

DECEMBER 2019



CLEAN
Clean Energy Access Network

INDIA CLEAN COOKING FORUM 2019

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OUTCOME REPORT

CREATING IMPACT THROUGH CLEAN COOKING APPLICATIONS

This document briefly summarizes takeaways from CLEANs year-round consultations and engagements with various stakeholders from the clean cooking sector, culminating into the seventh edition of the India Clean Cooking Forum (ICCF) held on the 3rd of December 2019 at India Habitat Center, New Delhi. ICCF 2019 was organized in partnership with NITI Aayog, ENGIE, Shakti Sustainable Energy Foundation and Good Energies Foundation. The event was attended by more than 130 participants ranging from industry players and financiers to parliamentarians and senior representatives of various ministries and institutions such as Ministry of New and Renewable Energy, NITI Aayog, Indian Institutes of Technology, National Environmental Engineering Research Institute and the World Bank. International organizations like ENGIE, Modern Energy Cooking Services and HomeBiogas were also in attendance. Over the last few years, clean cooking initiatives were focused on the expansion of LPG based cooking. There are various clean cooking technologies in the market that need to be pushed to the forefront of this industry to share the spotlight with LPG. The National Biogas and Manure Management Programme (NBMMP) by MNRE is one such initiative. The evident need to reduce crude oil imports by 10% by 2022 calls for such RE based innovations in the clean cooking sector. Given India's large geography and varied needs, CLEAN believes that many such clean cooking technologies have abundant space to grow. ICCF 2019 was instrumental in bringing many of these clean cooking appliances/technologies into the limelight; from thermal energy storage to portable biogas plants. This includes heating, drying and all other applications related to households, not just cooking.





Keynote Speaker: Shri. Dinesh Jagdale
Joint Secretary, MNRE



Special Address: Shri. Rajnath Ram
Adviser, NITI Aayog

FOCUS OF ICCF 2019

ICCF 2019 focused on bringing together stakeholders from the clean cooking sector to demonstrate innovations and impact of clean cooking applications. It also looked at highlighting various applications of clean cooking with a focus on the views and experiences of end users. This helped create awareness about the positive impacts of Clean Cooking Solutions and channelize our efforts towards research & development in a way which caters to the demands of end users and practitioners.

ICCF 2019 was divided into four thematic sessions:

- Impact Sharing by Clean Cooking Changemakers
- Converging Clean Cooking with Sustainable Development Goals (SDGs)
- Enhancing Clean Cooking through Research & Development
- Financing Clean Cooking Applications



EXHIBITIONS

In continuation to previous ICCF held, CLEAN invited practitioners from the field to showcase and demonstrate the latest innovation in Clean Cooking to the investors, sector experts, key government officials, corporates and others. The exhibition showcased both natural and forced draft cookstoves, stoves for space heating, pellets and briquettes, electric cookstove, some innovative biogas digesters and finance providers as well. There were some international entities present too. 15 clean cooking practitioners displayed their products and innovations. Overall, the exhibition provided a good platform for practitioners to interact with investors and policymakers.



IMPACT SHARING BY CLEAN COOKING CHANGEMAKERS

Impact creation can have very wide and varied meanings. Clean Cooking entrepreneurs have a difference in perspective and horizons of impact creation, through their businesses. All the Clean Cooking changemakers who were present in the panel discussion have their personal notions of creating impact but we all agree that the larger cause for all of them is the same- making positive environmental impacts by influencing the users to move from conventional to non-conventional sources of energy or atleast complimenting the former with the later, keeping in mind the accessibility, affordability and good health of the users.

The panelists in the session pointed out that the catalysts for creating impact lies in providing level playing field to the practitioners and value addition to the users. Even households with low income that hardly have any disposable money were ready to adopt Clean Cooking solutions, provided that they were given Easy Monthly Installment payment options since they saw good value in the product.

Those present at the panel felt that it is very important to make the required investment in the technology for easy construction and for keeping a check on quality, which would later lead to faster adoption and sustained use, with easy maintenance. Thus, investment from the right source and proper utilization of the same is the key for positive impact generation.



Left to right - Yair Teller (HomeBiogas), Lt. Col. Mohnish Ahuja (Retd) (PRESPL), Piyush Sohani (Sistema Bio), Akansha Singh (Swayambhu), Prasad Kokil (Ecosense), Dhaval Thakkar (UNesar), Smita Rakesh (Social Alpha)

Any business is sustainable only if it replaces conventional forms of energy at a similar or lower price point. This will incentivize adoption and ultimately lead to impact creation. It was correctly pointed out that the users not only want a shift from the conventional methods of cooking, but they also want a better experience with the new method. Users are looking for substantial value additions when shifting to a new technology. It was discussed that the financial gap that remains in the sector can be filled by injection of funds by the government through its schemes and programmes. This finance should be enabling, commercially viable and not restrictive to any particular type of entity.

Coming to the topic of impact measurement, one of the ways as marked by the panelist was through village level entrepreneurial model. When a practitioner invests in a technology, jobs/entrepreneurs are created and once they become successful, the investment made by the practitioner is put back into the economic system. To maintain synergy in the impact that is created, a strategic approach and utilization of technology is needed such as making baseline surveys, spreading right knowledge, successful installations, regular service visits and tracking the installed systems through GPS turns out to be helpful. While talking about the on-ground scenario, the importance of an anchoring agency at grassroots level was also discussed. Non-government organisations (NGOs) and trusts working at the grassroots play a very relevant role in community level projects, by taking a programmatic approach for mobilizing the local people in the villages. They also help define the ownership of the project within the community and counter the trust deficit and communication barrier that exists in rural areas around the community projects.

The session was concluded with a remark on how creation of impact always acts like motivation for practitioners to come up with better solutions for the problems in their sector. Some of such impacts that are the major drivers for the efforts made by the practitioners are providing a convenient, accessible and economical solution to the users, making them energy independent. Thus the need of the day is to move from anecdotal stories to impact at scale. Although, alignment of everyone on the impact narrative is very important, at the same time, solutions cannot be universal in nature due to the vast difference in the needs across the country.

CONVERGING CLEAN COOKING WITH SUSTAINABLE DEVELOPMENT GOALS

The harmful effect of air pollution is something every individual is aware about. Indoor air pollution in this case, is left ignored but is equally responsible for contributing to air pollution and must be addressed with right intervention. Inefficient cooking has been a norm in most of the developing countries but has now received more accusations than ever.

When spoken from the consumer's perspective, SDGs are not a concern but what matters to them is affordability and convenience. From an entrepreneur perspective, SDGs can be useful for attracting more finances considering that there is lack of investments in alternative clean cooking solutions. The government on the other hand, is involved in policy formulation and tracking the progress and its implementation and finding a way forward.

In the 2019 report on SDG 7 (Access to Clean Energy), it was observed that one part of the goal was achieved but access to clean cooking was still a far-fetched goal. According to the NITI Aayog SDG Index BaseLine report, many parts of northern India performed poorly in the adoption of clean cooking but a roadmap published by NITI Aayog and CEEW there was a massive improvement in the access of clean energy, from 43 % to 94% in three years but the dominant fuel was LPG.

The panelists deliberated upon the question that if there has been an improvement in the access of clean energy, why is there any conversation on the importance of SDG 7 (Affordable and Clean Energy) ?



Left to right - Dr. Parveen Dhamija (Sector Skill Council for Green Jobs), Abhishek Jain (CEEW), Richie Ahuja (Environmental Defense Fund), Debajit Palit (TERI), Siddhath D'Souza (LAYA), Hari Natarajan (Energy Expert)

It is to be noted here that, we might have achieved the access to clean energy but the question on its affordability and reliability needs to be assessed. Also, questions on sufficient connection as well as its adoption and use is critical to assess. At this point, it was mentioned that CEEW had come up with a report that stated- nearly 1/3rd of the rural population use LPG as their primary source of fuel.

What the panelist contended that wrong matrixes were used to track clean cooking and there was a need to go beyond the availability of clean connections. There was a need to first have a multi-dimensional definition of energy, clean energy and cooking energy. Also, why a conversion of LPGs can help in bringing about a better indoor cooking revolution. There were three bases on which this idea was discussed and its importance was highlighted. The first being healthcare, livelihood and education. It was observed that the intervention of the Ministry of Health in achieving SDG 7 was extremely crucial because they had an existing network on ground, the ASHA workers, who could be leveraged in bringing about a significant change. Also, traditional methods of cooking are leading to premature death and increase morbidity making it a prerogative of the ministry to champion this cause. Another crucial point of convergence was livelihood. Women in rural areas spend a large part of their day cooking through traditional means which leads to a loss of economic opportunity for them.

The importance and challenges of clean cooking in tribal communities was also highlighted. The tribal communities are surrounded by abundance of natural resources and injecting this sober technology would require not replacement of their existing methods but an improvement on what they already have.

Speakers had come up with studies and solutions that backed the convergence of SDGs by quantifying it. The key role was the development and testing the solutions on ground and later forming policies with the government and how to expand the convergence. Also, discussion on the challenges of shifting the users focus from the traditional cooking to clean cooking was highlighted.

A strong infrastructure to support clean cooking was also spoken of where economic convenience was an impediment to work on. Also, it should be a beneficiary's choice to decide which method of cooking they would want to use considering several researches were done where families used both LPG and as well as traditional methods as and when required.

A multi-dimensional measure to capture the adoption and use of clean cooking was spoken about. Methods to operationalize the multi-dimensional measure must be built into the business. It shouldn't become a separate exercise where the results are separately measured; instead it should be incentivized in a way where people are compelled to switch to better cooking.

The incentive structure needs to be aligned in such a way that the incentives promote sustainable use of carbon credit. Instead of having to sell the product it should be selling services thereby giving it a recurring profit. When services are incentivized it gives us a picture of change of affair instead of state of affair. Nonetheless, monetary incentivising the services would not be easy considering the issue of finances as well the payment of loans. The profits earned were used to repay and took almost 8 years. If there were adequate finances, the repayment would be done in 4 years and the incentivizing would take the rest 4 years. Also, insuring the products could also be a good way to compel users to shift their focus in clean cooking.

There isn't much conversation around indoor air pollution nor does this issue find any place in government reports considering it's not a big contributor to the larger picture of climate change but it cannot be ignored. Even if the user's do not use it, they should be giving it for free even though costs would be incurred even if it's not monetary.

When spoken from the skill and development perspective, there were questions on creating training packs for the SHGs under the NRLM, to which one of the panelists gave us an overview on how the new scheme of biogas under skill development has been incorporated. There was an emphasis on improving the supply chain management to better assess the aggregation efforts else the work would go in vain.

There is a need for private organizations to step in and provide training for the trainers to catalyze supply chain management. For this sort of work, not just technical skills are required, other skills like communication, digital skills and personal health and safety measures are needed. Assessment agencies exist that conduct exams for such services and issue certificates for the same. The same needs to be developed for cook stove programs and as pointed out CLEAN has been extremely helpful in partnering with many other organizations to do this work. There is a need for a level playing field for DRE and a subsidy is needed for the users. The government pushes for only those technologies that meet some technical standards.

From a research perspective, it is important to see if it meets those standards. From a policymaker's perspective, it is easy to give recommendations when performance data is provided. When spoken from consumers' point of view, there is a need to create a marketplace for cookstoves or build infrastructure of a clean kitchen to promote social good. Energy is too important to be spoken just around linkages of SDGs. There needs to be separate indicators to talk about the importance of energy in realizing the full extent of each SDG. Energy is critical and impacts our lives in every way possible.

	<p>Clean cooking is part of basic services necessary to lead a healthy and productive life and saves households time and money.</p>		<p>Clean cooking is essential to addressing energy poverty and ensuring sustainable energy security for billions of people.</p>
	<p>Efficient cookstoves reduce the amount of fuel needed to cook, thus reducing the burden on families who would otherwise have to collect it, buy it, or trade their food for it.</p>		<p>Energy access enables enhanced productivity and inclusive economic growth. The clean cooking sector offers many job opportunities.</p>
	<p>Reducing smoke emissions from cooking decreases the burden of disease associated with household air pollution and improves well-being, especially for women and children.</p>		<p>Clean cooking addresses household and ambient air pollution, resource efficiency, and climate vulnerability.</p>
	<p>Children, particularly girls, are often kept out of school so that they can contribute to household tasks, like cooking and collecting fuel.</p>		<p>Up to 25% of black carbon emissions come from burning solid fuels for household energy needs. Clean cooking solutions address the most basic needs of the poor, while also delivering climate benefits.</p>
	<p>Unpaid work, including collecting fuel and cooking, remain a major cause of gender inequality.</p>		<p>Up to 34% of woodfuel harvested is unsustainable, contributing to forest degradation, deforestation, and climate change.</p>

Global Goals Delivered by Clean Cooking
 Source: The Global Alliance for Clean Cookstoves

ENHANCING CLEAN COOKING THROUGH RESEARCH AND DEVELOPMENT

Clean Cooking solutions ranges from a variety of biomass fuels and solar technologies and goes upto geothermal solutions, wherever applicable. In India, R&D in clean cooking is mostly driven by the need to replace traditional biomass fuels in rural households and not extending them to urban kitchens.

The panelists discussed how to promote clean cooking technology in a more user centric manner. It was pointed out that the research should be field based. The pilot projects or the product development should be made iterative where user feedback is necessarily a larger part of product development compared to other accessorial and peripheral activities. Also, the funders while supporting innovations should not just look at one proof of concept exercise but focus on deployment in a stage manner gradually contributing to product feedback. There is a need for understanding user preferences and designing structured tools for building user feedback.

A paradigm shift is required where we need to provide users with the information to enable them to make decisions for themselves and not decide for them. This would help in behaviour change communication. The challenge of user acceptance in solar cooking solutions was also discussed. The key points that came out were cost and deficiency in social engineering.



Left to right - Dr. Nick Rousseau (Modern Energy Cooking Services), Pranav B. Gadhia (Sunrise CSP), Smita Rakesh (Social Alpha), Dr. Nitin Labhsetwar (NEERI), Dr. Sudhir Tyagi (IIT-D), Dr. Priyadarshini Karve Samuchit EnviroTech).

The panelists put forward the idea of community based centralized system and hybridisation of technologies and services. The efficiency and acceptance of the cogeneration system is also higher and proves to be cost friendly. It was pointed out that there are mainly 3 billion people cooking in biomass who suffer from household air pollution. Also, there is a lack of investment in clean cooking solutions. According to energy experts, 4.4 billion dollars is needed to finance universal access to clean cooking but only 13 million dollars so far has been invested in this sector. Therefore, to tap the clean energy solutions, investments in this sector need to be acknowledged.

The importance of standardisation of clean cooking technology/services was also discussed upon. Talking about ISO versus BIS debate, representative from NEERI pointed out that ISO standardisation holds importance to increase the export potentials of clean cooking products. Certain basics should be followed while taking standardisation into consideration such as, emission, fuel saving, adoption, durability and possibly exposure. The protocol that needs to be followed while going for standardisation is that the clean cooking solution should be close to real world condition. ISO standards for solar, biochar and solid biomass cookstoves already exist. The emphasis was also given at keeping testing and ranking as two different things for the devices. Life cycle assessment of such products was considered to be of importance during testing.

The panelists focused on how to bridge the gap between lab scale performance and field level user experiences. Several important highlights were made with respect to this, such as, training of women/users in handling the cook stoves, use of processed fuel, supporting increased research and development in building smokeless cook stoves etc. It was also brought into the notice of the audience that use of LPG is also releasing carbon dioxide and is harmful if used in closed kitchens.

If health is the driver of the sector, the focus should be more on reducing the exposure from harmful pollutants by doing everything needed. But we see a disproportionate focus on just changing cooking energy technology through our programmes and policies, rather than looking at the entire ecosystem leading to exposure. While talking about the ones at the bottom of the pyramid, exposure is highest among them. Their dietary habits also make them less immune as compared to others. Their homes are smaller with less/no ventilation at all. Here, the point was raised to bring in Pradhan Mantri Awas Yojana with a criteria of maintaining ventilation to check indoor air pollution.

It was discussed that, since there is a lack of confidence among investors about the sufficiency in demand, therefore business models sometimes fail to be viable as they don't invest much on making high quality products. Thus, it is important to also have a market point of view in such discussions.

Several action highlights were made to put forward the changes needed at the policy level for bringing in new trends in research and development and a new era in the clean cooking sector. It was marked to emphasize on indigenous fuel rather than imported fuel and gradually move towards minimizing the health damage. On the business side, it was discussed to bring realistic business models on the ground and strive towards developing technology for urban customers.

The panelist pointed out on creating scenarios where there are waves of various categories of clean cooking solutions and not just one solution, which would help in promoting further R&D, funding and dialogues. Taking technology agnostic view on understanding the cooking environment, bringing lab work and field work closer by working with communities and creating markets was focused upon.

FINANCING CLEAN COOKING APPLICATIONS

The panelists opened the session stating that there is a desire among the enterprises to engage in the sector and there is a set of financiers who are very keen to do end-user financing. They also shed some light on certain challenges to development, manufacturing, and adoption of clean cooking products and the role of blended capital and risk absorption to overcome those challenges.

According to the panelists, when investors see business and market opportunity in the sector, they are looking to invest in a portfolio of companies which can learn and benefit from each other, trying to stimulate the whole ecosystem. In the view of the participants, the clean cooking industry needs to get into that mindset of building a structural investment space thereby allowing different parties to come together and facilitate regular financing. Also, it was clearly stated that there is a lot of money available for innovation, R&D and perceivable projects.

Impact Finance is meant to generate measurable social and environmental impact alongside a financial return. It was brought to light that the mindset of impact financiers is such that by making the investment, the development and economic condition of the end-user should increase. Therefore, cookstoves need to demonstrate and reflect the environmental integrity in a way an investor wants to see.



Left to right - Jasmeet Singh (Fair Climate Fund), Arnout Dijkhuizen (ENGIE), Sreyamsa Bairiganjan (The World Bank), Upendra Bhatt (cKinetics), Cristudas K V (ESAF Small Finance Bank), Santosh Singh (Intellecap).

The discussion highlighted that there are abundant opportunities available in impact financing for cook stove manufacturers, a number of policies in place to help, and a number of opportunities available from international institutions as well.

The panelists discussed how global funds, such as Green Climate Fund, have very stringent norms and they look at a program in a very holistic manner. An alliance with a company or institution can be instrumental in getting investments from such a fund. A partnership with Clean Cooking Alliance helped The World Bank in getting funds from Green Climate Fund for a project in Bangladesh was cited as an example. Also, a similar partnership between The World Bank and IDCOL helped them to mobilize all the partner organizations and involve government organizations like IREDA to get GCF financing. This discussion on how to get financing from major global funds concluded the discussion.

ICCF 2019 SUMMARY

DISCUSSIONS AT ICCF 2019:

- Helped outline a strategy to support new innovations and expand clean cooking applications in the country.
- Showcased clean cooking impact stories from across the country
- Continued contribution to climate change initiatives/ institutional & policy measures that can be catalytic
- Impacted health, education, and cross cutting areas from other spheres
- Highlighted points for action by clean cooking practitioners, policy makers, innovators, financiers and legislators.



ACTION PLAN FOR CLEAN

CLEAN to work closely with policymakers to understand the disparity in the market and lobby for better policy around the clean cooking technologies. As an industry network, CLEAN to reach out to financial institutions to sensitize them and encourage them for investment in this sector.

CLEAN to plan to conduct a carbon footprint analysis and health impact assessment of improved biomass burning stoves along with some of its members.

CLEAN, with its industry network, to plan to initiate on-ground pilots in different areas of the country. Multiple iterations of different stoves could be tried at the same location to see what works and what does not. Small-scale community training workshops to be conducted to help the locals learn basic operation and maintenance of clean cooking technologies.

The Clean Cooking sector needs to build a structure of finance that enables different parties to get together. CLEAN, along with key stakeholders will develop a financial structure framework in the sector. Also, following the GCF and World Bank analogy, CLEAN would assist companies in sourcing finance from national and international funds

CLEAN to help bridge the information gap between manufacturers and users in the sector by conducting meetups and workshops and ensure proper knowledge transfer of the user requirements to the researchers and manufacturers.

CLEAN to help in bringing successful international experiences before the clean cooking sector in India and help translate these international learnings into the Indian context.

ICCF 2019 contributed to transitions that will help reach the goal of universal access to clean cooking energy in India and expand the adoption of renewable energy sources for cooking and related thermal applications.



ABOUT CLEAN

CLEAN is a non-profit organization, committed to support, unify and grow the clean energy enterprises in India. Our primary focus is on rural and underprivileged communities where reliable, affordable and clean energy plays a unique role in accelerating social, environmental and economic development.

CLEAN has contributed to development and influencing policies for DRE sector, bridged access to finance for its enterprises, facilitated technology innovations, assist its members in accessing markets and build capacity of enterprises through trainings.

CLEAN is a network of 200+ members across India and is considered as the industry body for the DRE space.

CLEAN was setup as a program in 2014, by its charter members which include The Energy and Resources Institute (TERI), Shakti Sustainable Energy Foundation, SELCO Foundation, GIZ, UN Foundation, WWF India, Council on Energy, Environment and Water (CEEW), Ashden India Renewable Energy Collective, The Climate Group (TCG), The Nand and Jeet Khemka Foundation and Indian Renewable Energy Federation (IREF).

To know more about CLEAN and ICCF, please get in touch with us at:

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