

The Shakti

Dialogues

February 26-28, 2018

FRAMING A NATIONAL VISION ON
ELECTRIC MOBILITY
DRIVING REFORMS IN THE
POWER SECTOR

INTEGRATING ENERGY EFFICIENCY IN THE
**NATIONAL AFFORDABLE
HOUSING PROGRAMME**

**ADDRESSING
AIR QUALITY**

CHALLENGES IN A RAPIDLY URBANIZING INDIA

**CATALYZING
FINANCING**
FRAMEWORKS FOR
CLEAN ENERGY

**ENGAGING
BUSINESS
LEADERSHIP
IN CLIMATE
MITIGATION**



#shaktialogues2018



Shakti @ShaktiFdn - Feb 26
Need to move beyond short-term emergency measures to address #airpollution and focus on long-term structural solutions @AnuragKishore @CCEETeam #shaktialogues2018



Margarta Parra @margartaparra - Feb 25
G. P. Agarwal @GPAgarwal highlighting the need to raise the seriousness of air quality issues in India and bring diverse set of stakeholders to take action #shaktialogues2018 @ShaktiFdn @VIRIndia



@ShaktiFdn - Feb 27
Dialogue on #EnergyEfficient #Affordable housing benefits from experts and industry perspectives. Issues raised on standardization of building materials of products & technologies, government subsidies, policy, skill building #shaktialogues2018



Q. P. Agarwal @GPAgarwal highlighting the need to raise the seriousness of air quality issues in India and bring diverse set of stakeholders to take action #shaktialogues2018 @ShaktiFdn @VIRIndia



Shakti @ShaktiFdn - Feb 25
Some important points highlighted by Mr. B. Sengupta, Ex-Member Secretary, CPCB: Pollution testing for in use vehicles needs an integrated approach. Tyres being used as fuel in the #SMI sector can be used in cement plants for co-processing.



Shakti @ShaktiFdn - Feb 25
Electric mobility is a significant opportunity for industry, India is a significant part of the global value chain in auto components. Industry must be able to capitalize. Mr. Nitin Desai. @ShaktiFdn



Margarta Parra @margartaparra - Feb 25
Very fruitful discussion on how to build an electric mobility system for buses, wheelers, trucks, and cars in India! #shaktialogues2018 @ShaktiFdn @VIRIndia @IndoExa @CCEETeamAse @CCEETeam



Shakti @ShaktiFdn - Feb 28
Have a state-wise analysis of the distribution sector - AT&C losses over 30% in some states. How to improve discoms' efficiency? Need system of commercial accountability at the lowest level of discoms? Shri Sreenivasa Murthy, Ex-Chairman of the KERC #shaktialogues2018



Shakti @ShaktiFdn - Feb 26
@ShaktiFdn commissioned public survey on #airpollution indicate that people interested in understanding its impact on health. More consumable information must be put in the public space: Edelman India. Read survey: goo.gl/CFNa32s #shaktialogues2018



Shakti @ShaktiFdn
#ShaktiDialogues2018 kicks off today at the picturesque Anandgram in New Delhi. We look forward to insightful discussions on #ElectricMobility, #CleanEnergy finance, #AirQuality, sustainability in #Affordablehousing. ...



Shakti @ShaktiFdn - Feb 27
How can we get political consensus on fixing the power sector, and what are entry points of interventions? @GopalKishore @CCEETeam #shaktialogues2018



Shakti @ShaktiFdn - Feb 28
Anirban Ghosh, Chief Sustainability Officer at the Mahindra Group, kickstarts the session on #BusinessCasesfor and #Climate mitigation with the question - Are business doing enough? #shaktialogues2018



A Clean & Secure Energy Future

The fourth annual Shakti Dialogues 2018, held from Feb 26-28th 2018, delivered rich perspectives on the critical transitions underway in India's clean energy sector.

Recent initiatives by the Government of India, such as the announcement of ambitious renewable energy and electric vehicle targets, energy efficiency interventions, rural electrification schemes as well as sustainable urban development priorities present significant opportunities for future growth to be cleaner and greener. One of the key imperatives for India is to mobilize high financial flows given that USD 2.5 trillion is required for the implementation of the Nationally Determined Contributions.

Recognizing the importance of open dialogue to share ideas, formulate solutions and foster cooperation around these developments, Shakti Sustainable Energy Foundation has been convening the Shakti Dialogues, bringing together policymakers, academics, industry, NGO's and thought leaders across the energy landscape.

The fourth annual Shakti Dialogues 2018, held from Feb 26-28th 2018, delivered rich perspectives on the critical transitions underway in India's clean energy sector. Drawing from insights gained from Shakti's on-going programme work and from emerging priorities and developments in the country, the Dialogues focused on six critical themes:

1. Framing a national vision on electric mobility
2. Catalyzing financing frameworks for clean energy
3. Addressing air quality challenges in a rapidly urbanizing India
4. Integrating energy efficiency in the national affordable housing programme
5. Driving reforms in the power sector
6. Engaging business leadership in climate mitigation

The sessions were introduced by Mr. Krishan Dhawan (CEO of Shakti) and chaired by distinguished members from Shakti's Board of Directors including Mr. Nitin Desai (Former Under Secretary General, United Nations) and Mr. Suman Bery (Former Director- General of the National Council of Applied Economic Research), as well as eminent personalities including Mr. Gireesh Pradhan (Former Chairman of the Central Electricity Regulatory Commission), Professor Jagan Shah (Director of the National Institute of Urban Affairs) and Mr. Anirban Ghosh (Chief Sustainability Officer at the Mahindra Group).



Framing a national vision on electric mobility

- There is need for a clear and long-term plan on sustainable transport. An EV policy should be technology agnostic, and key stakeholders will have to work comprehensively across all levels to transition to EVs. In the absence of an EV policy, there should be a roadmap or action plan from the government, which will help drive the Electric Mobility Mission.
- India has the opportunity to combine the electric vehicle roadmap with mobility objectives with a focus on public transport, 3-wheelers and fleet aggregators to promote public transport and shared mobility. Around 250,000 buses are required to service our cities. This will induce demand aggregation of EVs, which in turn will ensure the critical mass of vehicles required to bring down costs.
- EVs provide the opportunity of combining currently disparate energy sources into one, electricity. This will make it easier to deal with emissions by targeting clearer energy in the power sector.
- While states have a clear role to enable manufacturing of electric vehicles, they will also have to address other issues of EV adoption. Mobility and air quality improvements are co-benefits derived by cities, hence states and cities will need to be equipped to address these.
- Affordability and fear of technology lock-in of EVs could be improved in the short term if models of delinking the batteries from vehicles can be adopted, through battery swapping or battery leasing.
- India needs to adopt a pathway for charging infrastructure adoption. The Combined Charging System (CCS) of the European Union is being adopted worldwide and may be a viable option. The cost of a multi-standard charging station is not considerably higher, and it merits investigation. It is necessary to have clarity on who can own public charging stations and whether electricity can be provided through public chargers, or will be considered resale or as a service.
- Robust research & development on emerging technologies, especially on battery chemistries and their efficiencies is a must
- There is a need to build capacity of governments, city officials, research organisations, policy think-tanks.

A few emerging areas of concern were identified:

- a. How will the lack of rare earth metal reserves in India impact the EV mandate? Rare earth metals in India must be explored extensively. The deregulation of Lithium by the Department of Atomic Energy may be required.
- b. While EVs will create employment for skilled labour, in the long term, this will lead to a loss of jobs in the ICE automotive industry. What is the nature and impact of this job loss?
- c. Data generated from fleets can be provided for analysis and planning for city transport.

India needs to adopt a pathway for charging infrastructure adoption. This could begin with clarifying the standards to be adopted.



Catalyzing financing frameworks for clean energy



- There is a need for standards that universalize the definition of “green finance” across various lending and investing communities. These standards should seek to find mechanisms that incentivise green finance and reward those who opt for raising finance for clean energy infrastructure over conventional infrastructure.
- Defining “green finance” will enable a more accurate estimation of the finance required, the current levels of finance and the gap to be addressed. This will enable the development of policies for the appropriate deployment of public funds, for attracting private funds and for scaling up finance for the sector.
- The dearth of capacity and specialised skills for evaluating and financing clean energy infrastructure projects is a challenge. Upskilling and capacity increase may be achieved through adequate capacity building efforts in existing institutions or through the development of new specialised institutions. Capacity building will lead to the deployment of specialised tools, instruments and mechanisms to address existing gaps such as term of loan and accurate assessment of project/ credit risks

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- Most of the current thinking regarding clean energy infrastructure amongst the financial community is voluntary and not mainstream. This can be addressed through prototyping and piloting various business models and innovative financial mechanisms, which will enable the financial community to better assess and price risks.
- It is understood that in the longer term the most appropriate role for the government in creating an enabling environment for clean energy finance lies in providing regulatory/ policy stability and utilizing public funds for providing risk guarantees



Addressing air quality challenges in a rapidly urbanizing India

- Air pollution is a nationwide problem. There is a need to advance policy action beyond Delhi. The preparation of the Graded Response Action Plan (GRAP) and Comprehensive Clean Air Plan for Delhi is encouraging, and other cities are looking to emulate Delhi's example. However, caution is required as the replication of models/plans adopted by one city by another might not be the best solution. Local leaders need to be engaged to build political consensus on the need to tackle air pollution.
- Short-term emergency response measures like GRAP while necessary for dealing with air pollution episodes, have their limitations and cannot be relied upon for achieving sustained improvements in air quality over the longer term. Therefore, comprehensive clean air plans with time-bound and target-based measures are needed. The central government's decision to introduce a 'National Clean Air Programme' with time-bound targets to tackle the growing air pollution problem across the country is an encouraging development.
- The limited availability and accessibility of air pollution measurement data is a critical information gap. The emergence of low-cost air quality monitors provides an opportunity to fill the existing data gaps. However, the technology is still evolving, and its use requires careful application. Standardisation of protocols to operate networks that are based on low-cost air quality sensors are required to generate more credible measurements.
- The deadline for thermal power plants to comply with the new emission standards has passed. Given widespread non-compliance, the Supreme Court has directed power plants to complete a needs assessment and submit a timeline for adherence to the standards. Advocacy must continue to ensure that the standards are adhered to at the soonest and defaulters are penalised. The enforcement of industrial standards continues to be a challenge.
- The questioning by some policymakers of health impacts that are associated with exposure to air pollution is a concern. More health assessments are needed that include a greater engagement of the medical community and provide evidence to policymakers on the public health implications of exposure to air pollution.
- The environment should be looked at in a holistic manner. There is a clear opportunity to adopt strategies which lead to a reduction of greenhouse gases (GHGs) as well as conventional air pollutants. These inter-linkages should be further explored.
- CSOs and subject experts stand to benefit from a greater sharing of knowledge and experiences with each other. There is a need to create stronger CSO networks across states and cities.
- Enhancing the institutional capacity of public agencies responsible for tackling air pollution is critical. There is also a need to strengthen coordination among institutions. Supporting capacity development of public institutions is a significant opportunity.
- Urban centres require integrated planning approaches to abate air pollution. Mobility in the urban sector needs to be interlinked with clean air action plans. Furthermore, the capacity of city administrations to raise revenues and align their fiscal strategies with air pollution measures needs to be enhanced.
- Public understanding on the issue of air pollution and its implications on health and the economy is limited. This needs to be enhanced through better communication, media and public engagement.

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Integrating energy efficiency in the national affordable housing programme

- The green construction sector is facing a vicious cycle of limited demand and supply. The demand for energy efficient material is low due to the lack of sufficient providers, and supply does not exist due to lack of demand. A long-term and comprehensive plan necessitating the involvement of stakeholders across the spectrum is required to address this challenge.
- A clear definition of energy efficient material is an immediate requirement of the sector. An inclusive method for defining green materials should be developed, one that encompasses various facets of energy resource efficiency.
- There is a need to develop a directory for energy efficient materials. This must be followed by standardization of materials.
- Considering the diversity of climatic zones in India, local level standardization of materials can provide suitable material for local needs.
- A push towards local manufactures, in comparison to their foreign counterparts, is needed to boost the sentiments in the market.
- Many stakeholders are involved in the value chain of construction materials, which makes the acceptance of new technologies and materials across the chain a tedious and lengthy task.
- Around 85% of construction activity is related to bricks in India. Hence, the type of brick used has a profound impact over any energy efficiency target, necessitating the need for better quality bricks.
- There is need to make fly ash bricks mandatory in construction in about 300 km radius of a thermal power plant.
- A pragmatic approach is required to regulate the use of soil in the brick industry, given that the current regulation on top soil use may not be generating the desired results.
- Illegal brick manufacturing units should be closed to restrict the flow of cheap construction materials with high environmental impact.
- To transform the market for energy efficient materials, business models need to be developed for material suppliers and end consumers.
- Instead of initial cost, the lifecycle cost and induced savings should be included while making decisions for public procurement.
- Skill development is essential across the complete value chain to promote the implementation of energy efficient materials and technologies.
- Educational campaigns on the benefits of energy efficient materials should be launched for end users. Demonstration projects should be undertaken.
- There is a need to focus on Smart Construction, a holistic concept which subsumes environmental, social and economic concerns within itself. In the present age of resource scarcity, this concept gets further importance.

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Driving reforms in the power sector

- India has strong ambitions to enhance access to clean and sustainable power for its growing population. A key step forward is to develop an integrated narrative on electrification and broader power sector reforms that align with plans, priorities, consumer aspirations and actions on the ground.
- The power sector is one of the most critical growth drivers for India. It is critical to evaluate the entire value chain of power supply (from fuel to last mile consumers) to optimise the overall system cost and socialise those costs equitably.
- A strong consensus must be evolved amongst key stakeholders—policy makers, regulators, consumers, civil society—at the national and state level on the need and approaches to reform the power sector.
- To promote faster and informed decision making, it is necessary to strengthen the capacity of discoms, regulators and policy makers.
- Civil Society can play a key role in facilitating knowledge sharing and discourse building.
- A step ahead is to build the capacity of civil society organizations to be able to play a greater role in decision-making processes in the power sector.
- While the power sector in India has witnessed a few success stories in the last few years, the road ahead is still dotted with critical challenges. Learning and best practices from global experiences in areas such as retail competition must be documented and widely disseminated to enhance access to relevant information.
- Aggregate technical and commercial (AT&C) losses in India are much higher than the global average. Reducing AT&C losses through focused interventions such as working with the most ineffective Discom divisions can bring down national level AT&C losses—one step at a time—and ensure commercial accountability at the feeder level.
- A challenge being faced today is the lack of robust data on renewable energy, which limits the ability of stakeholders to explore develop solutions. It is necessary to improve the data regime and granularity across the power sector value chain, e.g., collate data for energy demand including captives, generation, transmission and distribution.
- Going forward, we need to concurrently work towards transformational changes in the power sector, by focusing on interventions in electric mobility and the electrification of industrial and commercial applications.

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Engaging business leadership in climate mitigation

One of the principal issues in businesses addressing climate change is that businesses do not know if their efforts are adequate. This necessitates the need for development of standards and tools.

There are several tools and standards that are currently widely accepted. Many of these are operating in India, and businesses can adopt them voluntarily. However, given that most have been developed outside India, there is some merit in deliberating if India specific standards and tools are needed, what they may be, and who should implement them.

If businesses choose targets such as being carbon neutral, they need to be cognizant that such targets keep changing as standards to assess these keep changing, hence it is not going to be a onetime exercise but needs to become a part of its strategy and operations.

Other concepts such as extended producer responsibility, circular economy, appropriate pricing of carbon also affect businesses. However, businesses typically adhere to such concepts and report on them only when required to do so by the investor community or the regulators. Those businesses that take the lead and voluntarily report their action have little congruency in the standards used.

Businesses can be divided into leaders and followers. The leaders are the businesses which have already started committing to climate business action as they see a business case for action as well as foresee climate risks. However, since such action is voluntary, there is little or no reward / benefit for such action for the business. Followers are those organisations which shall initiate action only when required by regulators.

Instituting awards and certifications for businesses in an appropriate way may help increase adoption of standards and increased climate action. Additionally, the awards and certifications should focus on the quality of reporting.

It is necessary to develop a business cases for climate action by corporates, such as under the affordable housing scheme for construction and allied

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businesses. Additionally, it may be useful to support research on the development of standards and tools, which may further support their implementation by supporting the awards and certification processes.



List of Participating Organizations

Asar Social Impact Advisors
Akhil Bhartiya Nirmal Smiti
Alliance for an Energy Efficient Economy
Asahi India Glass Limited
Asian Development Research Institute
Association of Fly Ash Products Manufacturers
Azim Premji Philanthropic Initiatives
Bloomberg Philanthropies
C40 Cities
CDP India
Center for Environment and Energy Development
Center for Study of Science, Technology and Policy
Central Building Research Institute
Central Electricity Authority
Centre for Energy, Environment & Resources
Centre for Environmental Planning and Technology (CEPT) University
Centre for Policy Research
Centre for Science and Environment
Ckinetics
Clean Air Asia
Climate Bond Initiative
Climate Policy Initiative
Confederation of Indian Industry
Consumer Unity & Trust Society
Council on Energy, Environment and Water
Covestro
Deutsche Gesellschaft für Internationale Zusammenarbeit
Edelman India
Energy Policy Institute at University of Chicago
Environmental Defense Fund
Forum for the Future
Geo Cycle
Godrej & Boyce Mfg. Co. Ltd
Green Rating for Integrated Habitat Assessment (GRIHA) India
Greentech Knowledge Solutions
ICLEI Local Governments for Sustainability - South Asia
IFC
Indian Council for Research on International Economic Relations
Infosys
Integrated Research for Action and Development
Intellect Advisory Services Private Limited
International Association of Public Transport
Jindal Steel and Power
KPMG
LLOYD Insulations (India) Limited
Mahindra Group
Meghraj Capital Advisors
Ministry of Power
National Institute of Urban Affairs
Natural Resources Defense Council
NN4 Energy
Ola Cabs
Prayag Clay Products Private Limited
Prayas Energy Group
PricewaterhouseCoopers
Public Health Foundation of India
Respirer Living Sciences
RP Sanjiv Goenka Group
Skymet
Smart Power India
Tata Power Delhi Distribution Limited
The Climate Group
The Energy and Resources Institute
The Institute for Transportation and Development Policy
The Janaagraha Centre for Citizenship and Democracy
The John D. and Catherine T. MacArthur Foundation
The Unit House Co
The William and Flora Hewlett Foundation
U.P. Twiga Fiberglass Limited
US-India Clean Energy Finance
World Bank
World Resources Institute India
World Wildlife Fund



Shakti Sustainable Energy Foundation

The Capital Court, 104B/2, Fourth Floor

Munirka Phase III

New Delhi 110067 India.

T : 011-47474000 F : 011-47474043 W : www.shaktifoundation.in

Corporate Identity Number : U93030DL2009NPL194891

