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NATIONAL PROGRAM/ PROJECT MANAGEMENT POLICY FRAMEWORK (NPMMPF)

*NITI Aayog and QCI jointly
launched the NPMMPF, envisaged to
bring radical reforms in the way
infrastructure projects are
executed in India.*

National
Fertilizers Limited
PANIPAT UNIT

64

NTPC KAWAS
HAZIRA INDUSTRIAL AREA

67

The Journey of
ISO 50001 Certification
ROURKELA STEEL PLANT

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QUALITY INDIA
A QCI PUBLICATION | October - December 2020

 **QUALITY COUNCIL
OF INDIA**
QCI Creating an Ecosystem for Quality

EDITOR'S NOTE



Dr. Ravi P. Singh
Secretary General
Quality Council of India

Dear Friends

The character of an organisation is visible in times of extreme adversity. The COVID-19 pandemic was one such example when most of third-party assessments were stopped during lockdown. Yet, QCI found a way to surge ahead in its mission to bring quality at the forefront.

During the lockdown we achieved several milestones in our fight against this pandemic. We accredited more than 1000 private medical laboratories for RT-PCR Test to expand India's COVID-19 testing infrastructure and accredited 137 testing laboratories for testing critical equipment and products such as medical devices, ventilators, PPE, sanitizers etc. Not only this, we accredited 6 calibration laboratories for medical device calibration of Patient Monitor, Ventilator, ECG Machine and Pulse Oximeter.

We developed Workplace Assessment for Safety and Hygiene (WASH) standards for all workplaces to assist in their preparedness for mitigating Covid 19 risks under which 300 organizations were assessed and ~1500 participating organizations were trained. QCI helped in fast tracking redressal of COVID-19 related grievances. ~30,000 grievances cleared at an average disposal time of 1.45 days. QCI also assisted NITI Aayog on



ideas for ramping up COVID-19 daily tests in the country. We have created a scheme with FSSAI for approval of hygiene rating audit agencies to help consumers take informed decisions on food outlets which has now been launched.

Following the Hon'ble Prime Minister's call for an "Aatmanirbhar Bharat", we are piloting a concept for an Open Network for Digital Commerce to allow buyers and sellers to transact in an open framework on similar lines to UPI. The network will have a business multiplier effect for MSME and Kirana stores in India. QCI partnered with Ministry of Tourism to implement the SAATHI (System for Assessment, Awareness and Training for Hospitality Industry) initiative. More than 7000 Hospitality Units have participated so far. We launched a voluntary certification scheme for GI (Geographical Indication) goods in Agriculture, Food, Textiles and Manufacturing sectors. In order to modernize MSME processes, reduce wastages, sharpen business competitiveness and facilitate their National and Global reach QCI is partnering with Ministry of MSME to take forward the MSME-Sustainable (ZED) and MSME-Competitive (Lean) initiatives.

I look forward to a wonderful 2021, and wish all of you a Happy, Prosperous and Impactful New Year!



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NATIONAL PROGRAM/ PROJECT MANAGEMENT POLICY FRAMEWORK (NPMPF)

“Introducing a Common Language of Program/ Project Management in India”

Infrastructure development, especially in India has always been a challenge due to its complexities and multiplicity, and often obstructs the smooth execution of the projects. Presently more than 1,661 Public infrastructure projects in India have incurred time overrun of over 32% and cost overrun of over 4 Lakh crore rupees. At such a moment, when the infrastructural transformation of an entire country is involved, the executing authorities require something more than leadership, experience, and conventional methods. India needs a structured, seamless, and integrated execution to deliver projects within the desired timelines and cost to unlock maximum potential.

The Mandate

A Task Force on Program and Project Management was constituted by NITI Aayog towards reducing impediments and improving the performance of infrastructure projects. The Task Force laid out the National Project / Program Management Policy Framework to prepare short-term and long-term strategies for improving Project and Program management practices and align them with the global best practices. The initiative aims to introduce a common language in the profession of program & project management across all stakeholders.

The NITI Aayog led Taskforce on Program and Project Management gave a **dual mandate to the Quality Council of India (QCI) to:**

Develop the National Policy Framework

- To envision the development of the profession in India and recommend industry best practices to enable the adoption of Program Management.

Develop an Institute for Program Management in India

- Create the framework for structuring and functioning of the National Institute of Chartered Program/Project Professionals (NICPP).
- Create a **technical baseline (The Indian Infrastructure Body of Knowledge)**: The InBoK will serve as the ultimate Indian standard for the profession and its practice.
- Develop operational guidelines for training and certification

Envisioning the NPMPF

The National Project and Program Management Policy Framework envisions to reform the way large and mega infrastructure projects are managed in India, with the following action plan:

“The National Program and Project Management Policy Framework shall prepare short-term and long-term strategies for improving infrastructure development, and also align them with the global best practices.”

- Adopt a Program Management approach to infrastructure development in India.
- Institutionalize and promote the profession of Program & Project Management in India and build a workforce of

certified Project Management Professionals in India

- Enhance institutional capacity and capability of professionals with a required skill-set, for key infrastructure projects.
- Set up a nodal body to certify professionals based on their merit, proven track record and the right expertise.
- Build capability and train government officials based on an Indian Standard, for program & project management

Executing the Mandate

To guide this initiative, the Taskforce entrusted the Quality Council of India (QCI) to facilitate and operationalise the adoption of the framework with the following successful developments:

Constitution of a Steering Committee

Comprising secretaries of top infrastructure ministries to direct the policy framework and operationalize the same by establishing the Technical Committee.

Technical Committee Deliberations

Comprising top infrastructure industry experts from academia, project management institutes, international and domestic infrastructure consulting

firms, large contracting firms, and the government. Quality Council of India integrated the framework laid down by the Technical Committee, i.e., the Indian Infrastructure Body of Knowledge (InBoK).

Developing the Indian Infrastructure Body of Knowledge (InBoK)

Contextualized for India, the InBoK incorporates best global practices in infrastructure project management and was launched nationwide on October 28, 2020.

“InBoK shall serve as a common reference for all practitioners of the industry”

A 4-Level National Certification System in Program & Project Management

Based on InBoK, links program/project professional's competence with project complexity.

Establishing NICPP

A “National Institute of Chartered Program and Project Professionals (NICPP)” shall house the certification system and be the nodal institute for program/project management in India.

Capability Development

To build capacity and upskill within government and PSUs and increase awareness of the

benefits of Program Management approach.

A National Launch for the NPMPF Initiative and Unveiling the InBoK

NITI Aayog and Quality Council of India jointly launched the 'National Program and Project Management Policy Framework' (NPMPF), envisaged to bring radical reforms in the way infrastructure projects are executed in India.

Union Minister for Road Transport and Highways and Micro, Small and Medium Enterprises Nitin Gadkari unveiled the Indian Infrastructure Body of Knowledge (InBoK), a book on the practice of program and project management in India, and launched the framework,



along with **Union Minister Piyush Goyal, NITI Aayog CEO Amitabh Kant, and QCI Chairman Adil Zainulbhai**. Dignitaries from across the government, infrastructure sector, global project management companies, large contracting firms such as L&T India, PSUs, global and Indian

development banks, etc., also participated in the event.

Lauding the initiative, Union Minister Nitin Gadkari said, 'NPMPF will help in realizing the Prime Minister's vision of an Aatmanirbhar Bharat by building a stronger India, in which we would need good quality infrastructure; we would need to reduce costs and waste material, without compromising on the environment and ecology. We also need to ensure time-bound and result-oriented delivery of projects.'

He recognised the significance of program and project management tools and techniques for mega projects and appreciated the importance of InBoK to serve as a common reference for all practitioners of the industry.

Union Minister for Railways, Commerce and Industry, and Consumer Affairs Piyush Goyal,

also underscored that capable and certified professionals with an in-depth understanding of InBoK would enable the transformation of the infrastructure landscape of India.

NITI Aayog CEO Amitabh Kant led the inaugural address,

National Program & Project Management Policy Framework Launch Event

A new Approach towards Planning & Executing Indian Infrastructure projects



Welcome Address
Shri Amitabh Kant
CEO, NITI Aayog



Chief Guest
Shri Nitin Gadkari
Minister, MoRTH, MSME



Special Address
Shri Piyush Goyal
Minister, Railways, C&I, CA, F&PD



Closing Remarks
Shri Adil Zainulbhai
Chairman QCI

CLICK HERE TO JOIN ▶ <https://youtu.be/OP9osu6j6aQ>



The event was graced by the presence of these dignitaries

highlighted the importance of program and project management for effective project delivery, to achieve economic objectives through the coordination of multiple projects.

Quality Council of India Chairman, Adil Zainulbhai, explained that the certification system under the framework links the scale and complexity of projects to competence of professionals. A self-paced learning system, rigorous and comprehensive exam at each level with continued professional development will

serve as pillars of the framework. In the future, InBoK is envisioned to have extensions, which will be specific to each domain or industry for infrastructure, for example, a dedicated extension for roadways that captures issues and best practices specific to that sector.

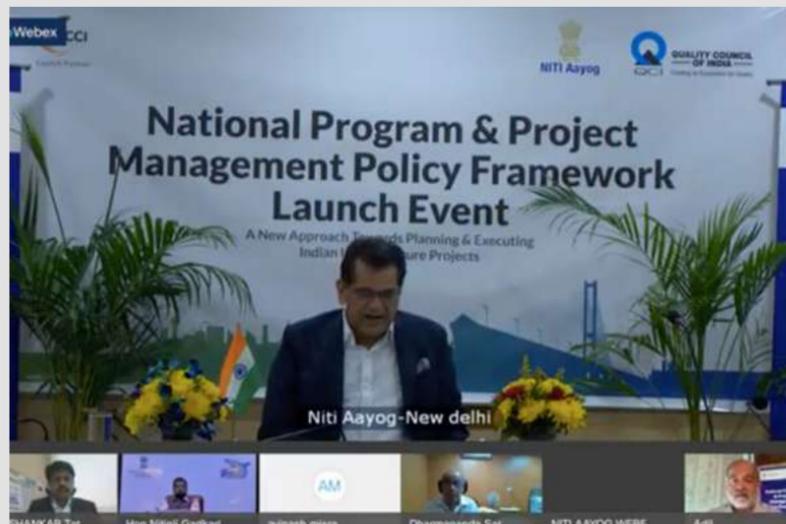
Next Steps

- As per the direction of the NPMPF Steering Committee, the National Institute for Chartered Program/ Project Professionals (NICPP) is being setup under the aegis of QCI

as the nodal body for Program and Project Management in India.

- To ensure this initiative maintains its momentum and makes an impact on projects being planned and implemented currently, a capability development program to create awareness around program and project management, as well as to provide capsule training for mission-critical projects, is being planned to increase the uptake and adoption of the practice. The team is undertaking a comprehensive Capability Development initiative, aimed at sensitization, training and capability development of key stakeholders in Indian Infrastructure including, government, PSUs, Project Management Consulting and infrastructure firms through workshops and programs.
- Pilot certifications to be carried out in March 2021





Mr. Amitabh Kant
CEO, NITI Aayog



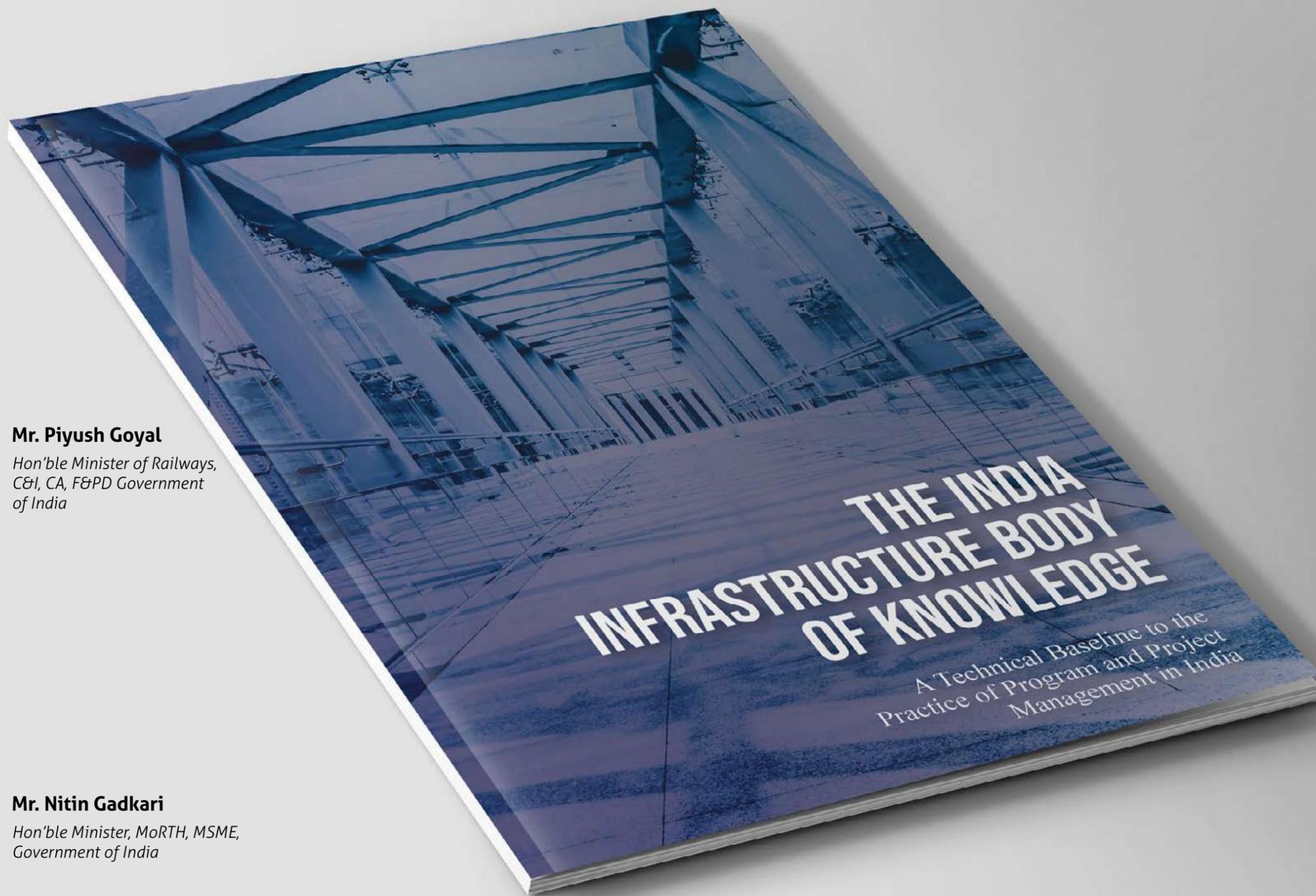
Mr. Piyush Goyal
Hon'ble Minister of Railways, C&I, CA, F&PD Government of India



Mr. Nitin Gadkari
Hon'ble Minister, MoRTH, MSME, Government of India

Launch of InBok

by **Mr. Nitin Gadkari, Hon'ble Minister, MoRTH, MSME, Government of India**



Updates from 'Training and Capacity Building' Cell



TCB's Virtual Trainings: A Discourse towards Progress in Stagnation

Continuing the tradition of holding interactive virtual training, in this quarter we have successfully concluded 21 training programs on various accreditation & certification standards and other general topics.

A series of programs on 'Organizational Values, Ethics & Office / Work Place Etiquettes' have been introduced.

TCB has extended its assistance to other Boards / Divisions of QCI in conducting various webinars/online training through the eQuest portal.

760+ professionals and university students got benefited from these programs. The programs also include two exclusive session for Central Institute of Petrochemicals Engineering & Technology, Department of Chemicals & Petrochemicals, Ministry of Chemicals & Fertilizers, two for Uttar Pradesh Jal Nigam and one for private Inspection Body based in Mumbai.

Topics covered in 21 training programs are:

Management System and Internal Audit Training programs on ISO/IEC 17025:2017 for testing & calibration laboratories, ISO/IEC 17020:2012 for inspection bodies, ISO 15189:2012 for medical laboratories, ISO 13485:2016 for Medical Devices etc.

Appreciating the response, we have announced new batches of virtual training for the next quarter. Details are available on TCB website www.tcb.qcin.org.

By the end of 2020, TCB is pleased to announce that the cell has trained more than 3000 professionals and conducted around 100 training on virtual platform.

Ensuring Efficacy through Efficiency-Development of New eLearning Modules

eQuest, an e-learning portal of TCB/QCI, along with National Accreditation Board for Testing and Calibration Laboratories (NABL) has launched a new program on ISO /IEC 17043 'Proficiency Testing Provider'.

The program is designed for PT Providers, (Accredited /Applicant /Potential), Quality Professionals and Laboratories to know about ISO/IEC 17043:2010 "Conformity Assessment – General requirements for the proficiency testing". Since its launch we have received an overwhelming response from the learners.

Another eLearning program has launched in the domain of environment viz 'Solid Waste Management'. This course focuses on Waste Management and its related aspects; from the history of waste management to several aspects such as storage, disposal, collection, and treatment of the various types of wastes. The learner will get an in-depth training on all these aspects and be educated on their environmental, social, ecological and aesthetic ramifications.

Amidst the Covid-19 pandemic, there has been a need for specific standards and protocols for businesses, organizations, institutions etc. to ensure

safe operations., QCI, along with industry stakeholders, has developed a harmonized standard named "Workplace Assessment for Safety and Hygiene (WASH)" to help the organizations assess their preparedness to restart and run their operations safely. In the last quarter, an eLearning on Workplace Assessment for Safety and Hygiene (WASH) was introduced which has received a roaring response from the participants.

Currently, eQuest has 49 courses which have been well received nationally and internationally.

All relevant information of our eLearning courses is available on <https://equest.co.in/>

eLearning module on Workplace Assessment for Safety and Hygiene (WASH) is now available on eQuest



eLearning module on ISO/IEC 17043:2010 has recently been introduced on eQuest platform

Third time a charm - SWAYAM to run 3rd batch of CQI

SWAYAM, an eLearning platform of Ministry of Education has decided to renew Continuous Quality Improvement (CQI), a course by eQuest, QCI to run its 3rd batch on their platform. Till now, about 4500 professionals nation-wide have benefitted through this program.

Exploring New Dimensions- Understanding Corporate Space

India shall soon see disruption happening in CSR Space. One of the most significant being the emergence of non-financial reporting as a mandatory requirement of business. A webinar on 'Non-Financial Reporting Framework using ISO 26000: Guidance on Social Responsibility' was conducted for corporates, businesses and organizations to operate in a more socially responsible way. The webinar scheduled on 11th November 2020 was organized to discuss how ISO 26000 helps preparing the business for non-financial reporting which is credible, accountable and transparent. The webinar also covered ISO 26000 for CSR reports aligned to SDGs and India's Development Goals as specified by Niti Aayog.

TCB going International

TCB Director delivered a talk on 'Testing, Inspection, Certification & Accreditation -Experience

Sharing' during the 'Assessor Conclave' of The Southern African Development Community Accreditation Services (SADCAS) Botswana, a multi-economy accreditation body in SADC region. Using accreditation by Government & Regulators to support their regulatory area of National interest and how accreditation is specified as part of Covid-19 testing in the country was the subject of the talk.

Along with National Accreditation Board for Certification Bodies (NABCB), virtual training/ Internship was successfully organized for NCA, Kazakhstan under bilateral agreement signed with QCI. The training was on the following standards viz. IEC 62443-3 'Industrial Communication Networks - Network and System Security', ISO 22870 'Point-of-Care Testing (POCT) - Requirements for Quality and Competence' and on internship on Information Security Management System (ISMS)

A glimpse of a virtual training for NCA, Kazakhstan

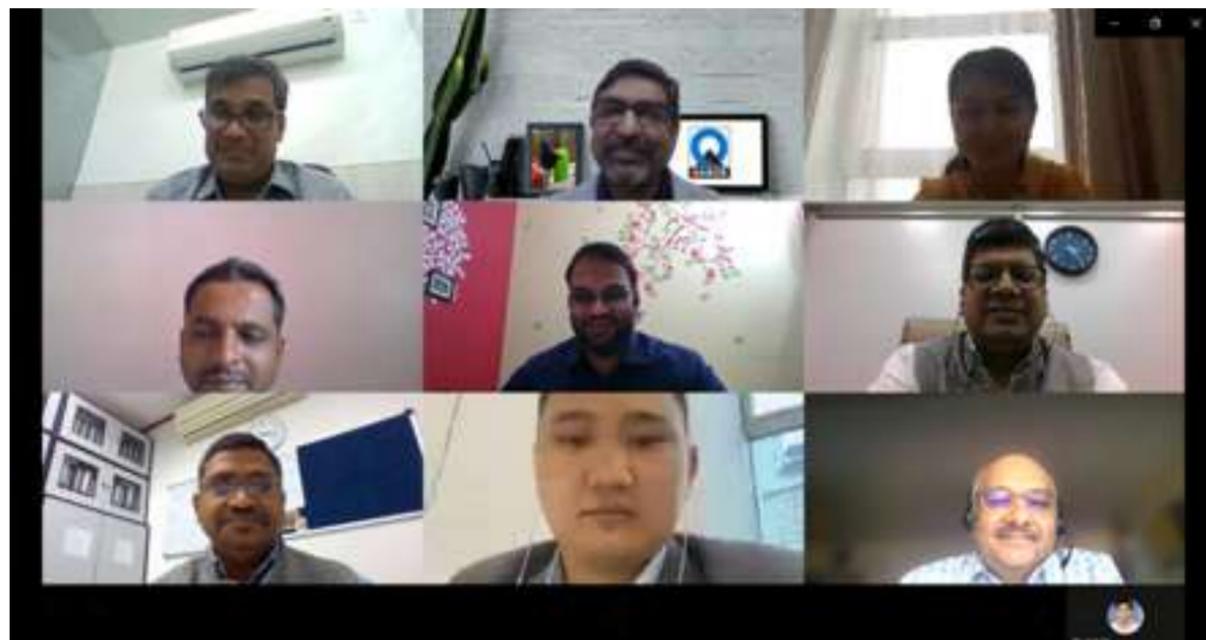


Fullfils the Quest for Learning

Quality Council of India has launched an e-learning certification platform in line with the Government of India's Digital India campaign to bridge the existing skill gap. eQuest is equipped with a unique model of blended learning with courses designed and prepared by industry recognised experts.



eQuest has several courses in the domains of Quality, Technology, Management, Environment, Healthcare, Agriculture, Laboratories and Food sector covering topics like Total Quality Management (TQM), Total Productive Maintenance (TPM), Good Agricultural Practices (GAP), Blockchain, Project Management etc.



The Ecosystem of eQuest



Students and Working Professionals

To strengthen skill and knowledge in line with emerging requirements to enhance employability



Entrepreneurs

Learn best practices in line with emerging trends of market



Assessors and Consultants

Reskilling or upgrading of existing skill set



Details of Policy Unit Projects

Facility Assessment of Pulses Importers

Client: Directorate General of Foreign Trade (Ministry of Commerce and Industry)

Due to bumper harvest and Government's commitment to ensure better price for farmers, the import policy of Tur, Moong and Peas was changed from 'Free' to 'Restricted' between August 2017 and April 2018 based on the direction of the 'Inter - Ministerial Committee (IMC) to review the prices of Agricultural Commodities'. The quota for millers/refiners intending to import is distributed through the IMC based on a well-defined transparent procedure.

Directorate General of Foreign Trade (DGFT) had invited online applications from millers/refiners until 8th May 2020 having own processing/refining facility of pulses/peas and intending to import. After initial scrutiny of applications, 1778 applicants were finalized by DGFT for allotment. To verify the existence and functionality of mills, DGFT had requested QCI to assess 10-15% of the facilities of importers of pulses (viz. Tur, Moong and Peas). The insights derived from the assessment would feed into allocation of import quota for the larger

set of facilities.

Based on a robust framework, a total of 181 facilities were assessed over a period of two weeks. The facilities covered 15 cities of India spanning across five zones (Center, East, West, North, and South). The on-ground inspection was based on multiple parameters including the following:

- Geotagged Location
- General details of the Millers/Refiners
- Capacity and Machinery Details
- Facility Details
- Accounting Requirements
- Personnel Details

The assessment data was captured on a mobile application

and monitored real-time by a QC team. After verification of documents and analysis of the data, QCI submitted a detailed report to DGFT. The insights derived from the assessment fed into allocation of import quota for the larger set of facilities.

High Quality Images of QCI team and photos from the field are attached with this document.

Open Network for Digital Commerce

Client: Department for Promotion

of Industry and Internal Trade

Department for Promotion of Industry and Internal Trade (DPIIT) has envisioned Open Network for Digital Commerce (ONDC), an open network protocol that enables location aware, local commerce across industries to be discovered and engaged by any network-enabled application. ONDC goes beyond the current platform-centric digital commerce model where the buyer and seller must use the same platform/application to do a business transaction. Instead, in this network-centric model, so long as platforms/applications are connected to the open network, buyers and sellers can transact no matter what platform/application they use to be digitally visible.

As the Unified Payments Interface (UPI) is to the digital payment domain, as IMAP/SMTP protocols are for emails, as HTTP is for data communication and browsing on the World Wide Web, the ONDC is expected to become the same for digital commerce in India. The network will use APIs which allow discovery, ordering, fulfilment and payment between consumers and providers in the digital marketplace. It allows basic interoperability of the commerce interactions on a digital medium. This open digital infrastructure marks a departure from the conventional platform-centric digital commerce.

In October, QCI prepared a comprehensive proposal for ONDC and submitted it to the Department for Promotion of Industry and Internal Trade, Ministry of Commerce and Industry. After approving the

Status	Description	No of facilities
Complaint	Facilities with all the necessary documents and machinery required	48
Non-Complaint	Found with one or more NCs: documents, machinery, address of sales office, etc.	107
Assessment Denied	Facilities visited but access denied	20
Facilities with address issues	Facilities not found, does not exist, address change	6
Grand Total		181

(Table: Overall Status of Assessed Facilities)



proposal in November, the Ministry assigned QCI to be the Programme Management Unit (PMU) for conducting the pilot. ONDC initiative by DPIIT in collaboration with QCI will be a first-of-its-kind initiative to create a level playing field for digital commerce at the scale of a country like India.

The Ministry has also set up a Steering Committee (SC) for formulation, implementation, and policy oversight for ONDC. The SC is keen to welcome participation of local retailers in sectors like FMCG and urban logistics. The PMU will shortly start conducting the pilot and perform relevant analysis to track the progress and implement scale up. The PMU would also actively engage with DPIIT, SC and private stakeholders for any necessary activities related to ONDC, such as community development, marketing and communications etc.

The open network protocol is expected to act as a force multiplier for end-beneficiaries - customers, application developers, governments, and businesses by creating an interoperable open playground to unlock value and innovation. The network would help aggregate all the service providers, which would ease the business flow, enhance the ease of doing business and increase market opportunity for small players. An open network will also bring many sellers into the world of ecommerce, thus reducing the monopoly of larger players in the market and increasing competition in the space. This will be most impactful for MSMEs and small traders looking to unlock value and scale their operations through the digital commerce space.

The network would help digitize the entire supply chain. The focus would be both on B2B

and B2C environments, with special push for covering the length and breadth of raw materials producers, suppliers, manufacturers, distributors, and retailers. The network would have standardized rules for contracting, invoicing, determining time essence, and payments, which will help to enhance efficiency of business operations. Sellers are expected to become more accessible to a wider audience, while significantly reducing many of the pain points that are involved in the current model of e-commerce. Furthermore, the cost of doing business on an open network is a small fraction of the current ecommerce or regular commerce cost as it may do away with intermediaries. It would also help open the logistics market with greater competitiveness and access to sellers for procuring services.

For consumers, the Open Network solves the problem of matching quick demand with the nearest available supply. This also gives consumers the liberty to choose their preferred local business and rules out the possibility of non-standardized customer handling and payment issues. It will solve for speed, quality and trust and would be in synchronization with consumer protection laws. Moreover, the Network has the potential to enhance the reach of e-commerce to all parts of the country. (Existing e-commerce reach depends a lot on availability and operations of private players in certain pin codes.)

Ease of Doing Business-Monitoring and Evaluation

Client: Department for Promotion of Industry and Internal Trade

Doing Business Report (DBR) is an annual report published by the World Bank, which ranks 190 countries by studying their business environment. This report covers ten broad indicators/parameters namely: Starting a Business, Dealing with Construction Permits, Getting Electricity, Registering Property, Getting Credit, Protecting Minority Investors, Paying Taxes, Trading Across Borders, Enforcing Contracts and Resolving Insolvency. The DBR assesses the ease with which these ten areas of business regulation are completed across geographies. A country is given scores across all ten parameters and ultimately a final rank is assigned by aggregating the scores with equal weightage assigned to all parameters. India has moved from rank 142 to 63 between 2014 and 2020 owing to the tailwinds of major reforms being undertaken by the Government of India. India now aspires to be in the top 25 by 2025.

Under the leadership of Hon. Commerce & Industry Minister, the Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce and Industry, is actively working

with different Union Ministries and state governments to improve India's performance across these ten EODB parameters. QCI has had the opportunity to work with DPIIT in certain aspects of this mega reform coordination project.

QCI is assisting DPIIT to carry out an EODB monitoring and evaluation exercise to ascertain if the business stakeholders and professionals are aware / benefitting from the reforms implemented by the government. Chartered accountants, company secretaries, advocates, logistics and custom brokers, structural engineers, architects, insolvency professionals etc. primarily from Delhi and Mumbai are participating in this national-level exercise.

These surveys, jointly developed by DPIIT and QCI, are helping understand the feedback of these users relating to time, cost, procedures, efficiency, and ancillary opportunities for improvement in the processes connected with doing business in India. The feedback and opinions received from the survey conducted will be presented by DPIIT to the relevant government stakeholders and help in developing insights on success of current reforms, designing future reforms, and a communication cum capacity development programme that will speak to the businesses and professionals across the country.

High quality images of India's parameter-wise EODB ranking and year-wise ranking comparison chart are attached with this document.

Technical Regulations

WTO Agreement on Technical Barriers to Trade (TBT) defines Technical Regulation as a "document which lays down product characteristics or their related processes and production methods, including the applicable administrative provisions, with which compliance is mandatory". Objectives of TR include protection of human safety or health, protection of animal and plant life or health, protection of the environment, prevention of deceptive practices, and other reasons such as technical harmonization and trade facilitation. TR is also known as Quality Control Order (QCO) and may include packaging, marking or labeling requirements. Unlike standards, compliance to a TR is mandatory.

In order to achieve the above stated objectives, various regulators in India have been issuing QCOs. QCI is constantly engaging with various stakeholders to improve the TBT system. A comparative study on machine safety regulations of various countries outlining global best practices was done and the report was submitted to Department of Heavy Industries. In addition, QCI has been participating in stakeholder discussions and providing comments on the QCOs. Some of the recent QCOs for which QCI provided comments are Omnibus QCO on machine safety, QCO on Iron Pipes, and QCO on Flux Cored Electrodes.





nabl-india.org

BOARD UPDATES

October to December 2020

National Accreditation Board for Testing and Calibration Laboratories

October 2020

NABL Stakeholders' meeting for Testing Laboratories on 6th Oct 2020



More than 40 participants from various NABL accredited testing laboratories participated.

Concerns of Testing Laboratories w.r.t NABL accreditation were discussed which include:

- Laboratory Implementation of NABL 133
- Changes in NABL 163: Policy on PT participation

NABL Stakeholders' meeting for Calibration Laboratories on 7th Oct 2020

More than 25 participants from various NABL accredited calibration laboratories participated.

Concerns of Calibration Laboratories w.r.t NABL accreditation were discussed which include:

- Laboratory implementation of NABL 133
- Changes in NABL 163: Policy on PT participation
- Secondary level reference calibration laboratories
- NALM ACRE Program updates
- Metrological Traceability requirements

NABL Stakeholders' meeting for Medical Laboratories on 8th Oct 2020

More than 25 participants from various NABL accredited medical laboratories participated in the stakeholders meeting.

Concerns of Medical Laboratories w.r.t NABL accreditation were discussed which include:

- Laboratory implementation of NABL 133
- Changes in NABL 163: Policy on PT participation
- NABL M(EL)T Labs Program
- Update on provision in portal for change in CAB activities / scope of accreditation
- Laboratory Sample Collection Facilities (SCF)



National Laboratory Conclave: Focused on Molecular Testing Laboratories on 9th Oct 2020

NABL, in association with Institute of Quality, CII conducted the National Laboratory Conclave: Focused on Molecular Testing Laboratories on 9th Oct 2020

Mr. Anupam Kaul, CII welcomed all the panelists and participants. The Inaugural Session was started with his welcome address.



Dr. Nivedita Gupta, ICMR elaborated on the important role NABL accredited molecular labs are playing during this COVID pandemic.



She explained how from a handful of laboratories during April 2020 to around 750+ molecular testing laboratories now were made possible through the proactive work done by NABL.

Dr. R P Singh, SG, QCI iterated on how perhaps for the first time the nation realized on the importance of collaboration within various sectors ranging from Accreditation



Bodies, regulators and government. This further proved that the laboratory quality ecosystem of the nation could rise up to any challenge being put forward. Dr. R P Singh, praised all NABL officials, assessors and Accreditation committee members for making this feat possible. He further emphasised how NABL took great care to ensure the quality is not compromised in the assessment process.

Dr. D K Aswal, Director, NPL explained that although RT PCR test is seen as a gold standard, the sensitivity and specificity are only 95% and not 100% and as large as 33% false negatives are being observed in case of low viral load. Dr. Aswal explained that accreditation brings parity among all the laboratories and it is important to conduct proficiency testing of laboratories. He advised on using Terra Hz spectroscopy and other recent techniques to increase the reliability of test results.



Mr. Adil Zainulbhai, Chairman, QCI expressed his views that it is a watershed moment as around 1200 government labs and 777 private NABL accredited labs are helping the nation in the fight against the pandemic. He reminisced the first conversation with ICMR and Mr. N Venkateswaran, CEO, NABL wherein the challenge to shrink the time taken for accreditation from months to weeks along with maintaining the quality of accreditation was envisaged.



He further emphasized that the excellent work done by these 770+ laboratories needs to be widely publicized in order to make the common man understand these important contributions at such difficult times.

Mr. Venkateswaran, CEO NABL, reiterated that all the requirements in accordance with ISO 15189 are thoroughly checked which includes calibration with metrological traceability, competence of laboratory personnel etc. NABL has also denied accreditation to laboratories which could not ensure the required competence.



Technical Session 1

Session Theme

Overview of national testing capacity in RNA, sampling policy, estimation of workload in next 12 months, supply of IVDs (test kits- domestic capacity vs imports, costs and pricing; Validation of IVDs/ test kits (RT-PCR), random samples testing of batches of kits for quality assurance.

Session Chair:
Dr. Aarti Kapil, Professor, AIIMS.

The first technical session consisted of speakers from various technical back grounds and covered a myriad of topics in relation to molecular testing and accreditation.



Dr. Manju Bala, NCDC explained the laboratory challenges in RT-PCR and Rapid Ag testing along with their limitations.



Other points discussed were on Waste Management, monitoring of viral genetic material, mutation activity of the virus, VTM, Sero surveillance.



Dr. Varsha Poddar, NIV – Pune, presented on the Pandemic preparedness and Response measures taken by NIV-Pune and ICMR.

Information related to training of personnel through virtual mode in aspects of sample collection to report analysis were discussed. Full genome sequencing work of the virus from about 400 positive clinical samples and development of COVID Kavach ELISA kit, bio repository was presented.



Mr. Ravi Kant Sharma, CDSCO presented on the regulatory requirements of CDSCO, status of import / export of medical devices.

He emphasized on how CDSCO had taken steps to ensure Atma- Nirbhar Bharat and improving exports, IVD kits availability, affordability & accessibility.



The joint work of CDSCO with ICMR for product validation were explained, along with availability of information in CDSCO website. Further, CDSCO is fast tracking applications which are being received in all classes of medical devices.

Manoj Chug, Transasia Bio-Medicals Ltd presented on SARS-CoV-2 and beyond: Ramping up testing capabilities for a future ready India. Transasia ELISA kit detecting COVID IgG.

The presentation included information in regard to reduction of cost through multiplexing from the current singleplexing which further increases the number of tests conducted. Testing strategies and policies of various countries around the world were presented.

Technical Session 2

Session Theme

NABL Accreditation requirements for medical laboratories with specific reference to real time RT-PCR testing scope, online assessment, surveillance and unannounced checks, observation trends and concerns ICMR laboratory approval scheme

Session Chair:

Dr. Anita Borges,
S L Raheja Hospitals

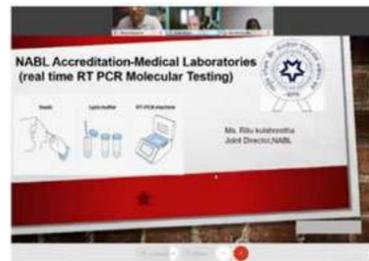


Dr. Neeraj Agarwal,
ICMR presented on ICMR approval of labs in private sector for COVID-19 testing.

Brief on the COVID testing situation with relevant statistics. Relevance of the testing technique based on the infection timeline.

Prerequisites and regulations for laboratories w.r.t Biosafety, BMW Rules.

Ms. Ritu Kulshrestha,
NABL presented on key requirements of NABL accreditation for Molecular testing labs for RT PCR RNA Viruses.



Importance of quality from Pre-analytical to Post analytical stage was explained.

Explanation of NABL 133 requirements in respect to NABL symbol and measure to be taken to prevent violation of misuse of NABL symbol.

Dr. Rajesh Kannangai,
CMC, Vellore and NABL assessor explained about the methodology of NABL assessment and the important aspects which are verified during the assessment.



He stressed on the important pre-requisites such as metrological traceability of the equipment, IQC & EQA, Bio Medical Waste Management and sample handling.



Mr. K Udaya Bhaskar, NABL demonstrated the accreditation process and the information which is required to be provided by applicant laboratories on the digitalized NABL web portal.

The pre-requisites which are required before submission of application to NABL and the process of filling the application were explained.

Technical Session 3

Session Theme

Discussion and review of technical processes including Sampling (swab/ blood), Test protocols - LOD/LOQ, laboratory test method validation, competency, test equipment, measurement uncertainty, Lab QA / QC covering a) Molecular RNA test; b) Antibody IgG, IgM, and IgG/IgM combo testing using ELISA, CLIA, FIA and LFIA assays.

Session chair:

Dr. Vandana Lal,
Dr. Lal Pathlabs Ltd



Dr. Neelamani Murthy, Vijaya Diagnostic Centre Pvt. Ltd. presented on the challenges in molecular testing.



The importance of Pre-examination process which includes donning and doffing of PPE, sample collection, packaging, transportation, the role of disinfectants, hygiene and bio safety measures along with associate risks were explained.

Dr. Rohit Chawla, Maulana Azad Medical College presented on the different techniques used for RT PCR, the variations in the PCR test such as qPCR, RT-qPCR.



Calculation of the Ct / Cq values, efficiency, techniques for validation and verification, LOD, LLOQ were elaborately explained along with the mathematical calculations.

Mr. Ashok Kumar Meena, IAS, CEO, Ayushman Bharat, Haryana presented on the situation of COVID-19 testing in Haryana and its impact on managing the spread.



He presented how the cases have increased with the timelines and month wise trend along with the increase in testing 30 samples per day to 30,000 per day. The 4T followed - Testing, tracing, tracking and treatment along with use of mobile testing facilities and engagement of Ayush doctors for sample collection were explained.

Dr. J Jayalakshmi, KMCH Institute of Health Sciences & Research spoke about the 3Cs which are Competency, Calibration and Compliance in the context of Molecular testing.



She presented on the context of Molecular testing w.r.t the above 3Cs and how checklists and other tools help laboratories to ensure these main requirements are adhered to.

Dr. Puneet Kumar Nigam, Metropolis Lab presented on the Quality Control techniques needed in Antibody IgG, IgM and IgG/IgM testing using ELISA, CLIA, FIA and LFIA assays.



He shared his experiences and trend analysis w.r.t the false

positives and false negative results that are possible during RT PCR testing.

He reiterated that RT PCR is still the gold standard in RNA testing for COVID-19. However, he opined antibody assays would help gauge the immunity levels and support in vaccine development.

Technical Session 4

Session Theme

Reporting trends, New developments - rapid testing kits, experiences in other countries reporting of false positive / false negative results - causes and remedies, use of CRMs, PT/ILC programmes.



Session Chair:

Dr. Sukesh Chandran Nair,
CMC, Vellore



Dr. Ashok Garg, Mylab Discovery Solutions Pvt. Ltd, presented on the fully automated, compact RT PCR equipment. This equipment setup reduces the laboratory space requirements and is designed with a unidirectional work flow. The data in relation to the performance of the equipment were shared.

Mr. Bivash Chakraborty, BIOMERIEUX India Pvt. Ltd. presented on the various regulatory requirements that are required to be followed for COVID testing.



NABL meeting with Ministry of Jal Shakti on 10th Oct 2020

NABL participated in a meeting with Shri Bharat Lal, Additional Secretary (Water), Ministry of Jal Shakti.

He lauded NABL on the initiatives taken in accrediting water testing laboratories under the ministry and informed that the pace should pick up and even more water testing laboratories in every district and sub-district are to be accredited by NABL in a time bound manner.

The Jal Jeevan Mission progress of various states was discussed and the updates in regard to accreditation of laboratories by NABL were presented.

CAHO – NABL M(EL)T Awareness Program on 20th Oct 2020

NABL in association with Consortium of Accredited Healthcare Organizations (CAHO) organized an awareness program on NABL Medical (Entry Level) Testing Labs Program {NABL M(EL)T Labs program}.

The program was attended by more than 800 participants representing various pathology laboratories.

Dr. Vijay Agarwal, President, CAHO spoke about how accreditation body should ensure strict quality requirements are in place which allow only competent and capable laboratories to be recognized for their quality and competency.



Dr. Lallu Joseph, SG, CAHO reiterated that NABL and CAHO should come together with more awareness programs to sensitize laboratories on NABL requirements.

Dr. Sankar Sengupta, reminisced about how, when a lab vertical was started in CAHO, a much-needed support was provided from NABL. He praised Mr. N Venkateswaran, CEO, NABL for being the torch-bearer for laboratory accreditation in India and ensuring that NABL started accreditation of medical laboratories as per ISO 15189 when very few international ABs were granting accreditation in accordance with ISO 15189. He further reiterated that the concept of laboratory conclave was the brainchild of Mr. Venkateswaran which for the first time brought together the various laboratories in the nation together with NABL.

Mr. N Venkateswaran, CEO, NABL explained about the simple and easy interface designed for the NABL M(EL)T Labs Program.

The only important criteria required from the laboratory of participation in PT and other requirements such as metrological traceability of equipment was explained.

The fees and other requirements for the NABL M(EL)T Labs Program was designed to be affordable and simple for the laboratories to upgrade themselves to ISO 15189 requirements.

CEO, NABL answered more than 150 questions / comments received from various participants and brought about more clarity on the program which was appreciated by all the participants who lauded the initiative and patience to take up such a challenging task.

Integrity Pledge on 27th Oct 2020

In line with Vigilance Awareness Week – 2020 themed 'Satark Bharat, Samridh Bharat' / 'Vigilant India, Prosperous India' from 27th October to 2nd November 2020.



All NABL officials took the Integrity Pledge maintaining social distancing and COVID-19 prevention guidelines.

November 2020

Swachhata Pledge on 2nd Nov 2020

NABL officials in observance of Swachhata Pakhwada (Nov 1-15, 2020) took the Swachhata Pledge on 2nd Nov 2020.



Ministry of Jal Shakti National Level meeting on 3rd Nov 2020

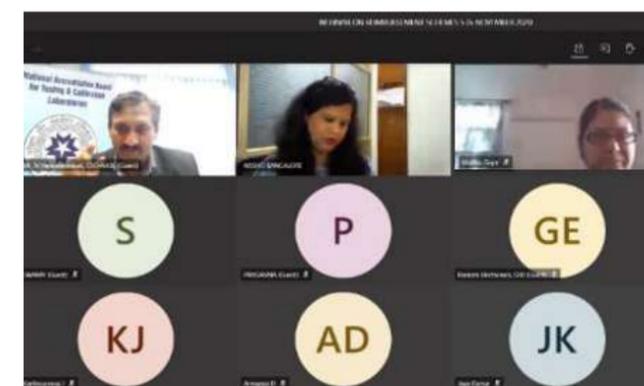
NABL participated in the National Level Ministers' meeting of Ministry of Jal Shakti.

CEO, NABL explained about NABL Accreditation and the provisions which can be utilized by Government water testing laboratories to come forward for accreditation of their laboratories to improve the confidence on their results.



NABL NSSH webinar on 5th Nov 2020

National SC-ST Hub (NSSH) Office, Bangalore in association with NABL organized a webinar 'Awareness program with NABL on Quality Product Development with special focus on reimbursement of testing fee charged by various NABL accredited Labs.'



The program sensitized more than 50 entrepreneurs on NABL accreditation, how to search the NABL website for accredited testing laboratories and requirement of test report from NABL accredited laboratories, for uploading products on GeM portal.

CEO, NABL delivered the presidential address and explained about NABL, Accreditation and International linkages of NABL.



Ms. Mallika Gope, Director, NABL explained how to search for accredited laboratories on NABL website, and ways to ensure that the product and test method which they are looking for are in the scope of accreditation of laboratories.

Ms. A Kokila, Branch Head, MSME, Bangalore informed the participants on the procedure to be followed for the Reimbursement scheme.

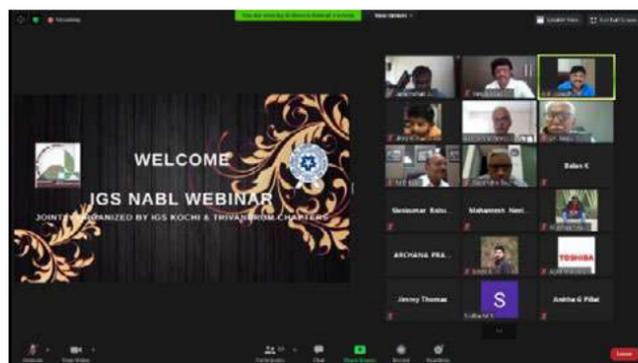


Mr. Subramani, NSSHO, MSME, Bangalore presented the Vote of Thanks and expressed gratitude for the presentations made by NABL and bringing awareness to entrepreneurs.



NABL-IGS Awareness program on Accreditation of Geotechnical Laboratories conducted for Kerala Region (IGS Kochi and IGS Thiruvananthapuram Chapters) on 7th Nov 2020

The NABL-IGS awareness webinar was jointly organized by NABL, IGS Kochi & Thiruvananthapuram Chapters on 7/11/2020.



More than 250 people benefitted from the awareness program. The Program started with welcome address by **Dr. Babu T Jose, Patron, IGS Kochi Chapter. CEO, NABL** gave the opening remarks wherein he highlighted the necessity of NABL Accreditation in technical testing.

Prof. Sivakumar Babu, President, IGS, Prof. N. K. Samadhiya, President-Elect and Shri. M. D Nair, Chairman, IGS Kochi Chapter gave introductory remarks.

Mr. C Venugopal, Joint Director, NABL delivered lecture on NABL Accreditation Process specially focused on Geotechnical Laboratories and Policies associated with the current ISO/IEC 17025: 2017 standard.



The perspective of an end user on Geotechnical investigations was shared by **Er. Biju, Chief Engineer, Govt of Kerala.**

The need of NABL Accreditation was highlighted by **Dr. K. Balan, Chairman, IGS-Thiruvananthapuram Chapter** and importance of Geotechnical testing was discussed by **Dr. Jimmy Thomas and Dr. Jayamohan.** The experience with NABL Accreditation was highlighted by **Er. A.V. S. Chakravarthy, GM, Geofoundations.** The highlight of the program was to sensitize the participants about the significance of NABL accreditation. All the attendees admired the efforts put in by NABL & IGS in augmenting the quality of the geotechnical laboratories across the country. They also felt the need for such awareness programs on a regular basis.

NABL & Healthy You Foundation webinar on 12th Nov 2020



NABL in association with Healthy You Foundation organized a Webinar 'NABL Accreditation: Assuring Quality to the Consumers: North East as focus states.'

The program was conducted on World Quality Day 2020, this year theme being 'How to add value to customers'. Prof. Bejon Mishra welcomed all the participants and informed how prominent the 8 North East states are with a separate ministry looking after their development.

Prof. Bejon Mishra called for all laboratories in the northeast to come forward for accreditation as many new schemes of NABL such as Entry-level testing labs are available for laboratory benefit.



CEO, NABL explained how NABL impacts the lives of common man from the start to end of daily life. He also explained how NABL accredited testing laboratories ensure compliance of products and services to the health, safety, environmental aspects which effect the common man.

He further emphasized the importance of NABL Accredited Calibration Laboratories which maintain the metrological traceability requirements thereby ensuring that the consumers get the correct quantity of food grains, exact weight of gold purchase and correct quantity of fuel in their vehicles.

NABL has also accredited more than 950 private medical testing laboratories in record time to ensure access of the common man for COVID testing.



He explained how such technological improvements are bringing choice of quality to consumers and the importance of NABL accreditation to ensure compliance to international standards of quality.

On the occasion of the World Quality Day, CEO, NABL launched the "The Aware Consumer Magazine" for the month of November 2020.

Prof (Dr.) Darlando Khathing, Vice Chancellor, North East Christian University, Dimapur, Nagaland spoke about how Quality impacts the lives of common man and why quality is critical in the North East States.



He informed how inferior quality food products in the market are affecting the health and safety of consumers and such occurrences are becoming more and more common. Food adulteration has become a major challenge and with reduced value of nutrients in food and adulteration with heavy metal impurities like arsenic and lead are acting as catalyst in deteriorating the health of the populace.

Other examples such as quality of building materials i.e. sand, steel used in infrastructure like bridges were quoted which emphasize the criticality of accurate testing to ensure the safety and dependence on quality products.

He made a call for increased participation of NABL in bring-

ing awareness to the various laboratories in the North East states and to ensure the quality of their results through NABL accreditation.

Shri Prafull D Sheth, Board Member, Patient Safety and Access Initiative of India Foundation presented Vote of Thanks. He opined that when laboratories are having accreditation, it ensures quality and accuracy in test results. The laboratories also comply to international standards which specify the robust quality management systems and have documented quality procedures.



He further informed that whenever he checks whether a lab is accredited, very few turn out to be accredited. He suggested NABL to further publicize the entry level schemes so that a greater number of laboratories can get accredited which will improve the access to quality services for all the citizens in the country.

Ms. Iti Saxena, Deputy Director, NABL presented on NABL Accreditation Schemes and Benefits.

NABL Accreditation: Experience Sharing



Mr. Sanjeev Vashishta, MD & CEO, Pathkind Diagnostics Pvt. Ltd., shared his experience of obtaining accreditation from NABL.

He explained how during the time of Lockdown and COVID restrictions, NABL came forward with digital innovations to grant accreditation to laboratories developing the capacity to test the new virus. The calibre of any person /organization gets identified during crisis situation and he praised NABL for coming out with flying colours during such a crisis.

He opined 'Sirf Naam Nahee.. Kaam bhee badaa hai' (Not only Name, Work is also Great) is what summarizes NABL.

He also emphasised how Pathkind Diagnostics has invested in developing the capability to test the SARS-COV-2 virus and how they approached NABL quite early to grant them accreditation.

Dr. Keisham Radhapyari, Scientist-B (Chemist), Regional Chemical Laboratory, Central Ground Water Board, North Eastern Region, Guwahati shared her experience on their water testing laboratory accreditation by NABL.



She shared her experience of how they applied through online portal of NABL and received NABL accreditation in a very quick and succinct manner.

Mr. M. K. Naik, Assistant Director (Legal Metrology), Regional Reference Standards Laboratory, Guwahati explained how the process for NABL accreditation is clearly defined and the assessment process was comfortable as the assessment team from NABL were cordial and experts in the calibration field.

Dr. Puneet K Nigam, Chief Quality Officer, Metropolis Healthcare Ltd, explained how customers are the most critical component of the system and how today even though there is abundance of service providers, consumers are facing difficulty in choosing the correct service



He emphasized that NABL accreditation is the main criteria in choosing a quality service provider and that accredited laboratories should ensure they publicize the importance of accreditation and the quality of service it brings.

He explained that digitalization and technology have brought choice to customers and the way customers are approaching quality services. He explained the new digitization technologies of Metropolis which provides control to customer on the service being provided along with real time updates.

The program concluded with an interaction session wherein various queries from the participants were taken up.



December 2020

Program on NABL accreditation in Vigyan Yatra of IISF 2020 on 21st Dec 2020



NABL conducted a webinar on the role of NABL accreditation in Vigyan Yatra Program on 21st Dec 2020 in association with Haryana unit of Vigyan Bharti. This program was part of the India International Science Festival 2020 which is conducted every year to reach out to students, teachers and research scholars in various parts of the country.

Mr. N Venkateswaran, CEO, NABL presented the special address and interacted with all the school students who participated in the program.

He set them thinking with small scientific questions and explained in clear examples as to how accreditation and quality infrastructure is helping in nation building.



All the young participants got the opportunity to interact and expressed their doubts which were further clearly explained with simple examples. The different aspects in accreditation such as Testing, Calibration, Proficiency Testing and Reference materials were put forth in simple relatable terms to boost the understanding of the participants.

CEO, NABL encouraged the participants to question whenever they have any doubt and emphasized that their learning will be exponential as they try to explore and question on various areas of science and technology.

Dr. Omkar Rai, Director General, Software Technology Parks of India (STPI) explained how the IISF Vigyan Yatra Program had been influential in spreading different ideas and thanked NABL for organizing a program to increase awareness about NABL accreditation. He emphasized that this is jointly organized by the Government of India in association with Vigyan Bharti and this is the 6th edition which is planned digitally due to the covid situation.



He explained how in IISF 2020, 41 separate tracks / themes are being conducted which is an improvement from the 28 tracks / themes in 2019. Also, why the date of the festival was chosen in the particular dates, was briefed.

Ms. Mallika Gope, Director, NABL explained how the practice of standardization and measurement existed since the time of Indus Valley civilization.

The journey of NABL since inception and its role in the quality infrastructure of the country was explained to the participants.



Simple examples were shared to help the participants understand about the requirement for testing and how accreditation ensures trust and quality in testing.

Mr. Sreepasad M Kuttan, Organizing Secretary, Vijnana Bharati explained about VIBHA and its role in propagating science among the young minds with a special emphasis on IISF 2020.

He explained the initiatives undertaken to educate people about the Indian spirit in science and technology which existed since the vedic period; and how VIBHA took upon the mission to inculcate scientific temper in younger generations.

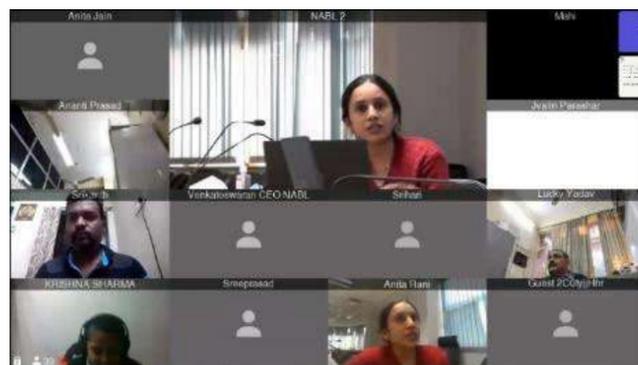
Further, he explained how IISF being planned every year since 2015, was planned to break an existing record and could make it to the Guinness World Records.

He explained how students from backward villages used to attend the program physically and thanked NABL in organizing the program virtually and helping in generating awareness about NABL and Laboratory Accreditation.



Ms. Anita Rani, Joint Director, NABL explained about NABL activities pertaining to scientific fields and public health.

She presented on using NABL website for information and downloading relevant documents and explained how to find the authenticity of certificates issued by accredited laboratories.



Further, contributions of NABL in the fight against the COVID-19 Pandemic and how testing by laboratories ensures safe food and drinking water were presented.

The participants cleared their doubts in the Q&A session and were highly motivated to inculcate the culture of quality in their daily lives.



MARK OF EXCELLENCE



National Accreditation Board for Hospitals and Healthcare Providers (NABH) is a constituent board of Quality Council of India (QCI), set up to establish and operate accreditation programme for healthcare organizations.

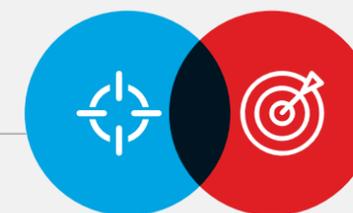
NABH has been established with the objective of enhancing health system & promoting continuous quality improvement and patient safety. The board while being supported by all stakeholders, including industry, consumers, government, has full functional autonomy in its operation.

NABH provides accreditation to hospitals in a non-discriminatory manner regardless of their ownership, size and degree of independence.

International Society for Quality in Healthcare (ISQua) has accredited NABH. The approval of ISQua authenticates that NABH standards are in consonance with the global benchmarks set by ISQua.

Vision

To be apex national healthcare accreditation and quality improvement body, functioning at par with global benchmarks



Mission

To operate accreditation and allied programs in collaboration with stakeholders focusing on patient safety and quality of healthcare based upon national/ international standards, through process of self and external evaluation

NABH Activities

NABH Accreditation Programs

NABH offers accreditation to Hospitals, Blood Banks, Eye Care, SHCOs/ Nursing Homes, OST Centers, CHCs/PHCs, AYUSH Hospitals, Wellness Centers, Medical Imaging Services, Dental Centers, Allopathic Clinics, Ethics Committees and Panchkarma Clinics

NABH Certification Programs

NABH offers certification to Medical Laboratories, Nursing Excellence, Emergency Departments, Medical Value Travel Facilitator (MVTF), Pre-Accreditation Entry Level for Hospitals, Pre-Accreditation Entry Level for SHCOs

NABH International

NABH has started its operations overseas under NABH International (NABH I). It offers all accreditation programs as being offered in India. The program is unique as in addition to the accreditation standards it requires compliance with local regulatory requirements

Training & Education

NABH conducts Education/Interactive Workshops, Awareness Programmes and Programmes on Implementation (POI)



For further details please contact:
**National Accreditation Board of Hospital and Healthcare Providers
Quality Council of India**

5th Floor, ITPI Building, 4A, Ring Road, IP Estate, New Delhi-110002, India
Ph.: 011-42600600; Fax: 23323415; Email: helpdesk@nabh.co; Website: www.nabh.co





nabh.co



National Accreditation Board for Hospitals and Healthcare Providers

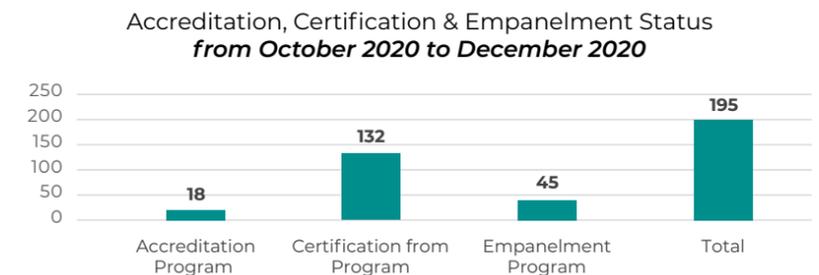
BOARD UPDATES

October to December 2020

During the period of October 2020 to December 2020 following work has been accomplished:

Accreditation/Certification/Recommendations for Empanelment Granted

S.No.	Program	Accreditation/Certification Granted
1.	Accreditation Program	18
2.	Certification Program	132
3.	Empanelment Program	45
Total		195



Accreditation, Certification & Empanelment Status from October 2020 to December 2020



Virtual Assessment Conducted

NABH team has initiated remote and hybrid assessments of HCOs using virtual platforms. To start with, virtual assessments of HCOs were conducted on pilot basis and the outcome was found to be favourable. It is expected that this will reduce the pendency in accreditation or certification cycle tremendously.

Total number of assessment 999 conducted for Accreditation, Certification and Empanelment during October 2020 to December 2020.

S.No.	Program	Assessment Conducted
1.	Assessment for Accreditation/ Certification / Empanelment Program	838
2.	Desktop Surveillance Assessments for Accreditation Programs	161
	Total	999



Quality Connect-Learning with NABH

NABH announced the enriched continuation of "NABH Quality Connect-Learning with NABH" initiative under which free monthly training classes, webinars and seminars will be conducted. The training topics will cover all aspects of patient safety, including: Key Performance Indicators, Hospital Infection Control, Management of Medication, Document Control etc.

NABH Training Programs on Implementation (POI) & Educational Workshops on Virtual Platform

- Programs on implementation are conducted on NABH Accreditation Standards of Hospitals, AYUSH, Blood Bank and Nursing Excellence, Pre-Entry-Level Hospital & SHCO Certification Standards, Clinical Audit Workshop and Continual Quality: Tools and Techniques Workshop.
- The objective of POI is to provide guidance to healthcare provider on implementation of NABH standards. These programs are instrumental in developing internal capability within the hospitals to work towards implementation of quality and patient safety standards, achieving accreditation and maintaining the same.
- During the period from October 2020 to December 2020, 22 educational workshops were conducted on virtual mode wherein more than 1000 healthcare professionals participated.

QUALITY CONNECT LEARNING WITH NABH

National Accreditation Board for Hospitals and Healthcare Providers

Certificate Courses

NABH, since its inception in 2005, has been at the forefront of creating and sustaining an ecosystem of healthcare quality. Training and capacity building in the realms of patient safety, healthcare quality and accreditation is one of the core activities of NABH. The purpose of these trainings & workshops is to upgrade the knowledge and skills of healthcare personnel, so that they can implement quality principles at their work place.

Over the past 15 years NABH has successfully conducted hundreds of training on various subjects and thousands of quality professionals have benefited.

The recent COVID pandemic has given an opportunity to NABH to reach out and connect to many more quality professionals via the virtual platforms at a very nominal cost.

All these Virtual Courses have been updated and enhanced with latest course material and content. All participants will also receive a NABH official certificate.

Do avail this opportunity

Education / Interactive Workshops (Duration of Course: 4 Hours)

- ▶ Clinical Audit
- ▶ Continual Quality Improvement: Tools & Techniques
- ▶ Documentation Requirement for Patient Safety and Quality Improvement
- ▶ Good Clinical Practice (GCP)
- ▶ New Drugs & Clinical Trials (NDCI)

Program on Implementation (POI) (Duration of Course 12 to 15 Hours)

- ▶ Hospital Accreditation Standards
- ▶ AYUSH Entry Level Certification Standards
- ▶ Medical Imaging Services Accreditation Standard 2nd Edition
- ▶ Blood Bank Accreditation Standard 3rd Edition
- ▶ Nursing Excellence Certification Standard 1st Edition

The objective of these courses is to provide guidance to healthcare providers on implementation of NABH standards. These programs are useful to develop internal capability for working towards implementation of quality and patient safety standards, achieving accreditation and maintaining the same.

The sessions during these programs are taken by Master Trainers, subject experts and Senior Assessors of NABH. Participants get an opportunity to clarify their doubts through interaction with experienced faculty.

For more information and registration about above courses please click on below link.

<https://www.nabh.co/EducationTraining.aspx>

QUALITY COUNCIL OF INDIA
Promoting and Maintaining Quality

NABH was knowledge partner with @ ASSOCHAM4India for virtual AYUSH Mela on 30th October 2020 to showcase opportunities in AYUSH industry in post COVID times

ASSOCHAM
AYUSH MELA
30th October to 1st November 2020

Conference Session on
ROLE OF AYUSH IN COVID ERA
30th October, 2020 – 03:00 pm to 05:00 pm

EMINENT SPEAKERS

- H.E. Tahir Qadry
Minister, Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homoeopathy and SDO&R, Government of India
- Dr. A. Raghu
Joint Director, Government of India
Director, Centre Council for Research in Yoga & Naturopathy
- Mr. Luke Covilinho
Business Director, Health & Wellness
Founder & Lead, Health & Wellness
Healing System Pvt. Ltd.
- Dr. Raghendra Rao
Director, Centre Council for Research in Yoga & Naturopathy
- Mrs. Ujjasana Arora
Head, Entry Control & Compliance
Tatyana Super Specialty Hospital
- Dr. Atul Mohan Kochhar
CEO, National Accreditation Board for Hospitals and Healthcare Providers (NABH)

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COUNTRY PARTNERS

ASSOCIATION PARTNERS

KNOWLEDGE PARTNERS

STATE PARTNERS

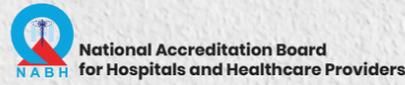
ACADEMIC PARTNERS

MEGA PARTNERS

PHARMA

Or register at: <https://www.assocham.org/ayushMela/role-of-ayush-in-covid-era.html>
Contact Us: Ms. Payal Swami | payal.swami@assocham.com

Webinar on National Accreditation Board for Hospitals and Healthcare Providers (NABH) Accreditation & Entry-Level Certification Programs for AYUSH Hospitals & Centres - Taking Quality to Grassroot Level



Webinar on NABH Accreditation & Entry-Level Certification Programs for AYUSH Hospitals & Centres

Taking Quality To Grass Root Level



16th December 2020 (Wednesday)



2:00 pm to 4:30 pm

Objectives

- To sensitise AYUSH Hospitals & Centres about Programs of NABH Accreditation | Entry-Level Certification
- To Impart knowledge about implementation of NABH AYUSH Standards
- Overview of application & assessment process

Speakers



Dr. Atul M. Kochhar



Dr. Prasanna N. Rao



Dr. Raghuram Ayyagari



Dr. J. Jeyavenkatesh



Dr. Anoop M. Nigwekar

<https://www.nabh.co/EventDetails.aspx?id=243>

JAN AANDOLAN FOR COVID 19 APPROPRIATE BEHAVIOUR PLEDGE



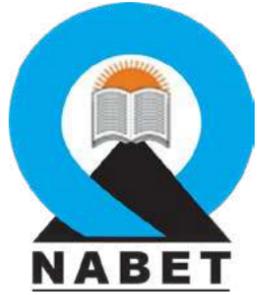
QUALITY COUNCIL OF INDIA
Creating an Ecosystem for Quality



NABH promotes this low cost but highly effective campaign and encourage people's participation to adopt COVID-19 appropriate behaviour

Swachhata Pakhwada from November 1-15, 2020, recognizing the importance of Swachhata Mission of Government of India





nabet.qci.org.in

BOARD UPDATES

October to
December
2020

National Accreditation Board for
Education and Training

Formal Education
Excellence Division
(FEED Division)

FEED-NABET conducted various digital awareness workshops for administrators, schools and teachers. The workshops were designed keeping in mind the need of the school stakeholders as well as the domain of FEED. Some of the screenshots are given below:

**Digital Awareness Workshops on
Preparing Schools for Pandemic
(PSP)**



FEED-NABET conducted Digital Awareness workshops on Preparing Schools for Pandemic (PSP) to address reopening protocol after COVID-19 lockdown and further provide safety guidelines.

The program was designed for: School Stakeholders

Following were the takeaways of the programme:

- Creating broad context-based safety guidelines to reopen schools
- Understanding protection, prevention, mitigation and recovery strategies
- Instituting education continuity plans and business continuity plan for schools
- Pandemic preparedness for school: Transport, School Entrance, School Corridor, Classroom Seating, Teaching and Learning, Kitchen/ Canteen Hygiene, Toilet & Bathroom Hygiene
- Surveillance activities by medical personnel, teachers & principals.

Speakers:

- Ms. Madhu Ahluwalia (Sr. Advisor NABET)
- Dr. Sheela Ragavan
- Ms. Aqsa Zaidi

Digital Awareness Workshops on Accreditation Standard for Quality School Governance



FEED-NABET conducted Digital Awareness workshops on Accreditation Standard for Quality School Governance to spread awareness about the Standard.

The program was designed for: Management Committee Members, Education System Coordinators, Teachers / School Administrators (Core team members), Principals, Educationists / Curriculum Developers and Education Consultants who wish to implement Accreditation Standard for Quality School Governance in the schools.

Following were the takeaways of the programme:

- Understanding the requirements of accreditation standard
- Implementation of the requirements of accreditation standard
- Understanding best practices: Benchmarking and innovation
- Facilitation to prepare a Road map for accreditation

Speakers:

- Ms. Madhu Ahluwalia (Sr. Advisor NABET)
- Dr. Sheela Ragavan

Awareness about various components of Accreditation Standard for Quality School Governance by NABET



FEED-NABET conducted workshops on components of Accreditation Standard for Quality School Governance by NABET. Various accredited and non-accredited schools participated in the workshops.

The program was designed for: School Stakeholders

Speakers:

- Ms. Madhu Ahluwalia (Sr. Advisor NABET)
- Dr. Sheela Ragavan

Digital workshops on Enhancing Blended & Online Teaching Capability through Hands-on Training

FEED-NABET conducted Digital workshops on Enhancing Blended & Online Teaching Capability through Hands-on Training. 6 Workshops have been conducted till date.



The program was designed for: School Stakeholders

Speakers:

- Ms. Madhu Ahluwalia (Sr. Advisor NABET)
- Dr. Patanjali Mishra
- Dr. Gaurav Singh
- Dr. Jai Singh
- Dr. Mamata
- Dr. Gaurang Tiwari
- Ms. Adiba Faiz
- Ms. Meenakshi Arora

Digital workshop on Preparing School for Competency-based Education

FEED-NABET conducted Digital workshops on Preparing School for Competency-based Education. 1 Workshop has been conducted till date.

The program was designed for: School Stakeholders



Speakers:

- Ms. Madhu Ahluwalia (Sr. Advisor NABET)
- Dr. Patanjali Mishra
- Dr. Gaurav Singh
- Dr. Bhaskar
- Dr. Mamata Aswal
- Dr. Gaurang Tiwari
- Ms. Adiba Faiz
- Ms. Meenakshi Arora

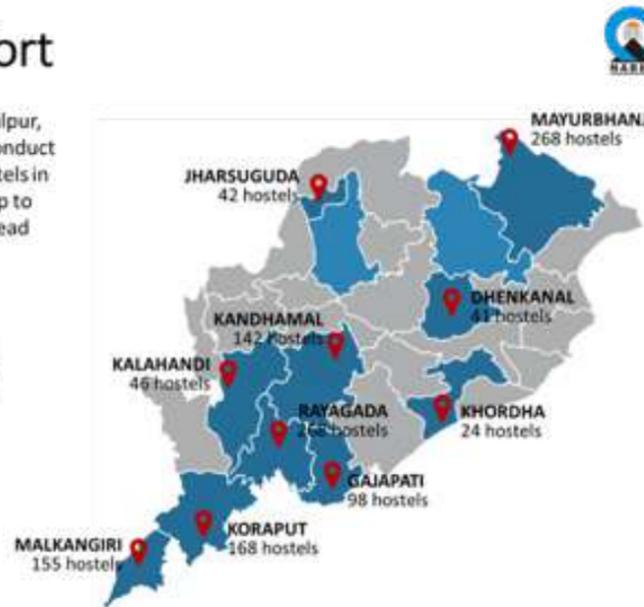
Assessment and Evaluation of ST & SC Hostels in Odisha

- FEED has also initiated a project for comprehensive assessment and evaluation of ST & SC Hostels in 10 more districts as part of Mission Suvidya and help improve the standard & quality of these hostels to lead them to achieve ISO 9001:2015 Certification (Phase II). 2-day Training on the Virtual Assessment Portal for 2000+ officials of 10 districts of SSD Department to prepare hostels for the evaluation has been imparted and desktop assessment of all the hostels have been completed.
- Feed has also initiated process of accreditation of 72 DAV Mukyamatri Public Schools in Chhattisgarh. Since 1st December 2020, 8 trainings have been conducted for DAV Schools on different topics.
- Feed collaborated with Navodaya Vidyalaya Samiti and conducted 8 workshops on preparing schools for Competency-based Education, training 480 teachers across different regions.

Context for overall effort

Post the encouraging results in Keonjhar and Sambalpur, ST & SC Welfare Department has allocated QCI to conduct a comprehensive assessment and evaluation of hostels in 10 more districts as part of Mission Suidhya and help to improve the standard & quality of these hostels to lead them to achieve ISO 9001:2015 Certification.

10 Districts
1252 Hostels



Environment Division

Assisting MoEFCC for the Meeting with EIA/EMP Consultants on quality of EIA report under the Chairmanship of Secretary (EF&CC) held on 7th October 2020. (approximately 385 participants attended the meeting).

A meeting was held on 7th October 2020 under Chairmanship of Secretary, MoEFCC with Accredited EIA Consultants and Non - Accredited Consultants, National Productivity Council (NPC), NEERI and QCI -NABET with the following objective -



Expectations of Ministry from EIA consultants (ACO) –

- Make yourself fully aware of the rules and regulations
- Refrain from doing plagiarism and data manipulations
- Discuss critical issues in the EIA report and suggest mitigation measures
- Advise Project Proponent with Full responsibility about requirements

MoEFCC highlighted that the perfect and technically sound EIA / EMP report may get Environmental Clearance in less than 105 days.

Virtual Quality Conclave (VQC): Accreditation – Increasing Credibility of Consultants – 17th October 2020



QCI- NABET organized 1st Virtual Quality Conclave (VQC) 2020 on 17th October 2020 in collaboration with National Board for Quality Promotion (NBQP). Quality Conclave was supported by South Delhi Municipal Corporation (SDMC), New Delhi. The theme of 1st VQC was 'Accreditation – Increasing credibility of Consultants'. The main objective of this VQC was to promote the importance of Accreditation especially in the field of Environmental Impact Assessment, Ground Water and Mining & Mine Plan Consultant Organizations.



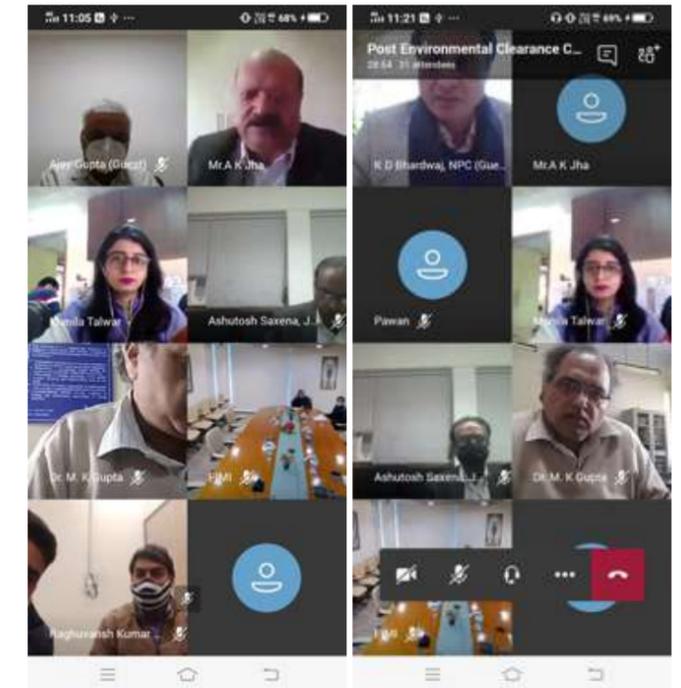
The VQC was aimed at to fulfil the following goals:

- To increase awareness of Accreditation in the identified field (EIA, Ground Water, Mining)
- To increase awareness of the organizations and benefits of accreditations
- To increase awareness of the project proponent and role of accredited organizations
- To increase awareness of specific projects or missions

Approximately 200 participants attended the conclave.

Organized meeting with the various Industrial Associations of India on Post Environmental Compliance Monitoring (29th December 2020)

Meeting was organized to lay importance on the involvement of Industry Associations in the Post Environmental Clearance Compliance & monitoring as per expectations of MoEFCC.



Focus of meeting was on the following -

1. The scenario of post Environmental Clearance (EC) compliance monitoring in the country and role an Industry Association (IAs) may play in monitoring post EC Conditions. Industry Associations may be involved in post EC monitoring in association with the regulatory agencies (Ministry of Environment, Forest and Climate Change (MoEFCC), Regional offices, State Pollution Control Board (SPCB), Central Pollution Control Board (CPCB) etc).
2. Industry Associations may play an important role in generating and maintain baseline environmental setting data in the industrial area. Industry Associations may help member industries to implement their Environmental Management Plan (EMP) through certified environmental auditors/firm/institution.
3. National Productivity Council (NPC) will be instrumental in certifying the competent Environmental Auditors (EA) / Environmental Managers (EM).
4. Presentation was made on the framework for post Environmental Clearance Monitoring
5. MoEFCC is in the process of developing 3-Tier System involving MoEFCC/CPCB/SPCB, Industry Association and partners like National Productivity Council (NPC), National Environmental Engineering Research Institute (NEERI), Quality Council of India (QCI), The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) and others.

MSME Division - Lean Vertical

A webinar was organized for the MSME Division - Lean Vertical across India on Predictive Maintenance (IIOT) on 20th November 2020. The webinar was attended by more than 140 participants.

Objectives of the webinar were

Condition monitoring solutions for predictive maintenance systems integrated into the frequency inverter System is IIOT / Industry 4.0 READY! Available for decentralised and control cabinet solutions

- **Sensors** - Virtual sensors – the PLC can calculate information such as the optimal oil change time. Interface for digital/analogue sensors
- **Communication interfaces** - Threshold values or general status information can be communicated externally (via normal Industrial Ethernet dialects)
- **Integrated PLC** - Local pre-processing of data with the integrated PLC. Pre-processing of threshold values

Key takeaways:

Condition Monitoring - Predictive Maintenance (IIOT)

The Industrial Internet of Things (IIOT) focuses on internet usage in industrial processes and procedures. IIOT aims at increasing the operational efficiency, reducing costs and speeding up processes. Sensors and sensor data playing a central role provide the basis for Condition Monitoring and Predictive Maintenance.

Advantages for Our Customers

Detection and avoidance of impermissible operating states at an early stage, Status-oriented maintenance replaces time-based maintenance, Plannable machinery and plant downtimes based on real drive and process data, Reduction of service and material costs, Longer service life of

components and machine, Increase in system availability, Avoidance of unplanned downtimes, Plannable and cost-optimised repair.

Update on Skill Training and Service Division

Launch of New Scheme : Accreditation Scheme for Learning Service Provider

With the objective of improving the quality of training being provided by different Learning Service Providers, NABET has developed an Accreditation scheme for Accreditation of Learning Service Provider thereby improving the Governance of Learning Service Provider involved in the process of delivering courses in a different arena. The scheme caters to courses being delivered either online or blended or face to face mode. Accreditation Scheme introduced is open for accreditation of courses being delivered through different medium across the sector.

Accreditation is a process of establishing the competence of Learning Service Provider in delivering the requisite elements of Learning Service Provider and its ability to carry out an evaluation of competence acquired by the Learners. Some of the perceived benefits of accreditation of Training Courses is as follows:

- Mark of Distinction between Accredited and Non – Accredited Training Course Provider
- Course Delivery Mechanism of Accredited Training Course Provider Verified
- Training Course Provider deploys Competent Faculty for delivery of Courses
- Security and Confidentiality of Data being shared with Training Course Provider
- Employer Prefers Accredited Training Course Provider over Non Accredited Training Course Provider

Details of scheme is available on NABET website : <https://nabet.qci.org.in/skill-training-services-division/accreditation-criteria/learning-service-provider>



National Accreditation Board for Education & Training (NABET) is one of the statutory board of Quality Council of India mandated for accreditation in the field of Education, Training & Services. Four distinct verticals have been formulated to provide focussed strategic direction to the activities of the Board. One of the verticals of NABET, **Formal Education Excellence Division (FEED)**, fosters quality in school education through spreading awareness, conducting assessments and accreditation. FEED - NABET accredits schools on **Accreditation Standard for Quality School Governance (ASQG)** in the country with a view to provide framework for the effective management & delivery of holistic education program aimed at overall development of school. The standard has three interwoven domains.



BENEFITS OF ACCREDITATION

OVERALL

- Standardisation of schools practices in alignment with National & International Benchmarks
- Better collaboration between stakeholders leading to improved effectiveness
- A sound basis for school improvement, strategic planning, restructuring, and staff development.
- A way to manage change through regular assessment, planning, implementation, and reassessment

STUDENTS & PARENTS

- Improved quality of education
- Holistic education helping students for personality development
- Organized and transparent school system for better day to day experience for students and parents
- Feedback system to get student and parent's issues addressed

SCHOOLS

- Capability development for delivering quality education
- Quality improvement in existing school system/ process
- System/ process driven activities
- International standards applied for local and national school needs

MANAGEMENT

- Benchmarking school against best in education field
- Establishing centre of excellence and continuous improvement
- Regular feedback on performance through internal and external assessments

FEED-NABET has accredited and assessed 5,500+ schools till now in India and abroad.





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BOARD UPDATES

October to
December
2020

National Accreditation Board for
Certification Bodies

NABCB undergoes Successful Peer Re-Evaluation Asia Pacific Accreditation Cooperation (APAC)

NABCB underwent successful Peer Re-evaluation for all its accreditation schemes which include Management System Scheme (QMS, EMS, EnMS, FSMS, ISMS, MDQMS, OHSMS), Product Certification including GlobalG.A.P., Personnel Certification and Inspection Bodies by Asia Pacific Accreditation Cooperation (APAC). NABCB was also peer evaluated for a new scheme related to GHG Validation and Verification bodies as per requirements of ISO 14065. The peer evaluation was conducted by a team of 8 evaluators from APAC with Ms Noriko Tominaga as Lead Evaluator. This evaluation was conducted remotely and was first peer evaluation undertaken by APAC through virtual means.

The objective of the evaluation was to reconfirm conformity against specified criteria for the continuation of NABCB Signatory Status in the APAC Mutual Recognition Arrangement (MRA) for the accreditation of QMS, EMS, EnMS, FSMS, ISMS, MDQMS, OHSMS, Product certification including Global G.A.P., Certification of Persons and Inspection and for inclusion of GHG programme for validation and verification bodies. Renewal of mutual recognition by APAC will also support in establishing the mutual recognition by ILAC and IAF in applicable programme.

Based on successful APAC re-evaluation and initial GHG evaluation, NABCB is likely to be reconfirmed as APAC signatory for these accreditation programmes.



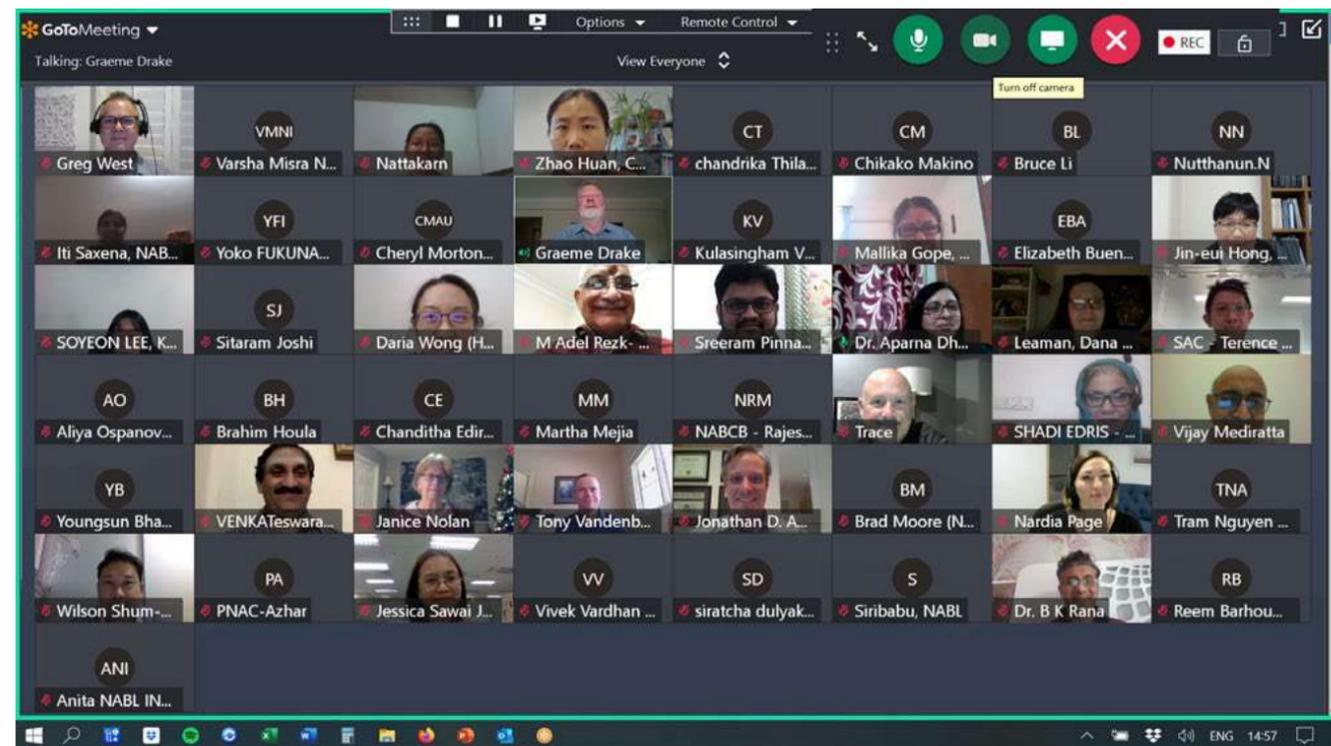
NABCB Participation in IAF-ILAC Meeting 2020

NABCB officers participated in various meetings of International Laboratory Accreditation Cooperation (ILAC) and International Accreditation Forum (IAF) conducted virtually held between the period of Oct to Dec 2020. The meeting was attended by **Mr Rajesh Maheshwari, CEO NABCB** along with other NABCB officers i.e **Mr. Mrutunjay Jena, Director; Dr. Aparna Dhawan, Joint Director; Mr. Ajay Kumar Sharma, Joint Director; Mr. Anand Deep Gupta, Deputy Director; Ms. Varsha Misra, Deputy Director and Ms. Poonam Gupta, Assistant Director.**

The meetings included various technical committee meeting, Accreditation issues committee and General Assembly. Participation in meetings was important as the meeting involved discussion related to accreditation requirements related to Certification and Inspection bodies for global harmonisation. The challenges faced by Accreditation Bodies in the new normal of COVID-19 era was the main topic of discussion. The experience and challenges of remote assessment were also discussed in detail in the meeting.

NABCB Officer Chairs APAC CPC Meeting

Dr Aparna Dhawan, Jt Director NABCB, Chaired the APAC Communication and Promotion Committee Meeting on 2 Dec 2020 which had participation of 40 plus participants from different economies. The nomination of NABCB officer as Chair of APAC CPC is a moment of pride for NABCB. During the meeting various working groups were formed for different activities and in few working groups would also be convened by NABL.



NABCB participation in online training organized by APAC

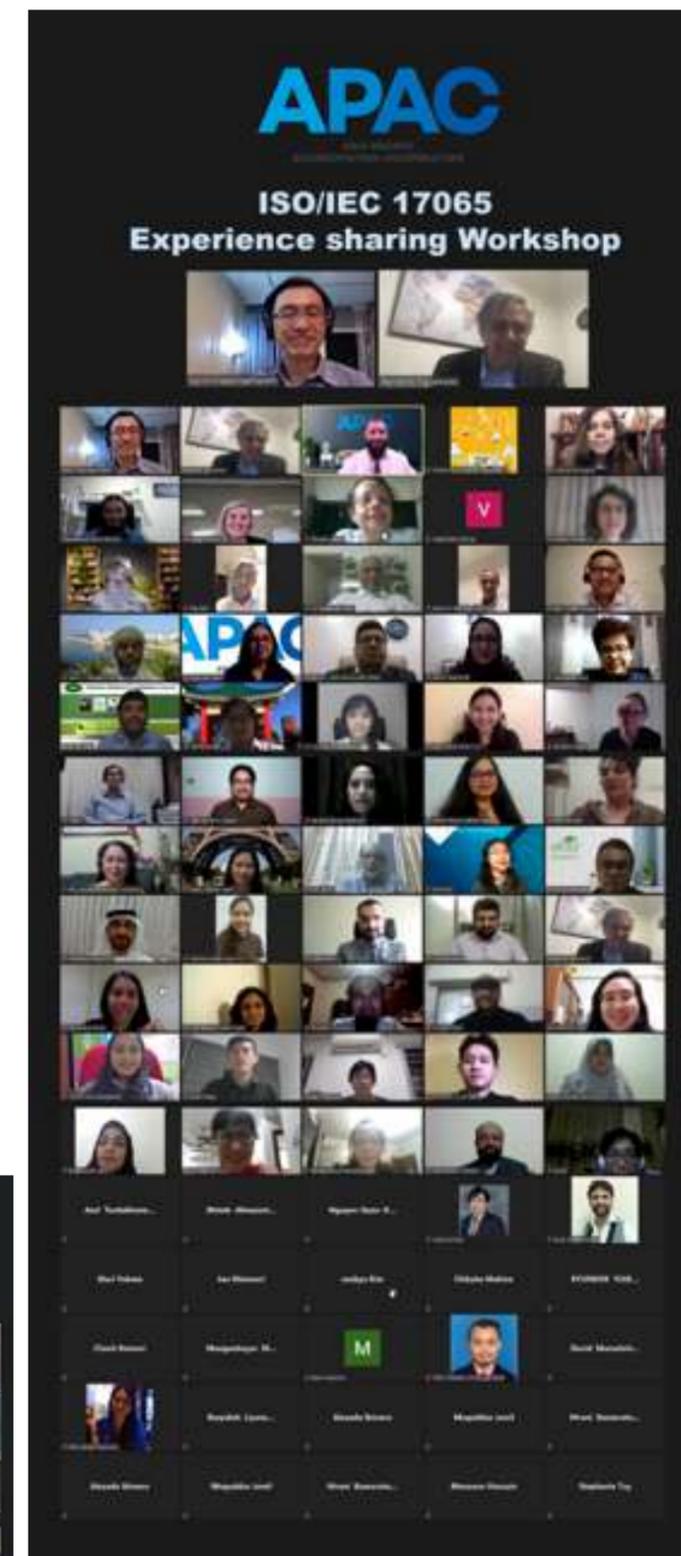
NABCB officers participated in various online training programmes organized by Asia Pacific Accreditation Cooperation (APAC) on various conformity assessment standards in the month of November -December 2020.

Mr. Ajay Sharma, Joint Director and Ms. Chinmayi Salooja, Accreditation Officer attended training on "Accreditation of ISO/IEC 17025:2017 Calibration Laboratories and Measurement Uncertainty" on 10, 11, 12 and 16-17 November 2020 (3-hour consecutive sessions). In this, key requirements of ISO/IEC 17025: 2017 were discussed with special focus on Measurement Uncertainty.

Mr. Ajay Sharma, Jt. Director and Ms. Poonam Gupta, Assistant Director attended Energy Management Systems (ISO 50003) accreditation training. This was an introductory/intermediate training course on the use of ISO/IEC 17021-1 and ISO 50003:2014, Energy Management Systems.

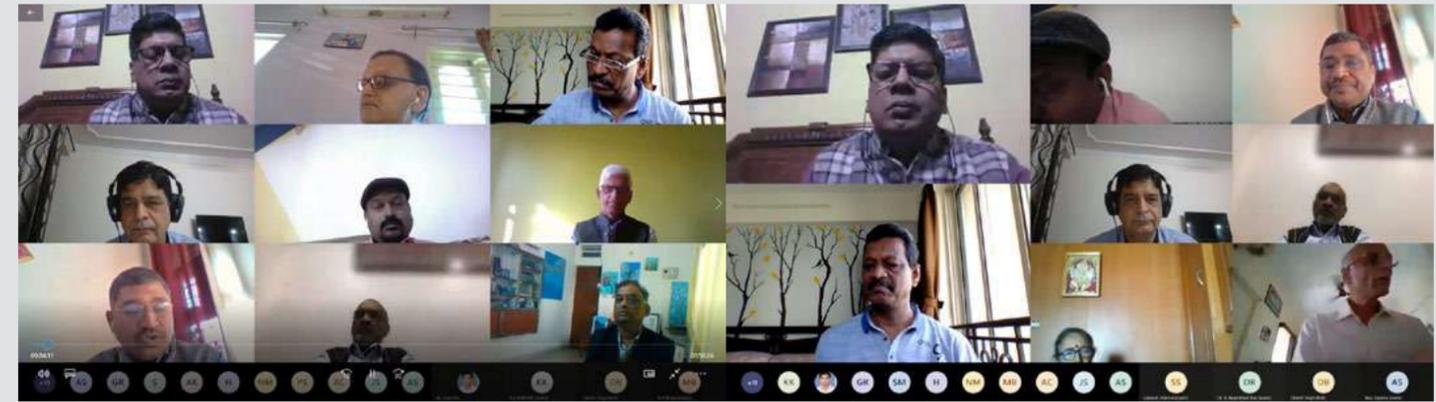
Mr Rajesh Maheshwari, CEO NABCB, Dr Aparna Dhawan, Jt Director NABCB and Ms Varsha Mishra, Deputy Director, NABCB attended the online training on requirements of ISO/IEC 17065.

Mr Rajesh Maheshwari, CEO NABCB and Mr. Anand Deep Gupta attended the virtual training on requirements of ISO/IEC 17024 organized.



NABCB Interaction with Assessors

NABCB organized Assessors Conclave for Assessors of Inspection Bodies Scheme which was held virtually on 17 December 2020. This Conclave was an extension of previously organised NABCB IB Assessors Conclave wherein few unresolved issues were to be discussed. The session was focussed to issues related to Assessment in Inspection Bodies (IB) and was attended by 26 assessors. The discussions focussed on scope statement, competence requirements of IBs.



Assessors Conclave 17th December 2020



Webinar on NABCB accreditation for inspection Bodies and its benefits to Industry & Government Body

NABCB, with an objective to increase the awareness about the benefits of using NABCB accredited inspection body among the Government organisations, Regulators, Industry, Inspection Bodies, organized three monthly webinars from Oct to December 2020. The participation in the webinar was free of cost. NABCB received a very positive response for these webinars and the footfall was around 250+ participants.

The webinar covered a host of topics ranging from details of NABCB accreditation and its benefits, NABCB accreditation process and key requirements of ISO/IEC 17020:2012 standard. The speakers for the webinars were Dr Aparna Dhawan and Mr Ajay Sharma, Joint Director NABCB.

NABCB Conducts Online Assessor Training Programme

NABCB conducted a 3-day Assessors' online Training Programme on ISO/IEC 17020:2012 on 28,30 Nov & 1 Dec 2020 in order to increase its assessor resources. The training was attended by 24 potential assessors. The faculty of the training programme were Ms. Rajalakshmi Subrahmanyam and Dr. S Ravi Shankar, Lead Assessor(s) of NABCB. NABCB used the online platform to train assessors and the programme was successful as there was lot of interactions.





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National Board for Quality Promotion

BOARD UPDATES

October to December 2020

AS 9100 Rev D - Aerospace and Defence QMS Introduction

Oct 10th, 2020

Objective

This will help the MSME sector understand the Aviation, Space and Defence Industry specific Quality System Requirements made by the industry, and also support the Make in India Defence / Aatmanirbhar Bharat Program and they collaborate and compete with international players.

About the Topic

Quality, reliability and safety are critical values for the aviation, space and defence industry. AS 9100 helps the organisation enhance customer satisfaction, meet regulatory, safety and reliability requirements, and ensure consistency of quality throughout the supply chain. This program is meant to create an awareness on the requirements of ASD industry specific Quality Management Systems requirements.

Key Takeaways

- Understand the Aerospace Quality
- Introduction about AS 9100 series of standards
- Explain how the additional requirements can be interpreted and implemented

Accreditation - Increasing Credibility of the Consultants

1st Virtual Quality Conclave

Oct 17th, 2020

Partners: National Accreditation Board for Education & Training (NABET)

Supported By: South Delhi Municipal Corporation (SDMC), Horticulture Department

Description: Quality Council of India (QCI) organised the 1st Virtual Quality Conclave (VQC) on Accreditation - Increasing

Credibility of the Consultants on 17th October 2020. The primary objective of the conclave was to bring awareness and share insights on the importance of Accreditation under the EIA Scheme, Ground Water and Exploration & Mining Schemes and its accreditation process, industrial safety & risk management and importance of Socio-Economic aspect in developmental project.

ISO/TS 22163 - IRIS Certification - Railway QMS Introduction

Oct 22nd, 2020

Objective

This will help the MSME sector to support the MakeinIndia Program and they compete with international players on Rail and Metro projects.

About the Topic

IRIS stands for International Railway Industry Standard. It is a globally recognized standard unique to the railway sector for the evaluation of management systems. IRIS Certification system is based on technical requirements (ISO/TS 22163) and conformity assessment (including assessment methodology and a common certification process). The aim of IRIS is to create a culture of quality that brings benefits to all stakeholders in the rail supply chain. The ISO/TS 22163:2017 contains the requirements of the ISO 9001:2015 Standard and the supplemental rail-specific requirements.

Key Takeaways

- Understand the IRIS Certification Process
- Introduction about ISO/TS 22163 Requirements
- Explain how the additional requirements can be interpreted and implemented

Low-Cost Automation: Key to Post Pandemic production

Oct 23rd, 2020

About the Topic

- What is LCA and its types, its evolution. LCA practices, technologies used in LCA.
- Application and methodology - How these techniques can be implemented by organizations in different manufacturing, support and service processes.
- How LCA can bring improvement in the areas of Productivity, Quality, Cost, Delivery, Safety, Morale etc.

No. of Participants: 123

Training Program on Statistical Process Control

Oct 28th-29th, 2020

Objective

Statistical Process Control has been used by quality and production professionals worldwide for effective process control and monitoring. This course aims at learning basic concepts in Variation, SPC and process capability with hands on exercises in control charting and process capability calculation.

Key Takeaway

- Understanding Types of Data
- Analyzing variation
- Understanding Measures of Central Tendency, Measures of Variation: Central Limit Theorem
- Plotting Control Charts, Process Capability and Process Performance, Calculation using Control Charts
- Control Charts for Attributes and Interpretation rules, examples and guidelines

Business Continuity: Organizational Resilience through Pandemic Response Preparedness

Oct 28th, 2020

About the Topic

The purpose of this webinar is to understand the genesis of the pandemics,

global learnings, the Threat Scenarios, the phases, the response strategies, the business continuity plans and how organizations could proactively ensure organizational resilience

Objective & Key Takeaways

- Risk Assessment with a specific reference to the times of Corona
- Investigating COVID-19 transmission
- Supporting Workplace procedure development and Reviews
- Health and Well-being Guidance (including Ergonomic assessments and mental health factors)
- Communication and Information
- Leadership and Behavioural factors
- Leading vs. Lagging Health Indicators

No. of Participants: 94

Quality 4.0: Future of Quality and Performance Excellence (Quality in the age of Industry 4.0)

Oct 30th, 2020

Objective

To bring awareness amongst participants, brain-storm, identify and

plan to implement proven strategies and best practices in the area of Quality 4.0. This workshop is focussing on Q4.0 Principles, Q4.0 Tools and Best Practices.

About the Topic

Covid-19 and Industry 4.0 has given us a unique opportunity to look into the future of Quality of our product, process and services. These future needs can be met with relevant Quality 4.0 Strategies and tools (within the context of Industry 4.0). These Tools are playing a very unprecedented and vital role in reshaping the future of quality and excellence. These tools are also helpful in digitisation and able to meet challenges emerged with disruptive and exponential technologies.

Key Takeaways

- Understand the concept Quality 4.0
- Learn & Understand the Q4.0 Tools like
- AI, Big Data, Analytics, Virtual Reality, Mixed Reality, Emerging Technologies like Sensors, Actuators, Cobots, 3DP etc.
- Q4.0 Resources
- Sharing Best Practices and Case Studies

Creating Quality Mindset to Sustain Improvements

Nov 02nd, 2020

Objective

To help the participants learn how to create a quality mindset can help them sustain improvements and optimise organisational performance

About the Topic

Every organisation makes significant improvements over a period of time. However, these improvements need to be sustained to benefit from them. However, this is where the organisations face a challenge to sustain the improvements, and therefore, they are not able to reap the benefits of the efforts and resources invested. The webinar aims to highlight how creating a Quality mindset can help the organisations sustain the improvements for a better performance.

Key Takeaways

- Understanding the process of improvement
- Identifying the reasons of failure to sustain improvement
- Learn how to create a quality mindset to sustain improvement and perform better

No. of Participants: 101

Lean Manufacturing Practices for Cost Reduction and Efficiency Improvement

Nov 04th, 2020

Objective

Objective of the program is to share best Lean Manufacturing practices for cost reduction and efficiency improvement. A deep dive into components of Cost whether fixed or variable will help participants brainstorm, understand, identify, assess and implement some of these practices in their own work area.

Key Takeaways

- Understanding of LEAN Practices
- Best Tools and Techniques in effective LEAN implementation 5S, TPM, SMED, QCO, Kaizen
- Understanding of Wastes, 3M, 3G & 3K
- Identification and implementation of some best practices at work place

No. of Participants Attended: 110

Food Hygiene & Food Safety – Introduction to ISO 22000

Nov 12th, 2020

Objective

- To create awareness on food hygiene
- To create awareness about HACCP in food safety
- To create awareness about GHP in food safety

About the Topic

HACCP & GHP provide businesses with a cost effective system for control of food safety and food hygiene,

from ingredients right through to production, storage and distribution to sale and service of the final consumer. The preventive approach of HACCP and GHP not only improves food safety management but also complements other quality management systems.

Objective & Key Takeaways

- Saves your business money in the long run
- Avoids you poisoning your customers
- Food safety standards increase
- Ensures you are compliant with the law
- Food quality standards increase
- Organizes your staff promoting teamwork and efficiency
- Organizes your process to produce safe Hygienic food

No. of Participants Attended: 114

How to conduct Risk-based Auditing (based on ISO 19011:2018 standard)

Nov 26th & 27th, 2020

Objective

- What is risk-based auditing
- What is the difference between risk based auditing and traditional compliance-based auditing
- When and why of risk-based auditing

- ISO 19011:2018- concepts, terminologies and the guidelines
- What are the types of risks and opportunities associated with auditing
- Preparing for risk-based auditing
- Conducting audit adopting a risk-based approach
- Evaluating the effectiveness of the audit program

About the Topic

As the need for managing risks within business is increasing, it is placing pressure on management to identify the areas that pose greater risks and take necessary actions. In recent years, the need for risk-based auditing has therefore become apparent. Modern quality management system coupled with effective risk-based auditing practices go a long way in mitigating potential risks and help business achieve its objectives.

The ISO 19011: 2018 guidelines for auditing management systems include a new audit principle – “the risk-based auditing approach: an audit approach that considers risks and opportunities”. Managing risks through risk-based auditing plays a central role in maintaining the integrity of the auditing process by focusing on matters that are significant for the audit client and for achieving the audit program objectives.

Atmanirbhar Bharat: Leveraging MSME

2nd Virtual Quality Conclave

Nov 27th, 2020

Partner: Foundation for MSME Clusters (FMC)

Supported by: GIZ, South Delhi Municipal Corporation (SDMC), Horticulture Department

Description: QCI, jointly with Foundation for MSME Clusters (FMC), organized the Virtual Quality Conclave (VQC) on ATMANIRBHAR BHARAT: LEVERAGING MSME on 27th November 2020. The primary objective of the conclave was to discuss about how Micro, Small and Medium Enterprise (MSME) sector in India can play a crucial role in achieving the vision of self-reliant India by understanding the current operations of the ecosystem, and pool in the necessary resources available. Making in India and supporting those who ‘Make in India’ can build and boost the economy enabling Aatmanirbhar Bharat.

AS 9100 Rev D - Aerospace and Defence QMS Internal Auditor program

Dec 10th & 11th, 2020

Objective

- Fully understand and successfully interpret the AS 9100 requirements
- Understand how to audit using the process approach and Risk Based Thinking
- Audit to the AS 9100 Quality Management Systems
- Identify and explain the requirements of AS9100 Rev D including process approach, project planning, risk management, configura-

tion management, counterfeit part and product safety

- Gain insight into the AS 9100 audit requirements to augment/ sustain your existing program
- Gain knowledge to help manage a successful AS 9100 implementation projects
- Provide professional credentials to your internal auditors

Commitment to Quality-Sustaining a Culture of Improvement

3rd Virtual Quality Conclave

Dec 17th, 2020

Partner: D.L. SHAH

Supported by: South Delhi Municipal Corporation (SDMC), Horticulture Department

Description: Quality Council of India (QCI) organised the 3rd Virtual Quality Conclave (VQC) on “Commitment to Quality-Sustaining a Culture of Improvement” on 17th December 2020

The event acknowledged the outstanding projects of the 13th cycle of the QCI-D.L. Shah Quality Award and awardees of the 2nd Cycle of the QCI Quality Champion Award. The 3rd VQC also showcased some of the award-winning technical case studies presentations of various industry, sectors that demonstrated their incessant efforts and commitment to Quality that have transformed people, processes and organizational culture, to make a significant difference.

Automations- Future of Pharma Industry

Dec 19th, 2020

Objective

Automation is transforming Pharma, with regard to R&D, Manufacturing and real-time monitoring by “Process Analytical Technology (PAT) & Quality by Design” implementation. The industry is moving towards minimum Quality issues. The Pharma Industry has realised that Cost of compliance is much less than Cost of Non-compliance. It is essential to consistently comply with various regulatory agencies GMP standards. Hence, Automation is the key to improve consistency in Manufacturing & Quality Assurance.

Key Takeaways

- Understanding of benefits of increasing automation to have streamlined work flows and end to end transparency on compliances
- Knowledge sharing automated process control can offer greater flexibility and reassurance to continuous manufacturing
- Updates from current practices in Manufacturing & Labs
- Advantages of Emerging Technologies in manufacturing & Quality Control Labs
- Minimizing errors in Quality Control Labs due to Automations
- Role of Artificial Intelligence in the Pharma Industry
- Regulatory Guidelines on Emerging Technologies

No. of Participants: 68

Data Analysis, Visualisation & Automation with Advanced Excel, Bar & QR codes

Dec 19th, 2020

Objective

Program objectives is to share the importance of these spreadsheet applications like advanced excel, google sheets etc. in managing complete operations including production, inventories, materials, resources etc.

About the Topic

Every organisation and individual have a crucial requirement of working on spreadsheets like MS-Excel, Google sheets etc. They spend a substantial amount of their time working on these apps and helping organisations in decision making. The recent advancements in the area of QR Codes and Barcodes are enabling organisations to use these spreadsheets and automate their

processes of managing Production, Quality, Maintenance, Safety, Materials, Inventories etc.

In order to meet the changing requirements, businesses need to have to depict more efficiency in business. A simple and low-cost spreadsheet automation solution could help manufacturers, suppliers, service providers or retailers to increase productivity and achieve desired results from the workforce and the business.

Technology advancement has made spreadsheet automation possible and affordable without much investment and adjustment in the workforce.

Key Takeaways

- Basic MS-Excel: cut, copy, paste, sort, filter, format, wrap, merge, find, replace, what if analysis, lookup, pivot table, IF, AND, OR etc
- Advanced MS-Excel: Data Analysis, Visualisation and Automation
- Introduction of Bar Codes and QR Codes
- How to create Bar Codes and QR Codes
- How to scan, read and record Bar/QR Codes related data
- Best Case Studies & Resources

Statistical Process Control (SPC)

Dec 22nd & 23rd, 2020

Objective

Statistical Process Control has been used by quality and production professionals worldwide for effective process control and monitoring. This course aims at learning basic concepts in Variation, SPC and process capability with hands on exercises in control charting and process capability calculation.

Key Takeaways

- Understanding Types of Data
- Analyzing variation
- Understanding Measures of Central Tendency, Measures of Variation: Central Limit Theorem
- Plotting Control Charts, Process Capability and Process Performance, Calculation using Control Charts
- Control Charts for Attributes and Interpretation rules, examples and guidelines

Quality Council of India Invites Applications



13th Cycle of QCI-D.L. Shah Quality Award (Project Based)

One of the most coveted awards at the national level. Started in 2007, it recognizes outstanding projects of establishments within India which have ensured continuous improvements on three aspects, namely, Operations & process/ Products & services/ Customers' & stakeholders' satisfaction

Why QCI -D.L. Shah Quality Award

Provides a special recognition to the organization & its project besides motivating and stimulating improvements and building customers'/ stakeholders' confidence.



Eligibility Criteria for the Award

Any kind of establishment within India like: Any Govt. Enterprise | Manufacturing Industries | Service | Infrastructure | Financial Service | Hospitality | IT/ITES | Pharmaceuticals | Healthcare | Education | MSME | PSU | NGO and other sectors

There are 3 levels of the Award:

PLATINUM GOLD SILVER

2nd Cycle of QCI-Quality Champion Award (Individual Based)

This Award aims to honor outstanding individuals who have demonstrated significant contribution in the field of quality (for example: outstanding promotional activities, innovation in approach, promotion, effective application of quality tools etc.) in any sector

Why QCI Champion Award

Recognition to an individual for making a difference apart from motivating to continue to improve and develop a Culture of Quality.



Eligibility Criteria for the Award

Individuals from any sector, who have demonstrated an outstanding commitment to the Quality principles through its application, management, promotion etc. to elevate Quality in any sectors, are eligible

There are 3 levels of the Award:

PLATINUM GOLD SILVER

For further details please visit our website: <https://qcin.org/nbqp/dsa/home/Home.aspx>
For any queries, please contact:

Ashutosh Kumar

Mail at : ashutosh.kumar@qcin.org
Call at :011- 23323415/23321274/75 ext. - 306/305
Mob: 9625132098 , 8800891834

Priyanka Maithani

Mail at : priyanka.nbqp@qcin.org
+91-11-2332-3415, 1274, Ext: 305

Our Social Media Presence

The collage displays a variety of social media content:

- Facebook Posts:**
 - Minister Piyush Goyal at the launch of the National Program & Project Management Policy Framework, designed by @NITIAYog & @QualityCouncil.
 - Swachhata Pakhwada initiative, 1st - 15th November 2020.
 - 17th Online Interactive Training on SAATHI conducted today by @ZED_QCI.
 - At the launch of the National Program & Project Management Policy Framework, designed by NITI...
- Twitter Posts:**
 - Quality Council of India: As a part of #SwachhataPakhwada initiative, QCI has organised an internal Slogan writing competition to motivate everyone...
 - Quality Council of India: The 6th edition of "Quality Best Pr... See more #VirtualQualityConclave"
 - Quality Council of India: Dr. Atul Mohan Kochhar, CEO NAB... See more #NationalQualitySummit
 - Quality Council of India: FSSAI launches recognition Scheme for Hygiene Rating Audit Agencies by QCI to fast pace Food Hygiene Rating Scheme. To become a HRAA visit: bit.ly/34aBowf
 - Quality Council of India: The Indian Body of Knowledge launched by Shri @nitin_gadkari, Hon'ble Minister of Road Transport & Highways, Micro, Small & Medium Enterprises, Govt will serve as a common reference for Program and #ProjectManagement in indian #infrastructure
- LinkedIn Posts:**
 - Quality Council of India: Dr. Atul Mohan Kochhar, CEO NAB... See more #NationalQualitySummit
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- Facebook Watch:**
 - Piyush Goyal on Facebook Watch: At the launch of the National Program & Project Management Policy Framework, designed by NITI...



ABOUT THE ORGANISATION

National Fertilizers Limited, a Schedule-A Mini Ratna Category-I company under Department of Fertilizers. 2nd largest producer of Nitrogenous Fertilizers in India with market share of ~16%. NFL Panipat unit has an installed annual capacity of 5.115 lakh MTs of Urea. Bentonite Sulphur plant of 25,000 MT per annum capacity has been commissioned on 20th December 2017 at Panipat unit.

MANAGEMENT SYSTEMS AT NFL PANIPAT

Prior to implementation of EnMS, Unit is already equipped with latest versions of ISO 9001-QMS (Quality).ISO 14001-EMS (Environment) ISO 45001-Health and Safety.

National Fertilizers Limited

PANIPAT UNIT

CASE STUDY

ORGANIZATION ENERGY POLICY

As a part of ISO 50001:2018(EnMS) implementation, Energy Policy

has been formulated which encourages optimum and efficient utilization of energy as per the policy in achieving production targets of NFL Panipat unit.

JOURNEY TOWARDS IMPLEMENTATION OF ISO 50001

NFL Panipat, being energy intensive fertilizer manufacturing facility, is a notified Designated Consumer under fertilizer sector in PAT scheme started by Ministry of Power, Gol.

A pilot project for Implementation of ISO 50001:2018 Management system standards in select PAT industries was initiated by BEE in May 2018. Under this project, an ISO 50001 preparedness check was sent to NFL Panipat. Requisite check points in desired format were submitted to BEE and NFL Panipat was selected for this pilot project for which QCI was the ISO 50001 implementing agency.

MoU was signed between NFL Panipat unit and BEE on 18.02.2019 for Implementation of ISO 50001:2018 Management system.

EnMS ROADMAP

QUANTITATIVE

Enhanced energy performance (6.6 GCal/MT of Urea production by March 2020), Increased efficiencies of plant, Reduced specific consumptions

QUALITATIVE

Energy management maturity, Cultural change towards energy savings, Energy related behavior, Commitment towards energy efficiency.

Significant energy uses (SEUs) are energy uses that account for substantial energy consumption and/ or have considerable potential for energy performance improvement. (e.g. ventilation, lighting, heating, cooling, production, etc.)

At NFL Panipat 5 Significant Energy Consumption Areas are identified.

Ammonia, Urea, Steam and power generation plant (SMC), Offsites & Utilities (O&U) and Electrical

In order to identify significant energy uses (SEUs), the 1st and foremost step is to know how much energy each process or system consumes. In an ideal situation energy sub-meters should be fitted to all large energy uses which can be used to quantify the consumption of each energy use. In reality, in many cases there are not enough meters installed. In such cases estimating the energy consumption based on defined parameters can serve the purpose. This activity has to be carried out for each energy source, i.e. electricity and each fuel type.

The steps involved in identifying and quantifying SEUs are:

- Establish the total annual energy consumption of each source (ex: NG, Steam, Electricity, etc)
- List all known uses of each energy source (ex. Heating, combustion etc)
- Estimate the annual energy consumption of each use
- The total should be as close to the total energy consumption as possible.

Select the largest consumers of Energy

NOTE: It is desirable that this exercise should be as accurate as possible. However, it has to be kept in mind that the purpose of this identification exercise is to converge where to prioritize energy management work. A good estimation is often accurate enough.

FOLLOWING ENERGY SAVINGS PROJECT / SCHEMES ARE IMPLEMENTED WHICH ARE DISCUSSED AS UNDER

- Installation of LED lights
- Installation of APC
- Combustion Catalyst
- Parallel Operation of S-200 & S- 300, Installation of GTG

Installation of LED lights

NFL Panipat has replaced all old and conventional fluorescent lights with energy efficient LED lights. All 7500 old fluorescent lights in factory area & residential township were replaced with LED lights.

Benefits Achieved

Power consumption for lighting has reduced by ~19 lakh KWH. Annual savings of ~ Rs 1.5 crores.

Installation of APC

Installation of Advanced Process Control (APC) in existing Distributive Control System of Ammonia Plant. APC is a proven control and optimization technology, shall automatically

stabilize control loops, process interactions and shall operate the plant at the most optimum level and thus minimize the specific energy consumption.

Benefits Achieved

After implementation of APC reduction in SEC is ~0.041Gcal/ MT Ammonia.

Combustion Catalyst

Combustibles coming along with ash were high which was direct loss of coal. Use of Combustion catalyst (Thermact) was started. This combustion catalyst is being added along with the pulverized coal.

Benefits Achieved

Improved coal combustion, Reduction in un-burnt combustibles in fly ash, Reduction in coal consumption by about 2.7%.

Parallel Operation of S-200 and S-300

Old redundant S-200 ammonia converter was hooked up in parallel with the new S-300 converter.

Benefits Achieved

Higher Ammonia conversion by ~1 %, Reduction of loop pressure by 2 kg/cm², Reduction in steam consumption of synthesis compressor by 1.5 MT/hr, Annual Coal Savings of 3600 MT, Reduction of specific energy consumption by 0.025 Gcal/MT of Urea.

Potential savings achieved/to be achieved by the unit through identification & monitoring of SEUs under EnMS

S. No .	Project	Investment in Rs lakhs	Energy Savings Giga Calories	Savings Rs lakhs per annum
1	Parallel operation of S-200 and S-300 reactors	112	13610	214
2	Use of combustion catalyst	78/Year	26210	524
3	LED lights	236.07	5637	150
4	Installation of APC	190	13728	384
Total		616	59185	1272

PROJECTS UNDER IMPLEMENTATION

Presently, Unit is in the process of installation of Gas Turbine Generator (GTG) along with Heat Recovery Steam Generation (HRSG). This will result in stoppage of one coal fired Boiler. Thus, there will be reduction in significant energy consumption along with Green House gases emissions. Post GTG commissioning expected Specific Energy consumption is 6.39 Gcal/MT of Urea. Reduction of 0.6 Gcal/MT Urea is Expected with an investment of 215 crores.

Study is being carried by M/s PDIL for Urea revamp. Expected energy saving will be 0.4 Gcal/MT of Urea with investment of Rs 441 Crores thus reducing energy and Green House gases emissions.

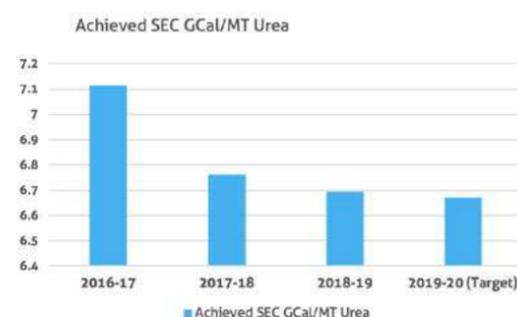
ABSOLUTE SAVINGS & ITS PERCENTAGE OVER PREVIOUS YEAR ENERGY CONSUMPTION.

NFL Panipat Unit has achieved the ever lowest Specific Energy Consumption of 6.695 Gcal/MT Urea for the year 2018-19 which is lower by 0.99 % as compared to last financial year.

Absolute Energy savings over previous year are 55187 Gcal which is equivalent to Rs. 1545 lakhs.

BEST PRACTICES FOR ENERGY CONSERVATION ACTIVITIES

NFL Panipat Management intends to up skill the workers at all levels from shop floor to the unit head. It, therefore, imparts regular training on



productivity & energy efficiency to each and every employee working in the unit. Regular training programs on Energy Conservation are conducted by Internal & External Faculty. Employees are also given opportunity to attend External Training Programs. Productivity week is celebrated every year for increasing the awareness among the Employees by essay writing, slogan writing & quiz Competitions.

ENERGY AUDIT

Mandatory Energy Audit is being conducted every three years by BEE empanelled Energy Auditors. Last Mandatory Energy audit was conducted in 2018. M&V audit for PAT cycle-II is conducted in July'2019.

INTERNAL ENERGY CONSERVATION PROMOTIONAL ACTIVITIES

Energy performance of the plant is evaluated and is displayed on local intranet website on a daily basis & energy sheet is also circulated internally through electronic mail from Top Management to lower level for awareness of all employees.



NTPC KAWAS

HAZIRA

INDUSTRIAL

AREA

CASE STUDY

Located in the Hazira Industrial Area, NTPC Kawas has an installed capacity of 656.2 MW. Consisting of Four Gas turbines and Two Steam turbines, the plant was commissioned fully on gas in the year 1992. KAWAS GAS POWER PROJECT, a combined cycle plant, has adapted itself to new technologies and accordingly various technologies were implemented, like in the year 1997 Liquid Fuel Capability has been done. In year 2004 Mixed Fuel Firing has been done using both gas and liquid fuel for firing of the turbine. In year 2006 Multi fuel sourcing has also been started. We receive our natural gas from two sources GAIL and GSPCL. To meet the water requirement of the project for generation and auxiliary purpose a pump house has been set at Variav for pumping

itself. Our major beneficiaries are namely Maharashtra, Gujarat, Madhya Pradesh, DNH, Daman and Diu, Goa and J&K.

NTPC Kawas is taking various steps to make its energy portfolio greener by adding significant capacities of Renewable Energy (RE) Sources. We have commissioned India's Largest Operational floating solar of 1MWp in our live reservoir in 2019. We have also signed MOU with Surat Municipal Corporation to install 14.9 MW Waste-to-energy plant at NTPC Kawas. Many other solar projects both floating as well as land PV are in pipeline.

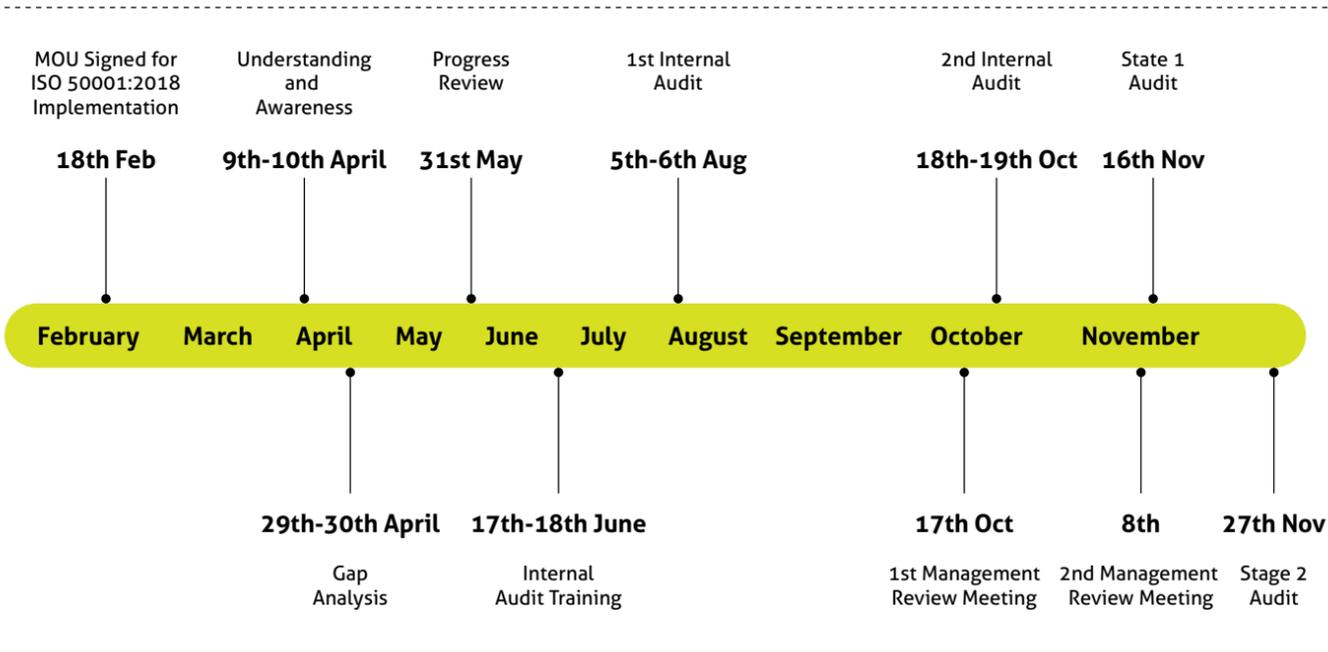
JOURNEY TOWARDS IMPLEMENTATION OF ISO 50001

NTPC Kawas has always been a frontrunner in implementing Energy Efficiency measures at plant level and for the same reason we have been awarded prestigious National Energy Conservation Award in year 2012, 2015 and 2017 and CII Energy Excellence Award in 2017 & 2018. Due to our efforts, we NTPC Kawas along with NTPC Simhadri and NSPCL Bhilai were shortlisted by BEE to implement ISO 50001:2018 at our stations. An MoU between BEE and NTPC Kawas was signed on 18th February 2019 for implementation of Energy Management System (EnMS) ISO 50001:2018.

Quality Council of India (QCI) was appointed the Implementation & Monitoring Agency for the implementation of the EnMS Standard.

out water from Tapti River to our reservoir through 15 km pipeline. Our power is purchased by the DISCOMS of the states with whom long term PPAs have been signed from the inception stage

EnMS ROADMAP



NEW INITIATIVES AND BEST PRACTICES BEING FOLLOWED AT NTPC KAWAS

- We developed a site-specific energy policy which is easily understandable by all the stakeholders and covers all the aspects which are important for implementation of Energy Management System. The special thing about it is that we gave all the points in policy an acronym i.e. CONSERVE. The policy has been displayed at various locations in three languages i.e. Hindi, English and Gujarati.
- We have also launched a site-specific stakeholder

suggestion scheme, where stakeholders can suggest ideas to improve energy efficiency or save energy. It has contributed to approximate saving of 0.36 MU in 2019-20.

- We have combined our safety training/pep talks with energy efficiency pep talks/training which are given to every employee/contract labor who starts working in plant premises.
- We are celebrating Energy conservation week where employees and their family members are engaged in various competition like Slogans/Quiz/Poster/Suggestion Competition to sensitize everybody about energy conservation.
- We at Kawas encourage employees to enhance their knowledge in the field of energy efficiency

by qualifying the BEE certified Energy Manager/Auditor Examination. We are proud to say that our EnMS Team consists of 5 BEE Certified Energy Auditors and 2 Energy Managers and 8 Internal Auditors.

- We also have an Award scheme where employees' efforts in the field of energy efficiency are acknowledged by presenting them prestigious GM Meritorious award.
- We have developed Standard Operating procedures for almost all process keeping in mind energy conservation.
- We have Online energy monitoring system and we run our equipment based on merit order determined by this system.

- We have implemented various projects in past few years, which have significantly reduced our Auxiliary power consumption. Few of the projects are: De-staging in High pressure boiler feed pumps, Energy Efficient coating in Cooling water pumps, VFD installation in Raw water pumps, Optimization of running hours of various drives like Service air compressor, Fin-fan coolers, Auxiliary Raw cooling water pumps etc.

phase just by changing the operational practice and they all have saved significant amount of energy.

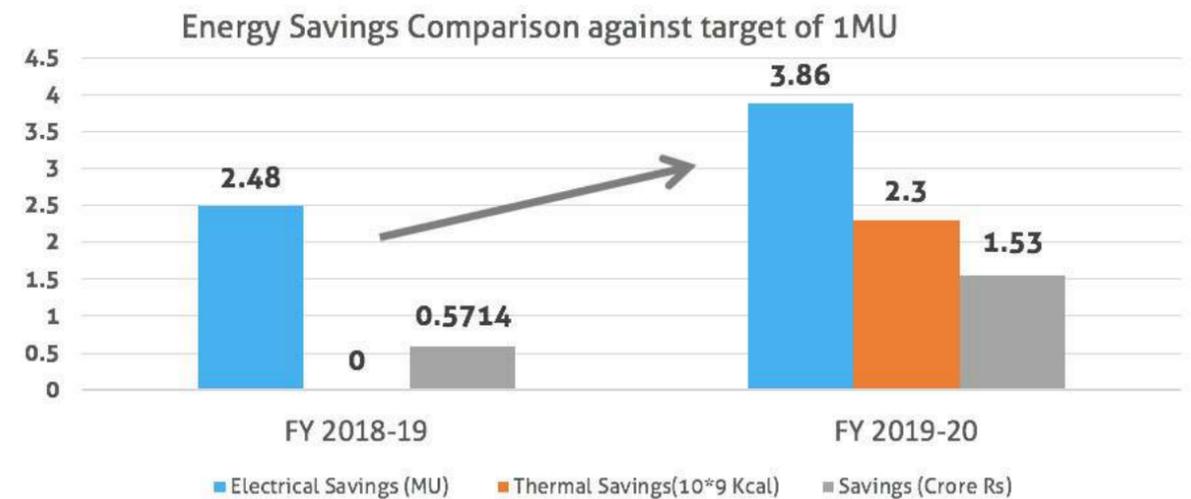
- EnMS implementation has benefited us in monetary saving and increased our profitability, which is the crux to remain competitive in today's era.
- It has enabled us with a systematic approach (plan-do-check and act) that leads to continuous energy efficiency improvement by making fact-based decisions.
- It has contributed to improve operational efficiencies and set us on the path of continual improvement.
- An ISO 50001-based EnMS creates awareness and a commitment about energy (i.e. consumption, use, efficiency, renewable sources) within the organization. Saving energy is now a collective approach with proper support from the leadership.

- It has helped us in reducing environmental impacts by reducing our carbon footprint.
- It improves the brand image of the company and stakeholder trust.

BENEFITS OF IMPLEMENTING ENERGY MANAGEMENT SYSTEMS

- The major change which EnMS has brought is Behavioral change. Energy Conservation which was taken as a task has now become a culture in the institution. We have seen many zero investment projects which have been implemented during this

ENERGY SAVINGS ACHIEVED IN THE YEAR 2018-19 & 2019-20





ABOUT THE UNIT

Rourkela Steel Plant (RSP), a pioneer unit of the Maharatna Company Steel Authority of India Limited, was set up with West German collaboration in the 1950s. Two German firms namely Fried Krupp and Demag AG combined to form Indien Gemeinschaft Krupp-Demag (IGKD) and signed an agreement on 21st December 1953 with the Govt. of India to set up the RSP. By 1958 things started taking shape and the first Coke Oven Battery was lit up in the month of December. Then came the momentous occasion: the lighting up of the first Blast Furnace 'Parvati,' by the then President of India Dr. Rajendra Prasad on 3rd February, 1959. Commencement of operations of other units both upstream as well as downstream continued for the next few years. RSP had

The plant that was initially visualized with a capacity of half a million tonne (MT) of Crude Steel per annum, was later upgraded to produce 1.0 MT. And hence after 'Parvati' within 3 years came two other Blast Furnaces 'Laxmi' and 'Saraswati'. Thereafter, with a view to meet the additional demand for flat products in the country, the hot metal capacity of the plant was increased to 1.8 MT in the late sixties with the addition of the 4th Blast Furnace 'Annapurna'.

HIGHLIGHTS OF RSP

The 1st Steel Plant in Asia to adopt LD process of steel making;

The only Plant in SAIL producing large diameter ERW/SW Pipes conforming to most rigid standards of API;

The 1st Steel Plant in the SAIL family to produce 100% of steel through the cost effective and quality centered continuous casting route;

The 1st Steel Plant in India to adopt external desulphurisation of hot metal by calcium carbide injection process.

The only plant in SAIL producing Cold Rolled Non-Oriented sheets for use in electrical industries.

The 1st plant to adopt vacuum degassing metallurgy, primarily for production of Silicon Steel for the CRNO sheets; and

Has the 2nd largest operational Blast Furnace of the country- Durga.

HOW AND WHEN THE JOURNEY STARTED AT THE UNIT TOWARDS IMPLEMENTATION OF ISO50001

The MOU was signed on 18.02.2019 by SAIL, RSP with BEE for implementation of ISO 50001:2018 Energy Management System (EnMS). Quality Council of India (QCI) was technical partner nominated by BEE for implementation.

At RSP, it was decided to implement EnMS in four units i.e. Blast furnace-5, Power and blowing station, Coke ovens Battery-6 and New Plate Mill.

ISO 50001:2018 certification was issued by M/s Bureau Veritas India Limited, UK Division on 2.1.2020.

Implementation process of ISO 50001 used to be constantly monitored and facilitated till completion of certification by RSP top management under the leadership of Sri Dipak Chattraj, CEO, RSP.

RSP acknowledges the technical support from QCI/NBQP officials for their guidance and active involvement during the whole process.

BEST PRACTICES BEING FOLLOWED/ INITIATIVES TAKEN BY THE UNIT

- Increase of Hot Blast Temperature from 1159°C to 1180°C by enrichment of LD Gas (Converter Gas) in BF (Blast Furnace) gas line to hot blast stoves.

ABOUT THE EnMS ROADMAP

S. No.	Dates	Activity
1	4 th - 5 th April 2019	Awareness training for ISO50001 EnMS
2	29 th April – 4 th May 2019	Preparation of Apex Manual
3	20 th – 25 th May 2019	Preparation of Departmental procedure Manual by individual teams
4	10 th – 13 th June 2019	Internal auditor training
5	11 th – 13 th July 2019	First Internal audit of COB#6, BF, NPM and PBS
6	08 th – 10 th August 2019	First Management Review meeting and Second Internal audit of COB#6, BF, NPM and PBS
7	30 th August 2019	Second Management Review meeting of COB#6, BF, NPM and PBS
8	10 th September 2019	Awareness Training for Venders and contractors
9	30 th September – 01 st October 2019	Stage-1 External audit of COB#6, BF, NPM and PBS
10	30 th October 2019 - 05 th November 2019	Stage-2 External audit for Certification of COB#6, BF, NPM and PBS
11	02 nd January 2020	Final certificate issued by M/s Bureau Veritas India Limited, UK Division

- Enhancement of power generation in TRT (Top Pressure Recovery Turbine) from 11.30MW/Hr in 2019-20 to 14.90MW/Hr by process optimization
- Enhancement of power generation in PBS (Power and Blowing Station) from 10.10MW/Hr in 2019-20 to 12.60MW/Hr by through process optimization.

- Cost saving for wastages and leakages
- Improved house keeping

POTENTIAL SAVINGS ACHIEVED/TO BE ACHIEVED BY THE UNIT THROUGH IDENTIFICATION & MONITORING OF SEUS UNDER ENMS BY THE END OF MAR 31,2020/ DEC 31,2020

The approx. saving towards reduction in coke rate and additional power generation has been Rs 50.57 crores. It has also resulted in reduction in specific energy consumption of RSP.

BENEFITS OF IMPLEMENTING ENERGY MANAGEMENT SYSTEMS

- Equivalent Energy saving
- Reduction in Specific Energy Consumption thereby more profitability.
- Reduction in CO2 emission

The Journey of ISO 50001 Certification

ROURKELA STEEL PLANT

CASE STUDY

the unique identity of using the LD technology for the first time in Asia and was the third in the world. The first LD Converter was commissioned on 27th December 1959.



C S Sharma

Joint Director, PAD Division,
Quality Council of India

Challenges for National Critical Information Infrastructure

State sponsored cyber-attacks

Critical Infrastructure and Cyber Vulnerability

Country's critical infrastructure is a lot like the neighbourhood street cleaner – we only notice when they're not working. But critical infrastructure can be more underrated than we think. Foundational Critical infrastructure systems like those driving power generation, water treatment, electricity production and other platforms are interconnected to form the "Collective Energy Grid" of our country. Although deeply beneficial to the public, this grid is vulnerable to cyber-attack by modern-day hackers or attackers.

Cyber-attacks on a country's Critical Information Infrastructure (CII) may impact the delivery of services that are essential in terms of protecting the nation's four pillars - Security, Economy, Health and Safety. These attacks result in unplanned downtime and loss of critical information/data that severely impact and/or limit the nation's ability to respond to any foreign intrusion.

Current Scenario

In light of recent geopolitical events, there is

heightened concern of espionage, nation state attacks and hacktivism. In 2019, there was a 42% increase in cyber attacks attributed to foreign governments. Cyberattacks tied to cyberwar, or geopolitical conflict, increased from 19% in 2018 to 27% in 2019.

In the not so bygone past, the world has observed a specific type of cyber attacks. These attacks are taking place against all levels of governments as well as services & businesses with unprecedented frequency and unabating for over months at once.

Thus, it would not be unreasonable to assert that the threat from highly capable, highly motivated state-sponsored attackers is growing and underscores the need to shift the country's focus to Cyber vulnerability.

A recent prime example of how unpredictable the targets of such attacks can be is the attack on Israel's wastewater treatment plants which suffered a series of coordinated attacks or a case where hackers from an unknown country conducted a spear phishing campaign against organizations in six countries involved in providing special temperature-controlled environments to support the COVID-19 supply chain.

In Indian context, according to a NITI Aayog report by member VK Saraswat, "India ranks 3rd in terms of the highest number of internet users in the world after USA and China, the number has grown 6-fold between 2012-2017 with a compounded

annual growth rate of 44%". In the midst of escalating tensions between China and India over a border dispute in the Galwan Valley, Indian government agencies and banks reported being targeted by DDoS attacks reportedly originating in China.

Although identified as being state-sponsored, no country has been officially implicated for having been behind the cyber attacks, with little or no official commentary to the International mainstream press on the matter. However, experts believe that the cyber attacks can be safely believed to be state-sponsored because of the "scale and nature of the targeting and the trade craft used", thus making it unlikely that a private organisation could manage the same without the state's consent at the very least.

Possible Objectives of State-Sponsored Cyber Attacks

State affiliated or sponsored actors often have specific objectives aligned with either the political, commercial, or military interests of their country of origin. The way we see this manifest quite often via the targeting of third-party companies as a means to help achieve these objectives. What attackers are often attempting to gain in these attacks is

information about their targets, or access to their targets through trusted relationships with third-party companies such as those supplying licensed software.

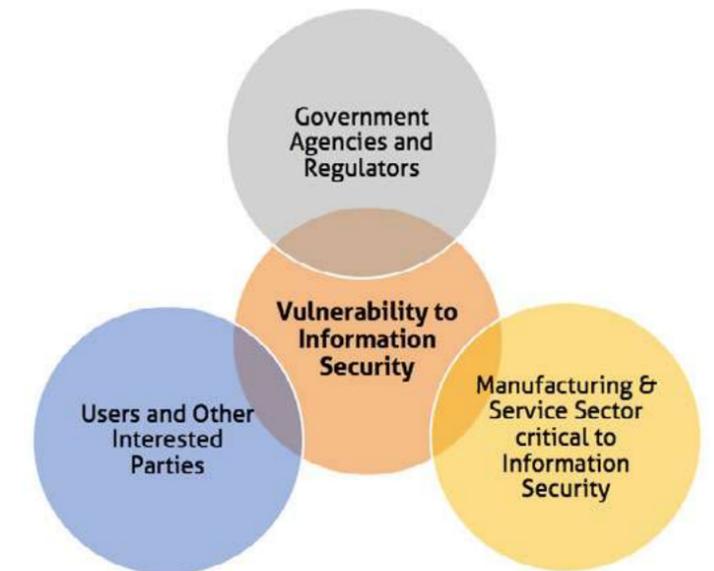
Common Methodologies Employed in State-Sponsored Attacks

Wherever possible, state-sponsored actors use standard attack methodologies used by other typical cyber-crime actors and penetration testers. They do so because they work incredibly

back to a particular state. These usually involve using targeted phishing emails followed by use of recent, known unfortified areas the victim may not have gotten around to patching. Such attackers rarely use much malware, they stick mostly to using administrative tools like normal system administrators and they impregnate the systems in a persistent, long term, and relatively quiet and unobtrusive way - much like a parasite.

The challenge of Detection

Most types of cyber attacks are often visible for a short period of time, whether they



effectively and are so generic that they can't be attributed to any particular group or traced

are due to hacktivism, are financially motivated, or merely opportunistic. This is because

they lead to public disclosure of ineptitude, exposure of fraud, or often resource destabilization through denial of services. In case of state sponsored attacks on Critical Information Infrastructure, attackers often plant persistent mechanisms (hidden malware) on systems throughout victim networks which may remain untouched or dormant for years. These can remain practically invisible until the victim attempts to extract the actors and, just as the victim thinks it was successful, the actors will utilize these to walk straight back in and continue operations.

State-sponsored actors rarely make a lot of noise and cause sufficient disruption to warrant suspicion or trigger detection. Their objectives are to remain persistent to retain surveillance of communications, or access to sensitive data. Their goal is not to make noise but to systematically undermine a country's networks – chipping away until the country finds itself incapable of a proper response in case of an outright strike.

Way Forward - Systematic fortification by adopting Quality Structure

State sponsored attacks can be highly rewarding and be achieved at a relatively low cost/ low risk to carry out espionage

and military operations undetected. The likelihood of being able to attribute attacks back to a particular country with sufficient rigor is extremely low and the success rate of any concerted effort is almost entirely unassured and fraught with being labelled as a baseless allegor.

“Cyber Defence cannot just be a Public Policy subject, but would require the cooperation of all entities who depend on the infrastructure that the state provides, most importantly citizens and corporations.”

Critical infrastructure cybersecurity relies on security framework protection based on layered vigilance, readiness and resilience. These fall under the guiding elements of risk management and should be dynamic enough to counter such attacks by Identifying, Protecting, Detecting, Responding and Recovering.

To prevent and detect such attacks on critical Information Infrastructure requires a holistic approach to design and implement an ecosystem and robust frame work with specific strategies, tactics and proactive capacity building measures.

The first step in this regard can be the adoption of international standards and global best practices like ISO/IEC 27001 series of standards for information security management & information security controls in supply chain; ISO 22301 for business continuity planning, and a host of other internationally accepted standards for effective training & personnel credentialing framework i.e. ISO/IEC 17024.

It is important to expose and mitigate all possible vulnerabilities by independent audits/ evaluation of critical infrastructure systems. This is best achieved by adopting the third party certification mechanism available to us through the International Accreditation & Certification Structure.

This structure is capable of providing the sound foundation necessary to achieve the paradigm shift needed to build the new and progressive cyber defence network for a safe & secure future.



Prapti Singh
Intern, TCB

Covid-19 and E-Learning

Progress in Stagnation

Ever since the outbreak of the Covid-19 pandemic, it seems that the world has come to a standstill. With each and every country taking necessary precautions to control the outreach of the virus, many people have had to stay hidden within the confines of their homes. Schools, colleges, offices and all other institutions of importance have brought their activities to a halt considering the situation outside. 1.2 Billion students across 186 countries have been affected by the closures of schools due to the pandemic. In the eerie silence that has now spread across the world, where are the constant drones of lessons being repeated? Where are those intellectual debates students have with their professors, pontificating over schools of thoughts and what not? Well, it's all online!

The concept of online learning is not a new one, and before the virus plagued our cities, learning portals such as Byjus and Eruditus ruled the e-learning world in India with almost 50 million US\$ having been invested in them by companies such as Bertelsmann, Kaizen Management Advisors etc. According to experts, the global e-learning market was valued at over 165 million US\$ in 2015 and is expected to grow at a rate of over 5% from 2016 to 2023, exceeding 240 US\$. In the recent times, all e-learning portals, whether they are language apps or online learning software, have reported a record high usage of these facilities since the outbreak. After the Chinese government instructed a quarter of a billion students to resume their studies online, Tencent K-12 Online, a Chinese e-learning portal, reported that approximately 7,30,000 students have availed their services since February, making it the largest online movement in the history of education.

In India, since the closing of schools and universities, the traditional classroom has relocated itself to virtual conferencing sites such

as Google Meet, Zoom etc. Microsoft Teams offers students, along with face-to-face interaction, the perks of voting and marking one's attendance online, with a single stop for recorded classes and reading materials such as PDFs and Ebooks. This has enabled the students and the teachers to hold and attend classes as per their convenience. Research reports that the retention capacity of students has increased from the 8-10% retained in offline classes, to 25-60% since the inception of the virtual classes. The pandemic has made



it possible for people to discover and experiment with different aspects and avenues of online learning. Teachers and students have been able to gain knowledge on technology through practice. Moreover, teachers and students have reported enhanced problem-solving and critical thinking abilities. All of these benefits show how effective online learning is as a means of education.

However, as is the case with most things, there are cons to e-learning as well. While

maintained when it comes to teaching them. On the flipside, there are many students in our country who do not have access to the appropriate technologies and resources required for attending a class online. While almost 95% students in Norway, Sweden and Austria have a stable internet connection and a laptop for their schoolwork, the same cannot be said for students living in some of the remote places of India. This gap in the income brackets of countries across the world may be the catalyst for a digital

failed to cater to the needs of the minorities, making the distribution of education uneven and unequal. With the absence of subtitles or options for audio modifications, differently abled people have had to struggle to educate themselves in a way that's humane and inclusive. All of these have been points of contention against the notion of revolutionizing learning. Yet, times of crisis teach us many a valuable lessons, and as is stated by Yuval Noah Harari in his book 21 Lessons for the 21st Century, schools often focus on rote memorization instead of critical thinking and adaptability. Whether or not online learning is the answer to this, is something we as a society have yet to decide, it would be futile to ignore the power that the notion and promise online learning holds. Making education accessible for hundred thousands of people is an attractive notion by principle, with an array of courses being taught and introduced to cater to the needs of our dynamic economy. Not only that, online learning allows life to continue even in catastrophic scenarios such as natural disasters, floods, or a pandemic. All of these factors combined make online education a strong force to be reckoned with.

the information provided through online classes is easy to retain, the hardest part, as many instructors would agree upon, is getting the students to participate and creating an engaging environment in the absence of a physical space. Children find it harder to stay focused during a class, making it imperative that a structure is

divide amongst the privileged and those who are not, creating inescapable hierarchies. If the unequal GDP quotients aren't an issue, then disorders such as physical disability, autism cause a rift amongst people. Despite living in a day and age of technological marvel, many e-learning portals have

As I begin to end to my case, a quote by author Donna J Abernathy comes to mind that goes: "Online learning is not the next big thing, it is the now big thing", and looking onwards to the rapid tide of change that is to come, it might just become our New Normal.



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Strengthening Health Management Information System

A unique initiative of NABH-QCI for District Hospitals in India

Public healthcare in India rests upon a three-tiered system of primary, secondary and tertiary health services which provide preventive, curative and promotive healthcare to the rural and urban populace of the country. District Hospitals form an integral part of this organised system offering access to specialised healthcare.

Notwithstanding the significant funding from the government and their critical role in healthcare, there was no comprehensive system to assess district hospitals based on measurable health outcomes and to evaluate health data management practices at the facility level. In this regard, NITI Aayog, as mandated by the Government of India, created a framework based on 16 Key Performance Indicators (KPIs) to assess performance outcomes in district hospitals. The indicators chosen for the KPIs included number of functional beds, ratio of doctors, number of laboratory tests per technicians, C-section rate among others. The KPIs were based on more than 120 data items of Health Management Information System (HMIS) which is an online portal where district hospitals submit data on health indicators.

NABH-QCI was on boarded by NITI Aayog with the aim of conducting an independent onsite review and validation of data items of the KPIs which are submitted by 731 District Hospitals of the country on HMIS. This was an enormous exercise given every district across the country had to be covered for assessing the hospitals. The exercise was also significant as this was the first time any national survey was done at the District Hospital level at such a large scale.

NABH-QCI formulated an assessment framework to validate the KPIs through onsite assessments. The framework was finalised after extensive consultations with the stakeholders, namely, NITI Aayog, Ministry of Health and Family Welfare, Indian Statistical Institute and multiple field tests. A survey instrument based on a mobile application was also designed to conduct the onsite assessments and data collection.

400+ assessors were engaged for the assessments which included NABH assessors as well as medical professionals from institutes like AIIMS Rishikesh, KGMU Lucknow, NEIGRIHMS Shillong among others.

The assessors were trained in training programs conducted by NABH-QCI in 17 cities across the country.

The assessments of the 731 District Hospitals were executed simultaneously at a pan India level. The assessors were mapped to the District Hospitals and a back-end NABH-QCI team was assigned to the assessors for any operational assistance and for engaging with the health officials at the district. The

like training and mapping the assessors, operationalizing the assessments, coordinating with the state and district level authorities, presenting the findings with the states and NITI Aayog and drafting the report among others. The collected data was rigorously scrutinised at multiple levels including approval of records from District Hospital health authorities, backend quality checks and final reconciliation with state governments.

and Dibang Valley in Arunachal Pradesh, areas of Manipur and Nagaland among others.

Based on the insights gathered in the assessments, NABH recommended actionable policy reforms to NITI Aayog, Ministry of Health and Family Welfare and State Governments to improve data reporting and management at the District Hospitals. This included proposing revisions in IPHS standards, standardisation of

data definition, trainings on HMIS operations among others. The efforts of the team were greatly commended by Mr. Alok Kumar, Advisor, Health, NITI Aayog when he gave a standing ovation to the team on successful completion of the exercise.

The exercise as undertaken by NABH is significant as it would reveal comprehensive insights into HMIS and the overall quality status of record management and data reporting at the District Hospital level. It has created immense awareness among the concerned stakeholders about the importance of HMIS data in developing informed policies for public healthcare. It

will also facilitate NITI Aayog's framework for District Hospital ranking and create a collaborative and competitive environment towards quality improvement in public healthcare.



planning and execution of the assessments involved an array of challenges given many District Hospitals to be assessed were situated in difficult terrains and sensitive areas of the country.

The entire project was implemented with the NABH-QCI team working tirelessly on multiple tasks

NABH successfully completed the assessments of 700+ hospitals across the country in a span of three months. This included assessing District Hospitals located in the difficult terrains and sensitive areas of Kargil and Pulwama in Jammu and Kashmir, Dantewada and Sukma in Chhattisgarh, Tawang



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Graphene- Based Flexible Electronic Devices

In this mobile internet era, portable electronic devices have become an indispensable part of human life as one of the most important information processing devices. Processing information can be more convenient with portable electronic devices integrated with clothes or directly touching the skin known as wearable electronic device. Electronic devices are generally manufactured as integrated circuits on brittle but rigid and planar semiconducting wafers which cannot fit into irregular, soft or moving objects

such as clothes or human skin. The recent progress in this research field motivates for future electronic devices which could be bendable, stretchable, foldable, and even twistable. Flexible electronic technology has the potential to offer cutting-edge technological application in biosensors and biomedical instruments in medical field, as e-skin in robotics. It can also play a vital role in flexible batteries, transistors, electrodes, display devices and conformable RFID tags. Thus, immense interest has been generated in the scientific as well as industrial world.

The main driving force for the electronics industry is the search of new materials that are capable of fulfilling the persuasive demand for lower power consumption along with higher performance. Silicon, though widely used in the electronic industry, has limited applications in manufacturing flexible electronic devices due to the intrinsic inflexibility and complicated fabricating processes of its microstructure. Hence, search for new and highly flexible materials as substitutes for silicon is of great importance. Flexible electronics demands the ability to undergo large mechanical deformations such as bending, twisting, folding, stretching or even deforming into more complex shapes while maintaining the high performance of the device. Thus, materials to be applied to flexible electronics should be highly flexible besides other excellent physical and chemical requirements of the device material.

A decade since presentation of results on field-effect transport in few layers-graphene, the field is now ready for serious consideration of graphene as an electronic material. In flexible nano-electronics, graphene is primarily used in RF FETs, transparent conductive films, heat spreaders, acoustic speakers and mechanical actuators. Commercial products bearing graphene are touch panels of smart phones by companies such as Samsung, Nokia and Sony. Hybrid materials have extended functionalities of graphene in different applications such as resonant tunnelling devices, light emission devices, photovoltaic devices, plasmonic, chemical sensors including gas sensors and flexible electronics.

Today's Prominent Applications of Graphene

Functionalization of graphene

Graphene and its derivatives can react with a wide variety of chemical substances. These adsorbents

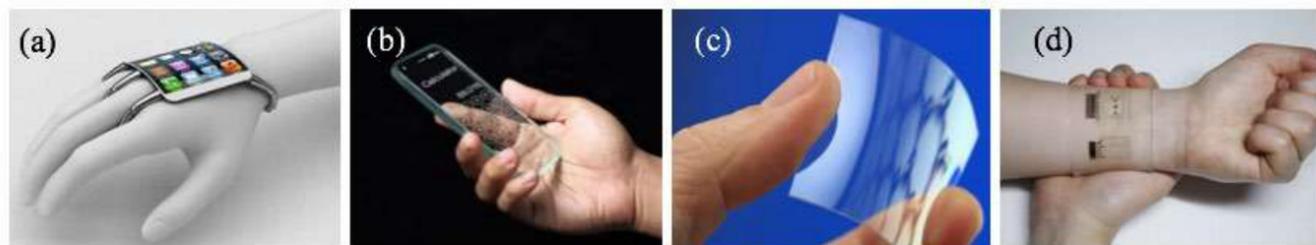


Figure 1: The images depict the use of graphene as flexible electronic device (a) as a flexible smart phone wearable on the hand; (b) as transparent electronic gadget; (c) as foldable transparent substrate; and (d) as a wearable gadget to monitor and possibly treat diabetes.

modulate the structures and properties of graphene to extend their functionalities and practical applications. Graphene is functionalized either in a non-covalent or covalent manner. Chemical doping of the graphene facilitates the tuning of the electronic structure and properties by changing their electrical properties from metallic to semiconducting behaviour. Dopants present at the interstitial site in graphene can be removed by a suitable heat treatment.

Graphene as electrical interconnect

Graphene conducts either electrons or holes with concentration as high as 10^{13} cm^{-3} . High carrier mobility ($\sim 500,000 \text{ cm}^2/\text{Vs}$) at room temperature, high thermal conductivity (5000 Wm/K), higher mechanical strength, reduced capacitance coupling between adjacent wires, width-dependent transport gap, temperature coefficient, low electrical noise and ballistic transport properties make graphene a suitable replacement of copper interconnects for electrical connections in integrated circuits.

Flexible light-emitting diodes using graphene

Organic LEDs are composed of electroluminescent organic materials sandwiched between two metallic electrodes. When a forward bias is applied to the electrodes, holes and electrons are injected through HOMO and LUMO energy levels of adjacent

organic materials from anode and cathode, respectively. Injected charge carriers are transported to the Electroluminescent Organic Emitting Layer (EML), where electrons and holes recombine. This process generates photon, which can exit from the device through a transparent conducting electrode. Therefore, at least one electrode should have high transparency to minimize optical light loss. A graphene electrode with high electrical conductivity that is comparable to that of ITO provides high efficiency in flexible OLEDs.

Graphene as an electrode for organic solar cells (OSCs)

OSCs are promising power-supply devices owing to their light weight, flexibility and low fabrication cost based on ease of large area processability. Therefore, high transparency and electrical conductivity of a transparent conducting electrode are essential factors to achieve high charge generation rate and charge collection efficiency for high JSC and FF, which together lead to high PCE. For these reasons, graphene is regarded as a suitable electrode of OSCs owing to its high transparency and sufficient electrical conductivity.

Field-effect transistor using graphene

FETs are thin-film transistors, in which a semiconducting channel is deposited on a dielectric layer, which has electrical contact with

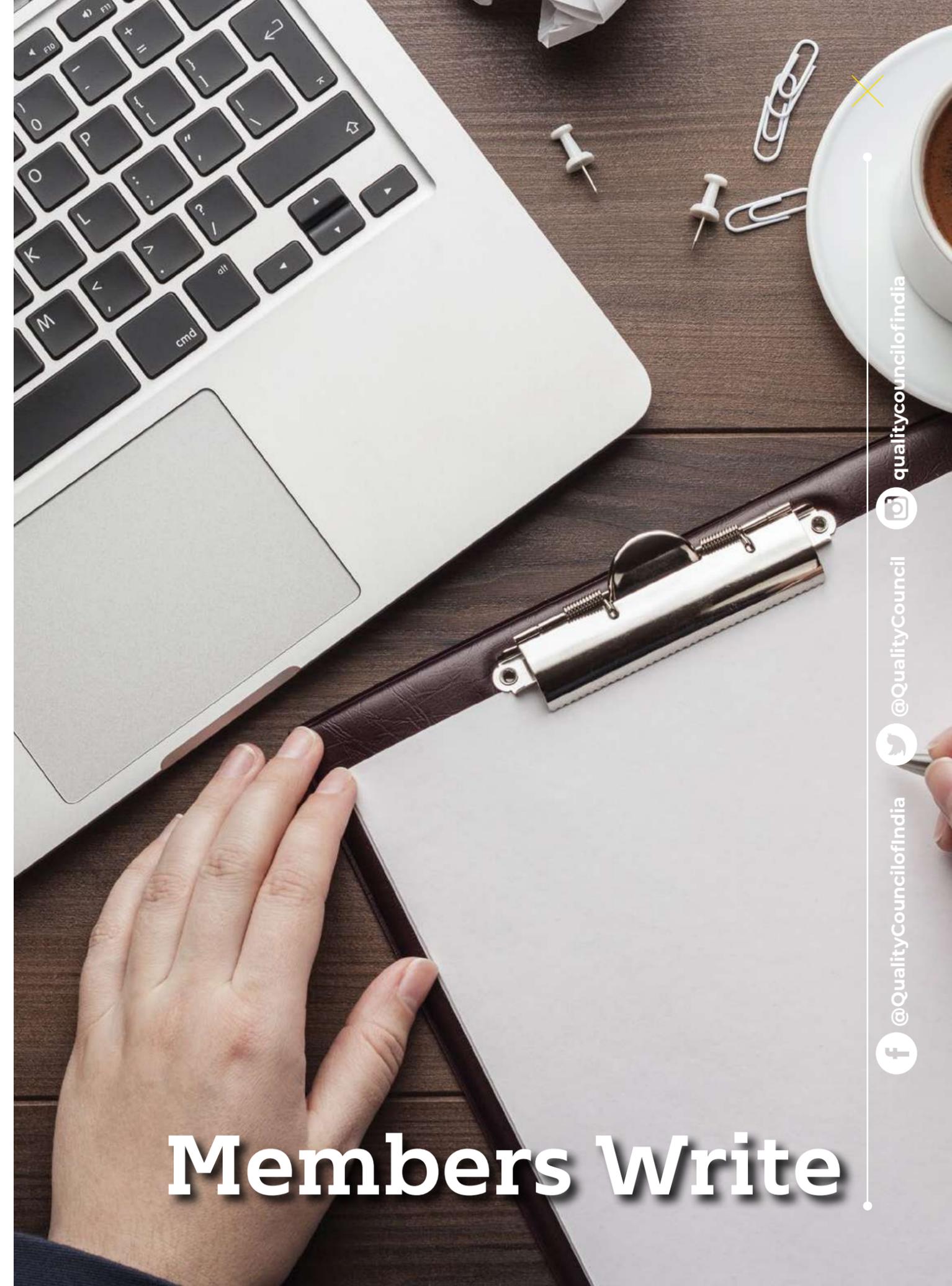
a gate electrode. Source and drain electrodes also contact the channel, through which charge flows from source to drain. If voltage is not applied to the gate, minimal current flows through the channel which is called off state. When voltage is applied to the gate, charges are induced at the interface of channel and dielectric, so current flows through the channel.

Flexible encapsulation using graphene

Although organic electronics have been advancing to replace inorganic electronics, organic molecules are susceptible to oxygen and moisture, so organic devices should be passivated to prevent degradation of organic materials in device. The most widely-used method to encapsulate organic electronics is to use hollow glass encapsulant with UV-curable epoxy resin.

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Members Write



Meeta Asthana

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Members Write

The Sublime Sound of Echoing Silence

Quality Management (Performance Measurement Beyond Metrics)

Thought leadership, Encourage looking beyond numbers to drive performance, Shifting attention to silence that exists in a team / organization / customer / stakeholders

We always strive to be better, perform better, achieve better! but how? We chase numbers, we quantify everything, we measure every act! but why? We listen to the loudest & harshest voices and somehow miss those haunting silences... This poem is in recognition of those leaders who manage to hear the sound of silence in their team, in their organization. This poem is to celebrate those leaders who constantly strive to look beyond just numbers... This poem is an ode to every individual who contributes to build the culture of quality irrespective of challenges. This poem is a reminder to think beyond metrics as the only measure of performance!

*Have you ever heard, the sound of silence,
That speaks volumes, gives boundless guidance.
A gloomy look, a dejected gesture,
If you are willing, you shall see a clear picture.*

*Not wanting to question the flawed practice,
Ignoring those who swallow unbearable injustice.
Naively neglecting the emotions, that in silence, slowly dies,
Following coin, creed or crown shall not be always wise.*

*Look within, around and beyond,
Let no simple sign go in vain.
Retain your humanly compassion,
Even when you are in agonizing pain.*

*There is so much dismay... What do you have to say?
Do you really realize? Do you know the way?
Blue rose, If you listen, you may decipher,
For it's not gonna get more loud and clear.*

*Irrespective of the circumstances,
Take those first step before the trust shatters.
For courage, strength and integrity,
Is all that genuinely matters.*

*You still got time, to be brave, to create a better proposition,
To be graceful, to be present, to see what is not in common vision.
If you do you will never again miss another invisible violence,
Nor the sublime sound of deafening silence.*



Dr. Himanshu Talwar 
ASG, FHRAI

Members Write

National Integrated Database of Hospitality Industry (NIDHI)

Consolidating Hospitality for a Better Future

Hospitality Industry is recognised as one of the key sectors of development in all countries and a major source of income, jobs, and wealth creation. It also plays a wider role in promoting the image and international perception of a country/ state/ city externally as well as influencing complementary domestic policies. This range of influence and importance creates opportunities and as well as bring the challenges faced to measure competitiveness in Hospitality.

In recent years, Hospitality has emerged as one of the world's most important industries in terms of its contribution toward

the GDP and overall economy of a nation. As demand of exemplary services in the hospitality continues to rise overall, its contribution to GDP has taken a new leap, however, the competitiveness challenge takes on new features with the growth of emerging economies, resulting in creating a new pressure on the market position of developed economies.

With the explosion of the "Digital Way of Life", the guests journey has become increasingly complex, forcing hospitality professionals to overhaul not only their corporate and marketing strategies; however, also their technology stack, in order to engage, acquire,

service, and retain these digitally-enabled travel consumers across multiple digital touch points and all digital channels and devices.

National Integrated Database of Hospitality Industry (NIDHI) is an initiative towards Aatmanirbhar Bharat to use technology to empower hospitality businesses. NIDHI is not just a database. It aspires to become a gateway to opportunities for the Hospitality Industry. The National Integrated Database of Hospitality Industry (NIDHI) is a joint initiative of the Central and State Governments in partnership with the fraternity to create a digital platform for Hospitality Industry.

On the occasion of World Tourism Day 2020, India brought forth a database (NIDHI) of the hospitality industry. This database will help in boosting Guests' confidence that has taken a beating because of the COVID-19 pandemic. The system is worked out in association with the Quality Council of India (QCI) to boost confidence in the minds of the Guests. The platform will enable the hospitality industry access services of the Ministry of Tourism such as COVID-19 related protocols through SAATHI, classification and re-classification services, listing on incredible India web portal and mobile app, skill development and capacity building programs and other such services.

Availability of digitised information about hospitality units across the country will be crucial in framing policies and strategies for the promotion and development of hospitality and tourism sector. It will provide a clear picture on the

NIDHI will enable the Central and State Governments to deliver better support and services including policies and strategies. It will also empower the hospitality industry to benefit from technology in availing various services. It will be a game changer for the industry by not only serving as a platform for the Hospitality organizations to ideate, share best practices, and connecting with the Government for ease of doing business but also by acting as an interface between the Government, the hospitality fraternity and the Guests.

Applying emerging technologies in the hospitality industry may help hospitality businesses gain the upper hand and stand out from competitors. The changes hospitality industry can go through due to the digital revolution are immense. Fortunately, introducing innovations is a rewarding experience, since guests instantly respond with increased satisfaction, positive feedback, and higher retention rates. The platform has a simple registration process for hospitality units in various categories viz., Hotels, Resorts, Guest houses, Bed and Breakfast/ Homestays, Farm stays, Lodges/Tourist homes, Houseboats, Heritage Homes, Timeshare units, Apartment hotels, Tented accommodation, Standalone F&B units etc. The registered unit is given username and password and can update the information at any time.

It is indeed necessary for the hospitality to engage, register themselves and avail the multifaceted benefits attached to the scheme. It will also help the fraternity to consolidate its efforts and map its contribution towards, GDP, Job Creation - both direct and indirect, infrastructure development, foreign exchange earnings, etc however above all in the overall growth and development of our beloved nation. For more information, you may visit <https://tourism.gov.in/> <https://nidhi.nic.in/HotelDivision/Default.aspx> <https://saathi.qcin.org/>



geographical spread of the hospitality sector, its size, structure, and existing capacity. This will help in assessing carrying capacities of various destinations and in planning for various new destinations. It will serve as a common repository of data from Ministry of Tourism, State Departments of Tourism and Industry and enhance the preparedness to manage any crisis such as COVID-19 pandemic by disseminating information, guidelines and protocols.



Prof. Bejon Kumar Misra 
International Consumer Policy Expert

Members Write

How Consumer Friendly is The New Consumer Protection Act 2019?

I have to admit I have often been induced to use a shampoo or lotion only because it was endorsed by one of my beloved actors. You too may have purchased a bike or mobile phone because your favorite cricketer was insisting that it is the best!

Celebrity endorsements are the norm in our country and can implicitly sway public opinions and behaviors. However, scores of people end up fuming when they realize that the hair oil they so enthusiastically bought does not grow healthy and shiny hair as depicted. Some of the advertisements even cross the line by being grossly misleading and the consumers end up

feeling disillusioned and cheated. Unfortunately, there has been no formal legal recourse till now and most often, the embittered consumers had to swallow the bitter pill and live with the disappointment.

Circa 1986, the Consumer Protection Act was a landmark legislation for its times. It instituted protection for consumers in the form of legal remedies and financial compensation for defective goods and services as well as unlawful and inefficient trade practices.

However, more than three decades later, the law has progressively lost its relevance in the face of dynamic changes and digitization in the marketplace. The narrow

definition and scope of consumer rights opened glaring loopholes that were unscrupulously exploited by the traders and sellers.

Alas, we the consumers were left in an increasingly vulnerable position once again. There was a pressing need for a complete overhaul of the outdated consumer laws to keep pace with the changing business models on the one hand and increasing customer expectations on the other.

The incoming Modi government lived up to its promise of tackling the emerging consumer issues and reforming the laws - so commenced the first draft of the new legislation in 2014. The new Consumer Protection

Act, 2019 was finally passed in August 2019 and has come into force on July 20th, 2020.

The new law heralds a huge cause for cheer with a slew of fresh measures and tighter rules to regulate the manufacturers, traders and sellers who were easily escaping the net or getting away lightly with their unfair practices. The biggest win is obviously the expanded purview to include the booming e-commerce industry along with telemarketing, direct selling and multi-level marketing models.

Till date, online platforms are playing the field by their own rules – they can get away with not issuing bills, refuse to take back defective goods, inordinately delaying refunds and even disclosing personal information of the consumers. Counterfeit goods are often sold online and the consumers didn't have an effective forum to file complaints or sue the offending parties. E-commerce platforms like Amazon, Flipkart and other giants are ensconced in a safe haven built on the crafty argument that they are merely the aggregators and cannot be held liable for the fake products. But now e-retailers are going to be brought under the radar with all rules of regular selling being extended to e-commerce websites.

The new Consumer Protection Act, 2019 has much more to rejoice about in the form of a central regulator – the Central Consumer Protection Authority – with suo moto powers, the introduction of a framework for product liability and unfair contracts, key changes in redressal of grievances like e-filing of complaints, increased pecuniary jurisdiction, changes in territorial jurisdiction,

mechanisms for alternate dispute resolution, shorter deadlines to effect refunds and requests, etc.

Much has been said and discussed about these ground-breaking revisions which also include revolutionary provisions like imprisonment for false and misleading advertisements by celebrities, harm caused by defective products, unfair trade practices and more.



Prima facie, the new consumer legislation is hailed as a positive and welcome step that is in sync with socio-economic developments and new-age markets. It does usher in a new regime of timely and effective administration and settlement of consumer disputes and other issues. The holistic law has managed to cover a lot of new ground and has efficiently bestowed much more power on the consumers in the form of greater protection, expanded benefits and streamlined processes.

But the question lingers – is the new policy truly consumer

friendly? Will it genuinely empower the Indian consumer who has so far found himself at the mercy of sellers and service providers? Does the law really have teeth for curbing fraudulent practices that were easily escaping the net until now?

Even though the new consumer act has been drafted with care and precision keeping the public interests in view, there is still some room for improvement. A conspicuous shortfall is that the healthcare sector has not been expressly included in the ambit of the law. Medical negligence – both in clinical outpatient and inpatient hospital treatments – calls for unambiguous inclusion in the consumer policy. There is a rousing dissent with the aviation sector on account of the unreasonably steep charges for cancellation and changes in travel plans which needs to be taken into account on an urgent basis.

Furthermore, it is alarming to note that the policymakers continue to turn a blind eye to the concept of accountability for public services and utilities. Why is it that the services provided by the government like transport, sanitation and water supply are still excluded from consumer laws? Are we not paying for them by the way of taxes and other additional charges? Doesn't the public have the right to complain against unsatisfactory and deficient services or expect redressal when the actions violate their interests?

The new act deserves kudos for expanding the scope of the definition of the consumer and attempting to make it more comprehensive. However, it is still fuzzy when it comes to the



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Flipped Classrooms: The New Way of Learning

rights of the consumers. They need to be simplified in explicit language so that they can be easily understood by the final beneficiary – the Consumer!

Certain provisions regarding the misleading advertisements, constitution of the Apex Central Protection Authority, direct selling, etc. have still to be notified. For instance, proper clarity is needed on the duties of the regulatory body and the consequences of violating the rules also have to be clearly defined.

Many more doubts and questions are popping up on the horizon –

Can the mediation cells provide a speedy redressal mechanism or will they become an additional burden for the consumers?

Will the consumers not avoid the mediation route in favor of directly approaching the traders or sellers for settlement?

Isn't there a need for friendly mechanisms to make complaint resolutions easy for the consumers and punitive for the service providers and the manufacturers?

Why don't the forums have the authority of enforcing serious

consequences in case of violation of the court orders?

Will the online functioning of the District, State and National Commission work out to be user-friendly for the consumers?

Will the CCPA be empowered enough to don the mantle of a tough regulator that can protect and enforce the interests of the consumers?

The law does provide for stringent action in the form of large monetary fines as well as criminal penalties, but how strictly will they actually be enforced?

Where is the legal backup for protecting the consumers from unfair trade practices?

Won't the district forums need more personnel to handle the increased workload and execute the cases quickly?

companies to adopt better practices?

In sum, it is too early to determine the actual efficacy of the new Consumer Protection Act, 2019. It can definitely be hailed as a huge leap in the right direction; but we still have a long way to go to transform from caveat emptor (let the buyer beware) to caveat venditor (let the seller beware)!

Coming to think of it, everything hinges on the effective enforcement of the policy by the authorities. We have to allow the law to take its course and await further clarity on the crucial matters in the days to come. Further amendments to the Act are hopefully in the offing.

In addition, there are a lot of apprehensions in various quarters – especially among consumer rights activists - about the actual implementation by the different states. The state governments are notorious for a glaring apathy towards consumer rights and protecting customers' interest, which ranks quite low on the priority list.

An extremely poor track record of enforcement is staring us in the face.

Yet, it is only when the consumer policy provisions are effectively executed in both letter and spirit that we can hope for a radical improvement in the position and rights of the Indian consumer....



What about the huge backlog of consumer cases already pending with the courts?

Finally, will the laws actually give sleepless nights to the corporates and compel the

India is a land of diverse geographies and ethnicities. The challenges of educating such a vast country with a sizeable rural populace are enormous. The art of imparting education also reflects its strong association with its informal counterpart in Coaching for various job-linked competitive screenings. The nation, as a whole, has been battling a war-of-compulsion to deliver quality education to its remotest of citizens since its inception. The intricacies involved, never got as complex as on the onset of Covid-19, the disease of terrifying horror and error, alike. When people were falling innocent preys to the viral outbreak, India grappled with ways to continue academic-

instruction to its school-inclined section of society, beyond closures. The informal brick-and-mortar educational facilities, too, were forced to think out-of-the-box to survive the catastrophe. This led to emergence of various e-strategies or consolidating the existing ones to educate those left in abeyance out of inevitable, the pandemic. Consequently, 'The Flipped Classroom' has been one of the key teaching-learning strategic turnarounds towards educational attainment of the taught, all round.

Education has been a game-changer for societies and nations galore. It has been one of the crucial prerequisites for development of the human race and all-round

progress of modern-day civilizations across the world. India's fertile soil has witnessed turmoil of endless dynasties and tussle among rulers to own supremacy through intellect and acumen. The present-day 'Bharat' is a product of eminent scholars and educational establishments of international repute, prevalent in the country over the ages.

Impact of COVID-19 on the Teaching-Learning Paradigm in India

The educational institutions in India were caught unaware when the deadly virus

struck the nation already on the economic roller-coaster. The segments to have suffered the most included, the schools and colleges, government and private, though the extent could have been different for both. The professional educational institutions and coaching facilities have also shared the brunt, irrespective of their size and location. The modern-day student and teacher may have technology at its footsteps when it comes to social-networking-sites or mobile telephony, but Teaching-Learning was found to be altogether a different proposition during conduct of COVID-affected-education.

The unprecedented closure of schools as a fallout of preventive freezing-of-activities across the nation, left millions of taught in the lurch. The after-effects were felt more by the marginalized and under-privileged sections of the society. The job-aspirants were also kept at bay on suspension of facility-bound tutoring sessions. Besides disruption in Teaching-Learning process, the social-support programs integrated into the state-run schools like Mid-day meal scheme and distribution of essential freebies also came to a standstill.

Non-conventional Teaching-Learning strategies adopted in India in the wake of Covid-19

In response to untimely interruption in providing formal instruction, academic institutions had to retort to digital platforms for imparting necessary education to the deprived, in online or offline

mode. In absence of tested and tried teaching methodologies, the challenges had been numerous to reach the targeted audiences in remotest of corners in rural and urban India. The lack of appropriate equipment and gadgetry was a big lacuna apart from clueless teachers who had no idea how to go about harnessing the digital-teaching-interface. The social ambition of reaching the virtually-distant learners who had been on a constant look-out for bits and bytes of academics, the limitations were outscored by the passion to excel in adverse circumstances. The Models-of-Instruction like Flipped Classrooms have been unknowingly put to tremendous use especially by school-educators and seasoned Coaching Pros as a part of blended Teaching-Learning strategy to maximise the desired learning-outcomes. The Coaching segment meant for competitive screenings, as a whole, went further to embrace the awkward situation as a lifetime opportunity to remain ahead on the digital front in facilitating instruction to all its aspirants-turned- consumers. The social-networking platforms like WhatsApp and Facebook also made an instant medium for teachers to deliver customised

content to the student-users along Apps like Zoom and Google Meet for live sessions. The pre-acquaintance of local populace with the social-user-interfaces certainly added lot of value when it came to prompt and assailable interaction between a Teacher and the Taught. As per the data for India, courtesy UNESCO, during monitoring the School closures globally, makes it evident as far as the volume of affected learners are concerned, as shown in figure 1.

We can summarise the data above to find out that more than 320 million school-bound learners have got affected in India due to intermittent closure of schools and this can eventually have grave repercussions for future of lakhs of students in exile, as shown in figure 3.

The digital teaching initiatives in India have broken the worn-out and age-old shackles leading to many-firsts in the scholastic arena and across coaching sector catering to aspirants of varied nature. The government-operated schools have been using various online

Fig 1: Enrolment statistics on different educational levels

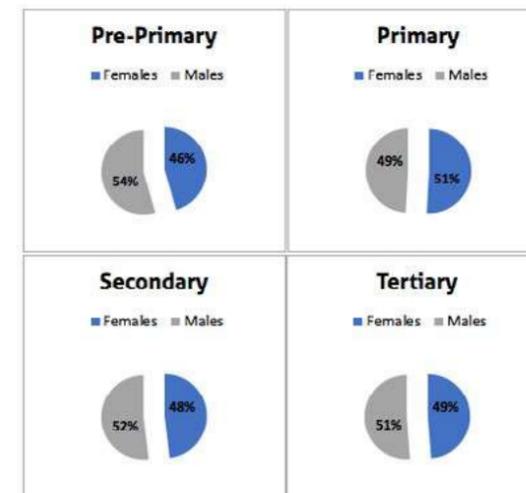
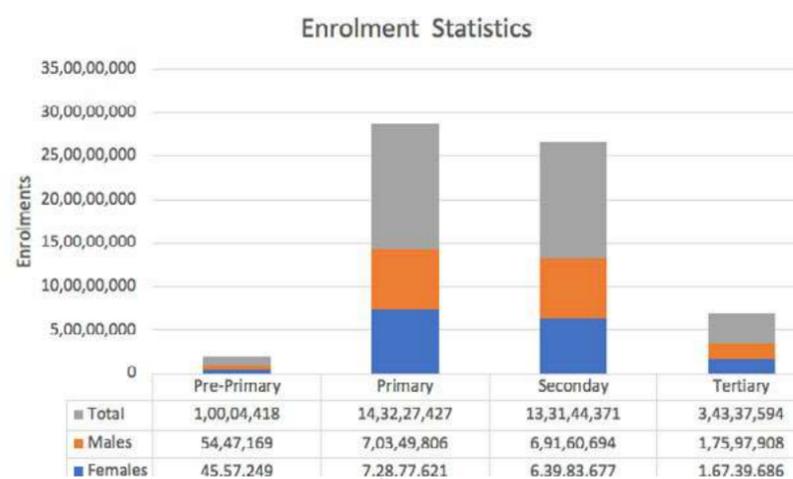


Fig 2: Involvement of males and females at different levels

measures like DIKSHA and e-pathshala for knowledge transfer, Teacher-training, and as a Teacher-student resource for learning with phenomenal success. The schools in the private sector have invented innovative edu-delivery solutions in customised Apps for attendance, live delivery of content, administering periodic assessments and evaluation. The Coaching giants in India who have been in the digital hunt since its advent still re-invented their ways to garner learners in the adjoining alleys. The objective of continuing school-oriented-instruction amidst the COVID-induced-hindrances has been met even if the extent, means and desired learning outcomes are far from being desired.

Flipped-Classrooms are there to stay post COVID-19

A concept that has been making waves in context of digital learning worldwide is a Flipped-Classroom. As more and more market-players in India

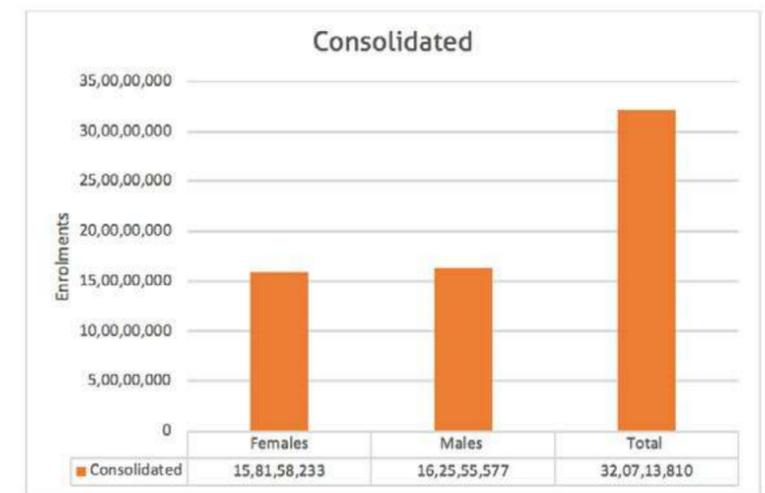


Fig 3: Enrolment figures based on latest UNESCO Institute for Statistics data

are making inroads into the e-learning segment, the flipped-side of it has been catching attention of the educators magnanimously.

The inverted structure of learning first came into being around 2007 as conceived by Jonathan Bergmann and Aaron Sams. The High School Chemistry teachers in Colorado, US, Bergmann and Sam utilized technological means on disposal in an attempt to optimise face-to-face time with students. The strategy of learning thus assumed form and framework which was eventually christened as Flipped Learning through a Flipped-Classroom.

A Flipped Classroom is a type of Blended Learning in which content is presented to students at their homes while they practice it to strengthen it further at school or a designated classroom.

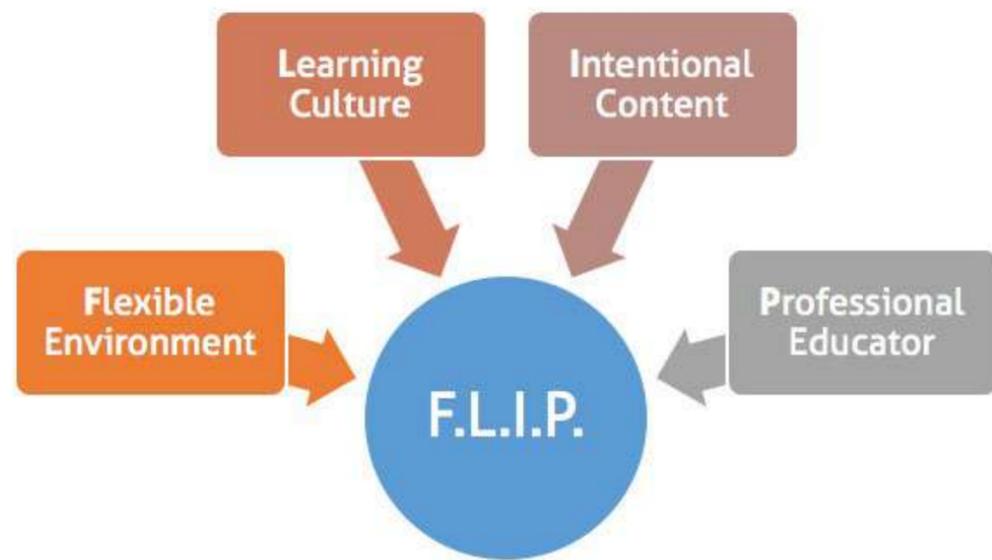
It is, in fact, an instructional strategy with a definite purpose to augment student engagement and learning through reading the content at home while working on actual problem-

solving in a live classroom in presence of a mentor. Such a classroom has functions flipped where traditional classwork is done at home and the usual homework in the class, hence the connotation. This enables the learner to utilise the face-to-face class time in hands-on activities, inquiry and project-based learning for effective and meaningful research of its own.

Flipped Learning according to Flipped Learning Network (FLN)

Flipped learning is a pedagogical approach in which direct instruction moves from the group learning space to the individual learning space, and the resulting group space is transformed into a dynamic, interactive learning environment where the educator guides students as they apply concepts and engage creatively in the subject matter.

A Flipped Classroom employs the above definition and underlying concepts to direct



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Energy Review for Green Building Projects

students towards a more of self-paced strategy to grasp content delivered to them in diverse Interactive modes. The available content may be in form of pre-recorded videos, digital slideshows, digital research, text readings, online student-discussions and Teacher-student online communication. Such a Classroom provides the learner with plenty of opportunities to clarify and apply the imbibed knowledge through a variety of mentored activities.

The 4 Pillars of Flipped Learning as per FLN

Figure 4 shows the determinants identified as the four pillars, by Flipped Learning Network to carry-on Flipped Learning:

It has been an earnest desire of Vidya Prakashan Mandir Private Limited (VPML), a distinguished publishing house, to develop

into a digital-coaching-provider for the benefit of government job-inclined-aspirants, who have been dependant till now on high-ticketing physical coaching facilities. We have recently launched eVidya, the one-stop e-coaching solution for all such job-seekers, especially those residing in tier-2 and tier-3 cities in state of Uttar Pradesh, to facilitate their preparation for a respective competitive screening, at an affordable price. Our dedicated team, comprising of technocrats and renowned educators, have succeeded in making the utility functional on lines of Flipped Classrooms and Learning. We have been aiming at simplified and Incentivized learning through ease of language used, flipped-content resources, live activity-based interactive classes and high-end assessment tools for immediate feedback.

All the stakeholders at VPML feel sympathetic towards the

COVID-affected and have hence initiated a social endeavour to organise Free-of-cost Masterclasses for more than 56 lakhs of Board exams bound-students of 'Uttar Pradesh Madhyamik Shiksha Parishad', due to appear for annual assessment in 2021. The 30 days prolonged Classes by reputed educators on eVidya TV, eVidya's YouTube channel, will target Grades 10 and 12 students to help them prepare hassle-free during times of interrupted school instruction while coaching facilities have been in a disarray.

I would like to conclude by conveying my heartfelt gratitude to Quality Council of India for letting me express my sincerest of views though with a die-hard optimism that a Flipped Classroom is here to stay post COVID-19, too.

The present day of the world needs green buildings to be constructed newly as well modify the existing buildings to have the green building status. First of all we have to know what is green building and how they are to be designed for the Indian Construction sector. There is a need to have reduction in cumulative annual energy consumption and also installation of renewable energy. As the fossil fuels are depleting at a faster rate due to huge demand of energy in various sectors like Industry, domestic uses, transport etc. Through green building projects we can reduce the domestic consumption substantially to around 30-40% of the present demand. There have been

major changes in the field of green buildings in India and the local green building industry has evolved significantly over the past few years. Many organisations like ASSOCHAM, IGBC, GRIHA etc are working in this field.

For the green building construction the following aspects play vital role for the project to be successful.

- Site planning
- Construction management
- Energy management
- Occupant

comfort and well being

- Water management
- Use of sustainable building materials
- Solid waste management
- Socio economic strategies
- Performance monitoring and validation process
- Training and capacity building of the project team
- Corporate social Responsibility etc.

In today's topic we will be focussing more on energy management along with efficient electric equipment, and imperishable energy. On the above aspects listed from A-K the energy management has been given maximum weightage for the green building project. We need to know certain mandatory requirements along with additional points to be taken care while constructing or renovating a building to provide it the status of green building.

In India we have five climatic zones (1. Composite, 2. Hot and dry, 3. Warm and humid, 4. Moderate, 5. Cold). Various climatic conditions have different temperatures and humid conditions. In India we experience six seasons. If the temperature is

1. >30 degree C and humidity <=55, then it is considered as hot and dry climate. Ex: Ahmedabad.
2. Between 25-30 degree C and humidity <75, then it is considered to be moderate climate.
3. For the warm and humid climate the temperature is >25 degree and humidity lies between 55-75. Ex: Kolkata, Chennai, Mumbai and Bhubaneswar.
4. If the temperature is <25 degree C then it is considered to be cold climate. Ex: Himachal Pradesh.
5. The composite climate prevails in the area like Delhi, Allahabad, etc. Similarly other areas in India are covered under different climate conditions.

Hence accordingly the energy

consumption varies in different areas of India based on its climatic condition.

For the energy management system, the energy efficiency plays a very important role on the construction of the building like use of energy efficient fixtures, energy efficient building materials. Towards the energy conservation and energy efficiency many guidelines are available on the Bureau of Energy efficiency website. However we will discuss few points here for the general awareness. ECBC (Energy Conservation Building Code) and NBC (National Building Code) provides many guiding factors on the same. ECBC provides guidelines for commercial projects which have a) mandatory requirements (section 4.2, 5.2, 6.2 & 7.2). Similarly the ECBC also has prescriptive method (section 4.3, 5.3, 5.4, 5.5 & 6.3) or whole building performance method (section 9) along with all mandatory requirements. The commercial buildings has to comply all the mandatory requirements and either the prescriptive method or the whole building performance method.

For Residential Buildings we need to consider different values as per NBC. For ex:

1. Glazing (window, door, façade or condition space). The shading coefficient has to be <=0.35
2. The overall heat transfer coefficient for a roof assembly <=0.8 watt per m² per Kelvin. Similarly for the wall assembly the overall heat transfer coefficient value is <=1.5 watt per sq.m per kelvin.

3. Lighting power density which is expressed as watt per m².

- For building exterior and parking space the value considered to be =2.2 watt per m².
 - For interior common spaces it is 6.5 watt per m².
 - For residential interior spaces the value =7 watt per m².
4. HVAC (Heating Ventilation and Air Conditioning) equipments:
- All unitary and split AC system are to be minimum BEE 3 star rating.
 - For other HVAC equipment refer ECBC 2017.

Energy Performance Index

This is defined as ratio of annual energy consumption to total built up area excluding basement. However EPI ratio which is the ratio of EPI of proposed building to the EPI of standard building is also considered while designing the new building. The EPI of standard building can be obtained from ECBC. For Ex: A residential building located in moderate climate should have EPI benchmark of 50KWH per m² per year. EPI is calculated taking the interior lighting and HVAC load only. For outdoor illumination, the lamps are required to meet the luminous efficacy level of around 75 lumens per watt.

Efficient Electric Equipment And Systems

By installing efficient electric equipment and systems we will be able to reduce electricity consumption to a substantial value say around 20-30%. For ex: 1) ECBC compliant power transformers where we consider the minimum acceptable efficiency at 50% and full load rating. 2) Energy efficient motors conforming to IE2/IE3 class/BEE 3 star rated as the minimum requirement. IE2 is the international efficiency for high efficient motors. Similarly, IE3 (premium efficiency) and IE4 (super premium efficient motors) can be considered as more efficient ones.

NOTE: For industrial projects the motors installed for non-process applications are only considered.

Use of imperishable energy resources:

The intent or the aim is to reduce the dependency on exhaustible fossil fuels and to ensure incorporation of renewable energy resources in the project. This is achieved by installing onsite or offsite imperishable energy system to offset a part or electric contract demand of the project. A minimum % is fixed by different agencies for giving the rating to the green building project. For ex: 5% offset for onsite and 10% offset for the off-site installations are considered as essential by some agencies. Other agencies like GRIHA considers 2.5% for day time commercial buildings and 0.5% for 24/7 occupied buildings as mandatory for onsite installations. However

these values depends on the agencies who is going to certify the building as per their rating system.

NOTE: 1) For industrial projects only non-process electric demand loads are considered for sizing the imperishable energy system capacity. 2) Solar water heater system are not considered as power generation sources for energy saving purpose. 3) The offsite renewable energy system should be preferably located within the same utility service area as the facility. 4) The green building project can sign a contract with the offsite renewable energy developer for a period of at least 2/3 years.

Optimal use of natural light in green building projects:

The aim is to reduce the reliance on artificial lighting and save lighting energy. The building spaces are designed to deliver visual, thermal and acoustical comfort to the building occupants. Solar heat gain coefficients are taken into account and accordingly the Window Wall Ratio (WWR) and SRR (Skylight Roof Ratio) are considered for designing the building. Solar heat gain coefficient is the ratio of solar heat passing through the glazes to the total incident solar radiation. Lower the SHGC value is better. High albedo materials can be used in roof and non-roof (parking) areas to reduce the heat island effect as well as cooling energy consumption. Similarly the U value (overall heat transfer) is the rate of heat flow through a unit area of building component through an overall

unit temperature difference between the two sides of the unit component. So both SHGC and U value plays an important role in energy saving. For the day lighting purpose ECBC section 4.2.3 is considered with its two approaches for compliance. Two approaches are: 1) Simulation approach which is carried out through computer. As per clause 4.2.3.1 of ECBC, some considers at least 40% of the area of any occupied space should comply with the day light requirement. 2) The second alternative approach is the manual approach. This approach makes use of daylight extent factor as per section 4.2.3.2 of ECBC.

For the purpose of daylight design only sky illumination is considered for illumination of the building interior. Direct solar illuminance should not be considered. For ex: wide and low height openings are easier to shade against sunlight entry. However glare can take place due to excessive contrast of illumination or from an excess illumination in the field of view. Glares can be reduced by overhangs, shades, balcony, or louver system as they reduce the effective height of opening. The sill height of the windows are kept low to allow increased illumination.

Diffusing glazing should be used properly within the normal field of views. It can scatter direct incident solar beam. Hence all of the above can be used for optimum use of natural day light and thereby reduce the energy consumption.

Water management for energy consumption:

1. Focus is given to reduce the building water consumption through the use of low flow fixtures. Ex: water closets with dual flush type with flush rates 4.6/2.6 LPF. For the kitchen sink faucets 4.5LPM at 3 bar design pressure may be used.
2. Sensor based water fixtures can be used in common areas. Water flow restrictors/ aerators can be installed in the high flow fixtures.
3. We can have water efficient irrigation system to reduce the demand for landscape water as well as by planting native/naturalised flora in the project.
4. we also have to focus on recycle and reuse of waste water as well as reusing the captured rain water through rain water recharge wherever allowed. The central ground water board CGWB suggest that if the ground water table is high then ground water recharge should not be done.

WAY FORWARD

The green building projects not only saves energy but also ensures the use of locally available construction materials and also ensures the compliance to various statutory and regulatory rules and laws, thereby reduction of pollution, proper handling /reuse of generated waste during pre/post construction activity. Hence, the green building projects should be made mandatory for the all future new buildings as well renovation of existing buildings. There are many examples of saved energy by renovating the very old existing buildings. This could be possible by use of proper use of efficient building materials and technologically developed efficient electrical and mechanical equipments, fixtures and fittings. Certified professionals for the green building projects can be of much help for supervising the green building project works taken up by the rating agencies. Other criteria like sustainable building materials and the construction management along with the site planning also plays a vital role for the energy efficient green building projects. Reference can be made to the websites of BEE, ASSOCHAM, IGBC and GRIHA etc for getting the details about the green building projects.



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Members Write

Mitigating Food Allergen Risk Under FSMA

Regulatory Perspective and Best Practices for Indian Food Manufacturers

Global consumers have a universal quest for safe and nutritious food. With rise in international food trade and retailing, the global food supply chain has become susceptible to food allergen control failures, owing to a complex web of relationships among multi-tier supply chain actors operating across international borders.

India is one of the leading exporters of food in the United States (US). Around 32 million people in the United States have food-related allergies. US Food and Drug Administration (FDA) recognizes eight common food as "Big 8 Allergens" that includes Milk, Eggs, Fish, Crustacean Shellfish, Tree nuts, Peanut, Wheat and Soybeans. As these account for 90% of food allergies, US law requires

controlling allergen cross contact, accurate allergen declaration and ingredient information on food packaging labels. Food allergy is an abnormal immune-mediated response to a protein in food. These food allergens cannot be processed out through cooking or heating and trigger potentially deadly allergic reactions in susceptible customers causing rashes, tingling in the mouth and respiratory distress. In a fraction of people, allergen exposure causes anaphylactic shock, a dangerous allergy response requiring treatment in the emergency room. Food allergic consumers have their own set of challenges and varying degrees of sensitivity in selecting safe food products. The prevalence

of food allergy in these susceptible consumers continues to increase over time. There has been a significant rise in incidents of food allergies in the United States in recent years witnessing undeclared allergens on food packaging labels that have increasingly compromised public health. Allergen contamination remains the common reason for food recalls in the United States. This leads to increased scrutiny for Indian food manufacturers exporting to the United States. As the global food industry continues to struggle with Allergen Control Program, food and beverage products adulterated with allergens make their way to US food market. With a view

to strengthen the domestic food safety landscape, The US FDA brought into an effect, Food Safety Modernization Act (FSMA) in 2011, requiring foreign producers involved in manufacturing, processing, packing or holding human food to determine food allergen hazards and create, implement and document Allergen Control Plan based on Hazard Analysis and Risk-Based Preventive Control (HARPC) to combat food safety problems including allergen contamination. Meticulously striving for food allergy controls as one area of focus, US importers corroborate imported foods present the same degree of public health protection equal to the food produced in United States. US Importers need to ensure that their foreign suppliers are registered and compliant with the Foreign Supplier Verification Program (FSVP) regulations under FSMA laws. The law also empowers US importers to conduct regulatory and consultative food safety audits of Indian food facilities on preventive control food safety system either themselves or through third party certification bodies accredited by US FDA. When inspecting and auditing foreign food facilities, auditors look out for allergen-specific risk assessment and level of documentation and record-keeping maintained by the site. The Act proposes that the manufacturing units must modernize their Current Good Manufacturing Practices (CGMP) and deploy risk-based preventive controls to address allergen related public health concerns in finished food like allergen cross-contamination, packaging and labeling errors and incorrect allergen declaration.



Image 1. Allergen Controls & FSMA. Adapted from (Allergen Controls and FSMA, 2015). <https://www.aibinternational.com/en/Food-First-Blog/PostId/11> Copyright 2020 by AIB International

Allergen has been categorized as a chemical hazard in the food and beverage industry and with its permissible level not established under Food Safety Modernization Act, the allergen management remains a high-level challenge and an uphill task for Indian food manufacturers exporting to the United States. With FSMA in effect, the Indian food manufacturers must implement FSMA Proposed food safety and quality management solutions with absolute clarity on the farm to table continuum, mapping risks and interactions in different supply chain stages that facilitate meeting FSMA allergen requirements, mitigate allergen contamination risk, avoid product recalls and meet consumer demand of food safety.

Allergen incidences can occur through the intentional and unintentional presence of allergenic components in food and beverage products. Food products containing allergenic components as a base ingredient is a case of intentional introduction. The existence of allergenic components in food products through cross-contact, accidental addition and

packaging error is classified as an unintentional introduction. Senior management commitment to Allergen Control Plan by dedicatedly implementing preventive control food safety system facilitating quick discovery time of issues with real-time visibility is pivotal to the success of food allergen management and control and to foster strong food safety culture throughout the organization. Managing allergens and allergen cross-contamination right from incoming ingredients to the final product remain a critical aspect. Proactively vetting Allergen Management Plan in food manufacturing facilities begins with supplier risk assessment and evaluation of logistic threats. To mitigate risk poised by supply chain, ingredient supplier approval and controls are pivotal. Practicing good communication with suppliers through means of allergen focused procurement, seeking certificate of analysis with full information disclosure on raw materials, conducting supplier on-site audits are critical to allergen control. The manufacturer is expected to have a clear understanding of data points to ensure supply chain controls. Unintentional

allergen cross-contact may arise out of common agricultural equipment used in harvesting both allergic and non-allergic products and food processed in shared environments without contamination controls.

Running allergen-free products before allergenic products, separating employees on product lines, using dedicated pallets and cleaning thoroughly at changeover is crucial to prevent allergen cross-contamination. Administering stricter internal process controls through identifying and segregating manufacturing areas with cross-contact potential by installing mechanical barriers and preventing proximity between allergen and non-allergen products through hygienic zoning, allergen mapping, segregating storage rooms, manufacturing equipment, storage containers, sampling devices and packaging tools are productive strategies. Also eliminating possibility of crossover of open conveyors to protect product from allergen cross contact is important. Food processing equipment must be of food grade non-absorbent material with easy-to-clean and pit-s free surfaces to avoid trapping of allergenic materials. Compressed air system and cleaning equipments like vacuum cleaners and brooms carry residual allergen laden dust or aerosols that could inadvertently introduce allergens into non-allergic products and trigger cross-contamination risk. Controlling dust emission and transmission and sampling compressed air are important risk control measures. Careful consideration of the introduction of new allergens into revised or new product



Image 2. Allergen Risk Management. Adapted from Dr. Boyacioglu, 2019. <https://www.bakingbusiness.com/articles/49216-the-vital-components-of-an-effective-allergen-control-strategy>. ©2020 SOSLAND Publishing Company

formulations must be clearly communicated with the quality and safety team and also down the production line to ward off formulation failure induced allergen contamination risk.

Food packaging is a very crucial point requiring significant control for allergen risk management. Food packaging articles regulated under FSMA regulations are considered raw materials that need approval and procurement controls. Getting the packaging label right is important but keeping it right all the time is equally important. Effective communication between all parties involved in packaging design is a prerequisite. Approving packaging suppliers, checking incoming packaging deliveries for compliance and labeling standards, removing or destroying obsolete packaging from the site, verifying new packaging and controlling the packaging review process are significant allergen controls. In food manufacturing units preventive controls on packaging and labeling begin by delegating authority and accountability for label management. Preventive strategies under the plan include labeling advisory, accurate allergen disclosure

and controls on the issue of packaging articles for allergic and non-allergic products. Packaging controls in allergic foods have the predominant objective of communicating and helping consumers in making better purchase decisions by identifying the presence of allergic products which may significant public health risk. Verifying labeling accuracy, packaging controls to avoid mispackaging of products and facilitating accurate information disclosure of consumer interest is significant for public health protection and promotion. As a preventive control, food facilities dealing with both allergenic and non allergenic food products must control their reworked products through color coding, segregating labeling accuracy and reevaluating to avoid rework failures. As one of the preventive controls, food facilities must write an effective product recall action plan describing recall procedures and steps for initiating product recalls, direct consignee and public notification, effectiveness checks, mock recalls and product disposal with a view to quickly remove products from the commerce. As mandated in the FSMA Act, indian food facilities exporting to United States

must have inter-disciplinary food safety team and at least one "Preventive Controls Qualified Individual" (PCQI) responsible for developing, implementing and managing HARPC Plan to ensure safe food production. Employees are the eyes and the ears of a manufacturing unit and employees should be trained on easy storage for correct identification of packaging materials, matching multi-components of packaging like lid and pots and exercising preventive controls ensuring product gets housed in right packaging. Segregating employees through color-coding to ensure the correct work station is another control measure to strengthen the allergen management plan. Visually clean is always the primary evidence and the first standard to validate cleaning. Validating sanitation effectiveness before the restart and in between allergic and non-allergic product run is crucial to warding off allergen cross-contamination risk. The cleaning and sanitation program in the manufacturing unit must be validated by verified allergen clean changeover and demonstrate consistency in achieving the desired level of allergen residue removal from food and non-food contact surfaces through application of potent cleaning agents. Training employees on hygiene and sanitary practices dedicated to allergen management will further push back allergen cross-contamination risk. In cases where food facility has been into identical food allergen profiles, only labeling accuracy needs to be addressed as there remains no possibility for cross contact. In view of food safety and for successful allergen control plan,

food facilities must establish, implement, document and communicate written corrective action plan and assign corrective action procedures and measures for preventive controls in line with the nature of the hazard. Monitoring in form of continuous observations and measurement to assess outcomes of implemented control measures is crucial to keep process in check. Verifying and validating allergen control plan by incorporating best practices like product testing, routine inspections, internal audits, documentation and record-keeping ensures preventive controls are consistent and achieving the desired outcome of controlling allergen risk. Not all allergen testing methods are created equal. For allergen in question, understanding acceptable level of sensitivity, the detection potential and the limit of quantitation are the guiding factors in selecting the allergen detection tests.

From US FDA regulatory perspective, FSMA non-compliance in terms of allergen labeling could lead to enforcement actions with financial penalties and recall order. Allergen contamination induced product failures translate into a huge liability for Indian food manufacturers and has a long term negative impact on financial performance in the form of product rejection at the point of imports, destruction or product rework, increased public health risk, falling consumer trust and rising business litigations. Indian exporters must demonstrate a clear understanding of allergen related FSMA regulations, as risk-based preventive controls leverage to mitigate allergen contamination risk ensuring federal compliance. With

no known cure to allergic reactions, accurate allergen labeling and allergen removal practices in food manufacturing units are only vital controls Indian food manufacturers have, to provide safe food to US consumers, protect public health and avoid allergen-specific nonconformity. After all, achieving consumer trust of safe food imports, reliable food product information and creating transparent food supply systems that bridge the confidence gap between brand and US consumer is a matter of global priority and public health protection.

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