

KALEIDO S GO

STANDING CONFERENCE OF PUBLIC ENTERPRISES









DD News

SCOPE appreciates Union Budget 2025





KALEIDO SCOPE





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Shubh Ratna GM (Tech. & HR) pr@scopeonline.in, 9873398242



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Reach us at:

SCOPE Social Interaction Centre (SSIC) ssic@scopeonline.in

DG Sectt. scopedg@scopeonline.in

Programme & Studies ca@scopeonline.in

Corporate Communications pr@scopeonline.in

Technical mmo@scopeonline.in

Finance finance@scopeonline.in

SCOPE Forum for Conciliation and Arbitration (SFCA) sfca@scopeonline.in

General Queries info@scopeonline.in



ADVISORY BOARD Atul Sobti Director General, SCOPE

Shubh Ratna GM (Tech & HR)

CHIEF EDITOR Director General

EDITOR & PUBLISHER Shubh Ratna

ASST. EDITOR Lipi Singh

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Designed and Printed at Royal Press, B-81, Okhla Industrial Area, Phase-I, New Delhi-110020 Tel: +91-93101 32888

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leadership requires Unique equally unique development programs that tailored are to nurture a leader's distinct strengths, foster innovative thinking and equip them with the skills needed to tackle the challenges of tomorrow's dynamic world. SCOPE has time and again come up with such unique initiatives that open new avenues of learning for all.

Recently, SCOPE and Capacity Building Commission (CBC) for its leadership initiative – DAKSH (Development of Aspiration, Knowledge, Succession & Harmony), signed a historic agreement with leading academic partners, to unleash a brand-new opportunity for building leaders of tomorrow.

I call upon our members and fellow Public Sector Enterprises (PSEs) to whole-heartedly participate in this endeavour and make the most of this unique offering by SCOPE.

Reflecting on the recently presented Union Budget 2025, it is inspiring to see that it aligns with the country's broader goals of sustainable progress, which emphasize both economic expansion and equitable social development. In this context, PSEs play a pivotal role in

driving the nation's progress. They are committed to advancing the economic and industrial sectors, helping India achieve socio-economic progress since independence.

Further, SCOPE also annually organizes a program on 'Decoding the Union Budget' with financial experts and the enthusiastic participation of our members in the program is always heartening.

As a Member of the Council of Indian Employers (CIE), SCOPE continues to address and strengthen solutions for the challenges and issues faced by employers. At a recent meeting held by CIE, deliberations were held to strengthen both employers and CIE itself, both nationally and internationally.

Upscaling its efforts towards Capacity enhancement and skill development, SCOPE continues to associate with important partners that will work towards capacitating workforce for the future.

SCOPE recently signed an MoU with Hydrocarbon Sector Skill Council (HSSC), towards developing a skilled workforce for the hydrocarbon sector in India. More such initiatives

towards skill building and capacity development are in the pipeline by SCOPE.

SCOPE-GIZ also recently launched a dedicated webpage on Climate Action enabling PSEs to gain information and engage in peer learning through a single portal. I invite our readers to glimpse through this on our official website.

Through our diverse initiatives, programs, and strategic collaborations with SCOPE, the apex body of PSEs, remains committed to fostering greater opportunities for them.

SCOPE will soon be opening the doors of SCOPE Social Interaction Centre (SSIC). I encourage the public sector fraternity to make optimum use of this facility for interaction, learning, recreation and unwinding.

I look forward to feedback and suggestions from our members to further improve our efforts in bringing the best opportunities to the threshold of PSEs.



Sandeep Kumar Gupta Chairman, SCOPE

ANNOUNCEMENT





SCOPE FORUM OF CONCILIATION AND ARBITRATION (SFCA)

With a view to expedite settlement of disputes and reduce avoidable expenditure by PSEs, a need was felt by Standing Conference of Public Enterprises (SCOPE), an Apex Body of Public Sector Enterprises, to institutionalize the prevailing system of arbitration which led to formation of SFCA in 2003. The forum was formally inaugurated by Shri Santosh Gangwar, the then Hon'ble Minister of State for Heavy Industries & Public Enterprises and Parliamentary Affairs at SCOPE Complex on 9th January 2004.

WHY SFCA?

Empanelment of more than 400 Arbitrators/ Conciliators

- Retired Judges of Supreme Court, High Courts,
- Retd. Secretaries, Joint Secretaries of Government of India
- Chief Executives, Directors and senior officials of PSEs
- Professionals including Advocates,
 Chartered Accountants, Engineers & Surveyors etc.

Complete services for conducting Arbitration

 A dedicated Forum administering, overseeing and conducting arbitration and conciliation proceedings.

Cost effective and timely dispute settlement

 Settling disputes between PSEs and their associates within shortest possible time at more economical and cheaper cost in comparison to other institutions.

Dedicated Infrastructure

- Exclusive Arbitration Hall having seating capacity of 15 persons.
- Facility of provision of halls with higher capacity in SCOPE Convention Centre at SCOPE Complex, Lodhi Road and SCOPE Minar, Laxmi Nagar, New Delhi.

Facilities and provisions

- Provision of modern equipments and facilities such as projector for live streaming of proceedings on a large screen, stationery etc.
- Arrangements of high tea/lunch on request of the parties.

Capacity Building

- Executive development programmes and workshops on various aspects of Alternate Dispute Resolution process (ADR).
- Annual National Seminar on various aspects of Arbitration and Conciliation.



For any queries relating to SFCA, you may contact

SCOPE FORUM OF CONCILIATION & ARBITRATION (SFCA)

1st Floor, Core 8, SCOPE Complex, Lodhi Road, New Delhi-11 00 03 • Email: sfca@scopeonline.in

• Phone: 011- 24360559, 011- 24361745

Mr. Shubh Ratna GM (Tech. & HR) Mob: 9873398242 Mr. Nishant Kumar Sr. Manager Mob: 9953046060

Associate with us and adopt SFCA Clause for resolving disputes in a cost and time effective manner



With the recently announced Union Budget 2025, India beckons a new era of growth and development. Embodying a focused vision on strengthening key sectors, fostering innovation and ensuring inclusive progress, the Budget sets the foundation for a prosperous future, positioning India as a global economic powerhouse.

SCOPE appreciates the clear directional push that the Budget gives to boost consumption and investment, while giving due impetus to inclusive development. By empowering businesses, enhancing spending power, and, for the first time, addressing the welfare of Gig Workers, this Budget sets the stage for a transformative economic future of India.

Further, I am happy to share that some of the recommendations, submitted by SCOPE in its Pre-Budget Memorandum to the Ministry of Finance, have been incorporated in the Union Budget 2025 presented by Smt. Nirmala Sitharaman, Hon'ble Finance Minister of India.

To ensure an in-depth understanding of various economic and taxation aspects of the Budget, SCOPE brings together renowned economists and financial experts every year to provide insights and share perspectives on budgetary announcements and their impact on various sectors.

Taking steps towards capacity enhancement, SCOPE has been working towards creating future ready leaders. A unique leadership initiative - DAKSH, along with Capacity Building Commission (CBC), and leading academic partners is being panned out for the Public Sector. DAKSH is a unique offering by SCOPE that aims at empowering individuals to navigate the evolving landscape and drive impactful change in the public sector.

SCOPE also continues to enhance employer representation on national and international forums and the latest Council of Indian Employers (CIE) meeting held at SCOPE premises deliberated on bringing together the interests of employers

and representing them more prominently at the international forums as well. CIE also looks at empowering itself and evolving with the times to mark a new chapter in employer representation.

SCOPE has had a long-term dedication to enhancing the participation and leadership of women in PSEs, equipping them with the tools and networks they need to succeed. In continuation of this endeavour, Women in Public Sector (WIPS) under the aegis of SCOPE is organizing its 35th National Meet in New Delhi this year, which will be participated by women employees of various PSEs from across the country.

We look forward to the support and feedback of our members in all our programs and hope to ace newer heights this year as SCOPE is all set to unravel a new chapter in its history. With the support and vision of our management and the undeterred faith of our members, we will continue to grow as an Inspiring, Innovative and Impactful apex body.

Programmes & Initiatives launched (since last issue of KALEIDOSCOPE)

DG, SCOPE inspirits Employees on New Year – 3rd January, 2025

SCOPE & Hydrocarbon Sector Skill Council sign Strategic MoU – 8th January, 2025

Council of Indian Employers Committee Meeting at $SCOPE - 13^{th}$ January, 2025

SCOPE celebrates Republic Day – 26th January, 2025

Programmes & Initiatives in the offing

National Meet of Forum of Women in Public Sector (WIPS) under aegis of SCOPE –

17th & 18th February, 2025

SCOPE & CBC Leadership program – DAKSH

Atul Sobti
Director General, SCOPE

SCOPE News

SCOPE and HSSC Forge Strategic MoU to Enhance Skill Development in India's Hydrocarbon Sector

SCOPE and Hydrocarbon Sector Skill Council (HSSC) signed a Memorandum of Understanding (MoU) to drive skill development initiatives within the hydrocarbon sector on 8th January, 2025. The MoU, signed between Shri Atul Sobti, DG, SCOPE and Member, Governing Body, ILO; and Shri S.K. Bose, CEO, HSSC, in the presence of senior officials from both organizations, aims bridge skill gaps and enhance workforce capabilities across the hydrocarbon and allied sectors.

Speaking at the signing ceremony, Shri Atul Sobti highlighted that in today's rapidly evolving professional environment, skills are the most valuable asset and to remain competitive, individuals continuously must upskill, reskill and unlearn conventional practices. He stressed



Shri Atul Sobti, DG, SCOPE and Member, Governing Body, ILO; and Shri S. K. Bose, CEO, HSSC signing the MoU.

significant transformation underway, with the global focus shifting towards Just Transition and with electric vehicles poised for widespread adoption, there's a pressing need to not only focus on current skill sets but also to prepare for the emerging skills required in the Hydrocarbon Sector.

Shri S.K. Bose highlighted that this MoU not only presents a valuable opportunity for collaboration with SCOPE, but also aligns with the Hon'ble Prime Minister's visionary call to transform India into a Global Skill Hub.

SCOPE continues to collaborate with strategic partners toward fostering a culture of continuous learning and capacity enhancement in PSEs. This MoU not only focuses on bridging existing skill gaps, but also aims address current industry challenges, along with preparing workforce for future challenges in the hydrocarbon and allied sectors.



DG, SCOPE and CEO, HSSC after the signing of MoU.

Council of Indian Employers (CIE) Meeting at SCOPE

The Meeting of Council of Indian Employers (CIE) comprising of All India Organization of Employers (AIOE), Standing Conference of Public Enterprises (SCOPE) and Employers Federation of India (EFI) was organized at SCOPE Convention Centre, New Delhi on 13th January, 2025.

The meeting was chaired by Shri Alok B. Shriram, President, CIE and Senior MD & CEO, DCM Shriram Industries Ltd. Shri Atul Sobti, DG, SCOPE & Member, Governing Body, ILO; Shri Jasbir Singh, President, AIOE and Chairman & CEO, Amber Enterprises India Ltd.; Shri Chetan Bijesure, Executive Director, AIOE; Smt. Parisha Singh, Deputy Director, AIOE and Ms. Harsh from Employers' Federation of India (EFI) were present in the meeting held in hybrid mode.



(L-R) Shri Atul Sobti, DG, SCOPE & Member, Governing Body, ILO; Shri Alok B. Shriram, President, CIE and Senior MD & CEO, DCM Shriram Industries Ltd.; Shri Jasbir Singh, President, AIOE and Chairman & CEO, Amber Enterprises India Ltd.; Shri Chetan Bijesure, Executive Director, AIOE; Smt. Parisha Singh, Deputy Director, AIOE during the meeting.

The meeting briefed the Members about the various procedural aspects of the Governing Body and discussions were also held about strengthening CIE both nationally and internationally. Deliberations were also held regarding CIE's relations with Ministry of Labour & Employment; International Labour Organization; and

International Organisation o Employers.

The meeting further deliberated on strengthening CIE's role at the upcoming 113th International Labour Conference, besides discussing the prospects of organizing events for the industry under the banner of CIE, with the support of ILO & IOE.

DG, SCOPE invited as Jury Member in Jury Meet for 'ICAI Awards for Excellence in Financial Reporting'

The Institute of Chartered Accountants of India (ICAI) instituted 'ICAI Awards for Excellence in Financial Reporting' to recognize excellence in presentation of annual reports. Shri Atul Sobti, DG, SCOPE was invited as an eminent Jury Member by ICAI for evaluating and finalization of 'ICAI Awards for Excellence in Financial Reporting' for the year 2023-24.

The Awards were presented in 11 categories namely Banking, Financial Services, Insurance, Manufacturing and Trading, Services, Infrastructure and Construction, Not - for - Profit



DG, SCOPE as Jury Member participating in Jury Meet of ICAI Awards for Excellence in Financial Reporting in New Delhi on $14^{\rm th}$ January, 2025

and Public Sector Entities. While selecting the awardees, emphasis was given to nature and manner of presentation, technical and statutory compliances, quality of information, reporting from corporate governance perspective etc

DG, SCOPE inspirits employees, welcoming New Year 2025

Shri Atul Sobti, DG, SCOPE addressed SCOPE employees on the occasion of New Year 2025. In a powerful and motivating address, he ignited the SCOPE employees with a forward-looking Vision 2025, setting the stage for a transformative journey over the next few years.

With a clear focus on growth, innovation and excellence, DG, SCOPE encouraged employees to chart out a roadmap that will guide SCOPE towards new frontiers of success. He also asked them to balance work, maintain good health and well-being.

He reiterated that SCOPE employees should own their organization and aim to drive transformation, challenge



DG, SCOPE addressing the employees on New Year.

conventions and achieve greater heights of excellence. He said, "The future of SCOPE lies in our hands — let's shape it with passion and purpose."

Further, sharing his best wishes, DG, SCOPE wished all employees and their families good health and prosperity in the year ahead.



DG, SCOPE along with employees on the occasion of New Year.

SCOPE invited by MoLE to participate in International Seminar on "Formalization and Social Security Coverage for Workers in the Informal Sector"



SCOPE at ISSA-ESIC International Seminar on Formalization & Social Security Coverage for Workers in Informal Sector, being addressed by Shri Mansukh Mandaviya, Hon'ble Union Minister of Labour & Employment.

of Labour and The Ministry **Employment** (MoLE) and State Insurance Employees' Corporation (ESIC) collaboration with International Social Security Association (ISSA) hosted a two-day international seminar at Yashobhoomi - India International Convention Expo Centre, New Delhi. The event brought together social security experts, policymakers and thought leaders to deliberate on "Formalization and Social Security Coverage for Workers in the Informal Sector: Challenges and Innovations."

Dr. Mansukh Mandaviya, Hon'ble Union Minister of Labour and Employment inaugurated the seminar and addressed the participants. Smt. Shobha Karandlaje, Hon'ble Union Minister of State for Labour & Employment and Smt. Sumita Dawra, Secretary, Labour & Employment also addressed the participants, along with eminent dignitaries from national and international forums.

Experts from international organizations including International Labour Organisation (ILO), ISSA, World Bank, United Nations India, UN Women and Bill and Melinda Gates Foundation also shared crucial insights and global perspectives.

Shri Atul Sobti, DG, SCOPE and Member, Governing Body, ILO was invited by MoLE to participate in the two-day seminar wherein he engaged in constructive interventions and

experience-sharing with the participants.

More than 200 participants including representatives from social security organizations from countries of Asia Pacific region, Ministries of Government of India, states and union territories, international organizations, workers' and employers' organizations engaged in the deliberations.

The seminar deliberated on issues related to formalization and social security coverage; flexible pathways to social security for informal and vulnerable workers and driving social security coverage for informal workers through targeted incentives, digital solutions for informal workers etc.

SCOPE appreciates a progressive, reform-oriented and holistic budget

Following the presentation of Union Budget 2025, SCOPE complimented Hon'ble Finance presenting progressive, reform-oriented and holistic budget that addresses all stakeholders of the economy. Shri Atul Sobti, DG, SCOPE and Member, Governing Body, ILO appreciated the Budget as it presents a directional push to both consumption and investment by enabling businesses. increasing spending power and

for the first time, addressing welfare of Gig Workers. "The Budget 2025 is a progressive budget as it strengthens inclusive development through series of action-oriented reforms targeted to accelerate manufacturing, modernise agriculture give impetus to skilling & innovation thereby bolstering growth for a Viksit Bharat," he said. Highlighting the role of Public Sector Enterprises

developmental journey of the country, he added that given the presence of the Public Sector in strategic areas, they shall continue to play a pivotal role in priority areas of investment, manufacturing, skilling, innovation and sustainable development while contributing effectively towards export promotion and support to the MSMEs.

SCOPE Celebrates 76th Republic Day



Interface with Stakeholders



DG, SCOPE meets Shri Sandeep Kumar Gupta, Chairman, SCOPE & CMD, GAIL (India) Ltd.



DG, SCOPE calls on Smt. Soma Mondal, Member, Public Enterprises Selection Board and shared the latest endeavours and initiatives of SCOPE.



Dr. P. S. Rathore, Motivational Speaker and Author of the Book - "Look Beyond: Breakthrough all limits - Transformative journey to achieve the impossible" presenting his book to DG, SCOPE.



Shri Pratap Padode, MD, ASAPP Info Global Services Pvt Ltd. presents his book 'Tarmac to Towers: The India Infrastructure Story' to DG, SCOPE during his recent visit to SCOPE.

SCOPE in

♦TheIndian EXPRESS

Dated: 11th January, 2025

LAUNCH-SCOPE

SCOPE, stong with DLZ, Germany, a public benefit federal enterprise, has launched test of its sind self-paced advance ocurse on Climate Change & Climate Action to enable the workforce of true



Philic Sactor Instanting to gian formal certification on the subject. The course is supported by international Camate instative of the Central Covernment & certified by them along with SOOPE & SQC, Semany, SOOPE also bushched for decidantly extension of Clinials Action exhallon PSEs to gain information and engoge in per-lauming through a single portal. The advanced course has been designed to develop an understanding about the various aspects of Climate Change and possible actions available to combat the same. The webpage aims to be a single point of elformation repository initialing Climate initiatives of PSEs, Int'l developments on sustainability & access to important publications & knowledge repositories on the important subject of Climate Action

FINANCIAL EXPRESS

Dated: 11th January, 2025

LAUNCH -- SCOPE

SOOPs, doing with GIZ, Germany, a public benefit: federal enterprise, has launched first of its kind self-quoted advance course on Clienter Change & Climate Action to enable the workforce of the



Applic Socior Instantify to gain formul certification on the subject. The course is supported by International Climate Initiative of the German Government & onlified by them along with SCOPE & GZ, Germany SCOPE also burnched its dedicated webgage on Climate Action enabling PSEs to gain information and engage in peer learning through a single portal. The advanced course has been designed to develop an understanding about the verticus aspects of Climate Change and possible actions available to combat the name. The verticage area to be a single point of information repository entailing Climate initiatives of PSEs, Int'll developments on sustainability & access to important publications & innoveledge repositories on the important subject of Climate Action.

Hindustan Times 🐵

Dated: 8th January, 2025



Standing Conference of Public Enterprises (SCOPE) along with GIZ, Ger-many launched first of its kind self-paced advance course on Climate Change and Climate Action to enable the workforce of the Public Sector frabernity to gain formal certification on the subject.

THE TIMES OF INDIA

SCOPE and GIZ launch course on climate change



अमरउजाल

Dated: 14th January, 2025

जलवायु परिवर्तन पर पाठयक्रम व वेबपेज लॉन्च

नई दिल्ली। स्टेडिंग कॉन्फ्रेंस ऑफ पब्लिक एंटरपाइजेज (स्कोप) ने जर्मनी के जीआईजेड के साथ मिलकर जलवाबु परिवर्तन और जलवाबु कार्रवाई पर एक अनोखा प्रमाणीकरण



पाठ्यक्रम लॉन्य किया है। यह पाठ्यक्रम सार्वजनिक क्षेत्र के कर्मचारियों को जलवाबु परिवर्तन के विकय पर ओपचारिक प्रमाणीकरण प्राप्त करने में सक्षम बनाएगा। स्कोप ने जलवायु कार्रवाई पर एक वेबपेज लॉन्च किया है।

🔟 Indian Masterminds

SCOPE and GIZ Lau nch Advanced Climate Change Course for









THE FREE PRESS JOURNAL

Dated: 7th January, 2025

SCOPE & GIZ launch certification course on Climate Change and Climate Action



Standing Conference of Public Enterprises (SCCPE), as specificity of fretan PSCs, elseig with GC, Germany, a public benefit federal anterprise, has launched first of to

PSUWATCH

SCOPE and GIZ launch certification course on climate change and climate



ndian PSEs, along with GIZ, Cermany, a public benefit federal enterprise, has laun he first of its kind self second advance course on climate change and climate action to mable the Public Sector workflows to gain formal certification on the subject. The course is copported by International Climate Initiative (IKC) of the Germ Covernment and contifled by them along with SCOPE and GIZ. Germany SCOPE also warched its dedicated webgaage on Climate Action enabling PSEs to gain inform and engage in peer learning through a single portal.

The advanced course has been designed to develop an understanding about the witous aspects of Climate Change and possible actions available to combat the same

The Tribune

Dated: 7th January, 2025

Course on climate change

Standing Conference of Public Enterprises (SCOPE), an apex body of Indian PSEs, and GIZ have launched a self-paced certification course on climate change, supported by IKI, to help PSEs understand and combat climate issues.

THE TIMES OF INDIA

SCOPE and HSSC forge strategic MoU



Indian GRAPEVINE

SCOPE and HSSC Forge Strategic MoU to Enhance Skill Development in India's Hydrocarbon Sector



THE NEWSMAN OF INDIA

SCOPE and HSSC Forge Strategic MoU to drive skill development



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Hindustan Times @

Dated: 14th January, 2025





SCOPE and HSSC Signed as MuU to drive skill div ment initiatives within the hydrocarbon sector. The was signed between And Soots, DG, SCOPE and Man Governing Budy, RQ, and SK Bose, CEQ, HSSC.

कौशल विकास बढ़ाने को समझौता जापन पर किए हस्ताक्षर



नई दिखे। सार्दजनिक उदानों के स्थापी सम्मेशन और हादहोकार्शन क्षेत्र कीजान परिषद ने हाइड्रोकार्बन क्षेत्र में कीजान विकास पहली की आगे बढ़ाने के लिए एक समझीता झावन पर हरताक्षर किए हैं। एमओएम के महानिदेशक और अनुल सोबती और डीजी के सीईओ एसके बीस के बीच दोनों संगठनों के वरिष्ठ अभिकारियों की मीजूदगी में हस्साक्षरित समझीता प्राप्तन का उदेश्य हाइड्रोकर्शन और सहद्ध क्षेत्री में क्षीशत अंतर को पाटना और कार्यवत क्षमताओं को बदाना है।

PSUWATCH Dated: 13th January, 2025

SCOPE and HSSC sign MoU to enhance skill development in India's

hydrocarbon sector on of Citalersmosting (MoC) to drive



New Delhi: The Standing Conference of Public Enterprises (SCOPE) and Hydrocarbon Sector Skill Council (HSSC) have signed a Memorandum of Understanding (MoU) to drive skill development initiatives within the hydrocarbon sector. The MoU has been signed between Alul Sobti, DG, SCOPE and Member, Governing Body, ILO, and SK Bose, CEO; HSSC, in the presence of senior officials from both organizations, aims to bridge skill gaps and enhance workforce capabilities across the hydrocarbon and affled

News mantra

Dated 14th January 2005

SCOPE and HSSC Forge Strategic MoU to Enhance Skill Development in India's Hydrocarbon Sector



and between the start facts (AC NOOPE and Marches Communications 41), and the S.A. Blook (AC).

The Statesman

SCOPE, HSSC sign MoU

Standing Conference of Public Enterprises (SCOPE) and Hydrocarbon Sector Skill Coun-cil (HSSC) have signed a MoU to drive skill development initiatives within the hydro-carbon sector. MoU signed between Atul Sobti, DC, SCOPE and Member, Coverning Body, ILO, and SK



Bose, CEO, HSSC, in the presence of senior officials from both organisations, aims to bridge skill gaps and enhance workforce capabilities across the hydrocarbon and allied sectors. Speaking at the signing peremony, Atul Sobit highlighted that in todays rapidly evolving professional environment, skills are the most valuable asset and to remain competitive, individuals must con-tinuously upskill, reskill and unlearn outdated practices.



SCOPE और HESC ने भारत के हाइडीकार्बन क्षेत्र में कीशत निकास को बढ़ाने के तिए रचनीतिक समझौता ज्ञाचन घर हम्ताक्षर किए



(and another seasons fill to the harmonic pill of implied agest of the first the objects on such and seasons.)

Technology and synergy with CSR and ESG



Mudassir Azam Manager, CSR HPCL

In the digital age, technology has become the cornerstone of progress across industries, reshaping economies, societies, and daily lives. Among the most technologies transformative are Artificial Intelligence (AI) and robotics, which are driving efficiency, innovation, and sustainability. When aligned with Corporate Social Responsibility (CSR) and Environmental, Social, and Governance (ESG) frameworks, these advancements have the potential to create profound, long-term impacts.

Globally, organizations are increasingly realizing the power of integrating advanced technologies into their CSR and ESG strategies. By leveraging AI and robotics, companies can drive meaningful change while aligning with their business objectives.

1. Environmental Impact and Sustainability (E in ESG):

- AI for Energy Efficiency: AI systems optimize energy consumption in manufacturing plants and buildings by analyzing usage patterns and adjusting operations in real time, reducing carbon footprints.
- Robotics in Waste Management: Robots equipped with AI are revolutionizing



recycling by sorting and segregating waste more effectively, reducing landfill contributions and enhancing resource recovery.

 Climate Monitoring: AI-driven models analyze vast datasets to predict climate patterns, enabling proactive measures for disaster management and sustainability planning.

2. Social Upliftment (S in ESG):

- AI in Healthcare: AI-powered diagnostics tools improve access to quality healthcare in remote areas. Robotics-assisted surgeries enhance precision and patient outcomes.
- Education through AI: AI-based learning platforms provide

personalized education, bridging the knowledge gap in underprivileged communities.

- Job Creation and Skill While Development: automation raises concerns about job displacement, it also creates new opportunities training, robotics maintenance, and technology implementation, fostering skill development programs through CSR initiatives.
- 3. Governance and Ethical AI (G in ESG):
- Transparency in Operations:
 AI can enhance transparency
 in supply chains, identifying
 unethical practices or human
 rights violations.

- Data-Driven Decision Making: Companies can use AI analytics to track and report ESG metrics, ensuring accountability and compliance with regulatory standards.
- Ethical AI Practices: Adopting fair, unbiased, and inclusive AI systems ensures equitable outcomes for diverse stakeholders.

Technology in CSR

- Healthcare Access: Tech companies are deploying AI diagnostic tools in rural areas to address healthcare inequalities, exemplifying their CSR commitments.
- Agricultural Assistance: Robotics and AI-powered drones are being used to improve crop monitoring and yield in marginalized farming

communities.

 Disaster Relief: AI algorithms predict natural disasters, and robotic devices are employed in rescue missions, showcasing how technology can save lives under CSR initiatives.

Challenges and Ethical Considerations

- Data Privacy: Companies must address concerns about data misuse in AI systems, ensuring compliance with ethical standards.
- Job Displacement: Responsible CSR programs should focus on retraining and upskilling workers affected by automation.
- Equity and Inclusion: Ensuring AI and robotics benefit all segments of society, especially the underprivileged, is essential

for meaningful CSR and ESG impact.

The Future of Technology-Driven CSR and ESG

The integration of AI and robotics into CSR and ESG activities marks a new era of sustainable innovation. By harnessing these advancements, organizations can address pressing global issues such as climate change, inequality, and healthcare access while fulfilling their corporate responsibilities.

As businesses continue to evolve, technology-driven CSR and ESG strategies will not only create measurable impacts but also foster trust, goodwill, and resilience in a rapidly changing world. Companies that embrace this synergy are poised to lead the way in building a sustainable and inclusive future.



Indian Economic trend shaping the Steel industry



Sushim Banerjee CEO, Indian Iron and Steel Sector Skill Council

Economic Outlook

Despite being subjected to major shocks like the pandemic and an energy crisis, the global economy has exhibited resilience by clocking only 0.1 per cent lower growth compared to last year as per IMF projections. The Global growth is fairly stable with declining trend in Inflation

and unemployment rate. Global trade has been projected to grow by 3.5-3.6 per cent in 2024 and 2025. The recurrent geopolitical crisis at different parts of the world and the rise of protectionism by the advanced countries partly to safeguard the interests of domestic economies and partly to restrict imports from carbon intensive sources,

have introduced embargo on free movement of goods leading to enhanced logistic The World economic outlook projections made by Organisations for Economic Cooperation and Development (OECD) and International Monetary Firm (IMF) display these sentiments.

Table-1: World Economic Outlook: 2023-2025

Category	2023		2024		2025	
	IMF	OECD	IMF	OECD	IMF	OECD
World	3.3	3.2	3.2	3.3	3.2	3.3
USA	2.9	2.9	2.8	2.8	2.2	2.4
Germany	-0.3	-0.1	0.0	0.0	2.2	0.7
Japan	1.7	1.7	0.3	-0.3	1.1	1.5
UK	0.3	0.3	1.1	0.9	1.5	1.7
China	5.2	5.2	4.8	4.9	4.5	4.7
India	8.2	8.2	7.0	6.8	6.5	6.9
Russia	3.6	N.A	3.6	N.A	1.3	N.A
Brazil	2.9	2.9	3.6	3.2	2.2	2.3

South Africa	0.7 0.7	3.6 1.0	1.5
Turkiye	5.1 5.1	3.0 3.5	2.7 2.6
Vietnam	5.0 5.1	6.1 6.9	6.1 6.5

Sources: OECD: World Economic Outlook Dec'24

IMF: World Economic Outlook Oct'24

The differential in yearly estimates is more or less similar except the two cases marked in red. For instance, OECD projects a limited GDP growth in Germany in 2025, while it is quite optimistic with Vietnam's GDP movement in 2024. The differential in perception of headwind risks in specific year by both the Agencies may explain this. In the midst of low to moderate economic growth projected for various countries, it emerges that India would continue to observe a significantly higher growth rate in 2024 and 2025.

Capital Formation and Manufacturing: Critical Links

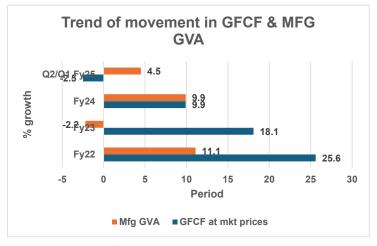
In 2024-25, India grew by 6.7 per cent in Q1 and clocked 5.4 per cent in Q2. As Indian GDP is estimated on both Expenditure approach, namely Private and Government Consumption plus Investment (Fixed capital formation) plus stock variation plus export minus Imports and Production/Income approach, it was found that there was a distinct deceleration in growth rates of Fixed Capital formation and in Manufacturing sector. The decline in GFCF rate was regular,

while Manufacturing GVA was down from Fy24. The following chart tabulates the last 3 years' growth rates in major economic parameters.

Both these important parameters had a mild setback from Fy22

It is a fact that persisting inflation has eroded the purchasing power leading to slow growth in demand for a number of commodity sectors and correspondingly it also partially dented the capacity building enthusiasm of the corporates. While the WPI growth

Chart 1: Movement of GFCF at Mkt Prices and Manufacturing GVA



till Q2 of Fy25 that may have impacted the GDP growth in Q2 of the current fiscal. It is noted that GFCF has received a big boost by higher budgetary allocation by the Government with equal participation from Internal and extra budgetary resources from the PSUs and other Government entities since Fy23 and it continued in Fy24 also. The same is yet to significantly crowd in Private investment in Infrastructure and Real Estate.

rate continued a gradual rise from 1.26 percent in April'24 to 1,89 per cent in November'24, the CPI rise was relatively more, from 4.83 per cent in April'24 to 5.48 per cent in November'24. Maximum share of price increase was accounted by food items and much less in the prices of manufactured items which suffered from demand contraction. The uncertainty in inflationary trend has made RBI take a rigid stand on reduction in interest rate.

Interestingly some of the high frequency indicators are exhibiting assured growth like tractor sales which is taken as indicative of rural demand. The passenger vehicle sales are lukewarm conditioned by personal loan costs. The domestic and international air cargo traffic

is going up. The GST Collections are exhibiting an upward movement compared to last year.

RBI has projected GDP growth at 6.8 per cent in Q3 followed by 6.5 per cent growth in Q4 of the current fiscal which yields an average growth of 6.4 per cent for Fy25 for India.

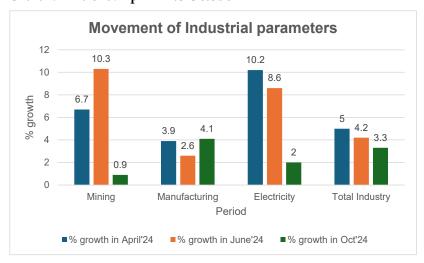
It would be interesting to analyse the sectoral growth of Indian economy in order to explain the subdued growth in manufacturing. The following table tabulates the behaviour of industry segments in the current year.

Table-2: Trend of Manufacturing sector and use based sectors

Category	% Growth in April'24	% Growth in June'24	% Growth in October'24
Mining	6.7	10.3	0.9
Manufacturing	3.9	2.6	4.1
Electricity	10.2	8.6	2.0
Total Industry	5.0	4.2	3.3
Capital Goods	3.1	2.4	3.1
Infra/Construction	8.0	4.4	4.0
Consumer Durables	9.8	8.6	5.9
Intermediate Goods	3.2	3.1	3.7

Source: MOSPI

Chart 2: IIP trend: April'24 to October'24



Source: MOSPI

Manufacturing sector grew by 5.5 per cent in Fy24 and hence the deceleration in growth rates between Fy24 and October'24 is gradual.

The Infra/Construction segment had enjoyed the benefits of public capex. The deceleration in Private consumption expenditure has affected the growth of consumer durable segment.

The share of Manufacturing in GDP in India varies between 15-17 per cent in the last few years against the earlier target of the government to take it to 25 per cent in GDP which seems unachievable. Some of the major economies of the world like China, South Korea, Japan, Vietnam have share of manufacturing in GDP at 26.2, 25.6, 20.0 and 23.9 per cent respectively.

The movement of the following sub-sectors in manufacturing during Fy24 till October'24 would capture the trend in manufacturing sector.

Table-3: Movement of sub-sectors in Manufacturing

Sl. No	Sub-sector in Manufacturing	Weight in Mfg.	% Growth in FY24	% Growth in April'24	% Growth in June'24	% Growth in October'24
1	Food manufacturing	5.3	1.5	(-) 12.7	3.0	4.9
2	Textile Manufacturing	3.3	0.2	0.3	(-) 1.7	1.1
3	Coke & Refined petroleum product manufacturing	11.8	3.9	4.9	(-) 0.8	5.6
4	Chemical Manufacturing	7.9	(-) 1,6	0.0	0.7	2.0
5	Pharmaceutical Manufacturing	4.9	8.0	3.1	(-)2.9	2.3
6	Basic Metals manufacturing	12.8	11.6	8.1	4.9	3.5
7	Fabricated Metal manufacturing	2.7	8.3	10.2	3.1	8.1
8	Electrical Equipment manufacturing	2.9	7.5	3.3	28.4	33.1
9	M&E manufacturing	4.8	6.4	1.0	1.5	(-)2.4
10	Motor vehicles manufacturing	4.9	11.6	11.4	4.1	(-)1.6
11	Other transport equipment manufacturing	1.8	13.9	17.4	8.5	17.4
12	Sub-total	63.1				

Source: MOSPI

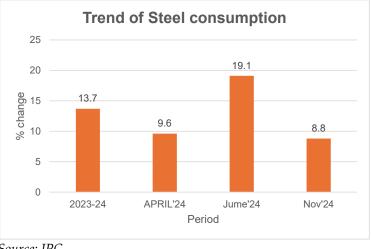
The major sub groups (Sl Nos. 1-11) accounting for around 63 per cent in Manufacturing have exhibited a fluctuating performance as seen from the indices of production during the period April - October'24.

While the sub-sector (Sl Nos. 6-7) summarise the trend in steel production which indicate a subdued trend, the (Sl Nos. 8-11) indicate the performance of the user segments of steel, namely Automobile, Railways, Shipping, aircraft and Electrical equipment sectors. The Electrical equipment and other transport (combined output of Railways, Shipping, aircraft etc) exhibit a growing performance.

Steel demand

The trend of movement in the Manufacturing sector has in turn impacted the trend of steel consumption as captured in the following chart.

Chart 3: % change in Steel consumption in FY24 and April-Nov'24



Source: JPC

Indian steel demand highly influenced by Capital expenditure and Consumption expenditure by both Government and private sources impacting Infrastructure, Real Estate and consumer segments goods as well as the growth in Manufacturing determining the output of Engineering industries (including MSMEs) and Capital Goods, Automobile, packaging and Defence industries. The journey of Indian steel industry in the next decade and beyond can therefore be shaped by Government initiatives in capex, monetary and fiscal policies, trade and tariff policies.

The recently announced PLI (Performance Linked Incentive) scheme for production Special steel, the Quality Control Order scheme, the Preference Government infra and other projects for domestically produced steel, the Scrap Processing policy etc. would facilitate and supplement the efforts of indigenous industry in its journey forward.

Indian Steel Industry and Decarbonisation

One of the major challenges posed for Indian Steel industry refers to its engagement in process of carbon emission reduction. Steel belonging to hard-to-abate group accounts for nearly 9-10 per cent of industrial carbon emission in India. To address the challenge, Steel ministry has classified the industry into 3 groups.

A) Five star: steel plants with

- carbon emission lower than 1.6t/tfs (tonne of finished steel).
- B) Four Star: steel plants with carbon emission exceeding 1.6t-2.0t/tfs.
- C) Three Star: Steel plants with carbon emission between 2.0-2.2t/tfs.
- D) No Green rating: All steel plants with CO2 emission higher than 2.2t CO2/tfs.

Large capacity steel plants have been adopting various technologies to reduce use of Fossil fuel in steel making, for instance, more use of PCI in BF, use of Biochar, biomass, Natural Gas to reduce CO2 emission. Injection of Hydrogen in BF, use of Renewable energy (Solar), Carbon Capture Utilisation and Storage (CCUS). The plants in the SME sector have been adopting various energy efficiency measures including setting up of upgraded Ladle Furnaces with Reheating facilities and Continuous casting facilities, use of more Scrap for production of DRI (Direct Reduced Iron).

Steel plants in India have a great potential for replacement of fossil fuels with Green Hydrogen. With the declining costs of renewable energy and Electrolysers, it is likely that Green Hydrogen based Steel becomes cost competitive in next few years. The viability of GH based steel making (BF or DRI-EAF route) has been brightened by provision of carbon credits and imposition

of market barriers on carbon intensive steel. European Union is implementing CBAM (Carbon Border Adjustment Mechanism) from 2026 beginning on all steel imports. The internal monitoring CO2 emission by steel plants in India is therefore a right step and would help and support Indian steel industry in its efforts at Decarbonisation.

Green National Hydrogen Mission has allocated Rs. 455 crores for Pilot projects in steel industry. The two areas that have been identified in Pilot projects refer to a) Use of Hydrogen in BF to reduce fossil fuel and b) Hydrogen injection in vertical shaft based DRI making unit to partially substitute Natural Gas (NG)/ other reducing Gas and gradually raise its proportion to maximise use of hydrogen and to utilize the DRI for steel making through Electric Arc Furnace and Induction Furnace.

The green transition increasingly requires a specific subset of skills and will bring reallocation. Although the impact of the green transition on the total number of jobs is expected to be modest, sizeable labour reallocation from polluting to green sectors will be necessary. Workers with higher levels of education are more likely to hold green jobs than those with middle or lower levels of education. Low- and medium skilled workers face significant skill gaps, requiring more retraining.

The diffusion of Artificial

Intelligence may further affect labour and skill demand in different ways. On one hand, AI may automate a wide range of existing tasks, like production and other Operational and Maintenance areas in steel plants. As a general-purpose technology, AI is expected to diffuse across many industries, with knowledge-intensive services such as finance, advertising, consulting and ICT likely to be most affected. On the other hand, in many industries AI is expected to complement rather

than replace human labour, at least in the medium term, as it will create new tasks and potentially generate new jobs. There is going to be more demand for Science, Technology, Engineering and Mathematics (STEM) graduates in various disciplines where AI based technologies (AI, Machine Learning, Industrial Internet of Things) Augmented Reality, Virtual Reality (AR and VR) can be applied.

Decarbonisation by steel industry in India would require substantial

government subsidies. RBI has clearly mentioned in its report that the commitment by advanced countries in COP29 for US\$ 300 bn per annum for climate action projects in developing countries by 2035 is woefully short of the demand for US\$1.3 trillion. While substantial subsidies would be essential for carbon emission efforts, a limited beginning by Indian steel industry would take the country much ahead of others in the group.

Personalia



Shri Brijendra Pratap Singh assumes charge as CMD, National Aluminium Company Ltd. (NALCO).



Dr. P. N. Sharma assumes additional charge as MD, Rajasthan Electronics & Instruments Ltd.



Shri Gunjan Kumar Sinha assumes charge as Director (Personnel), Eastern Coalfields Ltd.



Shri Manish Raj Gupta assumes charge as Director (Technical, Projects & Raw Materials), SAIL.



Shri Anandji Prasad assumes charge as Director (Technical/Project & Planning), Western Coalfields Limited.



Shri Achyut Ghatak assumes charge as Director (Technical), Coal India Ltd.



Shri Surendra Singh Kshatriya assumes charge as Director (Finance), Mineral Exploration and Consultancy Limited (MECL).

Role of CPR & COLS in Mines Safety



Dr. Nina Apra*

INTRODUCTION

Mining Industry, as other industries is not devoid of risks of life threatening accidents.

Coal India Ltd. (CIL) has framed a well-defined "Safety Policy" to ensure safety in all mines and its establishments. CIL has already established a multi- disciplinary Internal Safety Organization (ISO) in all subsidiaries for the implementation of CIL "Safety Policy".

Included in the SOP rules and directives is the First Aid Training of which Cardio-Pulmonary Resuscitation (CPR) is one of the important constituents. COLS (Compression Only Life Support) is a variant of CPR that is researched and proven to be more useful in saving lives especially in a nation as India.

WHAT IS CPR?

CPR – or Cardiopulmonary Resuscitation – is an emergency lifesaving procedure performed when the heart stops beating. Immediate CPR can double or triple chances of survival after cardiac arrest.

It is used to revive an unconscious, unresponsive person whose pulse

and breaths are not detected. It can be performed by any bystander, even a lay person (non medical personnel).

COLS is a variant of CPR where chest compressions only are provided to save lives.

Major obstacles to successful CPR facility development in India include a large population, 70% of which resides in the rural areas, high rate of illiteracy and poorly developed emergency medical services/ambulance services. In addition, due to cultural beliefs, majority of people are hesitant to perform mouth-to-mouth resuscitation. The skill is difficult to acquire and its inappropriate use may result in more harm.

Considering these limitations and recent developments, this practice guideline of CPR has been developed by the Resuscitation Council, formed by the Indian Society of Anaesthesiologists (ISA) for resuscitating cardiac arrest victims outside the hospital by layperson – the compression-only life support (COLS). The aim of the COLS guideline is to provide a stepwise approach in accordance with core links for an optimal outcome.

Compression-only CPR is as effective as conventional CPR for cardiac arrest at home, at work or in public.

CPR AND COLS DEMONSTRATIONS AND TALKS IN CHIRIMIRI AREA 2024

I proudly affirm that Chirimiri Area, has been the pioneer in entire SECL to conduct CPR & COLS Training sessions, demonstrations and talks for workers, executives and their families consecutively in years 2023 and 2024.

I consider myself fortunate to be the only trained demonstrator and instructor. I solely conducted about 15 sessions covering all the shifts of all the mines of Chirimiri, covering approximately 1000 to 1200 people in 8 days' duration in June '24 besides covering about 500 in the year 2023. I have taken sessions of first aid teams as an in -house trainer in last few years; setting more impact on life saving skills.

^{*}Anaesthetist & Deputy Chief Medical Officer, Regional Hospital Kurasia, Chirimiri, South Eastern Coalfields Ltd (SECL).

Core links in adult Compression Only Life Support (COLS):

is defined as a sequential series, when more than one trained

The steps of COLS are described in the following sections:



• Early recognition and activation

- Early chest compression
- Early transfer.

Once the rescuer recognizes an unresponsive victim, he/she should call for either an ambulance or any other layperson so that the victim can be transferred for advanced medical management at the earliest. Thereafter, the rescuer should initiate chest compressions.

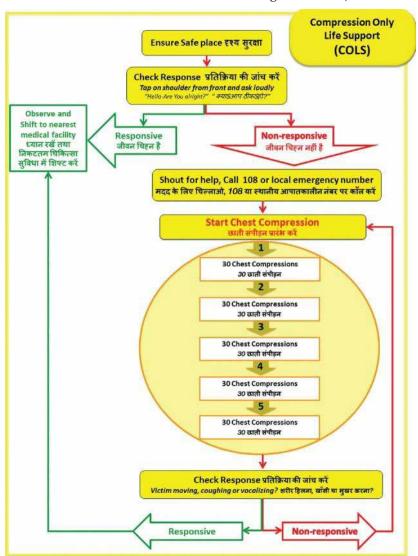
Steps for Adult Compression Only Life Support (COLS):

The adult COLS is a simple, easy to remember and perform cardiac resuscitation by minimally trained person, unable or unwilling to perform rescue breaths. It is the preferred algorithmic approach by layperson who witnesses a victim collapsing or comes across a victim who has collapsed. It can even be performed by family members who witness collapse of their near and dear ones. The method can be easily taught and training can also be imparted telephonically. Optimal outcomes with COLS can be ensured by early recognition of victim with cardiac arrest, activation of ambulance services, early application of effective chest compression and finally early transfer of the victim to the nearest hospital. COLS has a series of predefined steps which need to be followed sequentially. Although the COLS algorithm

rescuer is available, the steps may be done simultaneously. The main activity of this algorithm is effective chest compression which should be performed continuously till help arrives.

Safe place for resuscitation

The safety of the rescuer is paramount. In panic situations, mishaps can happen leading to injury to rescuer, if the place is not safe for management of victim with cardiac arrest. It is essential that the rescuer looks around the site for any type of imminent danger. If it is safe, then rescuer should proceed to further steps of COLS. In case any imminent danger is perceived (such as risk of accident, fire, electrocution, drowning and riots), then the



rescuer should activate the concerned authority or seek help from the available people to shift the victim to a safe place. The help of police personnel, fire brigade or lifeguard (for victim in water bodies) needs to be taken in unsafe sites by calling them and providing them all the information of the site. The resuscitation should be initiated, as soon as feasible, while this activity of information is being undertaken.

Victim's response check

Once the victim has been shifted to a safe place, the victim's response should be checked for further actions. The rescuer should come from front, facing the victim face, tap on the shoulder, speak loudly (e.g., HELLO-Are you alright?) in a language the victim could understand, to elicit the response from the victim. The victim should not be shaken nor neck movements done (like tapping on face) as it could cause further harm, in case cervical spine injury is also present. If the patient responds either by verbal response or by purposeful movement, or is breathing normally, then cardiopulmonary arrest is unlikely. Such victim needs to be monitored constantly and shifted to nearby medical facility at the earliest for further evaluation and management. If no response is elicited, the victim may be having cardiopulmonary arrest and would require further help. The emergency medical system must be activated for early transfer of the victim to nearby hospital.

Call for help, inform emergency medical system or ambulance service

If the rescuer is alone, then he should activate the emergency medical system or ambulance services himself for early transfer of the victim for definitive treatment. Since availability of mobile phone is common, it is suggested that the rescuer should call from his mobile, with speakerphone on, and continue following the steps of COLS. The rescuer should be aware of local emergency contact details. In India, till the acceptance of a uniform number for pan-India, local emergency number should be called by the rescuer.

Early chest compression

Once cardiac arrest is recognized, the rescuer should place the victim supine with his back over a hard flat surface or over the ground and start providing chest compression immediately. Cycles of 30 chest compressions should be initiated. This guideline suggests identification of center of chest by identifying the xiphoid process (lowest end of breastbone) and keeping heel of the hand 2 fingers above it for chest compression.

Technique

rescuer should start compressions over the chest. The hands should be placed on the lower half of the sternum (centre of the chest) and compress at a regular rhythm. The effective chest compression should be started with 30 compressions in one set. The rescuer should chant the count loudly 1,<u>2</u>,<u>3</u>....,30 to maintain the speed and number of chest compressions. The rate of chest compressions should be 120/min and compression depth should be at least 5 cm but not more than 6 cm. The rescuer should allow complete chest between compressions without lifting hands from the chest but should not lean on the victim's chest.

There should be minimum

interruptions during chest compressions.

Duration for compression-only life support

If the rescuer is alone, he/ should continue chest compression for 5 consecutive cycles (30 compressions in each) or more till there is a sign of return of spontaneous circulation (movement of any part of the body, coughing or vocalizing), the rescuer gets exhausted or medical help arrives. If there is more than one rescuer, then they should exchange hands after every 5 cycles till there is a sign of return of spontaneous circulation or medical help arrives. The aim of COLS is to provide continuous uninterrupted chest compressions to improve the survival and neurological outcome.

Lateral position of victim after return of spontaneous circulation

If the victim is revived or there is return of spontaneous circulation, then he/she should be placed in either left or right lateral position.

Transfer of the victim for better medical help

The victim needs definitive medical care and management of the underlying aetiology of the cardiopulmonary arrest and so should be shifted to nearest health-care facility. The COLS needs to be continued till medical help arrives (ambulance service) or victim is handed over to a medical care facility or victim becomes responsive (moving, coughing or vocalizing).

CONCLUSION

Cardiopulmonary resuscitation (CPR) involves development of skills which are relevant to the practice of medical specialities. Inappropriate and delayed resuscitation may result in adverse outcomes. The mortality

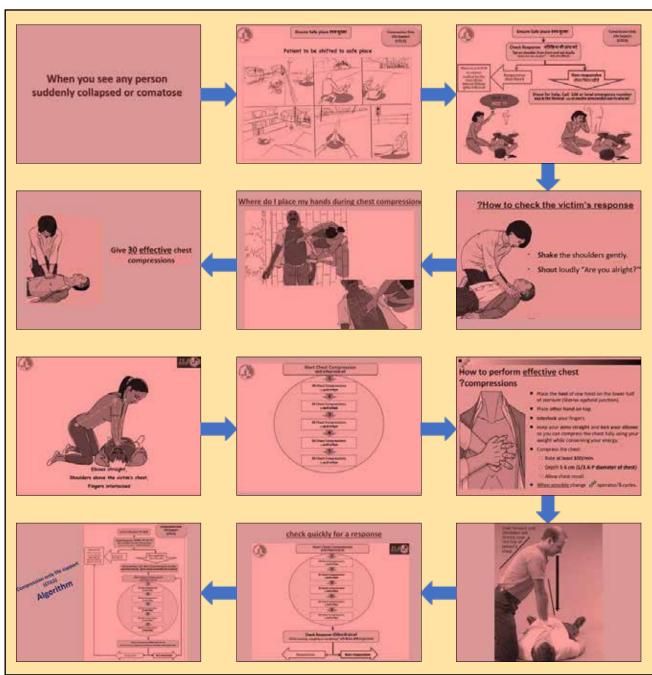
in sudden cardiac arrest in India is approximately 4280/100,000

Seventy per cent of out-of-hospital cardiac arrests occur at home and 90% of people who suffer out-of-hospital cardiac arrest die. Every minute's delay in resuscitation of the cardiac arrest victim reduces

the chance of survival by 7%–10%. Unfortunately, immediate help is received by only about 46% of people experiencing out-of-hospital cardiac arrest. However, if CPR is performed immediately by someone nearby, the chance of survival of victims can double or triple.

Considering the limitations in emergency medical services in India and the advantages of compression-only CPR, establishing COLS as a resuscitation algorithm for layperson/bystander is the need of the hour.

PICTURES OF SEQUENTIAL STEPS



Duration for compression only life support

- Continue chest compression for 5 consecutive cycles (50 compressions in each)
- if there is more than one rescuer, then they should exchange hands after every 5 cycles
- Till there is a sign of return of spontaneous circulation (movement of any part of the body, coughing or
- The aim of COLS is to provide continuous uninterrupted chest compressions to improve the survival and neurological outcome

How Long Can I Continue Doing COLS?

- * Till medical help or a trained rescuer arrives.
- * Till victim is revived (showing signs of life)
- * Till you (the rescuer) is exhausted and cannot do any more compressions.
- * If the place you are in becomes unsafe.

When do I not do COLS at all?

- * If the patient is responsive (awake, talking, breathing
- normally)
 * If the body has become stiff (suggesting signs of

Last Steps

- COL5 needs to be continued till medical help arrives (ambulance service)
- · Victim needs definitive medical care and management of the underlying aetiology of the cardiopulmonary arrest
- Transfer of the victim for better medical help and victim is handed over to a medical care facility or victim becomes responsive (moving, coughing or vocalizing

What is to be done after return of spontaneous circulation

If the victim is revived or there is return of spontaneous circulation, then he/she should be placed in either left or right lateral position

Target Groups

COLS apply to bystanders, who do not know CPR well, or are reluctant to perform rescue breaths

- Schools and Colleges
- · Public Spaces
- · Residential Places

Be a Life Saver

Every Citizen is a Life Saver











From Kurukshetra to the Boardroom: Strategic Thinking Lessons from Mahabharata



Debasis Satapathy CGM - HR, **NBCC**



Introduction

Strategic thinking is the cornerstone leadership, enabling individuals and organizations to navigate complexities, foresee challenges, and create pathways to success. modern While management principles emphasize planning, execution, and foresight, the ancient Indian epic, the Mahabharata, offers a treasure trove of insights into the art of strategy. This timeless narrative is not just a tale of strategy and ethics; it is a profound guide to understanding the dynamics of power, conflict resolution, and long-term planning.

From Krishna's unparalleled diplomatic strategies Yudhishthira's adherence to dharma amidst turmoil, the Mahabharata demonstrates the intricate interplay of vision, adaptability, and decisionmaking. It teaches us that strategy is not merely about achieving victory but also about aligning actions with purpose, ethics, and sustainable outcomes.

This article explores key moments from the Mahabharata that exemplify strategic brilliance translates them actionable lessons for today's leaders. Whether you are steering corporate boardroom

managing personal challenges, the epic's wisdom serves as an example, offering timeless principles to enhance strategic thinking in any domain.

Strategic Brilliance: Krishna's Competencies in the Mahabharata

Mahabharata, an ancient Indian epic, serves as a reservoir of timeless wisdom, offering invaluable lessons for modern professionals. management In these lessons, we explore into the characters of this epic, highlighting the competencies they personify and the insights they provide for contemporary

leadership. From Bhishma's Krishna's persistence to strategic expertise, each character represents a unique competency essential for effective management. Yudhishthira's integrity, Arjuna's decisiveness, Duryodhana's ambition offer actionable insights into leadership, decision-making, and team dynamics. Here are some of the competencies Krishna displayed, offering valuable guidance for success in the dynamic dominion of modern management. They are open mindedness, Result orientation, Proactive, strive for excellence, Problem Decision solving, making, Strategic thinking, Ambiguity Management, Innovative thinking, Effective communication, Networking, Effective Presentation, Negotiation, influencing skill, Self-confidence, Optimism, Resilience, Accountability, Perseverance, Critical thinking, Planning and organising, Active listening, Establishing Empathy & Conflict Management. Krishna was a master at strategic thinking, which was one of his greatest skills. When Duryodhana and Arjuna asked for his help in the Mahabharata war, Krishna cleverly gave them options. He offered two options - In one hand he himself who would never pick up arms and ammunitions and in the other hand his powerful He Narayani sena. knew Duryodhana would pick the army because he didn't understand leadership in war. Arjuna, on the other hand, chose Krishna as his charioteer because he knew Krishna's strategic abilities would

be a huge advantage.

Management Lesson

Mahabharata teaches us valuable lessons that apply to today's management. Its characters show different skills that leaders need. Krishna was really good at thinking ahead, especially during the war. He gave Duryodhana and Arjuna choices, knowing Duryodhana would pick his army and Arjuna would want his advice. This shows how smart he was in planning ahead. So, just like Krishna's wisdom helped in ancient times, today's leaders can learn from his strategic thinking to succeed in their own challenges.

Strategic Thinking - Krishna eliminated Bhishma

Epic - On the 10th day of the war, Pandavas had a brainstorming session with Krishna on how to win the war. Krishna suggested that, let Yudhishthira Bhishmapitamah and return his blessings of victory. He argued, "What is the use of his blessings, if he himself stands on the way of his fulfillment?" If he has given you the blessings of victory, then he must also protect it. Bhishma fully knew that he would oppose you in the war & he has the boon of wishful death. He also knew that he is the chief of Kaurav army and the Pandavas cannot win till he dies. Why then did he bless you with victory? Based on Krishna's advice, Yudhishthira and Arjuna went to Bhishma, explained him on his blessings. Bhishma said "Yes you are correct, but I do not take back once I have given". Hence the only way to win the war is to ensure my removal from the battlefield and that can happen if a woman comes before me. In this process he gave them the clue of how he is to be removed and Shikhandi was brought to the battlefield. On seeing Shikhandi, Bhishma surrendered his weapons. The process of Krishna's advice to remove Bhishma from the battlefield, executed with complete precision without bloodshed.

Management Lesson - Strategic thinking is defined as the individual's capacity for thinking conceptually, imaginatively, systematically, opportunistically with regards to the attainment of success in the future. Strategic thinking often requires assessing a situation or process and then breaking it down into steps so that one can choose the best approach towards solving a problem. Krishna was a good strategist having critical & innovative thinking. He could understand that Pandavas in no way can match to Kauravas looking to the number of soldiers and the warriors. Moreover, they cannot afford to have large scale bloodshed to fight against Kauravas & that too with Bhishma. Hence the strategy was to eliminate him from the battlefield. Hence, he proposed to give back Bhishma his blessings of winning the war. Krishna was well aware of the fact that, if a woman would come in front of Bhishma, he would renounce the weapons. Secondly, he was sure that Pandavas were extremely affectionate to Bhishma. Hence keeping in mind these two facts, he was certain that if Yudhishthira would request

Bhisma to take back his blessings victory, Bhisma would explain the path of victory. Once Bhishma is out of battlefield, the objective of winning the battle would be achieved without much bloodshed. Similarly, a leader needs to understand that to overcome all the challenges, not necessarily a huge effort is required. Some of them could be addressed by just having a strategy backed by clear understanding of the problem and its well-articulated critical thinking.

Shakuni as a strategic thinker

Epic-In the war between Pandavas and Kauravs, Duryodhana was baffled to see heavy causalities and asked Shakuni, "What to do? He also said Arjuna's death is essential and Bhisma would not kill him. I would kill Bhisma myself, if I could appoint another commander of our army. I must win this war and I cannot win without Karna's help. If Arjuna is the problem, then Karna, is the answer. If you want Arjuna to be nullified, then think of who can be appointed as commander instead of Bhishma Pitamah". Shakuni immediately responded. He said "We need not even think about this. If Pandavas wish to win this war, they must find a way to eliminate Bhisma Pitamah. Then why should we do their work? Besides, Krishna is with them. Let them think of a solution. They are also confronting the same problem of how to eliminate Bhishma."

Management Lesson - Strategic thinking is defined as the individual's capacity for

thinking conceptually, systematically, imaginatively, and opportunistically with regard to the attainment of success in the future. Shakuni was a good strategist having critical & innovative thinking. He could understand that sooner or later both Kauravs and Pandavas would be convinced eliminate Bhisma. Then why should Kauravs take the blame of eliminating Bhisma? Let Pandavas do it. Similarly, a leader needs to understand that to overcome every challenge, not necessarily he needs to act and respond. There are several issues, the solution of which is to buy time, so that the problem would either subside on its own or someone else would address the issue. In the business context, the competitors may take the pain to eliminate a common enemy.

Strategic wisdom – Drona's management mastery

Epic - During Mahabharata war, Drona strategized to capture Yudhishthira by keeping Arjuna away from the battlefield. As per the strategy, king Susarma taunted Arjuna and spoke terribly harsh about GANDIVA. In retaliation Arjuna chased Susarma to kill him and in the process both of them went out of the battlefield. Duryodhana said "I do not see Arjuna's banner & he is far away from us. This is the right time to arrest Yudhishthira." Shakuni also said "There is no doubt that Susarma has taken away Arjuna far away and there is no way Arjuna can fight now". Karna said "I do not understand why Susarma who is

such a great warrior has run away instead of fighting? However, this is the right time to capture Yudhishthira." Drona said "let Susarma go a little further away, so that there is no possibility of Arjuna's return." Karna said "why are you so scared of Arjuna?" Drona said "I am not scared of Arjuna, but I know him well. I do not want him to know my strategy of CHAKRAVYUHA". Though all the team members including Duryodhana, Shakuni, Karna were of the opinion of capturing Yudhishthira, Drona deferred his decision & as a result he did not venture into capturing Yudhishthira. This was a matured strategic decision; else Arjuna could have come back to save Abhimanyu from the CHAKRAVYUHA."

Management lessons - Drona's leadership style is a balanced mix of strategic thinking and authoritative decision-making. He proves to be a calculated and insightful leader, considering the long-term implications of his actions and maintaining control over the situation to achieve his goals. He also demonstrates a clear strategic vision bv formulating a plan to capture Yudhishthira ensuring and that Arjuna is kept away to prevent any interference. His focus was on achieving a longterm objective (capturing Yudhishthira) and he carefully considered the consequences of his actions before making a move. He was open to hearing the opinions of his team members, though ultimately, he took the decision to wait and not capture Yudhishthira immediately. His decisiveness was based on his understanding of the situation and his strategic objectives. He is seen as the leader with a higher level of knowledge and expertise, and the other members of the team look up to him for guidance and direction. Drona's decision to let Susarma go further away from the battlefield, despite the majority of his team urging to capture Yudhishthira, showcases his authority & wisdom in the decision-making process.

Duryodhana as a Strategic Thinker

Epic - During Mahabharata war, Drona expressed his inability to arrest Yudhishthira, as long as Arjuna is in the battlefield. Duryodhana said "I agree with Drona that with Arjuna guarding Yudhishthira, we cannot capture him". So, he gave the task of separating two brothers to the King Susarma of the kingdom of Trigad. As per the strategy, king Susharma & his brother teased Arjuna to trigger him to fight with them. They deliberately spoke ill about GANDIVA and asked Arjuna to throw it away.

They asked Arjuna, if he dared to fight with them. Arjuna retaliated and chased them far away. When Duryodhana asked Drona to arrest Yudhishthira, he said "Arjuna is still close enough to protect Yudhishthira". Next day Drona created Chakravyuha to which only Arjuna and Krishna had the expertise to enter as well as to come back. As per the strategy, "Both the Trigad brothers after teasing Arjuna, started fleeing from the battlefield without fighting. When Arjuna and Krishna, moved extremely far away while chasing Trigad brothers, Abhimanyu teenaged son of Arjuna entered Chakravyuha and mercilessly killed by Kauravas.

Management Lessons – Strategic thinking is a crucial management skill that entails considering the bigger picture, anticipating consequences, and formulating plans accordingly. Duryodhana's actions demonstrate the significance of long-term planning and the ability to identify and exploit vulnerabilities. The incident involving Duryodhana's

strategic manoeuvre in Mahabharata war provides a profound management lesson on the power of strategic thinking. Duryodhana's objective was to neutralize Arjuna, and he realized that his absence would weaken Pandava's strength. By exploiting situation, Duryodhana diverted Arjuna and Krishna to a distant location through the king of Trigad. This showcases the importance of analyzing opponents' strengths weaknesses to devise effective strategies. Through meticulous strategic planning of diverting Krishna & Arjuna, Duryodhana could execute the elimination of Abhimanyu, a strong warrior of the opponent. Similarly, in the corporate world, a leader needs to understand that to overcome all the challenges, not necessarily a huge effort is required. Some of them could be addressed by just having a strategy backed by clear understanding of the problem and its well-articulated critical thinking & execution with precision.

SCOPE & GIZ Launched the "Advance Course on Climate Change and Climate Action for PSEs"

Frequently Asked Questions

Log on to SCOPE's Official Website - www.scopeonline.in to view.

India's Public Sector Enterprises contributing (PSEs), around 12% to the national GDP and employing 1.5 million people, are strategically positioned to drive impactful climate action. Operating in key sectors like petrochemicals, oil & fertilizers, minerals (e.g., coal, iron & steel), and construction (e.g., cement), PSEs play a vital role in national development. However, sectors like iron, steel, oil, coal, and gas, which are "hard to abate," release significant greenhouse gases (GHGs), making decarbonization both critical and challenging. Balancing their essential role in development with reducing emissions is imperative achieving sustainability goals.

To support PSEs in climate mitigation, the Standing Conference of Public Enterprises (SCOPE) partnered in 2019 with Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH to address climate change, sustainability, climate finance, and carbon markets. Together, they have worked to raise awareness, provide highlight guidance, and PSEs' efforts combating climate change. Recognizing the challenges faced by PSE professionals, including gaps in understanding climate science, mitigation strategies, and adaptation frameworks, SCOPE and GIZ are focusing on capacity

building to equip professionals with the skills needed to lead transformative initiatives in energy, manufacturing, and other critical sectors.

encouraging individuals from all fields to enhance their knowledge on climate change and climate action through this program.



To address these challenges, a specialized course on Climate Change and Climate Action has been developed under the "Capacity Enhancement of Public Sector Enterprises (PSEs) in India on Climate Action" project by SCOPE and GIZ. This course aims to bridge knowledge gaps, foster leadership, and empower PSEs to act as catalysts for sustainable change, ensuring resilience, competitiveness, and alignment with India's climate goals.

This document includes Frequently Asked Questions to explain the course objectives and address basic queries,

FREQUENTLY ASKED QUESTIONS

Who developed and funded this course, and why?

The Advanced Course on Climate Change and Climate Action for PSEs was developed by the Standing Conference of Public Sector Enterprises (SCOPE), the apex body of Indian PSEs, and Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH under the Indo-German Support Project for Climate Action in India. The course has been created to equip public sector professionals with expertise in climate science, mitigation strategies,

adaptation frameworks, enabling them to align the critical role of PSEs in driving national economic growth with India's climate commitments and address the complex challenges posed by climate change.

When was the course launched?

course was officially launched on November 28, 2024, in Goa, in presence of several eminent dignitaries, including Shri Atul Sobti, DG, SCOPE; Dr. Alexander Fisher, Director of the Indo-German Climate Project at GIZ, India; Shri Brajesh Kumar Upadhyay, CMD of Goa Shipyard Limited and Vice Chairman of SCOPE; Shri Prabal Vikram Singh, Country Director of OPM India and OPM Bangladesh; Shri Soumik Biswas, Team Leader (Consortium of CEEW, OPM, and PCG); and senior executives from the public sector fraternity.

professional background or department. Whether you are a climate professional, a policymaker, or someone keen to learn about climate action, mitigation strategies, and sustainability, you can enroll in the course. Upon successful completion, all participants will receive a certificate, regardless of their area of expertise or organizational affiliation.

Are there any prerequisites for taking this course?

This course does not have any specific prerequisites, making it accessible to a wide range of participants. No prior specialized knowledge is required, as the course begins with fundamental concepts and gradually builds upon them through engaging modules, interactive discussions, and quizzes. However, having a curiosity to learn about climate

leaders, particularly from PSEs, with the knowledge and skills needed to effectively tackle the challenges of climate change. By providing updated knowledge on climate change and climate action through interactive modules, quizzes, and a certificate of completion, the course not only enhances participant's expertise but equips executives to embed climate action into their business strategies, strengthening their ability to lead the transition toward a sustainable and resilient future for their organizations and the nation. Additionally, course completion provides participants with exclusive opportunities further for professional development, such as preferential access to SCOPE's initiatives, including exchange visits, seminars, and specialized training programs.



When did the course commence?

The course opened for registration from January 20, 2025.

Who can enroll in this course?

This course is primarily designed for executives working within Public Sector Enterprises (PSEs) to enhance their knowledge and skills in addressing climate change challenges. It is open to anyone with an interest in the subject, regardless of their action strategies and solutions would certainly be beneficial.

What is the course fee?

The course is completely free of charge with no hidden costs. This is an excellent opportunity for individuals to gain valuable skills without financial burden.

What is the significance of this course?

This course is strategically designed to equip industry

Where can I enroll for this course?

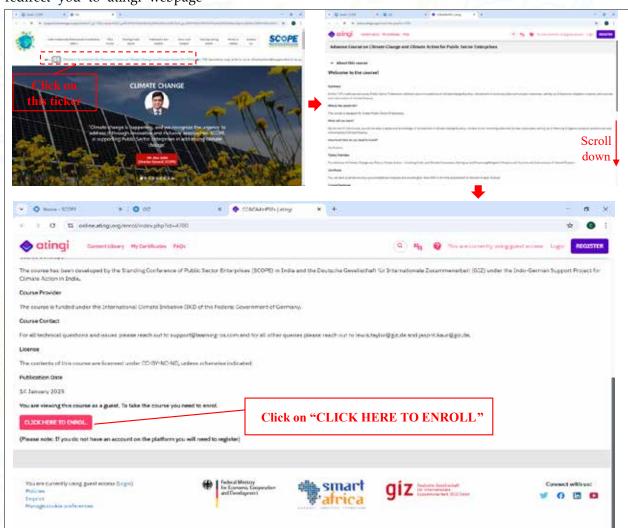
Visit the SCOPE website i.e., https://scopeonline.in/ and click on the ticker "SCOPE & GIZ launched a dedicated Online Knowledge Platform (OKP) and the Advance Course on Climate Change and Climate Action for PSEs". Alternatively, click on "Climate Change" under "Our Domains" menu tab.

Clicking on the ticker or "Climate

Change" tab will redirect you to the SCOPE's online knowledge platform on climate action. At the Online Knowledge Platform (OKP), click on the ticker "Click here to enroll for the Advance Course on Climate Change and Climate Action for PSEs". It will redirect you to atingi webpage where you can enroll for the course. On this page, scroll down and click on "CLICK HERE TO ENROLL" after which you will be able to enroll and access the course. You can begin the course immediately after your enrollment.

What is the course structure?

The course is organized into five modules, with each module further divided into chapters. At the end of each chapter, there are questions for review. Once all the chapters within a module are completed, a final quiz will



Module 1 Chapter 1: Are you ready? **Chapter 2: Training Objectives Introduction to Climate** Chapter 3: How does this training work? **Action for PSEs Chapter 1: Scientific Perspective** Module 2 **Chapter 2: Economic Perspective Foundations of Climate Chapter 3: Political Perspective Change & Policy Final Quiz Chapter 1: Introduction Chapter 2: Accelerating Climate Action Chapter 2.1: Measuring Footprint & Risks** Module 3 **Chapter 2.2: Set Targets & Pathways** Climate Actions – Involving Chapter 2.3: Action Plan to Reduces & Offset **Public and Private Sectors Chapter 2.4: Finance Climate Action** Chapter 2.5: Monitoring, Disclosure & Reporting **Final Quiz Chapter 1: Carbon Markets Chapter 2: The Steps Chapter 2.1: Initial Project Assessment Chapter 2.2: Project Design Document & Finance** Module 4 **Chapter 2.3: Stakeholder Consultation Setting Up & Financing Chapter 2.4: Validation Mitigation Projects Chapter 2.5: Registration Chapter 2.6: Recurring Actions** Chapter 2.7: Carbon Project for the Paris Agreement Chapter 3: What makes a good carbon off-set project **Final Quiz Chapter 1: Introduction & Key Concepts** Module 5 Chapter 2: Global Landscape of Climate Finance **Sources & Instruments of Chapter 3: Sources of Climate Finance Chapter 4: Climate Finance Instruments Climate Finance Final Quiz**

be conducted to conclude the module.

What is the course content?

Each module builds on the last, offering a holistic approach to tackling climate challenges.

 Module 1 serves as an introduction to the training, offering an overview of the course objectives, structure, and guidelines for engaging in interactive discussions.

Module 2 lays the foundation for understanding climate change through diverse perspectives. By the end of this module, you will have a clear grasp of the basics of climate science and the rationale behind international interventions. You will also become familiar with political responses to climate change, including various policy instruments. The module is divided into three chapters: Chapter 1 covers the scientific basis of climate change, Chapter 2 explores its economic

impacts, and Chapter 3 delves into the political discourse surrounding climate change.

- Module 3 focuses on strategic approaches to accelerating climate action. It consists of two chapters, with the second chapter divided into five sections, covering topics such as measuring carbon footprints, setting targets, financing, monitoring, and The reporting progress. module introduces the Corporate Carbon Strategy Framework, providing detailed guide for companies to design and implement effective climate strategies.
- Module 4 provides an indepth understanding carbon markets. marketbased mechanisms, and the steps involved in developing climate mitigation projects. It also explains what makes strong carbon offset project. Chapter 1 introduces carbon markets and the opportunities they offer for carbon credits. Chapter 2 outlines the steps involved in creating a mitigation or carbon offset project, and Chapter 3 discusses the key characteristics of a successful offset project.
- Finally, Module 5 explores the landscape of climate and sustainable finance. Through its four chapters, it introduces different funding sources, stakeholders, and financial instruments available to support climate action projects, including green bonds and other innovative tools.

What is the course duration?

The course is designed to take approximately 12.5 hours to complete, offering a

thorough and in-depth learning experience. However, it is self-paced, allowing participants to progress through the material at their own speed and convenience, making it flexible to accommodate varying schedules and commitments. This flexibility ensures that learners can balance their professional and personal commitments while gaining valuable knowledge.

What is the maximum time allowed to complete the course?

Participants are required to complete the course within 8 weeks from the date of enrollment. This timeframe offers a balance between flexibility accountability, ensuring that learners have ample time to engage with the course material while maintaining a structured deadline to stay on track and achieve their learning goals. This ensures timely completion while encouraging consistent progress throughout the duration of the course.

Will I receive a certificate upon course completion?

Yes, a certificate of completion will be awarded to you once you successfully complete all the modules of the course. The Certificate will be issued by SCOPE & GIZ in association with International Climate Initiative (IKI), Federal Government of Germany.

How are assessments conducted?

Assessments are designed to help you gauge your understanding of the material and ensure you are fully prepared to move forward. In addition to a quiz at the end of each chapter that reinforces the key concepts and boosts your confidence in the knowledge you have gained, a more comprehensive assessment will be conducted at the end of

each module. These assessments provide an opportunity to evaluate your grasp of the entire module's content before progressing to the next stage of the course.

What is the qualifying score to earn the certificate?

To ensure successful completion of the course and a certificate at the end, a score of 60% is mandatory for each module.

What if I did not score 60% for each module?

You will be allowed to re-attempt the module until you achieve the required 60% score.

How many attempts can be made for each module?

The course is designed with a focus on building the capacity of PSE executives, and therefore, there is no restriction on the number of attempts you can make for each module. You are welcome to reattempt any module as many times as needed in order to achieve the required passing score. This flexible approach ensures that learners can master the content at their own pace and with confidence, ensuring a solid understanding of the topic.

What if I stop in the middle of a module?

Since your progress is automatically saved, you can resume the module from where you left off at any time.

Where can I access my course certificate after completion?

After completing the course, you can download the certificate directly. Additionally, a copy will be sent to the email address you provided during registration.

Can I interact with instructors and peers?

No, interaction with instructors and peers is not possible as the course consists of pre-recorded sessions.

Do I get the any additional reading materials besides the available online material?

All the knowledge resources for the course are provided through the online course materials

available on the platform. No additional reading materials are provided.

Whom can I contact for support?

all technical questions and issues please reach out to support@learning-os.com and for all other queries please reach out to GIZ at lewis.taylor@giz.de and jasprit.kaur@giz.de.

From SCOPE, you can reach out to Ms. Samridhi Jain, Senior Manager, Corporate Affairs, or Ms. Garima Agarwal, Assistant Manager, at <u>climateaction@</u> scopeonline.in or call 011-24362604 for any questions and issues.

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Advancing Energy Solutions Through the Green Hydrogen

Introduction

hydrogen is rapidly emerging as a cornerstone of the global transition to sustainable energy systems. Produced through the electrolysis of water and powered by renewable energy sources, it emits minimal greenhouse gases, making it a clean, versatile energy carrier. Hydrogen is categorized into various types based on production methods, with green hydrogen gaining significant global traction due to its potential to decarbonize hard-to-electrify sectors and help nations achieve ambitious climate targets. Beyond addressing emissions, green hydrogen offers

opportunities to drive economic growth, enhance energy security, and build a resilient, low-carbon future. To address challenges associated with green hydrogen, governments and industries worldwide are investing heavily in hydrogen strategies, infrastructure, and technologies to harness its transformative potential. This article explores the classification of hydrogen by production methods, examines the potential and significance of green hydrogen, reviews its applications, and analyses the global and national scenarios, along with the challenges and opportunities it presents for a sustainable energy transition.

Hydrogen and its Types

Hydrogen $(H_2)_{r}$ commonly referred to as the "fuel of the future," is the simplest and most abundant element in the universe. It is a lightweight, storable, colourless, odourless, and highly flammable gas that produces no emissions on its own. Its classification into various colours is based on the production methods and their sustainability, emphasizing the environmental impact and facilitating the identification of eco-friendly practices that align with climate action objectives.

Hydrogen Color	Production Process	Energy Source	By product	GHG Footprint
White	Naturally occurring	Naturally occurring, Industrial Waste	NA	NA
Green	Electrolysis	Renewables: solar, wind, hydro, geothermal, tidal	Oxygen	Near Zero
Pink		Nuclear heat / electricity	Nuclear waste, Oxygen	
Yellow		Solar or a mix of energy from electrical grid	Oxygen	Medium
Red	Biomass Gasification + CCUS	Biomass	Carbon dioxide, sequestered through CCUS	Near Zero
Blue	SMR, Gasification + CCUS	Natural gas and coal		Low
Turquoise	Pyrolysis	Natural gas	Solid carbon	Medium to low
Grey	SMR but no CCUS		Carbon dioxide	Medium
Brown	Gasification	Lignite Coal		Highest
Black		Black Coal		

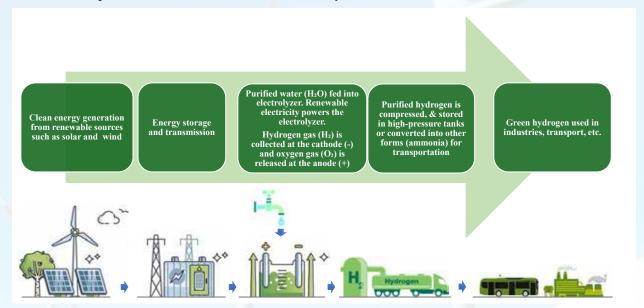
Green Hydrogen as Fuel of the Future

Green hydrogen, a clean and

sustainable form of hydrogen, is produced through the electrolysis of water using electricity from renewable sources like solar, wind, or hydropower. This process splits water into

hydrogen and oxygen, emitting only water vapor and leaves no greenhouse gases or other harmful residues. When it needs to turn into energy, hydrogen stored in specific tanks is channelled into a fuel cell. There it binds again with oxygen from the air and electricity is obtained. Thus, the only by-product of the process is water, resulting in a clean, sustainable system in which

zero CO₂ is emitted to produce energy. As a zero-pollution fuel, green hydrogen offers immense potential as both an energy carrier and a raw material.



Potential and Significance of Green Hydrogen

Green hydrogen is quickly establishing itself as a kev driver in the global shift toward sustainable energy systems. Recognized as a vital solution for achieving carbon neutrality, it plays a central role in the energy transition being explored by economies worldwide. With high gravimetric energy density of approximately 33.33 kWh per kilogram (~ 3-times that of diesel or gasoline by weight), green hydrogen serves as an efficient fuel for energyintensive applications requiring storage, such compact aviation, shipping, and long-haul transportation. This highlights its vast potential to advance decarbonization, enhance energy security, foster economic growth, and sustainably power the future.

One of the most significant advantages of green hydrogen is its balancing ability to address the intermittent nature renewable energy sources. By storing surplus energy generated during peak production periods, green hydrogen ensures a consistent and reliable energy supply, bridging the gap between energy generation and consumption. Moreover, being an extremely light element, green hydrogen can be stored in compressed tanks that are lighter and more manageable than lithium batteries, making efficient transportation more and convenient. It also enhances energy security by diversifying energy sources, reducing reliance on fossil fuel imports, mitigating supply chain risks, and reduce vulnerabilities to price shocks in global energy markets.

Green hydrogen provides a means to cut greenhouse gas emissions in industries where direct electrification is difficult, or by replacing grey hydrogen as a feedstock in industries like ammonia production, refining, and petrochemicals. As the world strives to meet ambitious Net Zero targets, green hydrogen plays a critical role in decarbonizing hard-to-abate sectors such as steel, cement, chemicals, shipping, aviation industries, that have traditionally relied on fossil fuels and contributed significantly to global emissions. Green hydrogen fuels hydrogen fuel cell vehicles (FCEVs), including cars, buses, trucks, and trains, offering a zero-emission alternative to internal combustion engines.

Application of Green Hydrogen			
Industry	 Steel Manufacturing: Green hydrogen replaces coking coal in the Direct Reduction Iron (DRI) process, reducing CO₂ emissions. Chemical Industry: Used as a feedstock for ammonia (fertilizers), methanol, and plastics, replacing grey hydrogen to lower emissions. Oil Refining: Employed in hydrocracking and desulfurization processes, offering a cleaner alternative to conventional hydrogen 		
Energy Storage and Production	 Power Generation: Used in fuel cells or hydrogen turbines to produce electricity with water vapor as the only by product. Energy Storage: Stores excess renewable energy (e.g., wind, solar) for later use, ensuring grid stability and supply during peak demand. Hydrogen Blending: Blended with natural gas for use in existing pipelines, reducing the carbon intensity of natural gas systems. 		
Transport	 Commercial transportation accounts for approximately 13% of today's global CO₂ emissions. Green hydrogen may be key fuel decarbonise this sector which are difficult to electrify. Fuel Cell Vehicles (FCEVs): Powers cars, buses, trucks, and trains, especially for long distances and heavy-duty transport. Hydrogen fuel cells provide a higher energy density than batteries, making them more suitable for long-range travel. Aviation and Shipping: Provides a cleaner fuel option for aviation and maritime industries, reducing dependence on fossil fuels. 		
Domestic and commercial use	 Heating and Cooling: Used for residential and commercial heating through hydrogen boilers or Combined Heat and Power (CHP) systems, offering a low-carbon alternative to natural gas. Power Backup: Small-scale hydrogen fuel cells can provide backup power for homes, hospitals, data centres, and other critical business facilities, providing a clean electricity alternative to diesel generators. 		
Green Hydrogen in Agriculture	• Green hydrogen can be used to power farming machinery such as tractors, harvesters, other farming equipment, and producing fossil-based fertilizers.		
Decentralized Power Solutions	• Powers remote areas and islands where extending traditional energy grids is challenging, using hydrogen-based microgrids.		

Green hydrogen supports global climate action by enabling significant GHG emission reductions. According to the Hydrogen Council, hydrogen could abate 80 gigatons of CO₂ emissions cumulatively by 2050, with an annual reduction potential of 7 gigatons, representing 20% of the required global reductions by mid-century. This sector also holds transformative economic

offering potential, extensive opportunities for job creation across the value chain, from manufacturing and infrastructure development to research and technological innovation. Moreover, local production of green hydrogen can substantially reduce reliance on fossil fuel imports. energy-Renewable based hydrogen production can spur economic development in rural and remote areas rich in renewable energy resources, while green hydrogen derived from waste biomass presents an avenue for farmers to generate supplementary income, further supporting rural economies.

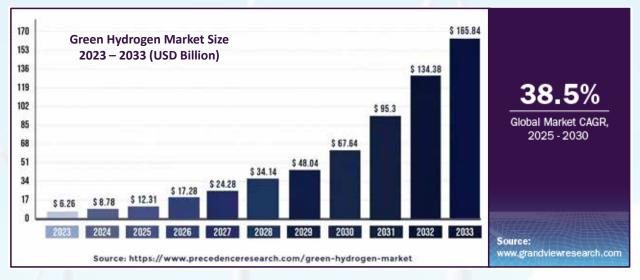
Global Hydrogen Market and Growth Projections

Hydrogen has been used in industries since the 19th century

to power cars, airships, and spacecraft. As the global push for decarbonization intensifies, hydrogen is emerging as a critical solution. Countries like the United States, Russia, China, France, and Germany already utilize hydrogen extensively, while nations such as Japan aim

to transition into full-fledged hydrogen economies. Nations with abundant renewable energy resources, including India, Australia, and parts of the Middle East, are positioning themselves as global hubs for green hydrogen production and exports. Green hydrogen is

especially vital for decarbonizing sectors that are hard to electrify, such as heavy industry, aviation, and shipping. Its role in replacing fossil fuels and acting as an energy storage medium makes it indispensable in combating climate change and achieving net-zero targets.



global green hydrogen market is poised for substantial growth, driven by the clean energy transition. Research estimates the green hydrogen market size at \$8.78 billion in 2024, is projected to surge to \$165.84 billion by 2033, reflecting a robust CAGR of 38.5%. This growth is fuelled by advancements in electrolyzer and smart grid technologies, increased government initiatives, and rising awareness of green hydrogen's environmental benefits. Enhanced grid stability contributes to the growing adoption of green hydrogen in the utilities sector, supporting their critical role in maintaining safe and efficient operations across electrical networks. Key drivers of this gigantic

market include global net-zero commitments, rising demand from hard-to-abate sectors, and expanding applications in clean mobility for heavy transport, shipping, and aviation. Countries worldwide are developing National Hydrogen Roadmaps to integrate hydrogen into their energy systems strategically. By investing in infrastructure, advancing production technologies, fostering and international collaborations, hydrogen is set to become a cornerstone of a resilient, lowcarbon global economy.

India's Advancement in Green Hydrogen Industry

India has achieved remarkable progress in the green hydrogen

sector, establishing itself as a frontrunner in the global shift toward sustainable energy. Backed by comprehensive policy frameworks, vast renewable energy potential, and dynamic public-private partnerships, India is paving the way for a green energy revolution while making a substantial contribution to global climate objectives. This progress is underpinned by robust policy support, including the National Green Hydrogen Mission, which promotes large-scale production and adoption.

National Green Hydrogen Mission (NGHM): It was launched by the Ministry of New and Renewable Energy (MNRE) in January 2023 with a budget allocation of ₹ 19,744 crores.



This initiative aims to position India as a global leader in green hydrogen production exports, targeting and the production of 5 million metric tonnes (MMT) annually by 2030. Earlier, in February 2022, the Government introduced the Green Hydrogen Policy, which supports projects for producing, transmitting, and distributing green hydrogen. To enhance transparency and credibility, MNRE also launched the Green Hydrogen Certification Scheme, establishing a framework measure, monitor, and certify production. Additionally, Green Hydrogen Standard defines sustainable production methods for the industry. Under this mission, the Strategic for Interventions Green Hydrogen **Transition** (SIGHT) program offers ₹ 17,490 crores in with incentives, ₹4,440 crores for electrolyzer manufacturing and ₹ 13,050 crores for hydrogen production. **Production-Linked** Moreover, **Incentive (PLI) schemes** further promote domestic manufacturing in this sector. Considering environmental regulations, the MNRE has introduced a Greenhouse Gas **Emissions** Standard, capping non-biogenic GHG emissions at 2 kgCO, per kilogram of hydrogen (kgH₂), applicable to both electrolysisbased and biomass-based production methods. The NGHM has also supported infrastructure development. India established Green Hydrogen Industrial Clusters, including the Kochi Green Hydrogen Hub, Kerala Green Hydrogen Valley, and Gujarat's Mundra and Rapar clusters, aiming to produce 3 MMT annually in Gujarat alone by 2030, with two more Green Hydrogen Hubs planned in near future. To drive innovation in the sector, ₹400 crores have been allocated under the NGHM for research and development (R&D). These funds are aimed at advancing technologies and solutions to make green hydrogen production more efficient and cost-effective.

Additionally, India is actively fostering international collaborations to accelerate its green hydrogen initiatives and strengthen its position in the global energy transition.

Key bilateral agreements include the **Indo-German Green Hydrogen Roadmap**, focusing on joint research, technology transfer, and sustainable hydrogen infrastructure development.



India has also partnered with the European Union, Denmark, and Japan to advance green hydrogen technologies, establish supply chains, and develop export markets. On global platforms, India is a prominent member of the International Partnership for Hydrogen and Fuel Cells in the Economy (IPHE) and hosted its 41st Steering Committee Meeting in 2024. Additionally, India participates in the Green Hydrogen Catapult, a coalition aimed at accelerating hydrogen production deployment and globally. Collaborating with the International Solar Alliance (ISA), India has launched the Green Hydrogen Innovation **Centre** to drive innovation and address challenges in hydrogen adoption. These collaborations aim to enhance India's capacity to produce and export green hydrogen.

Indian Public Sector Enterprises (PSEs), owing to its scale,

operational diversity, and role in national economy (~12% of the national GDP), play a pivotal role in advancing the adoption of green hydrogen, aligning with the nation's ambitious clean energy and decarbonization goals. energy-focused Major PSEs are actively exploring green hydrogen applications in refining, power generation, natural gas blending, and transport. Some PSEs are leveraging their resources and expertise to pilot projects, including electrolyzer manufacturing, establishment of hydrogen fuelling stations, developing hydrogen-based transport systems while integrating green hydrogen into existing industrial processes. Some PSEs are actively financing green hydrogen projects, contributing to research and development (R&D) by and collaborating with academic international institutions and organizations to enhance hydrogen production efficiency and reduce costs. Overall, PSE's proactive engagement is crucial for accelerating India's green hydrogen economy and supporting climate action goals.

Challenges and Opportunities in Adoption of Green Hydrogen

Despite its immense potential, the widespread adoption of green hydrogen faces several challenges. One of the primary challenges is cost. Generating energy from renewable sources, which is essential for producing green hydrogen through electrolysis, remains expensive. Although advancements in technology and economies of scale are gradually reducing costs, green hydrogen production is still more expensive than hydrocarbon-based alternatives. Additionally, the energy consumption required for hydrogen production, especially green hydrogen, is higher than other fuels, making efficiency improvements critical. Safety concerns also present a hurdle, as green hydrogen is highly volatile and flammable, necessitating stringent safety measures to prevent leaks and potential explosions. Furthermore, scaling up production and infrastructure meet growing demand requires substantial investment, posing a significant challenge to its adoption. Global adoption of hydrogen technologies depends heavily on collaboration between industries, governments, research institutions. Expanding partnerships international essential to promote knowledge exchange, technology transfer, and investment in hydrogen projects. Equally important are supportive policies, including government incentives, subsidies, regulations, to reduce initial costs and risks, enhance competitiveness, and accelerate the transition to green hydrogen. Despite these challenges, the green hydrogen sector is expected to evolve rapidly with ongoing technological advancements, stronger collaborations, and a robust policy framework, paving the way for a cleaner, more sustainable future.

However, declining renewable energy costs have created an opportunity for green hydrogen to become more competitive. Solar energy is now ten times cheaper than it was a decade ago, and wind energy costs have dropped by more than half, significantly reducing the electricity costs required for the electrolysis process. Innovations, large-scale renewable energy projects, and public-private partnerships are expected to help overcome these obstacles, positioning green hydrogen as

a cornerstone of global energy systems, driving sustainable industrial transformation, and supporting climate goals.

Conclusion and Way Forward

Green hydrogen stands as a transformative solution in the global pursuit of a low-carbon sustainable future. ability to decarbonize hard-toabate sectors, support energy storage, and replace fossil fuels places it at the forefront of clean energy systems. As global energy demand continues to grow, green hydrogen offers a scalable and versatile pathway to align energy consumption with climate action goals, particularly for industries and applications that are challenging to electrify. While the potential of green hydrogen is undeniable, realizing its promise requires overcoming critical challenges, including high production costs, infrastructure gaps, and safety considerations. Continuous innovation electrolyzer efficiency, renewable energy generation, and hydrogen storage technologies will play a pivotal role in addressing these hurdles. Additionally, supportive government policies, financial incentives, and international collaborations are essential to accelerate its adoption and scale up production. India, with its National Green Hydrogen Mission, is uniquely positioned to emerge as a global leader in the green hydrogen economy. By leveraging its abundant renewable energy resources and investing in research, infrastructure, and strategic initiatives, India can drive industrial decarbonization, enhance energy security, and contribute significantly to global climate goals. As nations worldwide integrate green hydrogen into their energy strategies, India's proactive approach could serve as a model for sustainable and inclusive development.

Looking ahead, the expansion of the global green hydrogen market must be guided by sustainability, and innovation. equity, countries and industries advance toward net-zero targets, green hydrogen is poised to play a central role in reshaping energy markets, reducing emissions, and fuelling economic growth. By fostering international partnerships and prioritizing clean energy transitions, stakeholders can ensure that green hydrogen becomes cornerstone of a resilient and sustainable global energy system, driving progress toward a lowcarbon future.

'Dheu' makes a splash as GRSE delivers its 'first-of-its-kind green' platform to Govt. of West Bengal

Marking a significant milestone in GRSE's efforts to revolutionize green maritime technology, the state's first Green Ferry – the Next Generation Zero-Emission Electric Ferry 'Dheu'-was officially handed over to the Transport Department, West Bengal, in the presence of Smt. Mamata Banerjee, Hon'ble Chief Minister of West Bengal at Babughat, Kolkata recently.

Earlier in the day, the ferry was flagged off by Cmde P. R. Hari, IN (Retd.), CMD, GRSE from GRSE's Main Works Unit. During the flagging-off ceremony, CMD, GRSE expressed his immense pride in the accomplishment and highlighted the shipyard's ongoing strides in innovation and sustainability.

"Team GRSE is proud to have designed and built the largest and fastest fully electric ferry of our nation. I am also happy that GRSE is playing an important role in the efforts of our Nation towards achieving 'Net-Zero' emission through the construction of this vessel and also the other green vessel projects in hand. I am confident that 'Dheu' shall sail safe, smooth and easy in the blessed Hoogly river" he said in his address.

'Dheu' or Wave, as the Ferry has been named, is the first such vessel to be built by GRSE. It



(L-R) Smt. Mamata Banerjee, Hon'ble Chief Minister of West Bengal during handing over ceremony of 'Dheu' to Transport Department, West Bengal. Cmde P. R. Hari, IN (Retd.), CMD, GRSE flagging off the ferry from GRSE's Main Works Unit.

will also be the first such ferry to be operated by the Transport Department, Government West Bengal. 'Dheu' will be the start of a revolution that will see the replacement of ageing dieselengine operated ferries along the stretch of the Ganga/ Bhagirathi in West Bengal, with green vessels. Not only will these new vessels cause lower emissions, they will also reduce pollution of the river caused by the old diesel generators used to run conventional ferries. With efforts on to develop India's waterways as a mode of transport, both for passengers and goods under Maritime India Vision-2030, 'Dheu' will provide an alternative to conventional vessels that are presently in use.

'Dheu' is 24 meters long and powered by a 246 Kilowatt per hour (kWh) liquid-cooled Energy Storage Solution. It is ergonomically designed to carry 150 passengers in airconditioned comfort, with no noise or engine vibrations. She has twin screw propellers that allow greater manoeuvrability and a Catamaran Aluminium hull, enabling her to achieve a top speed of 10 knots. The solar panels on her exterior augment power supply from the batteries.

The Ferry has been built by GRSE in compliance with the latest classification society rules of Indian Register of Shipping (IRS) related to passenger safety. She has also undergone necessary harbour and afloat trials. The Government of West Bengal has also placed an order for 13 hybrid ferries from GRSE that will run both on electric and diesel propulsion.

Forging Maritime Supremacy: Goa Shipyard Ltd. launches twin indigenous Fast Patrol Vessels for Indian Coast Guard

In a moment of unprecedented achievement, Goa Shipyard Ltd. (GSL) propelled the nation's maritime capabilities into new league with the concurrent launch of two indigenously designed and built Fast Patrol Vessels (FPVs) for the Indian Coast Guard. The ceremonious unveiling of Amulya and Akshay marks a defining milestone in India's pursuit of self-reliance in defence manufacturing under visionary initiatives 'Atmanirbhar Bharat' and 'Make in India'.

This milestone follows the launch of two FPVs from the same series in October 2024, demonstrating GSL's unyielding commitment to delivering cutting-edge vessels to fortify India's maritime security. With a fleet of eight FPVs under construction for the Indian Coast Guard, the shipyard continues to set benchmarks in indigenous shipbuilding excellence.

Engineering a Historic Milestone

GSL concurrently launched two vessels using its revolutionary State-of-the-Art facility, a ground-breaking achievement reflecting the shipyard's drive for technological advancement and operational efficiency.

These advanced vessels, measuring 52 meters in length, 8 meters in breadth, and weighing 320 tonnes, are designed in-house to meet the Indian Coast Guard's specific operational requirements.



Smt. Vandana Agrawal; Shri Sanjeev Kumar, IAS, Secretary (Defence Production); Shri Brajesh Kumar Upadhyay, CMD, GSL; IG H K Sharma, TM, DDG (M&M) alongside luminaries from the defence and maritime sectors during the launch of two FPVs for Indian Coast Guard.

Their role in protecting offshore installations, island territories, and conducting surveillance operations underscores their critical importance to India's maritime defence strategy.

The launch ceremony, steeped in tradition, was graced by Smt. Vandana Agrawal in the presence of Shri Sanjeev Kumar, IAS, Secretary (Defence Production) amidst the resonant chants of the Atharva Veda. The distinguished gathering included IG H K Sharma, TM, DDG (M&M), alongside luminaries from the defence and maritime sectors.

Visionary Leadership Speaks

Addressing the gathering, Shri Brajesh Kumar Upadhyay, CMD, GSL reflected on the shipyard's extraordinary journey of growth and transformation. Under his stewardship, GSL has achieved a phenomenal 100% increase in Gross Revenue, surpassing the Rs. 2,000 crore milestone.

Goa Shipyard Ltd. has consistently surpassed its own benchmarks, integrating cuttingedge technology and adopting transformative policies to emerge as India's foremost shipbuilder. Our partnership enduring with the Indian Coast Guard epitomizes our shared vision of strengthening national security, stated Shri Upadhyay.

The Secretary (Defence Production) echoed this sentiment, commending GSL's resilience overcoming in challenges ranging from the COVID-19 pandemic to global disruptions. geopolitical This launch is a testament to GSL's determination unwavering and innovative spirit. The high indigenous content in

vessels stands as a proud emblem of India's quest for self-reliance in defence production, he said.

Driving Economic Growth Through Maritime Innovation

The launch of Amulya and Akshay is not only a landmark in shipbuilding but also a catalyst for local economic prosperity. GSL's robust ecosystem of MSMEs and local industries has thrived under its visionary initiatives, driving employment generation and regional development.

The Chief Guest lauded the GSL workforce for their steadfast

dedication and urged them to maintain momentum on the path of innovation and indigenous excellence. "This achievement is a beacon of hope for India's defence sector, showcasing our potential to redefine global standards in shipbuilding," he remarked.

Setting Sail Towards a Bold Future

The launch of Amulya and Akshay reinforces GSL's reputation as a leader in advanced technology, delivering indigenously built vessels that safeguard the nation's maritime frontiers. With

each milestone, GSL reaffirms its role as a critical driver of India's defence manufacturing prowess, carving a path toward a selfreliant future.

As GSL continues to forge new horizons in shipbuilding, its commitment to technological innovation, operational excellence, and nation-building remains steadfast. This historic achievement is not just a tribute to India's growing maritime supremacy but also a testament to the indomitable spirit of Goa Shipyard Ltd and its invaluable contribution to national security.

NRDC commemorates 71st Foundation Day and unveils the Design Clinic Facility

The National Research Development Corporation (NRDC) on its 71st Foundation Day, marked over seven decades of unparalleled service to India's research development ecosystem. The event, held at the NRDC headquarters, also witnessed the inauguration of the Design Clinic Facility, transformative initiative poised to catalyze innovation, entrepreneurship, technological advancement in India.

A series of noteworthy events marked the occasion, starting with the arrival of the honored guests and dignitaries. Dr. N. Kalaiselvi, Secretary of the Department of Scientific & Industrial Research (DSIR) and Director General of the Council of Scientific and Industrial Research



Dr. N. Kalaiselvi, Secretary, DSIR and Director General, CSIR; and Cmde. Amit Rastogi (Retd.), CMD, NRDC along with officers and employees of NRDC during the event.

(CSIR), presided over the event as the Chief Guest. Alongside her, several eminent personalities from government, academia, and industry graced the occasion, making it truly momentous. The dignitaries were warmly welcomed by Cmde. Amit Rastogi (Retd.), CMD, NRDC who extended heartfelt greetings to the guests and participants. CMD, NRDC, shared the

Corporation's rich legacy of fostering technological excellence and driving India's self-reliance through promoting innovations and fostering startups ecosystem. He reflected on NRDC's pivotal role in bridging the gap between technological advancements and their application in industry, highlighting the Corporation's commitment to fostering an innovation-driven economy.

A noteworthy collaboration was formalized during the event with the signing of a Memorandum of Agreement (MoA) between NRDC & Dr. Vidya Rakesh, Director, National Institute Design, Madhya Pradesh, in the presence of NRDC's Board of Directors and dignitaries from DSIR and CSIR. The partnership aims to promote innovation, research, and design excellence, marking a significant step toward advancing India's designing landscape. The MoA exchange symbolizes NRDC's ongoing efforts to create a design facility to supports the startups incubated at the NRDC incubation centre and also to serve other stakeholders in the country.

NRDC a premier organization dedicated supporting innovation and entrepreneurship, has granted one crore funding to Adiuvo Diagnostics Pvt. under the Technology Development Validation and (TDVC) Scheme Phase 2. This funding, provided in exchange for equity, underscores NRDC's commitment to fostering the growth of startups and MSMEs in the field of advanced diagnostics, helping them scale and bring innovative solutions to market.

"The Cottage" organizes Gandhi Shilp Bazaar 2025

"The Cottage" organized Gandhi Shilp Bazaar from 8th-14th January, 2025 wherein 46 Artisans participated from states such as Bihar, Chattisgarh, Jharkhand, Orissa, Rajasthan, Madhya Pradesh, Uttar Pradesh Tamil Nadu & Andhra Pradesh.

The "Gandhi Shilp Bazaar" showcased exclusive Handcrafted traditional Paintings, Furniture & Artisanal Crafts made by Mastercraft persons, National awardees, Shilp Gurus & State Awardees.

While inaugurating the Exhibition along with Shilp Gurus, National Awardees and State Awardees, Shri Manoj Lal, MD, Central Cottage Industries Corporation Ltd. stated that Artisans & Weavers are the backbone of Cottage Industries Sector and



Shri Manoj Lal, MD, Central Cottage Industries Corporation Ltd. inaugurating the Gandhi Shilp Bazaar 2025.

by preserving & sustaining the traditional crafts & craftsmanship through generations they have a major role to play in the Economic growth and promoting the cultural heritage of our country.

In this direction, CCIC will take all possible measures to promote their Artisanal products to a global audience through various Govt schemes, Exhibitions & exports. The Gandhi Shilp Bazaar is sponsored by the office of DC (Handicrafts). Business enquiries worth Rs. 10.47 lakhs were generated in the exhibition.

ITI Limited bags contracts worth Rs. 64 Crores for Wi-Fi & LAN and Integrated Security System (CCTV)

ITI Limited has forayed into Security Systems and education/ICT domains. The company has received orders from Sambalpur University in Odisha for Wi-Fi & LAN worth Rs. 35 Crores, and Integrated Security System from Central Railways worth Rs. 29.14 totalling Rs. 64 Crores and the details are as given below.

Wi-Fi & LAN Contract from Sambalpur University in Odisha worth Rs. 35 Crores

ITI Limited has received a contract worth more than Rs. 35 Crores from Sambalpur University, Odisha to establish Campus Wi-Fi and LAN at 80 locations in its University campus to meet the need of providing

seamless internet and intranet access across the campus. This project includes supply, installation, commissioning along with three years maintenance period. ITI Limited will supply Secure Wireless Controller with additional functionalities like authenticator & restricted unauthorised users, and so on.

Integrated Security System from Central Railways worth Rs. 29.14 Crores

ITI Limited has also received a contract worth Rs. 29.14 Crores from Central Railways (Mumbai) for Integrated Security System consisting of IP Based Video surveillance system at six railway stations of Mumbai division.

The scope of work includes supply, installation, testing and commissioning of Integrated Security System consisting of IP based video surveillance system at six railway stations of Mumbai division viz. Chhatrapati Shivaji Maharaj Terminus, Dadar, Kurla, Lokmanya Tilak Terminus, Thane and Kalyan of Central Railways, and AMC for five years after expiry of warranty period of three years. The period of completing the project is 12 months from the receipt of the Letter of Award (LoA). As part of this contract, over 1400 number of cameras will be installed which will provide a line of safety for the passengers of Central Railways.

MOIL achieves best ever Q3 & 9 months' performance in FY'25

MOIL has achieved best ever Q3 performance in October-December, 2024, which includes inter-alia,

- Best ever Q3 production of manganese ore of 4.6 lakh tonnes.
- Best ever Q3 sales of 3.88 lakh tonnes, higher by 13% over corresponding period of last year (CPLY).

During April-December, 2024 period also, MOIL has registered the following notable achievements:

- Production of 13.3 lakh tonnes, higher by about 4.5% over CPLY.
- Sales of 11.39 lakh tonnes, higher by 4% over CPLY.
- Exploratory core drilling of 72,340 meters, which is higher by 19% over CPLY.

With the above performance, MOIL is expected to surpass the best ever Q3 revenue.

Shri Ajit Kumar Saxena, CMD, MOIL, expressed satisfaction over the performance and was confident that the company will maintain the growth momentum.

PSEs Celebrate 76th Republic Day

Goa Shipyard Limited marks 76th Republic Day with a vision for National Progress and Technological Advancement

Goa Shipyard Limited (GSL) celebrated the 76th Republic Day with unparalleled enthusiasm and patriotism, reaffirming its commitment to strengthening India's maritime defence and contributing to national progress.

The ceremony, held at the GSL premises, was marked by a solemn flag unfurling, an inspiring address by Shri Brajesh Kumar Upadhyay CMD, GSL and vibrant cultural performances that encapsulated the spirit of the nation.

The event began with Shri unfurling Upadhyay Tricolour, accompanied by a Guard of Honour presented by the Central Industrial Security Force (CISF). Following National Anthem, Shri Upadhyay addressed the GSL family, reflecting on India's journey since the establishment of the Republic and GSL's indispensable role in the nation's defence and maritime sectors.

In his address, Shri Upadhyay commenced by underscoring the 2025 Republic Day theme, "Swarnim Bharat: Virasat Aur Vikas" (Golden India: Heritage and Progress), highlighting the enduring importance of the Indian Constitution as the foundation of India's democratic and developmental journey. He emphasized how this theme resonates with GSL's mission



Shri Brajesh Kumar Upadhyay CMD, GSL unfurling the National Flag on the occasion of $76^{\rm th}$ Republic Day.

to honour both the legacy of India's maritime history and the progressive strides the company is making towards national selfreliance.

Shri Upadhyay also set a bold and forward-thinking vision for

GSL in 2025, declaring the year as the "Year of Training." This initiative is designed to equip GSL's workforce with the skills and expertise needed to thrive in an increasingly technological and competitive landscape. He further acknowledged the

PSEs Celebrate 76th Republic Day

Ministry of Defence's theme for the year, "Year of Reforms," and called upon the management and employees to critically assess their workplaces, identify areas for improvement, and propose innovative solutions.

He remarked, "We must continue to evolve by embracing technological advancements, particularly Artificial Intelligence, which will shape the future of shipbuilding and our operations. The future lies in innovation, and we must integrate AI and other cutting-edge technologies to enhance efficiency and ensure

our competitive edge."

The cultural segment of the event added to the sense of national pride, featuring patriotic songs, dynamic performances, and traditional Goan dances that celebrated India's rich cultural diversity. Special recognition was awarded to employees for their exceptional dedication, service, and contributions to GSL's continued success.

As a leading player in India's defence and shipbuilding industry, GSL remains steadfast in its commitment to building world-class vessels, contributing to the nation's Aatmanirbhar Bharat and Make in India initiatives. Today's celebration not only reflected on past achievements but also set the stage for a future marked by continuous innovation, growth, and global leadership.

The ceremony concluded with a collective sense of pride and unity, reaffirming GSL's unwavering commitment to contributing to India's progress and reinforcing its status as a cornerstone of India's defence and maritime strength.

HSL celebrates 76th Republic Day

Hindustan Shipyard Ltd (HSL) marked the 76th Republic Day with patriotic fervour. The National Flag was unfurled at the HSL Colony Parade Ground, followed by an inspection of the Parade comprising Security & Fire Service personnel, NCC cadets, Rover Scouts, Scouts & Guides, and students from schools and colleges. A patriotic musical dance performance by students added vibrance to the celebrations.

On this occasion, commendation letters were presented employees in recognition of their meritorious services during the year. The event also included an address highlighting remarkable transformation of HSL from 2020 to 2025 across various domains including and operational financial achievements, technological



Cmde Girideep Singh, IN (Retd.), Director (Strategic Projects), HSL unfurling the National Flag on the occasion of 76th Republic Day.

advancements, infrastructure upgrades, collaborations, community welfare initiatives, and recruitment efforts and HSL's vision for the future.

Reaffirming its commitment to a self-reliant India, HSL called

for a result-oriented approach to ensure the timely completion of all projects and encouraged employees to continue their efforts in building a credible, modern shipyard that contributes to the nation's growth and selfreliance.

HPCL Green R&D Centre signs MoU with Sea6 Energy Private Limited to revolutionize production of biofuels from seaweed biomass

HPCL has set-up its state-ofthe-art HP Green R&D Centre in Bengaluru and is carrying out research in various areas related to petroleum refining, development of novel catalysts & additives, biofuels, alternate energy, nanotechnology, etc. and has developed patented technologies / products for various applications.

Sea6 Energy Private Limited headquartered in Bengaluru, was founded in 2010 to develop innovative solutions for key global problems. Over the last decade, it has become a pioneer of innovative technologies for sustainable, large-scale and mechanized farming of seaweeds and the conversion of this biomass to novel products.

Seaweeds provide an attractive alternative to traditional biomass

as far as biofuel production is concerned because it doesn't compete with food security, does not require fertilizers or irrigation, can be practiced in areas unsuitable for traditional agriculture such as coastlines, etc. Moreover, seaweeds grow much faster than terrestrial crops, with some species capable of doubling their biomass in just a few days and they are an excellent option for carbon capture for meeting India's net-zero commitments by 2070.

HPCL and Sea6 Energy Private Limited, recognizing similarity of their interests, have entered into a Memorandum of Understanding (MoU) for R&D collaboration in areas of mutual interest on 9th December 2024, particularly on joint development and commercialization of technologies for valorizing seaweed biomass.

This strategic collaboration also marks a significant milestone in India's journey towards self-reliance in cutting-edge technology, aligning with the Government of India's vision of Aatmanirbhar Bharat, National Biofuel Policy and the greater objective of energy security.

Under this MOU, HPCL will develop and scale-up technologies jointly with Sea6 Energy for the conversion of seaweed biomass into fuels and chemicals. While these technologies are being developed and piloted, Sea6 Energy will also work on the upstream portion of making seaweed farming and harvesting more cost effective.

NRDC and IISc partner to drive technology commercialization and socioeconomic growth

The National Research Development Corporation (NRDC), a Government of India enterprise under the Ministry of Science and Technology, and the Indian Institute of Science (IISc), India's premier institution for advanced scientific research and education, have



Cmde Amit Rastogi (Retd.), CMD, NRDC and Prof. Govindan Rangarajan, Director, IISc signing the MoA in presence of key officials from NRDC and IISc.

PSEs ink MoU

signed a Memorandum of Agreement (MoA) to accelerate the commercialization of IIScdeveloped technologies.

The MoA was signed and exchanged recently at IISc by Cmde Amit Rastogi (Retd.), CMD, NRDC and Prof. Govindan Rangarajan, Director, IISc in the presence of key officials from NRDC and IISc.

With over seven decades of experience in technology transfer and intellectual property rights management, NRDC brings a vast network of partnerships with R&D organizations, industries. and government agencies. IISc Intellectual Property and Technical Licensing (IPTeL) Chair, Prof Suryasarathi Bose opined that by leveraging

IISc's advanced research and development capabilities, this collaboration aims to translate laboratory innovations into market-ready technologies, driving socioeconomic benefits across India.

During the MoA signing ceremony, Cmde Amit Rastogi informed that this partnership aligns with NRDC's programs like the Program for Inspiring Inventors and **Innovators** (PIII) and the Program for Development of Technologies for Commercialization (PDTC) under the Department Scientific and Industrial Research (DSIR), Ministry of Science and Technology, Government India. Together, NRDC and IISc aim to bridge the gap between research and industry

facilitating technology transfer, intellectual property protection, and start-up mentoring.

To date, NRDC has concluded over 5100 technology transfer agreements and filed more than 2000 patent applications, cementing its role as a leading organization in technology commercialization in the country. This collaboration marks a significant milestone in ensuring IISc's innovative solutions reach industries. maximizing impact on India's development and economy.

Prof. Rangarajan summarized that the signing of this MoA underscores the commitment of both organizations to drive innovation, economic growth, and societal well-being.

Balmer Lawrie & Co. Ltd. signs strategic MoU with BEML Limited for Comprehensive Logistics Solutions

Balmer Lawrie & Co. Ltd. has signed a strategic Memorandum of Understanding (MoU) with BEML Limited to provide extensive logistics solutions for BEML's EXIM (Export-Import) and domestic requirements.

The MoU was formally exchanged between Shri Adhip Nath Palchaudhuri, CMD and Director (Service Businesses) - Additional Charge, Balmer Lawrie and Shri Shantanu Roy, CMD, BEML Limited. The signing ceremony was held recently at Bengaluru and was attended by other Directors of BEML Limited and senior officials from both the organisations.

The partnership aims to enable



Shri Adhip Nath Palchaudhuri, CMD and Director (Service Businesses) – Additional Charge, Balmer Lawrie and Shri Shantanu Roy, CMD, BEML Limited sign the MoU at Bengaluru, in the presence of Senior Officials of both the organisations.

BEML Limited to focus on its core competencies of production and sales by leveraging the expertise of Balmer Lawrie, a leader in end-to-end logistics, for efficient and reliable logistics solutions.

This collaboration, valid for a

period of three years from the date of signing, underscores Balmer Lawrie's commitment to delivering tailored integrated logistics solutions ensuring the seamless movement of all kinds of cargo.

Shri Sunil Dattatrey Tatkare, Hon'ble MP launches several educational infra initiatives under GAIL's CSR initiative

Shri Sunil Dattatrey Tatkare, Hon'ble Member of Parliament (Lok Sabha), Raigad and Hon'ble Chairman, Parliamentary Standing Committee Petroleum and Natural Gas recently launched a series of developmental initiatives aimed at improving the educational infrastructure in Raigad district of Maharashtra. These initiatives, part of GAIL (India) Limited's Corporate Social Responsibility (CSR) programme, were launched in the presence of Ms. Aditi Varda Sunil Tatkare, Hon'ble Minister of Women & Child Development, Government of Maharashtra, at an event held in Raigad recently.

The initiatives, part of GAIL's flagship CSR programme 'Project Ujjwal' for underprivileged children, include critical infrastructure and logistical support to various schools in the district. The key projects are as follows:

- Construction of additional classrooms to enhance the schools' capacity.
- Provision of computers with complete setups to facilitate digital education.
- Installation of smart boards and establishment of a wellequipped science laboratory to promote interactive learning.

These initiatives aim to strengthen the region's educational foundation by upgrading school infrastructure and providing modern learning resources.



Shri Sunil Dattatrey Tatkare, Hon'ble MP (Lok Sabha), Raigad and Hon'ble Chairman, Parliamentary Standing Committee on Petroleum and Natural Gas launching several educational infra initiatives under GAIL's CSR initiative in presence of Ms. Aditi Varda Sunil Tatkare, Hon'ble Minister of Women & Child Development, Govt. of Maharashtra and other senior officers of GAIL.

Through 'Project Ujjwal', GAIL is committed to creating a lasting impact on the lives of underprivileged students in rural and urban areas of India.

They showcase GAIL's commitment and its strong support for community welfare and education by improving learning facilities for young students in Raigad. These efforts aim to help students excel in education and contribute to the growth of the entire region.

Addressing the gathering at the launch event, Shri Tatkare appreciated the efforts of GAIL in socio economic development of Raigad district through its establishment and CSR initiatives.

Executive Director (CSR & HR), Chief General Manager (PDH -PP Projects) & OIC Usar, GAIL and General Manager (HR) and other officials of GAIL were present at the launch event held in Raigad today.

Through its CSR projects, GAIL is working to bring positive change by providing support to the various sections of the society.

GAIL's upcoming plant at Usar near Alibag is set to establish a Propane Dehydrogenation Unit at an estimated investment of Rs. 11,000 crore. This ambitious project will manufacture raw materials for the petrochemical sector and is expected to drive significant socio-economic progress in the Raigad district, generate substantial employment opportunities for the local population and enhance India's self-reliance in petrochemical production.

Once operational, this facility will cater to industries across Maharashtra and India, positioning the Konkan region as a hub for industrial and technological growth.

Awards & Accolades to PSEs

HPCL wins Sustained Excellence Category Award at 17th Edition of BML Munjal Awards

Hindustan Petroleum Corporation Limited (HPCL) has been awarded the prestigious BML Munjal Award for its Excellence in Business through Learning and Development. HPCL has won the award in the Sustained Excellence category.

Shri Rajneesh Narang, Director -Finance & CMD (Addl. Charge), HPCL along with, Shri Amit Garg, Director - Marketing, HPCL; Shri K. S. Shetty, Director-Human Resources received the award from Shri Piyush Goyal, Hon'ble Union Minister of Commerce & Industry and Shri Sunil Kant Munjal, Chairman Hero Enterprise in the presence of Senior Officials from HPCL at a ceremony at New Delhi. The Guest of Honour at the event was Shri Amitabh Kant, India's G20 Sherpa and former CEO of NITI Aayog.

The BML Munjal Awards annually celebrate excellence



Shri Rajneesh Narang, Director - Finance & CMD (Addl. Charge), HPCL along with, Shri Amit Garg, Director - Marketing, HPCL; Shri K. S. Shetty, Director- Human Resources receiving the award from Shri Piyush Goyal, Hon'ble Union Minister of Commerce & Industry and Shri Sunil Kant Munjal, Chairman Hero Enterprise in the presence of Senior Officials from HPCL at a ceremony at New Delhi.

in Learning and Development (L&D) and are a tribute to the enduring legacy of the late Dr. Brijmohan Lall Munjal, founder of the Hero Group. They recognize organizations that invest in people and reward companies that believe in continuous improvement and innovation.

For the 2024 edition, hundreds of organizations across sectors

went through a rigorous fourstage screening process managed by Grant Thornton Bharat which included site visit, jury presentation, site visit and panel evaluation.

This award highlights HPCL's commitment towards its focus on Capability Building, learning processes and business excellence.

WAPCOS honoured with CEAI National Award

WAPCOS has been honoured with CEAI National Award 2024 in the category of "Excellence in Project Engineering". The Award is instituted by Consulting Engineers Association of India.

The recognition reaffirms company's commitment delivering exceptional engineering consultancy excellence under the leadership of Shri R. K. Agrawal, CMD, The Award WAPCOS. received by Shri Amit Gupta, Sr. General Manager and Shri Rahul Israni, Deputy Chief Engineer on behalf of WAPCOS.

WAPCOS, a "MINI RATNA-I" Public Sector Enterprise under



Shri Amit Gupta, Sr. General Manager and Shri Rahul Israni, Deputy Chief Engineer receiving the Award on behalf of the company.

the aegis of the Union Ministry of Jal Shakti, is a technology driven Consultancy and Engineering, Procurement and Construction (EPC) organization. The Company has provided engineering consultancy services to various clients since incorporation, in over 75 countries and has developed global presence, particularly in South Asia and across Africa, in areas of water, power and infrastructure sectors.

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The centrally air-conditioned SCOPE Convention Centre at SCOPE Complex, Lodhi Road, New Delhi provides excellent conference facilities to PSEs, Govt. Departments, Autonomous Bodies, Institutions/NGOs etc. The Auditorium and other Conference Halls are equipped with projector and screen facilities, sound & light control room with recording & P.A. facility, etc. Details of the capacity of the Auditorium and other Halls.

Tagore Chamber



The chamber has capacity of 92 persons (86 Nos. Chairs + 6 Nos Chairs on Dais) equipped with 2 Nos. projector screens and mikes on dais, tables & podium.

Auditorium



The Auditorium has a capacity of 310 persons (300 Chairs + 10 Nos. Chairs at stage) capacity equipped with projector, screen and mikes on dais and podium on stage.

Bhabha Chamber (Board Room)



The chamber has the capacity of 44 persons (24 Nos. Chairs on round table and 20 Nos. Chairs on sides) equipped with 4K advanced VC system for 12 person, projector screen and mikes on dais, tables & podium.

Mirza Ghalib Chamber



The chamber having capacity of 108 persons (102 Nos. Chairs + 6 Nos. Chairs on Dais) equipped with 2 Nos.-projector & screen and mikes on table, dais and podium.

Fazal Chamber



The chamber has a capacity of 25 persons (15 Nos. Chairs on round table and 10 Nos. Chairs on sides) capacity with board room type seating arrangement equipped with screen and mikes.

Business Centre



point Video Conferencing System projector screen. (1+3), that can connect with three locations at a time.

Annexe II



The Business Centre has a capacity of The Annexe-II has the capacity of 15 7 persons and is equipped with multi Persons and is equipped with

Banquet Hall



The banquet hall has a capacity of 500 Persons for the purpose of lunch & dinner with variety of cuisines. Seating can be arranged for 40 persons.

Tansen Chamber Annexe I at UB



podium equipped with projector and screen. and screen.



The Tansen Chamber has capacity of The Annexe-I has capacity of 20 The Amir Khusro Chamber has 30 persons and also has stage & Persons and is equipped with projector capacity of 35 persons with facility of

Amir Khusro Chamber at UB



stage & podium equipped with projector and screen.

Facilities for specially-abled persons at SCOPE Convention Centre:







For Booking & Tariff details please contact:

Mr. Nitin Kulshrestha Dy. Manager (Tech. & HR)

Mob: 9313989067 Email: nitin@scopeonline.in Mr. Shubh Ratna GM (Tech. & HR) Mob: 9873398242

Email: shubhratna@scopeonline.in

Conference Facilities at SCOPE Minar Convention Centre, Laxmi Nagar, New Delhi

SCOPE Minar, Architecturally conceived in the form of two high rise curvilinear tower with blocks sitting on a four storey circular Podium Block, is strategically located in Laxmi Nagar District Centre, Delhi -110092 and housing around 40 PSEs of repute. It is one of the iconic buildings of East Delhi. It has a huge foyer which gives an ambience look inside the building. There is greenery all around the SCOPE Minar building with large size planters. The building also has state-of-the-art Convention Centre comprising of five conference halls:

Board Room



Board room having "U" shaped table, has a seating capacity of 50 delegates with modern facilities - projector, screen, sound system, table mic etc.

Auditorium



The auditorium has a capacity of 350 delegates. Various seminars, training programmes, presentations, get together etc. can be conducted in auditorium which is equipped with projector screen. It provides ambient and peaceful environment for the programmes.

SCOPE Academy of Public Sector Enterprises



SCOPE Academy of Public Sector Enterprises (APSE) conducts executive development programmes for PSEs' executives. It has three training halls equipped with projector, screen, sound system etc. one with capacity of 40 persons and two halls with capacity of 30 persons each for training purpose.

VIP Lounge



VIP Lounge has seating capacity of 30 delegates. CMDs, Directors, and other high level officials can use it as waiting lounge also,

Meeting Hall



Meeting hall having "U" shaped table, has a seating capacity of 62 delegates. Most widely used for small size meetings and training programmes, group power point presentations etc. and is equipped with projector and screen.

For Booking & Tariff details for Convention Center, SCOPE Minar, Laxmi Nagar please contact

Mr. Gopal Krishna Bharti

Asst. Manager (Tech.) SCOPE Minar, Mob: 9717564689 Email: scope.convention@scopeonline.in, gopal@scopeonline.in

Mr. Shubh Ratna

GM (Tech.& HR) Mob: 9873398242 Email: shubhratna@scopeonline.in

There is a wide space for vehicle parking that cater to a capacity of 550 cars, including the newly built good quality Banquet Hall wherein 300 delegates can comfortably dine at a time, making it special to deliver an all-round conducive meeting environment.

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SCOPE SOCIAL INTERACTION CENTRE



SCOPE COMPLEX, LODHI ROAD, NEW DELHI



For further queries contact
Shri Shubh Ratna, GM (Tech & HR), SCOPE | Shri Nishant Kumar, Senior Manager, SCOPE; +91 99530 46060

email-ssic@scopeonline.in