



3rd EDITION | A VIRTUAL CONFERENCE

SMALL SCALE LNG IN INDIA

Experience, Challenges,
New Technologies and Future
Outlook

December 16, 2021

3rd EDITION | A VIRTUAL CONFERENCE

STORAGE IN OIL AND GAS

Current Infrastructure, Future
Requirements, Opportunities and
Challenges

December 17, 2021



Organiser:

**Indjan
Infrastructure**

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Mission

- Small-scale LNG (ssLNG) has emerged as a viable option for serving end users in remote areas and places that are not connected to the main pipeline infrastructure. In 2020, nearly 100,000 mt of LNG was supplied through road tankers to the existing liquid to compressed natural gas (LCNG) stations and other remote industrial consumers from Dahej, Ennore and Kochi terminals.
- Currently, LNG is being supplied to nearly 50 industrial/LCNG operators from the existing terminals. The total LNG output from the eight truck loading facilities at the LNG terminals is 0.4 million tonnes per annum (mtpa). Under an ssLNG network, LNG is ferried in containers by road or rail (or on waterways) from LNG import terminals and is re-gasified at consumer sites.
- In January 2021, Shell launched its first ssLNG supply project in India, a truck loading unit at its LNG terminal in Hazira, Gujarat. While gas customers in industrial clusters are expected to be the primary beneficiaries, ssLNG will also support market seeding and the development of recently licensed city gas distribution (CGD) areas that are not yet connected by pipelines. Besides, innovative supply solutions such as “LNG by trucks” are expected to play a pivotal role in the development of gas markets across the country, including in the hinterland.
- In the coming years, the ssLNG market is poised to grow on the back of support from the government and significant demand from the CGD sector. At least 7-10 mtpa of LNG demand is expected to come from the ssLNG segment by 2025. In terms of infrastructure, around 15 truck loading bays, meant to send out 0.75 mtpa of LNG, are coming up in the country. With these, the number of truck loading facilities in the country will go up to 26, making it possible to send out a total of 1.15 mtpa of LNG in near future.
- Shell plans to have an LNG truck loading unit, and supply LNG loaded on trucks to industrial units such as power plants, and fertiliser and petrochemical plants. Multiple truck loading bays are also planned to be added in the next phase of the Karaikal LNG terminal. Moreover, plans to develop a network of LCNG/LNG fuelling stations along the 6,000 km long Golden Quadrilateral highways are also being chalked out. This move would help in building an effective ecosystem for LNG-fuelled vehicles in the country.
- The mission of this one-day virtual conference is to discuss the emerging trends and recent developments in the ssLNG segment, identify the upcoming opportunities in the LCNG, truck loading and bunkering segments, highlight the experience of key stakeholders, and assess the demand potential from key industrial segments. The conference will also provide a platform to showcase the recent advancements and innovations in technology and equipment.

Target Audience

- The event is expected to draw participation from executives, managers and decision-makers from:
 - LNG Suppliers
 - LNG Storage Facilitators
 - Engineering and Design Firms
 - Government Agencies and Policymakers
 - Technology Providers
 - R&D Organisations
 - Small-scale LNG Potential Buyers
 - LNG Terminals
 - Pumps, Valves and Compressors
 - Regulatory Agencies
 - Steel Manufacturers
 - Industry Analysts
 - End Users/Industrial Consumers
 - Ports and LNG Shipping Companies
 - LNG Transport Companies
 - Equipment Manufacturers
 - Financial Institutions
 - Consultants, etc.

AGENDA/STRUCTURE

INDUSTRY PERSPECTIVE: EXPERIENCE, NEW INITIATIVES AND FUTURE PLANS

- ❖ What has been the experience in setting up and operating ssLNG stations?
- ❖ What are the ssLNG capacity expansion requirements and plans in light of the growing gas demand and declining domestic production?
- ❖ What are the new and upcoming opportunities for technology and equipment suppliers?
- ❖ What is the future outlook for sLNG in India?

REGULATORY FRAMEWORK: KEY DEVELOPMENTS AND OUTLOOK

- ❖ What are the existing regulations, standards and guidelines for the ssLNG segment?
- ❖ What key initiatives are being taken by the central and state regulators to promote ssLNG development?
- ❖ What has been the impact of recent regulatory developments/initiatives?
- ❖ What is the regulatory outlook?

COSTS AND ECONOMIC VIABILITY

- ❖ What factors determine the business viability of ssLNG projects?
- ❖ What are the key cost components? How has the cost economics evolved?
- ❖ What are the trends in LNG prices? What will be the impact of domestic natural gas price fluctuations on the cost competitiveness of ssLNG/L-CNG plants?

FOCUS ON CITY GAS DISTRIBUTION: CURRENT INFRASTRUCTURE AND FUTURE DEMAND

- ❖ What percentage of total gas requirement is being met through RLNG? What is the existing ssLNG capacity (in terms of satellite stations, LCNG stations)?
- ❖ What are the future plans for setting up ssLNG facilities? What are the investment requirements?
- ❖ How is the gas demand expected to increase in the next couple of years? What role can ssLNG play in meeting the increased demand?

KEY FOCUS SEGMENTS: CURRENT INFRASTRUCTURE AND NEW OPPORTUNITIES

- ❖ FOCUS ON LNG SATELLITE AND LCNG STATIONS
- ❖ FOCUS ON LNG TRUCK LOADING FACILITY
- ❖ FOCUS ON LNG BUNKERING INFRASTRUCTURE
- What are the key features of the project (in terms of components/infrastructure, technology used, capacity, storage, etc.)? What are the capex and opex requirements?
- What are the existing sources of gas/LNG supply?
- What are the new and emerging trends in technology and equipment? What are the key issues and challenges?
- What are the upcoming projects and opportunities in this segment?

CAPTIVE SSLNG REGASIFICATION AND STORAGE FACILITIES FOR INDUSTRIAL USE

- ❖ What is the capacity of captive ssLNG facilities (in terms of satellite stations, LCNG stations)?
- ❖ What is your total gas demand? What percentage of your total gas demand is being met through ssLNG?
- ❖ What are the future plans for setting up ssLNG facilities? What are the investment requirements?

SMART ENGINEERING AND DESIGN PRACTICES

- ❖ What are the emerging trends and advancements in the design and engineering of ssLNG facilities?
- ❖ What are the safety aspects being considered? What are the new technologies and digital solutions deployed?
- ❖ What are the challenges in the adoption of these technologies?

TECHNOLOGY AND EQUIPMENT SHOWCASE

- ❖ What are the new and emerging technology and equipment requirements for the ssLNG segment?
- ❖ What are the advancements and innovations in this space? What are the IT and automation systems/tools being deployed for O&M of ssLNG facilities (PLC and SCADA, sensors, flow and pressure devices, etc.)?
- ❖ What are the possible areas/interventions that could lead to cost savings? What is the future outlook?

Mission

- India presents a growing market for bulk liquids, led by petroleum products, petrochemicals and chemicals. Being a consumption-driven market, significant investments are being made in the storage segment, primarily led by oil marketing companies.
- A number of storage structures have been built or are being built by oil and gas companies to store domestically produced and imported crude oil, petroleum products and natural gas. As of August 2021, the total installed capacity of refineries across the country stood at 249.9 million metric tonnes per annum (mmtpa). With regard to the storage of liquefied natural gas (LNG), the total operating LNG capacity in India stands at 42.5 mmtpa as of 2021. Besides, the major ports have a cumulative petroleum, oil and lubricants (POL) storage capacity of about 505 million tonnes (mt). The total handling capacity increased by about 60 per cent from 2015-16 to 2019-20.
- There is also increased focus on automation and digitalisation of storage facilities. IT-based solutions such as supervisory control and data acquisition systems, flow meters and remote sensors are being deployed for real-time monitoring and control.
- Going forward, capacity expansions at LNG terminals, strategic crude oil reserves, CNG stations and refineries are expected to create opportunities for storage infrastructure in the country. The capacity of LNG terminals is expected to increase from 42.5 mmtpa at present to over 70 mmtpa during 2024-25, assuming that all the planned terminals come on stream. India may also explore the development of underground gas reserves to shield itself from supply disruptions. Besides, the growing investments in domestic E&P activity and rising imports are expected to create new demand for storage infrastructure in the country.
- The mission of this one-day virtual conference is to highlight the emerging opportunities in the crude oil and gas storage segment in India, examine the impact of Covid-19, identify the key issues and challenges, and discuss the role of digitalisation and automation. The conference will also showcase some of the key existing and upcoming storage facilities and provide a platform to showcase recent advancements and innovations in technology and equipment.

Target Audience

- The event is expected to draw participation from executives, managers and decision-makers from:
 - Oil & Gas Producers
 - Oilfield Service Providers
 - Storage Tank Manufacturers (Cryogenic, LIN, LOX, Ammonia, etc.)
 - EPC Contractors
 - Refineries
 - Technology Providers
 - Corrosion Control Companies
 - Equipment Manufacturers
 - Chemical and Petrochemical Companies
 - Consultants, etc.

AGENDA/STRUCTURE

INDUSTRY PERSPECTIVE: CURRENT INFRASTRUCTURE AND FUTURE REQUIREMENTS

- ❖ What is the existing capacity and infrastructure created by the industry for storing crude oil and natural gas?
- ❖ What are the plans for the development of new storage infrastructure? What are the investment requirements?
- ❖ What are the current utilisation levels? In what ways has the Covid-19 outbreak increased your storage requirements?
- ❖ What are the key issues and challenges?

FOCUS ON PRODUCT STORAGE FACILITIES

- ❖ CRUDE OIL
 - ❖ COMPRESSED NATURAL GAS
 - ❖ LIQUIFIED NATURAL GAS
 - ❖ REFINED PETROLEUM PRODUCTS (LPG, aviation fuel, diesel, petrol, etc.)
 - ❖ PETROCHEMICALS AND CHEMICALS
- What are the existing storage facilities with key oil and gas companies?
 - What are the new and advanced technologies, and digital solutions deployed for O&M of these facilities?
 - What are the capacity expansion plans and targets? What are the investment requirements?

ISPRL PERSPECTIVE: FOCUS ON STRATEGIC RESERVES

- ❖ What are the key features of the three strategic crude oil storage facilities developed by Indian Strategic Petroleum Reserves Limited (in terms of investment requirements, capacity, pipeline length, land area, number of compartments, sources of funding, etc.)?
- ❖ What are the upcoming facilities and investment requirements?
- ❖ What were the specific risks and complexities involved in constructing these storages in underground rock caverns?

SPOTLIGHT ON STORAGE TANKS: ELEVATED, FLOATING ROOF-TYPE AND UNDERGROUND

- ❖ What are the different types of tanks built for storage of oil and gas?
- ❖ What is the existing capacity of key O&G companies?
- ❖ What are the upcoming facilities and investment requirements?

FOCUS ON O&M: SCOPE FOR AUTOMATION AND INSTRUMENTATION

- ❖ What is the role of IT and automation systems in O&M of storage infrastructure?
- ❖ What are the most promising technologies/solutions (PLC & SCADA, AI, ML, etc.)?
- ❖ What are the upcoming opportunities and outlook for the segment?

INNOVATIONS IN FACILITY DESIGN, ASSEMBLING AND CONSTRUCTION

- ❖ What are the emerging trends and advancements in the design, assembly and construction of storage facilities?
- ❖ What are the new technologies and digital solutions deployed? What are the safety aspects being considered?
- ❖ What are some of the best practices in design and construction? What are the specific issues and lessons learnt?

EMERGING MATERIAL REQUIREMENTS

- ❖ What are the new and emerging material requirements for oil and gas storage facilities (cement, steel, etc.)?
- ❖ What are the recent advancements and innovations in this segment? What is the future outlook?
- ❖ How is the industry gearing up to meet the emerging requirements? How have the procurement strategies evolved?

Previous participants

Adani Ports & SEZ, Aeromarine, Aitut Technologies, Aker Solutions, Ambtronics, Arush Gas Technologies, AUCTION Advisors, Baumer, Bhagyanagar Gas, Black & Veatch, BMR & Associates LLP, BPCL, Brookings India, Burckhardt Corporation, Cairn, Cairn India, Care Ratings, Central UP Gas, Charotar Gas, Cinda, Clarke Energy, Delhi LPG Bulk Carriers, Diamond Gas International, Directorate General of Hydrocarbons, DLF Power & Services, DLF Utilities, DNV-GL, Dolat Capital, DUA Associates, Duraline, EControls, EIL, Elster, Empire Industries, Engie, Essar Bulk Terminals, ESP Safety, Evonik, Fearnleys LNG, Filter Concept, Flir, Flowserve, Flosil, GAIL India, GE Oil & Gas, Global Infrastructure Partners, GMMCO, GMR Energy, Govt. of Western Australia, Green Fuel Energy, Green Gas, GSPL, Gujarat Fluorochemicals, Gujarat Gas, Gujarat State Fertilizer, HCL, HEnergy, High Commission of Canada, Honeywell, Honeywell Process Solution, Howe Engineering, HPCL, HPCL-Mittal, HSA Legal, ICF, ICICI Bank, ICRA, IEX, IFC, IFFCO, IGL, IMC Limited, Imkemex, India Futuristic Marine, Indian Energy Exchange, Indraprastha Gas, Inel, Inox Wind, IOCL, IOT Infrastructure & Energy Services, IOTL, Itron, Jain Irrigation, Jainsons Industries, JCO Pumps, JSW Steel, Jyotech Engineering, Karaikal Port, Kaveri Naphthol LLP, Kawasaki Heavy Industries, Kimplas Piping, Kirloskar Pneumatic Company, KongunaduRoadlines, Koso Pumps, KPCL, Kraton Polymers, KRIBHCO, L&T Hydrocarbon Engineering, Linde, Lloyd's Register, Lucky Investment Mergers, LuxferUttam, Madras Fertilisers, Magikminds, Mahanagar Gas, Maharashtra Natural Gas, Maharashtra State Power Genco, Mahindra Powerol, Marubeni, Maruti Suzuki, MCX, MECON, Ministry of Petroleum & Natural Gas, Mits Skills, Mitsubishi, Mitsubishi Heavy Industries, Mitsui, Morgan Stanley, Motilal Oswal, Moxa, Mumbai Port Trust, National Fertilizers, NEDO, NTPC, Oil India, ONGC, ONGC Tripura Power Company, ONGC Uran, Orissa Stevedores, OSI, Pace Marine Solution, Parker Hannifin, PetroChina International, Pertonas Energy, Petronet LNG, Petronet LNG Kochi, Pipeline Infrastructures, Piramal Glass, PNGRB, PPAC, PPS, Praxair, Process System Engineers, PROTEGO, Quippo, Rajasthan State Gas, Raychem RPG, Reliance Group, Reshamwala Ship Brokers, Reshamwala Shipbrokers, Rockwin Flowmeter, RSGL, Sabarmati Gas, SAGE Group, Saigal Sea Tradem Saipem, Sandvik, Savair, S&P Global, SBI Capital Markets, Scania, SECON, Secure Meters, SENER, Sener India, SGS, Shapoorji Pallonji, Shapoorji Pallonji Oil & Gas, Shell & Tube, SHV Energy, SICK, Siemens, Simorgh Energy, Spark Engineers, Sterling & Wilson, Supertug Offshore, Suren Enterprises, Swagelok, Swiftlifter, TANGEDCO, Tata Communications, Tata Consulting Engineers, The Corporate Profiles, TGE Gas Engineering, The Shipping Corporation of India, Thermax Global, Think Gas, Tieto, Torrent Gas, Toyo Engineering India, Toyota Touche, Tractebel Engineering, Trimble, Tulip Compression, U3S Chemsolutions, Uniper Global Commodities, Varicon Pumps & Systems, VCS Quality, Vimta Labs, Vitrum Glass, Wallfort Financial Services, Western Australia Trade, Zuari Indian Oiltanking, etc.

REGISTRATION FORM

I would like to register for the “SMALL SCALE LNG IN INDIA” conference (December 16, 2021)

I would like to register for the “STORAGE IN OIL AND GAS” conference (December 17, 2021)

I would like to register for **both the conferences**

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Registration Fee

Both conferences

	INR	GST@18%	Total INR	Total USD
1 Login	12,000	2,160	14,160	203
2-3 Logins	18,000	3,240	21,240	304
4-5 Logins	24,000	4,320	28,320	405
6-9 Logins	30,000	5,400	35,400	506
10-20 Logins	36,000	6,480	42,480	607

Any one conference

	INR	GST@18%	Total INR	Total USD
1 Login	7,000	1,620	8,260	116
2-3 Logins	12,000	2,160	14,160	203
4-5 Logins	17,000	3,060	20,060	287
6-9 Logins	22,000	3,960	25,960	371
10-20 Logins	27,000	4,860	31,860	456

- There is a 30 per cent “early bird” discount for those registering before November 25, 2021.
- GST @18 per cent is applicable on the registration fee.
- Registration will be confirmed on receipt of the payment.

Sponsorship opportunities
are available

Payment Policy:

- Full payment must be received prior to the conference.
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- Conference fees cannot be substituted for any other product or service being extended by India Infrastructure Publishing Pvt. Ltd.

Organisers

The conference is being organised by **India Infrastructure Publishing**, the leading provider of information on the infrastructure sectors. The company publishes **Indian Infrastructure** (a magazine on infrastructure policy and finance), **Power Line** (India’s premier power magazine) and **Renewable Watch** (which covers the entire spectrum of renewable energy). It also publishes a series of reports on the oil and gas sector including **LNG Market in India** and **City Gas Distribution Market in India**.

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