yarn and textile processing involving scouring, bleaching, dyeing, printing or any effluent/emission generating process
19. Vegetable oils including solvent extracted oils, hydro-generated oils
20. Industry or process involving metal treatment or process such as picking, surface coating, paint baking, paint stripping, heat treatment, phosphating or finishing etc
21. Industry or process involving electroplating operations
22. Asbestos and asbestos-based industries
23. Slaughter houses and meat processing units
24. Fermentation industry including manufacture of yeast, beer etc
25. Steel and steel products including coke plants involving use of any of the equipment's such as blast furnaces, open hearth furnance, induction furnance
26. Incineration plants
27. Power generating plants (excluding D.G. Sets)
28. Lime manufacturing

29. Tobacco products including cigarettes and tobacco processing
30. Dry coat processing/ Mineral processing industries like ore sintering, palletization, etc
31. Phosphate rock processing plants
32. Coke making, coal liquefaction, coaltar distillation or fuel gas making
33. Phosphorous and its compounds
34. Explosives including detonators, fuses etc
35. Fire crackers
36. Processes involving chlorinated hydrocarbons
37. Chlorine, fluorine, bromine, iodine and their compounds
38. Hydrocyanic acid and its derivatives
39. Milk processing and dairy products (Integrated Project)
40. Industry or process involving foundry operations
41. Potable alcohol (IMFL) by blending or distillation of alcohol
42. Anodizing
43. Ceramic/ refractories
44. Lead processing and battery reconditioning & manufacturing including lead smelting
45. Hot Mix plants
46. Hospitals
47. Mining and ore-beneficiation

7.2 Orange category

Industries listed under the Orange category can be permitted in the state with proper environmental control arrangement.

- All such industries which discharge some liquid effluents (below 500 kl/day), which can be controlled with suitable proven technology.
- All such industries in which the daily consumption of coal/fuel is less than 24 mt/day and where the particulate emissions can be controlled with suitable proven technology.
- All such industries employing not more than 500 persons (differ per state)

The following is the list of industries under this category:

1. Manufacture of mirror from sheet glass and photo framing
2. Cotton spinning and weaving
3. Automobile servicing and repairs stations
4. Hotels and restaurants
5. Flour mills (excluding Domestic AattaChakki)
6. Malted food
7. Food including fruits and vegetable processing
8. Pulping and fermenting of coffee beans
9. Instant tea/coffee, coffee processing

10. Non-alcoholic beverages (soft drinks)
11. Fragrances and industrial perfumes
12. Food additives, nutrients and flavours
13. Fish processing
14. Organic nutrients
15. Surgical and medical products not involving effluent/ emission generating processes
16. Laboratory-wares
17. Wire drawing (cold process) and bailing straps
18. Stone crushers
19. Laboratory chemicals involving distillation, purification process
20. Tyres and tubes vulcanisation, vutcanisation, retreading, moulding
21. Pesticides/Insecticides/ Fungicides/ Herbicides/ Agro chemical formulation
22. NPK Fertilisers/ Granulation
23. Pharmaceuticals formulation
24. Khandsari sugar
25. Pulverizing units

7.3 Green category

In the green category industries in approved industrial areas which may be directly considered for issue of no objection certificate without referring to the Ministry of Environment, Forests and Climate Change (reference is to be made to the MoEFCC).

- All such non-obnoxious and non-hazardous industries employing up to 100 persons. The obnoxious and hazardous industries are those using inflammable, explosive, corrosive or toxic substances.
- All such industries, which do not discharge industrial effluents of a polluting nature and which do not undertake any of the following processes:

Industries in Small Scale, Cottage/Village category suggested under notification of the State Government/Union Territory for issuance of simplified NOC/Consent from State Pollution Control Board/Pollution Control Committee, as the case may be.

All those industries or processes, which are not covered under the "Red" and/or "Orange" category; An illustrative list is provided below.

1. Wasting of used sand by hydraulic discharge
2. Atta-chakkies
3. Rice mull.ors
4. Steeping and processing of grains
5. Mineralised water
6. Dal mills
7. Bakery products, biscuits confectionery
8. Groundnut decorticating (dry)

9. Supari (Betelnut) and masala grinding
10. Chilling plants and cold storages
11. Ice-cream or Ice-making
12. Tailoring and garment making
13. Cotton and woolen hosiery
14. Apparel making
15. Handloom weaving
16. Shoelace manufacturing
17. Gold and silver thread zari work
18. Gold and silver smithy
19. Leather footwear and leather products excluding tanning and hide processing
20. Musical instruments manufacturing
21. Sports goods
22. Bamboo and cane products (only dry operations)
23. Cardboard or corrugated box and paper products (Paper or pulp manufacturing excluded)
24. Insulation and other coated papers (Paper or pulp manufacturing excluded)
25. Scientific and mathematical instruments
26. Furniture (wooden and steel)
27. Assembly of domestic electrical appliances
28. Radio assembling
29. Fountain pens
30. Polythene, plastic and P.V.C. goods through extrusion moulding
31. Rope (cotton and plastic)
32. Carpet weaving
33. Assembly of air coolers, conditioners
34. Assembly of bicycles, baby carriage and other small non-motorised vehicles
35. Electronics equipment (Assembly)
36. Toys
37. Water softening and demineralised plants
38. Paint (by mixing process only)
39. Candles
40. Carpentry (excluding saw mill)
41. Oil ginning/expelling (no hydrogenation/refining)
42. Jobbing and machining
43. Manufacture of steel trunks and suitcases
44. Paper pins and U-clips
45. Block making for printing
46. Optical frames
47. Powerlooms.//handlooms (without dyeing & bleaching)
48. Printing press
49. Garments stitching, tailoring
50. Thermometer making

51. Footwear (rubber)
52. Plastic processed goods
53. Medical and surgical instruments
54. Electronic and electrical goods
55. Rubber goods industry

For the industry which does not fall under any of the above mentioned three categories (i.e. Red/Orange/Green), decision with regard to its categorisation is taken by a the committee at Head Office level comprising the Member Secretary and two senior offices of the Board/Committee.

8. RECOMMENDATIONS

CEEW's analysis revealed that three main problems afflicted the process of environmental clearances in India, namely: (i) major delays happening after the grant of ToRs and during the process of data/information collection, EIA, public hearing and required document submission; (ii) issues related to the public hearing process, and (iii) issues related to information management for effective delivery of the environmental clearance process.

Following are suggested interventions to address the above challenges:

8.1 Improving the Quality of EIAs

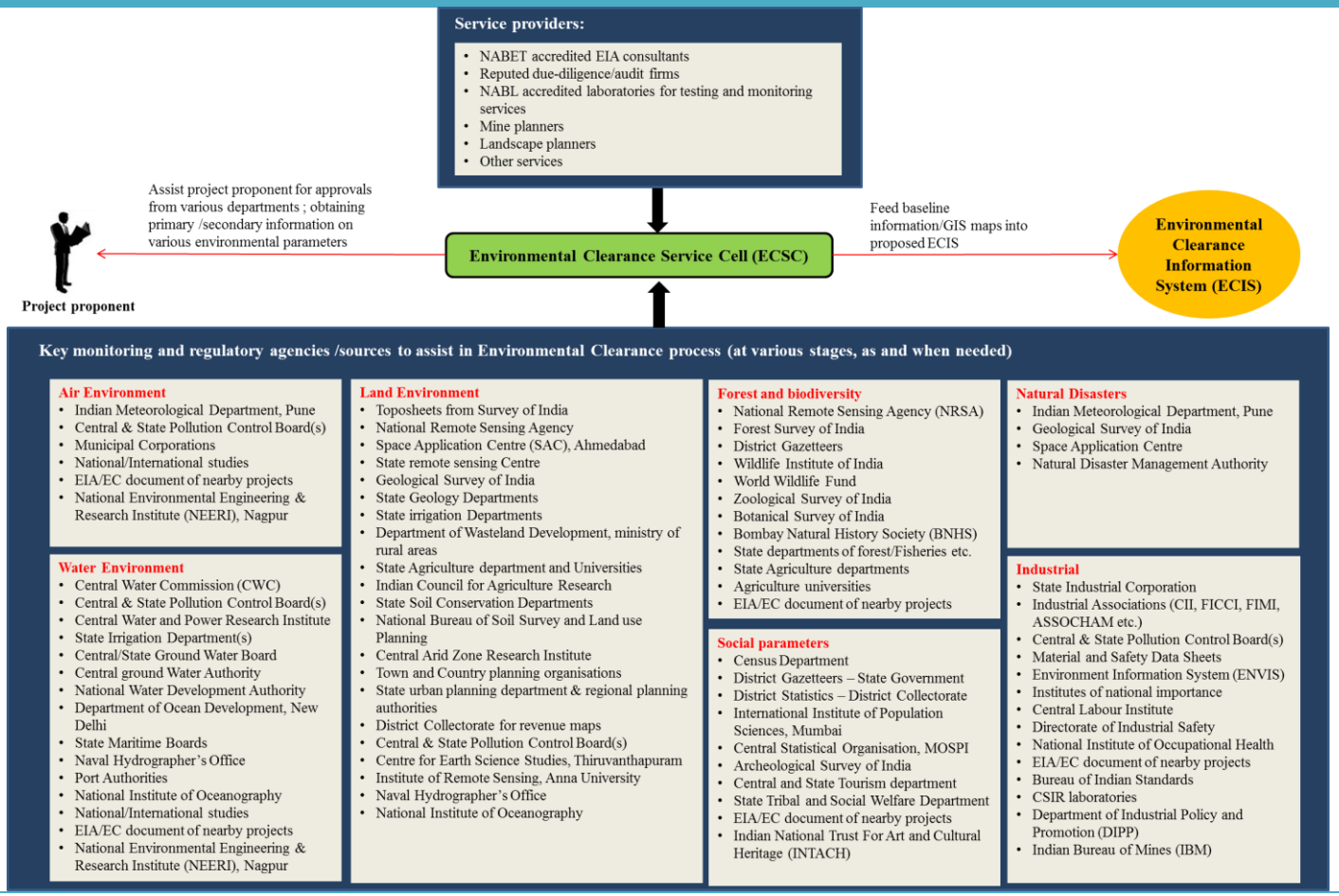
Currently, the project developer employs a consultant to undertake the EIA study. In such an arrangement, the consultant is accountable to the project proponent – and there is potential conflict of interest, no matter how credible the consultant. There might be an incentive to under-report environmental baselines or underestimate potential adverse impacts from the project. Such uncertainties could result in further contestation between different stakeholders, with the result that the post-EIA report preparation phase experiences delays as well. In order to strengthen the EIA process, the following steps are recommended:

- Create an **Environment Clearance Service Cell (ECSC)**, adequately staffed with technical experts. The ECSC would provide project proponents complete assistance, right from the start of the project application stage until the final verdict in favour or against grant of environmental clearance. A detailed information flow diagram is shown in Figure 14.
- The ECSC will act as a single assistance window in order to obtain necessary approvals from various departments and seek primary/secondary information on several aspects of project activity and related impacts.
- The cell would coordinate with the Quality Council of India (QCI) to prepare and manage a list of accredited consultants. This initial set of consultants would be subjected to a rapid performance review by a professionally recognised international agency, such as the **International Association of Impact Assessment (IAIA)**, and a baseline rating of consultants could be undertaken.
- In the revamped system, the project proponent would approach the ECSC to seek assistance in securing an environmental clearance.
- The ECSC would then allot (through **random selection**) the project to an accredited EIA Consultant and issue a Terms of Reference for screening. This would be followed by project scoping, public involvement, preparation of EIA report, and detailed recommendations for project modification.
- The ECSC would institutionalise a system of incentives and penalties, which would depend on the performance of the consultants in preparing EIA reports but would also **penalise them and project proponents for wilfully submitting false information**.

- The EIA Consultant firms would pay a token amount each year to the ECSC to retain their positions as empaneled consultants.
- The EIA consultation fee would be paid for by the project proponent via the ECSC, again in order to retain independence in evaluation and prescriptions.
- **Repeat offenders (spreading disinformation, poor methodology) would be suspended / blacklisted** and barred from being a part of the list of empanelled Consultants.
- The project developer would also pay a fee to the ECSC in return of the service that the cell provides. This fee would include the management fee of the cell and the cost of undertaking an EIA. The amount would have to be pro-rated with respect to the physical scale and financial size of the investment.

The **ECSC could sign MoUs with international professional agencies such as IAIA, Netherlands EIA commission, Canadian EIA agencies and the USEPA to conduct training programmes** for the panel of consultant firms from time to time, and particularly for specialised impact assessment studies like Cumulative Impact Assessment, Strategic Environment Assessment, Health Impact Assessment and Sustainability Impact Assessment. The cost would be borne by the consultant firms. The training programmes would be designed in a manner to ensure that consultant firms be eventually rate.

Figure 14: Structure of the proposed Environmental Clearance Service Cell (ECSC)



Source: CEEW analysis

8.2 Inclusive and Legitimate Public Hearing Process

Currently, public hearings are held late in the decision-making process. By the time the project opens up to public inputs, it is too late to have any meaningful engagement with the public. So the public hearing becomes an irritant to all, a delay for project proponents and an opportunity for the public to oppose the project. Public hearing in India is – wrongly – perceived by communities and civil society as a decision-making forum. It is, rather, a consultation forum. Decision-making takes place within the MoEFCC with recommendations from the Expert Appraisal Committee. This misperception results in a mismatch of legality and legitimacy, resulting in increased conflict and contestation between various stakeholders, rather than as a means to secure social licence for a project. Recommendations towards reforming the public hearing process are outlined below:

- **Public hearing should be projected as a consultation, not a decision-making forum.**
- In order to ensure that public involvement enriches the EIA analysis, the forum should be managed jointly by the designated EIA consultants and the affected community. The **first public hearing** – an open-ended one – should be conducted right at the start of the EIA process i.e. **during the Scoping phase**. The consultant should be asked to prepare a ToR for the EIA and should get the same vetted by the public at the start of the Scoping phase. Based on the public hearing report, the EAC would finalise the ToR.
- Once the report is prepared, the EIA consultant, with the help of the EAC/Pollution Control Board, should organise a second public hearing.
- The ECSC should employ an NGO/research institution as a resource agency for the community to ensure that the community is able to undertake a pre-public hearing deliberation exercise. The amount is part of the amount, which is charged from the project developer initially. The **deliberation exercise should last for a month after which the second public hearing would take place**.
- The public hearing exercise would remain limited to the consultant, public, government representative and NGOs (where the community is able to have its representation).
- The deliberation should be video recorded and, at the end of the deliberative process, the public would **vote not on the project but on the quality of the EIA report. If more than 50% of the vote questions the sanctity of the EIA report, then it would have to be redone. The District Magistrate would be in charge of the voting process with necessary institutional support.**
- **The second public hearing would last for a maximum of two days in each of the areas designated for public hearing.**
- **The public hearing should not be bypassed on account of law and order**.
- The second public hearing would also explain the subsequent process to the public, with decision-making power reserved with the MOEFCC (on advice of the EAC).

8.3 Environmental Clearance Information System

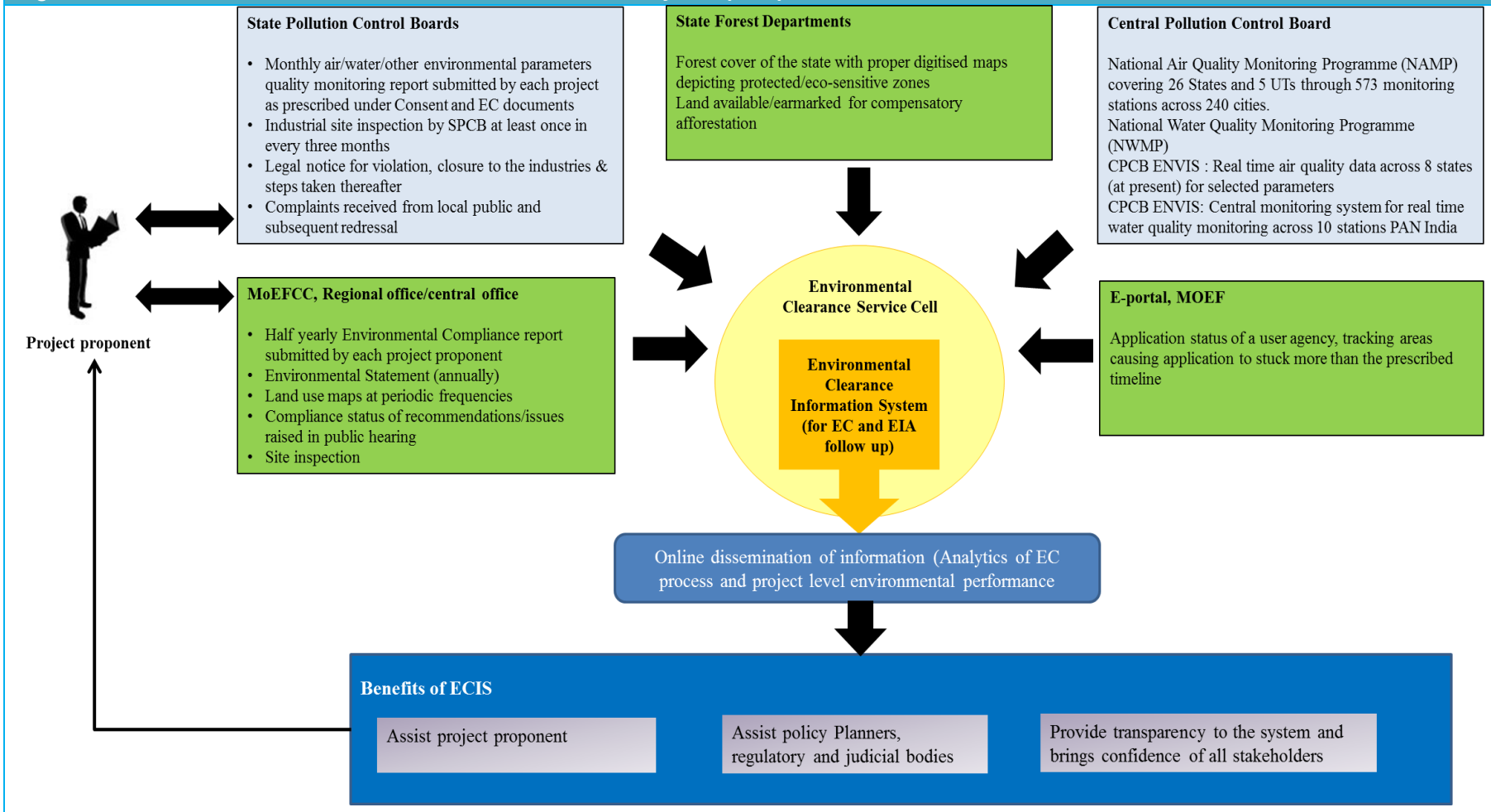
Unless a common set of data is accessible to all parties (government agencies, project proponents, EIA consultants and the public), it is hard to establish the baselines upon which to calculate the expected environmental impact. Moreover, there is a (perceived) risk of disinformation by unscrupulous consultants. Even where the consultants are credible and have a strong track record, any lack of transparency on the data and methodology could result in contestation during the EIA and public hearing process. It is recommended that the existing institutional setup be restructured into a centralised information body called the Environmental Clearance Information System (ECIS).

The ECIS, within the proposed Environmental Clearance Service Cell, would structure a countrywide baseline mapping of environmental quality parameters (air, water, land use, meteorology, soil, biodiversity, social factors, etc.). GIS and remote sensing should be promoted to create the environmental database, which can be shared on a case-by-case basis.

- The suggested ECIS would build upon and expand the existing institutional set up within India. Figure 15 describes how information would flow from real time environmental quality monitoring stations (such as CPCB initiatives under the National Air Quality Monitoring Programme and National Water Quality Monitoring Programme) to the centralised ECIS. As shown in Figure 14, baseline information (in the form of GIS maps) would be readily available to the ECSC (and ECIS) from each distinguished agency encompassing a wide range of environmental parameters.
- This centralised environmental baseline inventory (ECIS) would get strengthened (and could reveal more granular data) over time with the expansion of respective monitoring agencies across the country at regional levels.
- A robust **ECIS would largely assist**:
  a) Expert Appraisal Committee, to cross-verify baseline environmental information available from ECIS with ground-level monitoring results reflected in the EIA study, to ensure no data are misrepresented or to seek explanation for large discrepancies.
  b) Regulatory agencies, to conduct a comprehensive follow up of the environmental clearance granted to any project, to check progress during project implementation.
  c) Judicial and regulatory authorities, to make quick decisions for penalising projects, which have not complied with prescribed standards.
  d) Local communities, to approach and register grievances, as well as track positive developments, for which a project might be responsible.

EIA follow up is a globally recognised practice and includes measuring, monitoring actual impacts, adaptive management and regular communication. Over time, this should be integrated into the EIA process to strengthen the ECIS, provide updated data and adjust baselines. An **EIA Follow Up Cell** should be established within MoEFCC for this purpose.

Figure 15: Structure of the Environmental Clearance Information System (ECIS), formed under the ECSC



Source: CEEW analysis

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