GOVERNMENT OF INDIA
MINISTRY OF POWER

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PRIVATE SECTOR CONSULTATION

INNOVATION PARK
AT THE SMART GRID KNOWLEDGE CENTER

EVENT SUMMARY REPORT

SPARC
Smart Power for Advancing Reliability and Connectivity

US-INDIA
STRATEGIC PARTNERSHIP FORUM


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BACKGROUND

The Smart Grid Knowledge Center (SGKC), a state-of-the-art platform for demonstration and outreach for smart grid technologies, has been established by the POWERGRID with support from the Ministry of Power (MOP), Government of India (GOI) and the National Smart Grid Mission (NSGM). The SGKC showcases smart grid technologies through live demonstrations and provides training and capacity building support to power distribution companies (DISCOMs). Technologies showcased at the SGKC include: Advanced Metering Infrastructure (AMI), Outage Management System, Smart Home Energy Management system, AC Microgrid, DC Microgrid, Power Quality Measurement Laboratory, Building Blocks of Smart City, etc.

The SGKC is located within the POWERGRID Academy of Leadership (PAL) complex at Manesar, Haryana. Spread over 22 acres, the PAL is an ultra-modern training complex, equipped with state-of-the-art training facilities and electrical infrastructure such as National Transmission Asset Management Centre (NTAMC), 400KV GIS Sub Station, Laboratories for Research and Development.

SGKC's Vision

The SGKC aims to establish India's leadership in smart grid and serve as a leading Center of Excellence (COE) to foster partnerships, innovation, and entrepreneurship in smart grid technologies.

The United States Agency for International Development (USAID), though its bilateral program "Smart Power for Advancing Reliability and Connectivity" (SPARC), is providing technical assistance to the SGKC in developing it as a global COE of smart grid. The core aim is to build on SGKC's existing infrastructure and roll out new strategic interventions that will help catalyze higher value proposition for stakeholders. The key strategic interventions include:

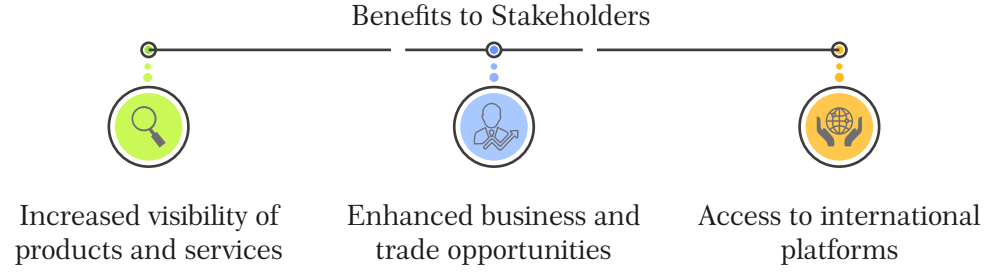
Innovation Park
Platform for live demonstration of new and innovative products and technologies

Technology Incubation
Platform to support innovative ideas to progress in their journey from concept to market

Capacity Building & Outreach
Platform for workforce development through customized training and exchanges

Concept of Innovation Park

The Innovation Park aims to serve as a platform to demonstrate frontier technologies, products and solutions linked to power distribution. The Park will showcase cutting edge smart grid solutions to varied stakeholders (utilities, researchers, policy makers, and consumers) through physical assets, technology or software solutions and virtual demonstrations. This will help in capacity building, knowledge sharing and innovation.



USAID, in partnership with the MOP, organized a private sector consultation on 30 June 2020 to share the Innovation Park concept with stakeholders, provide them an overview of the partnership opportunities with the SGKC and seek their comments/suggestions. The virtual consultation was organized in collaboration with the U.S.-India Strategic Partnership Forum.

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AGENDA

Session Coverage

Welcome Address by
Mr. Michael Satin, Director, Clean Energy & Environment Office (CLEEO), USAID/India

Keynote Address by
Mr. Sanjay Malhotra, Additional Secretary, Ministry of Power (MOP), Government of India (GOI)

Release of Strategic Roadmap for the SGKC by
Mr. Sanjay Malhotra, Additional Secretary, MOP, GOI and Mr. Michael Satin, Director, CLEEO, USAID/India

Presentation on Existing Infrastructure at the SGKC by
Dr. Subir Sen, COO (CTU Planning and Smart Grid), POWERGRID and Mr. B N De Bhowmick, Executive Director, POWERGRID

Presentation on Value Proposition of Innovation Park by
Ms. Apurva Chaturvedi, Senior Clean Energy Specialist, USAID/India and Mr. Vikas Gaba, Partner, KPMG (Implementing Partner for USAID SPARC Program)

Idea of Innovation Park by
Mr. Vishal Kapoor Director (Distribution), MOP, GOI

Open House Discussions

Way Forward by
Mr. Mritunjay Kumar Narayan, Joint Secretary (Distribution), MOP, GOI

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PROFILE OF PARTICIPANTS

90+

Participants from

45

Organizations attended the event

01 Central Agencies

MOP
NSGM
Central Electricity Authority
POWERGRID
Department of Science and Technology

02 Utilities

Adani
Enel
Engie
BSES Rajdhani Power
BSES Yamuna Power
EDF, Tata Power

03 Technology Providers

Landis+Gyr
Exceleron
Trilliant
Cyanconnode
SAP
Fluentgrid
Thales Group
ABB
Oracle
GE
I-EMS Group
Itron
Tech Mahindra
Siemens
Dell
IBM
Wipro
Kalkitech
Auto-grid
Secure Meters
Walter P Moore
Enzen
Abjayon

04 Academia/ Research Institutes

India Energy Storage Alliance
India Smart Grid Forum
IIT Delhi
IIT Kanpur
IIT Roorkee

05 Start-Ups

Detect Technologies
Arcturus
Aviroenergy
Greenovative

06 Bi-lateral/ Multi-lateral Institutions

USAID
GIZ

07 Innovation Parks

BRE Group

04

SUMMARY OF PROCEEDINGS

4.1.Speakers and Key Messages

Mr. Michael Satin, Director, CLEEO, USAID/India made the welcome address and mentioned that USAID has been a proud partner of the MOP for several years. He reiterated that USAID remains committed to support the MOP usher in a new era of power distribution reforms and modernization. Mr. Satin said that the SGKC was a one of a kind resource center in India for smart grid technologies. Countries, especially from South Asia, will benefit from the state-of-the-art facilities available at the Center—both economically and socially as well as ecologically. According to him, the proposed Innovation Park will act as a platform to showcase technologies, products and solutions in the smart grid space. He said that SGKC is uniquely positioned to foster innovation in smart grid and drive entrepreneurship and partnerships in the sector. The Center will pave the way for higher technology uptake across utilities, facilitate knowledge sharing and bring in efficiencies across operations.

> “Setting up of the Innovation Park is critical to accelerate the pace of adoption of smart grid technologies and build capacities in power distribution.”

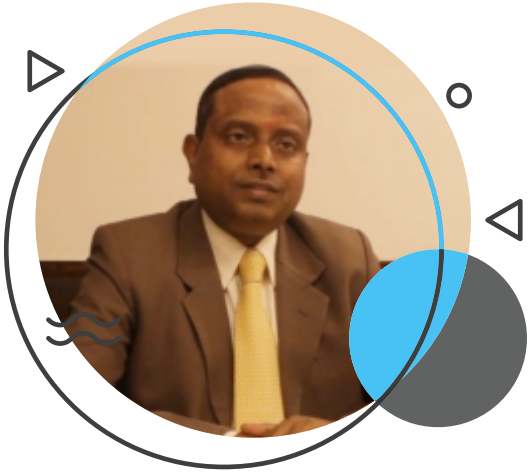
Mr. Michael Satin
Director, CLEEO
USAID/India

Following this, Mr. Sanjay Malhotra, Additional Secretary, MOP, GOI gave the keynote address. He mentioned that India's power sector has undergone a transformative shift in recent times and the country has made considerable progress with surplus power generation and decongested transmission grids. However, the distribution sector is still plagued with challenges such as high Aggregate Technical and Commercial (AT&C) losses and Average Cost of Supply – Average Revenue Realized (ACS-ARR) gap. Mr. Malhotra mentioned that the SGKC, with the help of the private sector, can play a key role in overcoming the challenges currently faced by DISCOMs such as reliable supply, power theft, early detection of faults, quick turnaround and rectification times, and quality of power supply. According to him, the best minds of the private sector working on best technologies in the SGKC and the Innovation Park can pave the way for a strong, robust, resilient and efficient distribution sector in India.

> “The private sector has been an important part of the distribution journey. Its technical support in the Innovation Park will pave the way towards a robust and efficient distribution sector.”

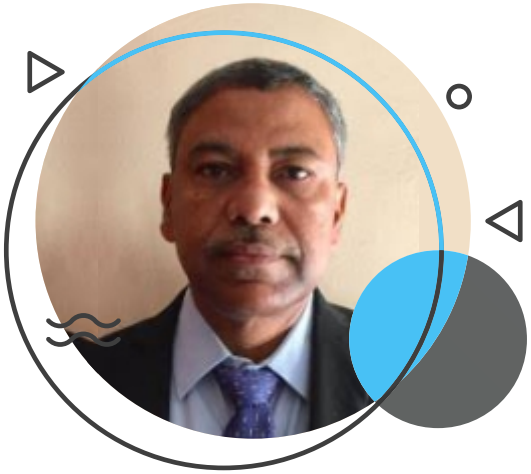
Mr. Sanjay Malhotra
Additional Secretary, MOP, GOI

This was followed by a presentation on “Existing Infrastructure at the SGKC” by Dr. Subir Sen, COO (CTU Planning and Smart Grid), POWERGRID and Mr. B N De Bhowmick, Executive Director, POWERGRID. Dr. Sen mentioned that more than 500 executives from 15+ DISCOMS, State Load Dispatch Centers, State Electricity Boards, central agencies and Public Sector Undertakings have already been trained at the SGKC. He said that the Powergrid Advanced Research and Technology Centre (PARTeC) has been listed in the International Smart Grid Action Network (ISGAN) creating strong mindshare of the Center in national and international platforms. Similarly, Mr. Bhowmick provided a quick overview of the various use cases at the SGKC and the infrastructure. He said that the SGKC will act as a platform to demonstrate cutting edge technologies and enhance capacity building of professionals. The Center will facilitate efficiency improvement in the entire value chain of the power system and ensure market development of smart energy infrastructure in India.



“The distribution sector is moving at a fast pace in accelerated mode and the SGKC will facilitate efficiency improvement and ensure skill development in the sector.”

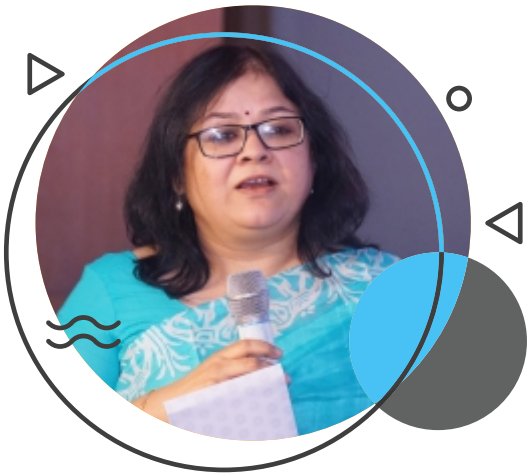
Dr. Subir Sen
COO (CTU Planning and Smart Grid)
POWERGRID



“Equipped with India's largest real time simulation lab and other state-of-the-art R&D infrastructure, the SGKC is well-positioned to become a COE. The listing of our research facilities with ISGAN has already created a strong mindshare for the Center across the globe.”

Mr. B N De Bhowmick
Executive Director
POWERGRID

Following this, Ms. Apurva Chaturvedi, Senior Clean Energy Specialist, USAID/India and Mr. Vikas Gaba, Partner, KPMG (Implementing Partner for USAID SPARC Program) made a joint presentation on the Value Proposition of Innovation Park. In her address, Ms. Chaturvedi mentioned that USAID is pleased to support the MOP in key interventions such as the national rollout of smart pre-paid meters, customer centricity in power distribution sector, distribution franchise models for enhanced private sector participation and public charging infrastructure for electric vehicles (EVs). Mr. Gaba mentioned how the SGKC can leverage PAL, NTAMC, GIS sub station and training centers to offer holistic services to stakeholders. He said that a good footfall of visitors at the Center can make the Center a lucrative platform for technology providers to showcase their technologies.



"The strategic roadmap provides three elements needed for enhanced delivery of services: advanced technologies, innovations and demos in the smart grid space; partnerships and alliances; and strong skill development and capacity building."

Ms. Apurva Chaturvedi
Senior Clean Energy Specialist
USAID/India

"Collaboration with the SGKC will make it possible for partners to get plug and play space to demonstrate technologies and provide a forum for direct interaction with DISCOMs."

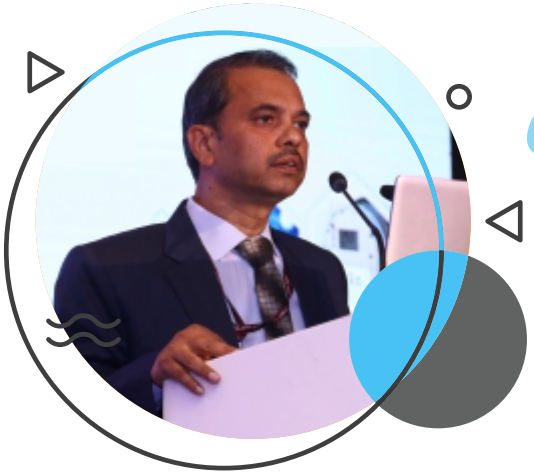
Mr. Vikas Gaba
Partner, KPMG
(Implementing Partner for USAID SPARC Program)

Mr. Vishal Kapoor, Director (Distribution), MOP, GOI spoke about the increased focus on Aatma Nirbhar Bharat Abhiyan (Self-reliant India Mission) announced by the Hon'ble Prime Minister of India. He said that the SGKC will be an effective platform to drive the best innovation initiatives in the smart grid space in India. He mentioned that the concept of an Innovation Park is a great idea as it can act as a platform that can be accessed by both developers and users. The proposed Park addresses two problems simultaneously—lack of common platform for sharing demands from industry to research/academic institutions, and difficulties in marketing the innovative product(s) developed by research/academic institutions.

> The idea of the SGKC is to ensure a marriage between a hardcore researcher and the industry; this is a place to allow the two to handshake. This is very important for the realization of the Aatma Nirbhar Bharat Abhiyan.

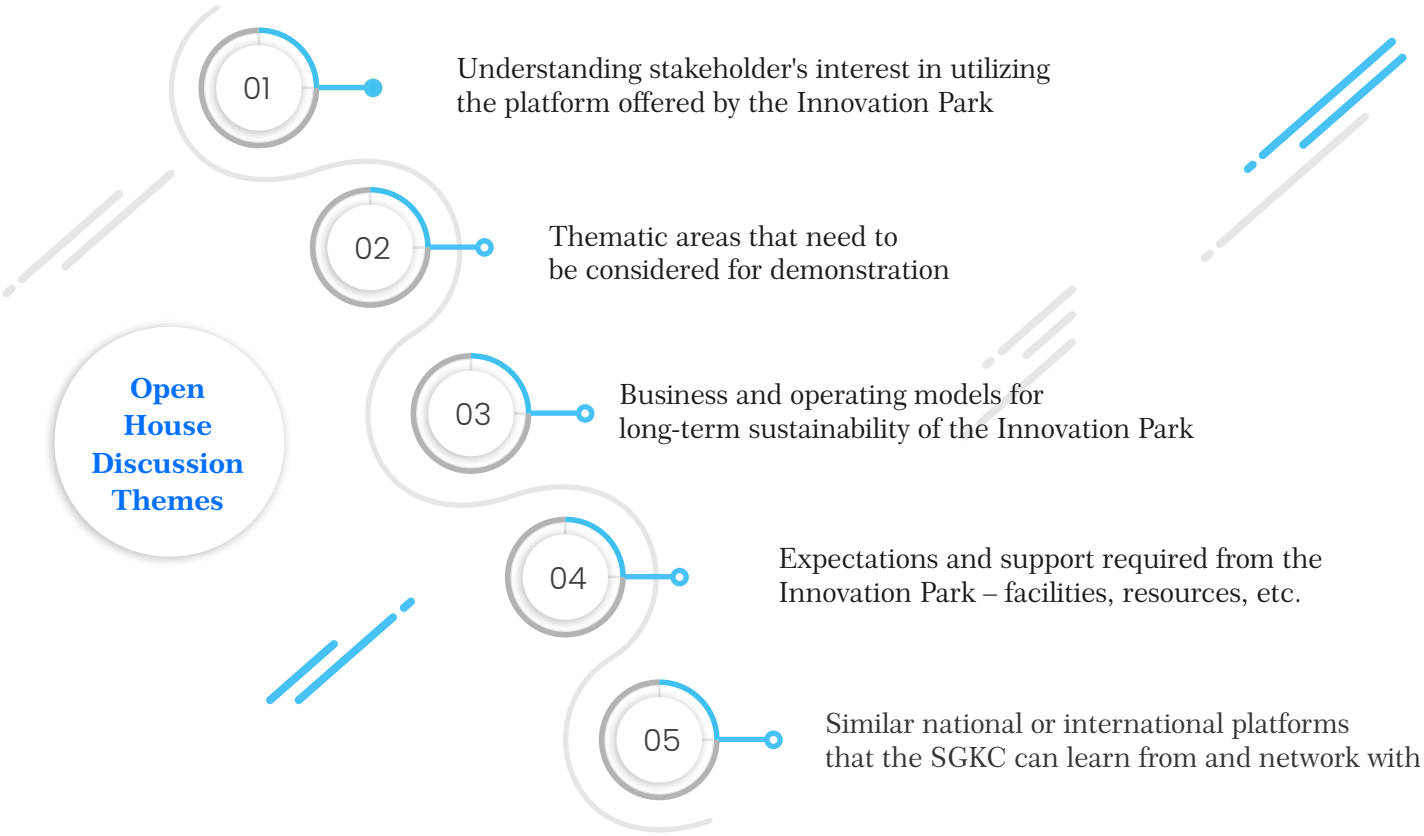
Mr. Vishal Kapoor
Director (Distribution)
MOP, GOI

Moving towards the end of the consultation, Mr. Mritunjay Kumar Narayan, Joint Secretary (Distribution), MOP, GOI provided the concluding remarks and the way forward. In his address he mentioned that while India has made significant progress in electricity generation and transmission segments, the distribution segment of the value chain requires focused interventions for its sustainability. The SGKC can play an important role in achieving this. Mr. Narayan reiterated that the MOP is committed to address the comments/views raised by stakeholders for the Innovation Park. He said that he believes that the proposed Innovation Park, with strong collaboration with the private sector, can be one of the best facilities globally.



> The Innovation Park will be made for demonstration of new innovative products and technology with state-of-the-art facilities. If we join hands together our Innovation Park will be one of the leading Parks in the world.

Mr. Mritunjay Kumar Narayan
Joint Secretary (Distribution)
MOP, GOI



4.2 Participants' Observations and Key Messages

Sukumar Mishra – Professor, IIT Delhi and Expert – DST
The Innovation Park can act as a platform for academic institutions where product prototypes can be converted into Technology Readiness Level (TRL)-8 and above with the help of industry partners.

Anil Daulani – CEO & MD in India, Cyanconnode Pvt. Ltd.
The Innovation Park will play an important role as a platform for showcasing Proof of Concept for use cases before technology deployment in the field.

Prudhvi Teja – Business Development, Detect Technologies
The Innovation Park should act as a platform where start-ups have access to the common problems of all DISCOMs and solutions thus developed can be evaluated and showcased for industry.
The biggest challenge start-ups face currently is marketing their developed solutions as per industry requirements. The Innovation Park can be an enabler where Proof of Concept can be demonstrated for utilities thus making it easy for marketing the products.

Vikram Gandotra – GM Strategy & Marketing, Siemens
The Innovation Park should act as a platform to discuss the problems faced by utilities and Original Equipment Manufacturers can develop products if solutions do not exist for the problems.

Ajoy Rajani – Independent Expert
The Innovation Park should provide specific tools and templates to utilities for justification of Return of Investment on the technology which is a key challenge in technology adoption.
It should also work on artificial intelligence, big data and block chain technologies to help and guide utilities on these aspects.

Rajiv Tiwari – Head-Business Development, EDF
The Innovation Park can act as platform where any technology can be demonstrated in a heterogenous environment. Similar facility in France enabled implementation of the Linky project. EDF is keen to collaborate to make SGKC have a similar impact.

Vijay Malladi – Wipro
Pandemic response can be one thematic area at the Innovation Park and solutions for resilient ecosystems should be developed and demonstrated at the Innovation Park.

Markus Wypior – GIZ
GIZ can help with the resources available in Germany for setup of this Innovation Park.

Prof N.P. Padhy – (IIT Roorkee)
This is the right time for us to take up such an initiative. Different laboratories across the country at the industry level have similar kind of activities in smart grid areas. If we can tap those resources within academic institutions as well as R&D labs of different industry houses and take it forward from there, that could be a big boom for us.

Graham Dunne – VP (Sales), Trillion Networks
If you look at the trends worldwide you see there is a convergence between some of the utilities and smart city engagements. At the Innovation Park, the same global trends could be followed, and the Park needs to allow that type of technology to flourish in that type of environment. Innovations around various Internet of Things type opportunities like sensors, videos, etc. should all be combined into the same network as you would use for sub stations and AMI, capturing the metadata.

Ramani Iyer – Director-Asia, Oracle UGBU
We have felt the need for a platform like the SGKC, a center where both industry and the vendor can participate. I think it would be useful to see how we can build a governance model to synchronize the ideas coming up to make it simpler and more effective for all.

Anand Srivastava – General Manager, Landis+Gyr Ltd
We should brainstorm at the beginning about converting SGKC to a think tank with a defined Key Performance Indicator (KPI) and variable commercially funded which can be referred to as a governance model. We need to define that kind of governance in this center where we can create value proposition from technologies deployed in that knowledge center.

Rajesh Bansal – BSES Rajdhani Power Limited
We need to change our methodology and create an innovative way to implement smart grid projects. We could train the utility staff at the Park on how to make a roadmap about the objective they are going to address through the smart grid. Let the utility first decide on its objective and expectation and then decide what data and technology are required to meet that objective. This way the Innovation Park can help the utility and also lead to better usage.

Vasundhar Boddapati – Head-India Operations, Exceleron Software
Exceleron Software is keen to collaborate in realizing the vision of the Innovation Park.

Dr. Rahul Walawalkar – Executive Director, Indian Energy Storage Alliance
India Energy Storage Alliance will be happy to collaborate on research related to energy storage, microgrids and EV charging/Vehicle to Grid areas.

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KEY LEARNINGS & WAY FORWARD

The SGKC needs to operate as a commercially viable, self-sustainable organization with well-defined KPIs. This was a key insight that emerged at the private consultation—a view that was echoed by several stakeholders during the open discussions. Stakeholders stated that such a structure will provide the SGKC the required resources, expertise and impetus to achieve its mission of being a global COE in the smart grid domain. Some key suggestions include:

Governance – The governance mechanism should be set up in a manner that ensures continuous engagement of the private sector as well. While POWEGRID and NSGM operating under the aegis of the MOP will continue to drive this, the governance model should also have representation from the private sector.

Business model – The business model should be laid out clearly for the private sector to assess the benefits they are likely to derive by associating and investing in the Center. Additionally, the Center should explore other funding avenues such as CSR funds, funding from GOI schemes, etc.

Sustainability - The Center must operate in a sustainable manner with clearly defined KPIs and a budget of its own.

Platform to convene – Numerous academic and other research organizations have been working in the space of advanced technologies in the power sector. Several of these also have specialized labs and similar facilities. The Center must provide a platform for such facilities to be showcased and used for wider benefit of the sector.

Power of partnerships – The SGKC should enter into partnerships with similar leading national and international platforms, like minded organizations and R&D labs already working on similar initiatives to leverage the synergies and further strengthen the value proposition of the Innovation Park and other activities.

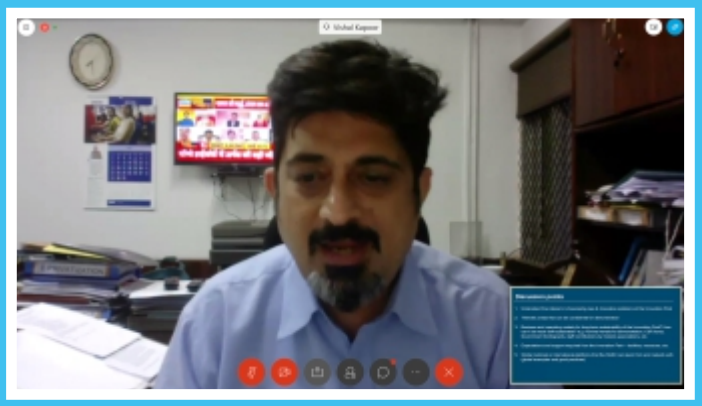
Thematic areas – Among other areas, the Center can also explore Internet of Things, blockchain, artificial intelligence-enabled smart grid technologies to further strengthen its value proposition. Technologies/solutions to transition towards a resilient distribution system can be a core focus area of the Center. While exploring the solution to be demonstrated, overall theme and architecture should be kept in mind. For instance, the theme could be convergence across sectors and aligning with the attributes of a smart city.

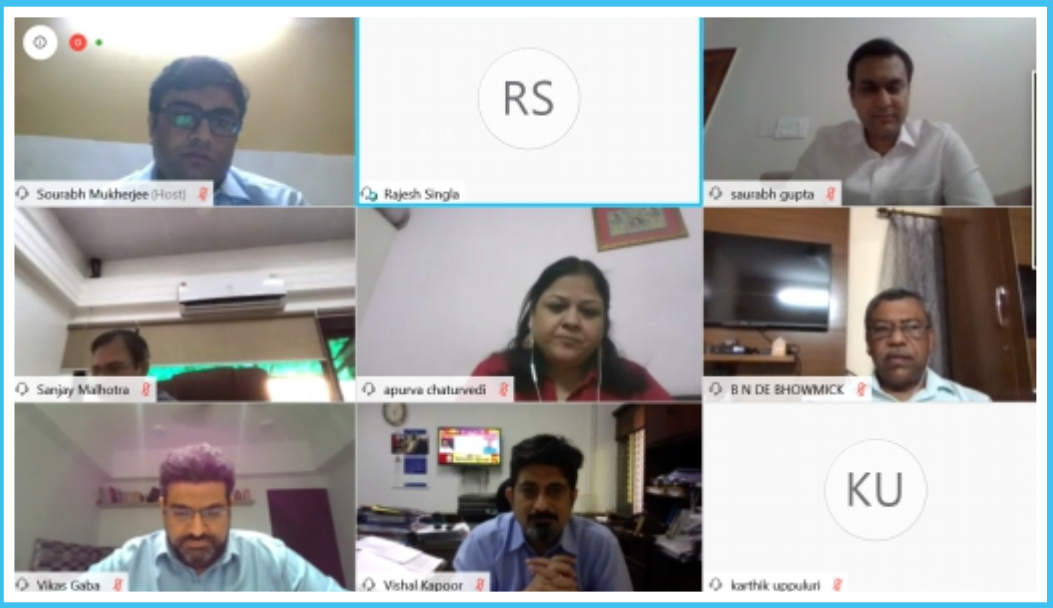
Market development: The Innovation Park could also serve as one common platform for technology providers, entrepreneurs, regulators and DISCOMs to deliberate on key issues, and develop basis use cases to validate technology, understand usefulness, establish costs and benefits, and other implications. Such measures will help foster market development and also facilitate regulatory approvals for such technologies.

Visibility: Structured plan for senior level delegate visits and training programs should be put in place for utilities from India and the region to increase footfall/virtual meetings and visits to the SGKC. This is a low hanging fruit that can help achieve early success and build further confidence.

Communication and outreach – A significant part of the success is linked to the increased footfalls and/or virtual visits/programs at the Center. The forward strategy hence should include a strategic communication and outreach plan for creating visibility, and forging partnerships and alliances, nationally and internationally.

The USAID SPARC program will synthesize the comments and suggestions received from the stakeholders and submit the same to the MOP to design the future action plan. The private sector engagement will continue as the planning for the Innovation Park evolves further, and becomes ready for further development.

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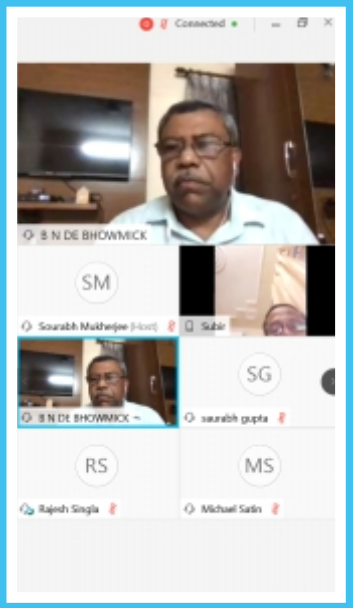
Sourabh Mukherjee (Host)
Rajesh Singla
saurabh gupta
Sanjay Malhotra
apurva chaturvedi
B N DE BHOWMICK
Vikas Gaba
Vishal Kapoor
KU
karthik uppuluri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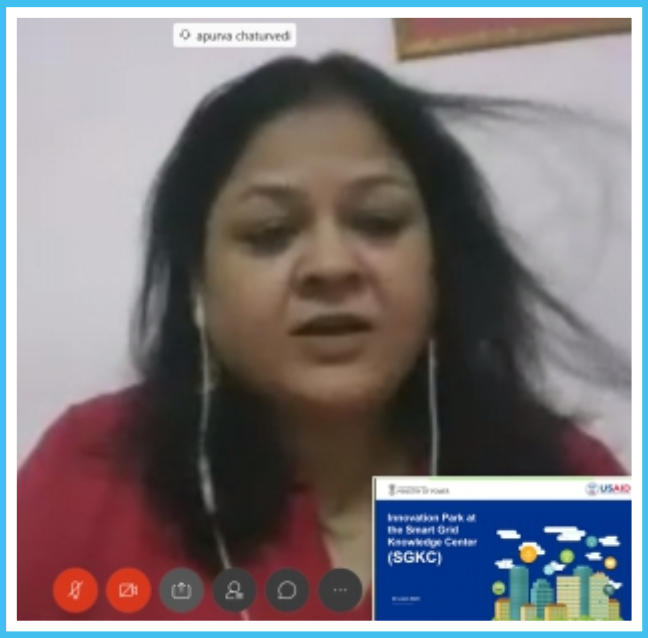
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Innovation Park at the Smart Grid Knowledge Center (SGKC)


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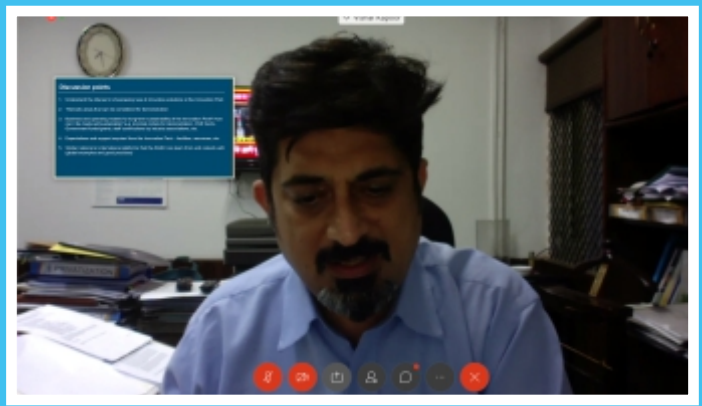

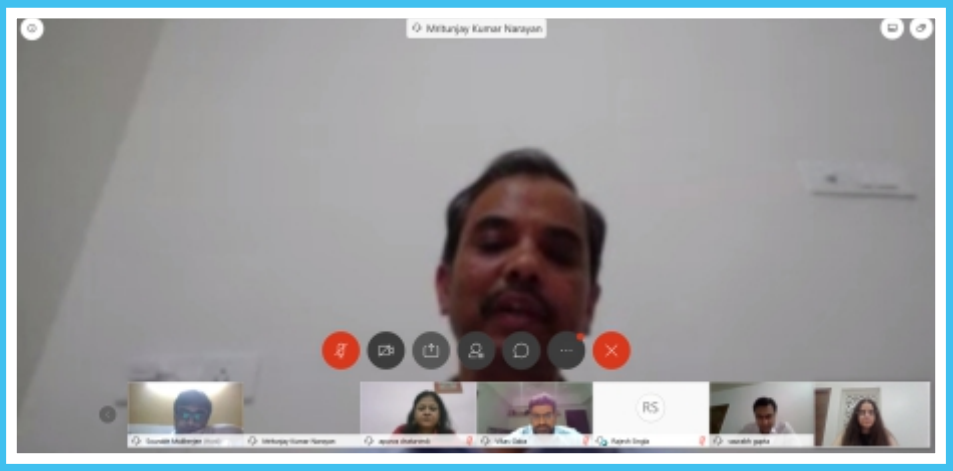

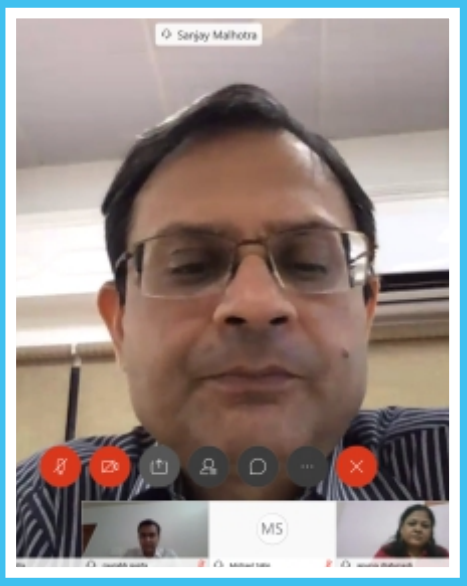

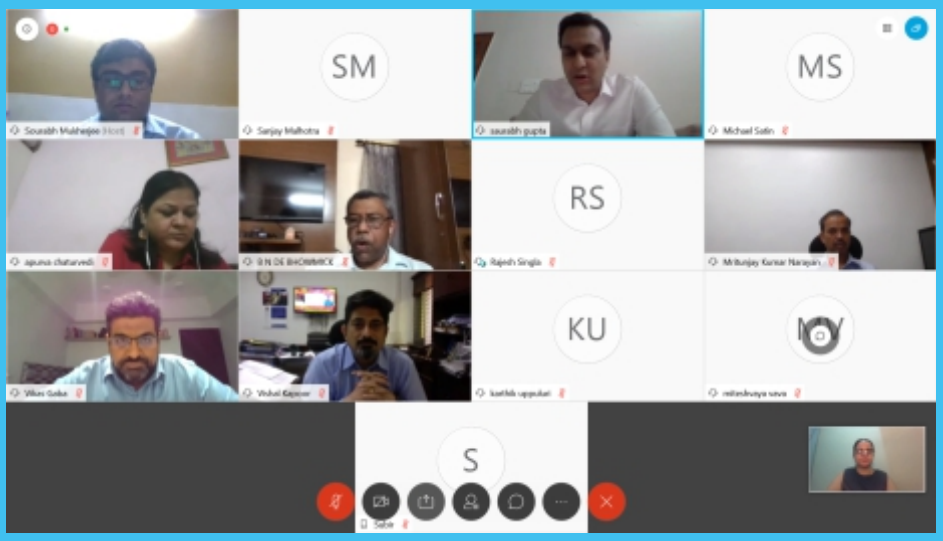

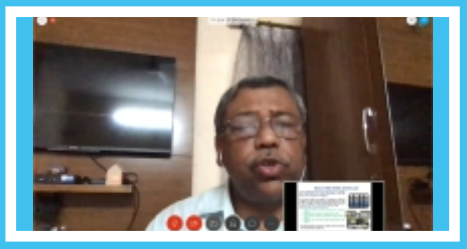

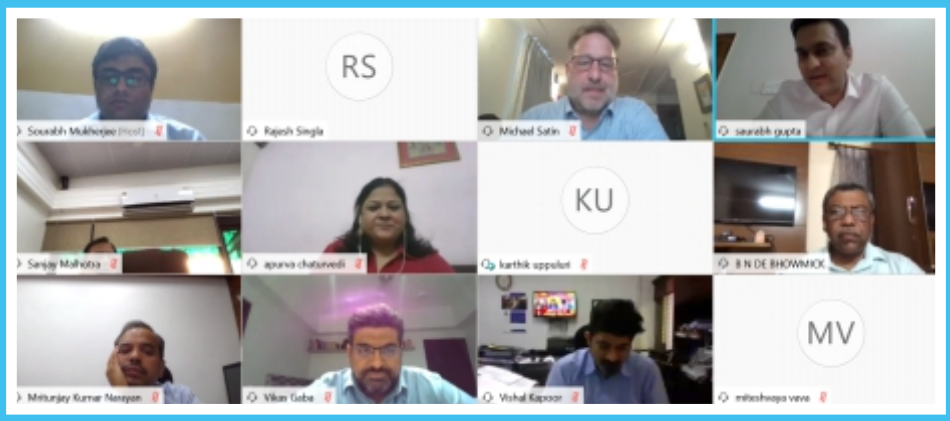

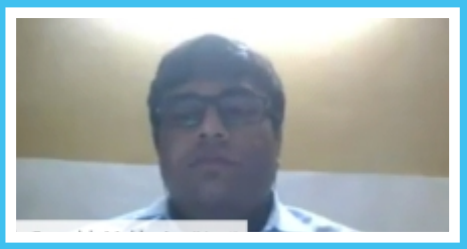

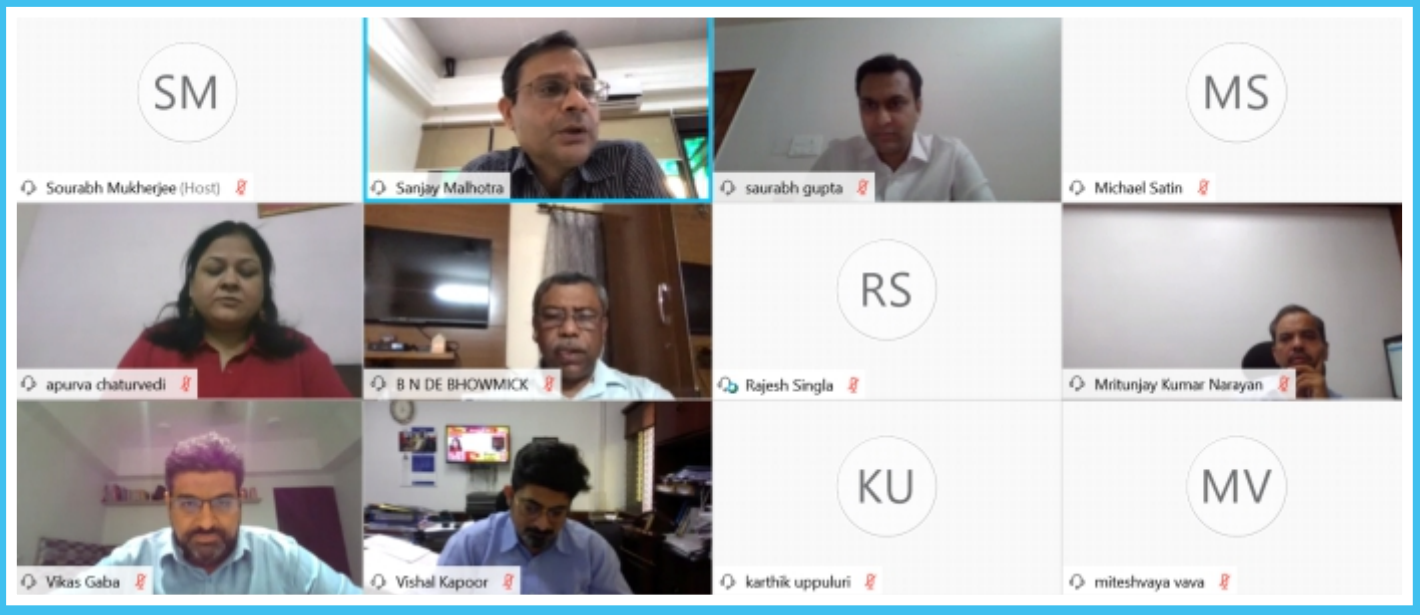

ABOUT THE SMART GRID KNOWLEDGE CENTER

The Smart Grid Knowledge Center has been established by the POWERGRID with support of the Ministry of Power and the National Smart Grid Mission (NSGM) to act as a resource center for providing technical support to the NSGM. The Center is housed within the PAL campus at Manesar, Haryana and equipped with demonstrations of smart grid use cases. The Center is envisioned to be a hotbed of innovations in smart grid technologies.

ABOUT THE POWERGRID ACADEMY OF LEADERSHIP

The POWERGRID Academy of Leadership (PAL) is a state-of-the-art institute of learning set up by POWERGRID at Manesar, Haryana. The campus, spread over an area of 22 acres, is equipped with world class training infrastructure that includes smart class rooms, computer labs, auditorium, conference halls and modern hostel facilities. With dedicated subject matter experts, the institute offers best-in-class classroom training combined with hands-on learning and exposure visits. Experts of PAL are part of core apex level committees set up by Ministry of Power, Central Electricity Authority, Central Electricity Commission, etc.

ABOUT THE USAID SPARC PROGRAM

The Smart Power for Advancing Reliability and Connectivity (SPARC) is a key initiative under USAID's Asia EDGE program. It is a three year bilateral program with the Ministry of Power, Government of India. The objective of the program is to modernize electricity distribution utilities to improve their operational and financial performance. The implementing partner of the USAID SPARC Program is KPMG Advisory Services Pvt. Ltd.

CONTACT DETAILS

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