



GAIL (India) Limited
India's **Youngest** Maharatha



Sustainability Report

2017 - 18



Our Sustainability Reports (SR)

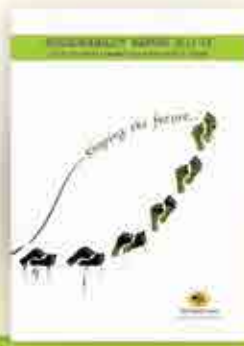
2011



SR FY 2010-2011

Value Beyond Business

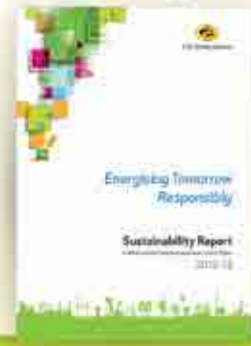
2012



SR FY 2011-2012

Shaping the Future

2013



SR FY 2012-2013

Energising Tomorrow Responsibly

2014



SR FY 2013-2014

Care Share Grow

2015



SR FY 2014-2015

Fostering Responsible Growth

2016



SR FY 2015-2016

Nurturing Resilient Eco-system

2017



SR FY 2016-2017

Rejuvenate | Resonate | Redefine

2018



SR FY 2017-2018

Execution | Efficiency | Excellence



Content

13
CMD's Message

About the Report 15

19
GAIL's Story

Corporate Governance 29

37
Risk Management

Sustainability at GAIL 45

49
Stakeholder Engagement and Materiality

Business Growth 59

73
Operational Excellence

Energy and Environment 83

93
Health and Safety

Public Policy and Advocacy 101





109

Human Capital at Core

119

Our Corporate Social Responsibility

127

Customers

131

Suppliers

137

Performance Snapshot

143

Independent Assurance Statement

147

Glossary

149

GRI Content Index

161

Linkages with NVG SEE Principles

162

Linkages to API/IPIECA, UNGC, ISO 26000 Principles





GAIL Highlights for 2017-18

Clean, affordable and sustainable supply of energy



1st Liquefied Natural Gas (LNG) cargo under long-term contract with Russia that arrived at Dahej was received by Shri Dharmendra Pradhan, Minister for Petroleum & Natural Gas and Skill Development & Entrepreneurship.



International Energy Forum at New Delhi



1st Liquefied Natural Gas (LNG) cargo under long-term contract with Russia arrived at Dahej was received by Shri Dharmendra Pradhan, Minister for Petroleum & Natural Gas and Skill Development & Entrepreneurship





Energizing our Cities with Cleaner Fuel



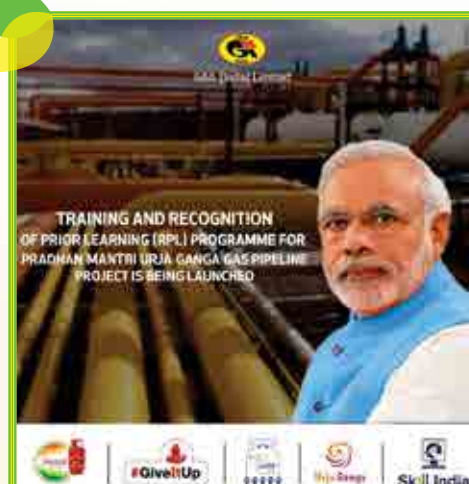
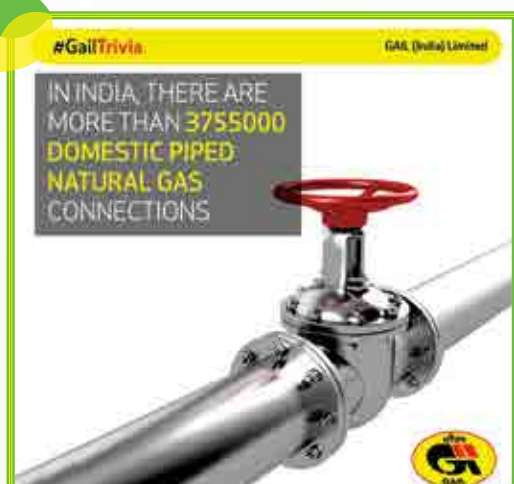
The Urja Ganga project is a 2,655 km long project, also known as Jagdishpur-Haldia & Bokaro-Dhamra (JHBDPL) Pipeline project.

This pipeline has been further extended by adding 727 kms from Barauni to Guwahati. The current capacity of Regasified Liquefied Natural Gas (RLNG) terminals in India is 30 Million Metric Tonne Per Annum (MMTPA).





Energizing our Cities with Cleaner Fuel – Continuation



A Proud Moment to share



GAIL turns a new leaf in gas retail marketing with Jagdishpur-Haldia & Bokaro-Dhamra Pipeline (JHBDPL) by executing Joint Venture Agreement (JVA) with GCGSCL (a Govt. of West Bengal entity) for operating city gas network in Kolkata Geographical area extending over 1500 sq.kms

This historic agreement paves the way for GAIL to steer the Joint Venture Company with 76% equity stake. The new subsidiary Bengal Gas Company Limited has set an ambitious target of connecting over 1.4 million households and setting-up 70 plus CNG stations at an investment of over ₹ 500 crore within the next five years. The addition of Kolkata into GAIL's CGD portfolio provides us with a unique distinction of emerging as a major operator of City Gas Distribution across metropolitan cities in India.

Kolkata JVA was signed in the presence of CMD, GAIL and Chief Secretary, Govt. of West Bengal today at the State Secretariat, Kolkata.





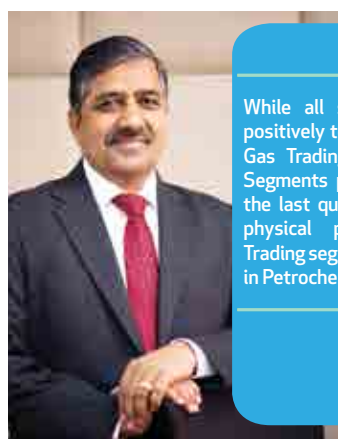
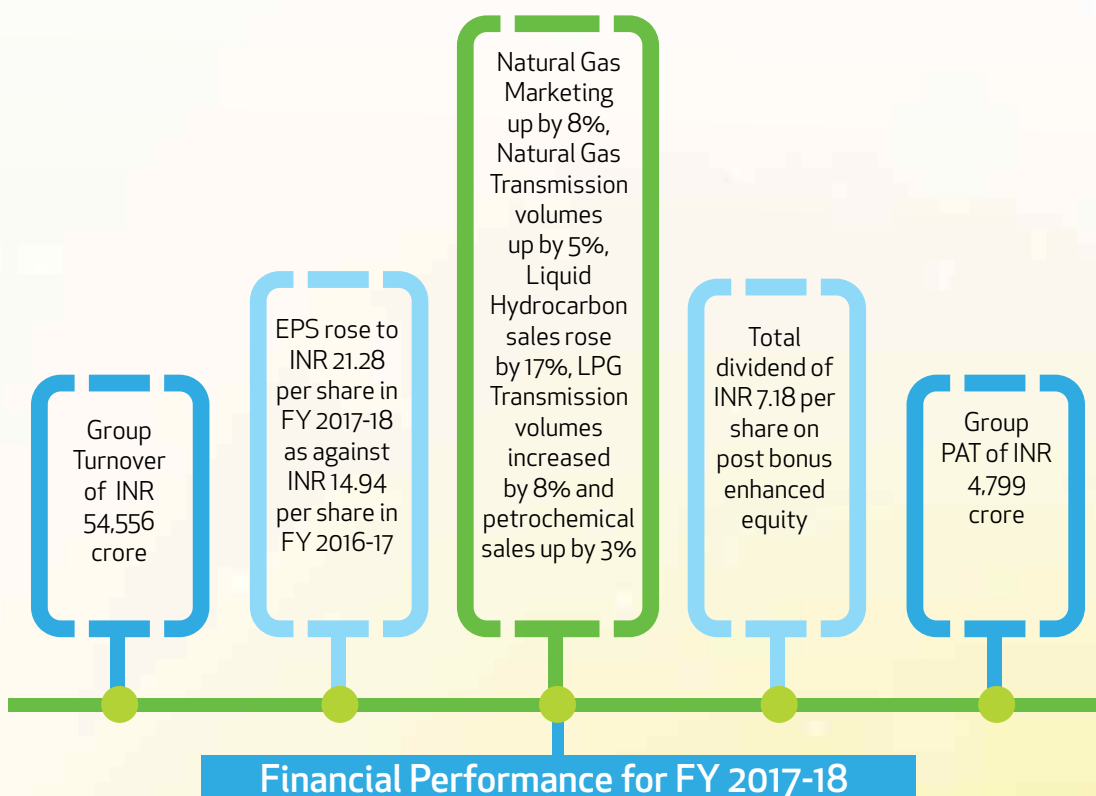
Natural Gas for a Cleaner Tomorrow





Energizing tomorrow with cleaner fuel

Sustaining the growth momentum through strong financial performance



While all segments contributed positively to the company's profit, Gas Trading and Petrochemicals Segments performed better than the last quarter due to improved physical performance in Gas Trading segment and better margin in Petrochemicals segment.

Shri B.C. Tripathi CMD
GAIL (India) Limited



GAIL (India) Limited





Customer Centricity, Safety and Mobility



GAIL signs Rupee term Loan Agreement with SBI



Partnership agreement between Uber and GAIL signed at Hardware Technology Park, Bengaluru

We Are Equipped To Provide Uninterrupted And Safe Services To Our Customers

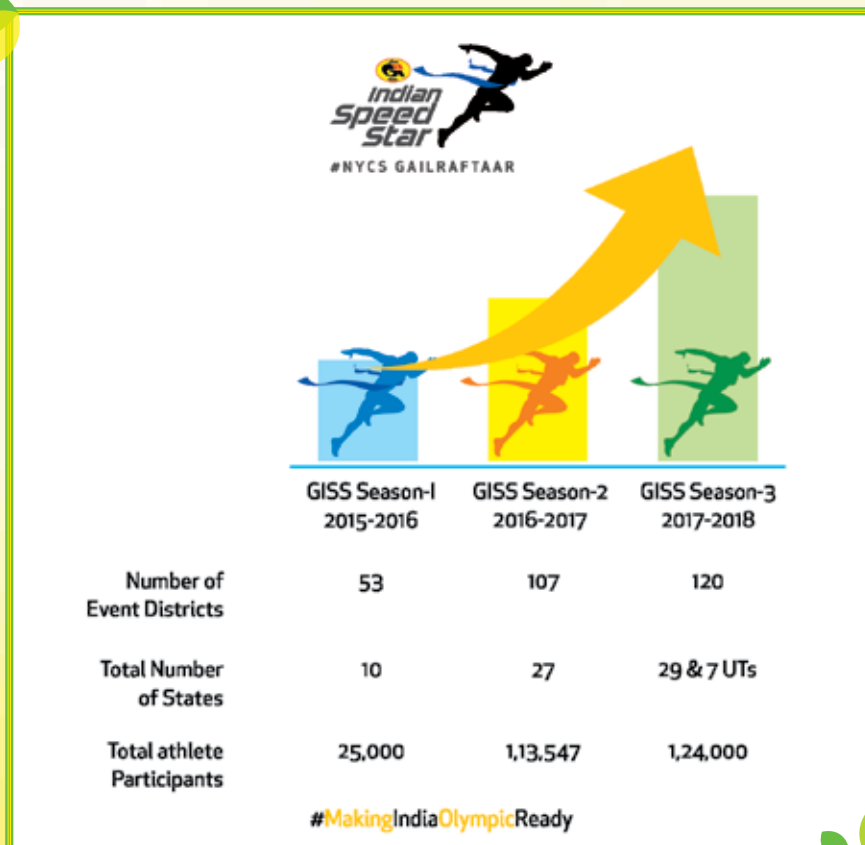
- 24x7 customer care
- A flexible, dynamic and transparent service for ensuring the uninterrupted flow of gas
- All GAIL projects involving responsible and safe drilling - without affecting the environment of public

Bringing Clean Fuel to Your Doorstep

GAIL (India) Limited



Creating Value beyond Business





Community Connect



Mobile medical units (MMU) for providing health checkups to nearby villages of GAIL installations under GAIL's flagship healthcare project "Aarogya".



Glimpse of GAIL Speedstar athletes during the felicitation event



Free Health checkup camp organized by GAIL on 04.05.2018 under GAIL CSR Project "Aaroga". Respectable Sh. Ram Naik, Governor, Uttar Pradesh was present as Chief Guest of the event



Mini-marathon organized for women at GAIL, Noida



Committed to Nation's Development



GAIL (India) Limited




**GIVE WINGS TO YOUR ENTERPRISING IDEA
WITH GAIL'S INVESTMENT**



 GAIL PANKH, an initiative to identify, invest and nurture Start-ups in our Core Business areas that can become successful ventures and contribute to the creation of a Start-up Nation
A GAIL Start-up Initiative

**Hurry !! Submit your Proposal by June 20, 2018
Portal opens on June 1, 2018**

To know more about the eligibility and evaluation process, visit: www.gailonline.com Follow us 





Swachh Bharat Pakhwada



Global Recognition



GAIL (India) Limited has been included in the

**FTSE4
Good Emerging Index"** for second year in a row.





Our Commitment towards Sustainable Development Goals (SDGs)



United Nations' Sustainable Development Goals (SDGs) came into force on January 1, 2016. The unprecedented scope of the 17 SDGs and its 169 sub-targets have laid a comprehensive vision for the future. They offer a tremendous opportunity to move towards a more equitable, socially inclusive, safe and sustainable world.

The Government of India is focused towards tracking and evaluating the impact of its present initiatives and scaling up successful interventions with regards to the SDGs. Achieving the SDGs in a country as diverse as India may be seen as difficult but not unachievable.

"There is no cause greater than shaping a world in which every life that enters it can look to a future of security, opportunity and dignity; and, where we leave our environment in a better shape for the next generation. And, no cause that is more challenging" – Sh. Narendra Modi, Prime Minister of India.



We have mapped our key initiatives with SDGs relevant to business approach. The details of these initiatives are appropriately captured in the Report.





Mapping GAIL Initiatives with SDGs



- GAIL Kaushal
- Promotion of Khadi



- GAIL Saksham
- Health and safety at Workplace
- GAIL Arogya
- GAIL Raftaar



- GAILUjjwal
- Project Utkarsh



- GAIL Sashakt



- Swachh Bharat Pakhwada



- Urja Ganga
- Rooftop Solar Power Plant
- Clean Energy Development



- GAIL Pankh
- EIC Coaching Program
- Public Procurement Policy



- Bio-based fuel Generation
- Digital yatra
- Pipeline Integrity Management



- GAIL Unnati
- Project Shrijan



- Energy Efficiency Initiatives
- Waste Management and Land Reclamation



- Emission Management
- Cloud Based Emission Monitoring - IIOT



- Hawa Badlo
- Green Belt and Biodiversity Management



- Partnership with TERI





CMD's Message

As the pace for gas-based economy accelerates and forays in new markets and geographies through expanding national gas grid and city gas projects, at GAIL, our emphasis have been on expansion across gas value chain and achieve a deeper market penetration.



Being India's flagship natural gas company, GAIL promotes natural gas in all spheres of economic and social growth in the country. It has been our consistent endeavor to achieve our goals and objectives. We have made systematic investments in building new gas pipelines and undertaking City Gas Distribution projects to cater to the increasing energy needs of the country. Today, GAIL has a marked its presence in the entire gas value chain ranging from exploration, processing, transmission and marketing of Natural gas as well as processing of gas based value-added products such as LPG and its transmission, other Liquid Hydrocarbons and Petrochemicals.

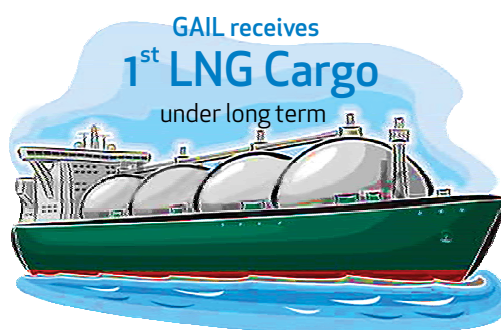
During FY 17-18, GAIL registered a gross sale of INR 53,825.49 crore and a highest ever Profit after Tax (PAT) of INR 4,618 crore. This rise in PAT has been achieved along with 5% growth in Natural Gas Marketing segment and Natural Gas Transmission volumes. Sales quantity in Petrochemicals, Liquid Hydrocarbons and LPG Transmission segment also went up by 17%, 15% and 11% respectively.

With gaining more visibility as a Global player, this year marked a turning point for GAIL as we foray into new business area of international trade of LNG. By virtue of its LNG Portfolio, GAIL today is among top 10 Global LNG players. As an industry pioneer, undertook innovative measures of destination and time swap of term contracts with global players to optimize value under long-term LNG contracted from USA. The LNG carrier- Meridian Spirit which has been charter hired at extremely competitive rates is pressed into service for voyaging scheduled cargoes from US east coast. This year, GAIL became the first Indian public-sector company to source LNG from Russia on a long-term. GAIL has contracted to import 2.5 MMTPA of LNG from Gazprom Marketing and Trading Singapore. In midst of geopolitical uncertainties, LNG imports from Russia will go a long way in mitigating these risks.

In addition to an existing pipeline network of over

11,400 km of Natural Gas pipeline and over 2,030 km of LPG pipeline in India, our company is now developing Natural Gas pipeline network of more than 4,000 km across the country to make access-to-energy for all a reality.

GAIL has been entrusted with responsibility of 'Pradhan Mantri Urja Ganga' (PMUG) project. This project would help achieve our government's aspiration of increasing the percentage contribution of natural gas in India's energy mix to ensure a sustainable economic and social



Energy cooperation
contract with **Russia**





growth through clean fuels. PMUG was envisaged to bring eastern states of Uttar Pradesh, Bihar, Jharkhand, West Bengal, Odisha and Assam under National Gas Grid. This pipeline has been further extended by adding 727 kms from Barauni to Guwahati. Gas supply through pipeline and cascades has commenced in Varanasi, Bhubaneswar and Cuttack in the first quarter of FY 2018-19. Ground work for laying the CGD network in Patna, Ranchi and Jamshedpur has also started. Physical progress is in line with the envisaged schedule.

City Gas Distribution networks along the pipeline at Varanasi, Patna, Ranchi, Jamshedpur, Cuttack and Bhubaneswar are being concurrently developed. GAIL has also turned a new leaf in gas retail marketing along Jagdishpur-Haldia & Bokaro-Dhamra Natural Gas Pipeline (JHBDPL) pipeline by executing Joint Venture Agreement with Greater Calcutta Gas Supply Corporation Limited (GCGSCL), for operating City Gas Network in Kolkata extending over 1,500 km and have set an ambitious target of connecting over 1.4 million households.

GAIL, through its focussed measures, has also contributed to the National initiatives that includes Make in India, Smart Cities, Skill India, Ujjawala scheme among others. Further, in a bid to contribute to the Government's effort to combat air pollution, GAIL supports and promotes the 'Hawa Badlo' initiative which aims to bring change in air quality through environment friendly practices in day-to-day life.



Smart Cities, Skill India and Ujjawala Scheme, among others.

Health, Safety and Environment sustainability is of highest priority at GAIL. In keeping with this philosophy, various initiatives were undertaken such as Behavior Based Safety (BBS) and SAP training on Environment, Health & Safety Module (EHSM) to employees to upgrade their performance in their respective HSE functions. With these efforts, FY 17-18 has been an incidence free year with zero Fatalities and zero reportable injuries. In addition, GAIL achieved the HSE Score of 93.45% as against the MoU target of 90%, Zero fatalities and Zero reportable injuries.

We are proud to announce that the 'FTSE4Good Emerging Market Index', a market-leading tool for investors seeking to invest in companies that strong management of ESG risk, has included GAIL for second year in a row. GAIL as a responsible Corporate citizen is committed towards the Sustainable Development Goals (SDGs). We aim to align our business goals with national and global priorities.

In order to amplify its outreach efforts, GAIL contributed 2.63% of the average net profit of the preceding three years on CSR projects in FY 2017-18 amounting to INR 91.65 crore as against the stipulated 2% spend of INR 69.67 crores. GAIL's CSR philosophy of 'HRIDAY' emphasises on a multi-stakeholder approach. We have been effectively engaging and collaborating reputed institutions and NGOs to develop, assess, execute and monitor projects and effectively respond to community challenges. GAIL has supported 31 GPS enabled and geo-fenced Mobile Medical Units (MMU) under our flagship healthcare project 'Arogya'. The project includes Free Doctor's consultation, distribution of medicines, basic diagnostic tests and referral to other healthcare facilities. GAIL with its focus on long-term approach and consistent endeavor through our CSR projects, GAIL has been recognized and awarded for excellence in CSR practices under Hindustan PSU Award 2018.

With the commitment and efforts of our employees, GAIL treads towards the holistic success of the organization to create long-term value for its stakeholders. With every year our approach to sustainability agenda becomes more enriched and refined through our experiences and learnings. At this exciting dawn of a new GAIL in the making, I, look forward to deepening engagement and trust of our stakeholders as we tread newer paths together and scale uncharted milestones. In the end, I would like to thank our stakeholders for their valuable support and continued belief in GAIL.

B. C. Tripathi
Chairman and Managing Director
GAIL (India) Limited





01

About the Report



GAIL's growth story



is based on the strong foundation of
Ethics, Transparency
and Inclusiveness





About the Report



Since 2011, GAIL has been sharing its social, environmental and economic impacts of its operations with all its stakeholders through its annual Sustainability Report. Through the sustainability reports, we communicate the company's performance targets and corresponding results related to sustainability commitment so as to ensure a transparent disclosure practice.

This report has been prepared with reference to the latest version of Global Reporting Initiative (GRI) Standards: Core Option. The content has been defined taking into consideration the reporting principles as referred in Global Reporting Initiative (GRI) Sustainability Reporting Standards document that is available on the GRI website. The content index is included on page 149 of the report.

This report also complies with National Voluntary Guidelines (NVG) on social, environmental and economic responsibilities, International Petroleum Industry Environmental Conservation Association (IPIECA), the global oil and gas industry association for environmental and social issues, guidelines of the American Petroleum Institute (API), United Nations Global Compact (UNGC), and ISO 26000:2010.

Global Reporting Initiative (GRI) is the first independent international organization that pioneered sustainability reporting in 1997. GRI helps businesses and governments worldwide understand and communicate their impact on critical sustainability issues enabling real action to create social, environmental and economic benefits for everyone. They feature a modular and interrelated structure and also represent the global best practices for reporting on a range of economic, environmental and social impacts. They are designed to be used as a

set by any organization that wants to report about its impacts, and the organization's contribution towards sustainable development.

GRI Standard has two "in accordance" options of core and comprehensive. The general disclosures are to be reported for both options, with a larger number reported for the comprehensive option for standard disclosures on an organization's strategy, analysis, governance and ethics. With an objective to improve readers' reference to guidelines, we have mapped the GRI Standard indicators in the footer of the relevant sections of the report.





The above Design Frame is used through out this Report to highlight New Information/Initiative taken during Fy 2017-18

“Execution, Efficiency, Excellence”

Growth of an organization is imperative for the sustenance of a business. However, growth in these times is more inclusive, centred not only on the financials of the business but also value creation for its stakeholders.

GAIL's growth story is based on the strong foundation of ethics, transparency and inclusiveness. Fiscal 2017-18 has been a landmark year for GAIL. GAIL's strong pursuit of investments and growth along the natural gas value chain resulted in delivery of highest-ever profits grossing over ₹4,618 crore in FY 2017-18 increasing by 32% from last financial year (FY). This year has also been significant in terms of strengthening our sourcing of natural gas. GAIL, now with LNG/RLNG portfolio of over 15 MMTPA, is being recognized as a significant player in the global industry.

Our continued commitment and action towards consolidating leadership position in natural gas business by expanding the transmission and distribution infrastructure, gas trading portfolio, city gas distribution infrastructure, optimizing our LNG contracts and marketing of LNG cargoes has helped us reap the accomplishments that exceeded our growth metrics. In line with our vision of creating value for our stakeholders,

the GAIL Board recommended highest ever total dividend pay-out of ₹1,619 crore that is a historic dividend distribution at 35% of profit after tax.

We at GAIL believe in growth with responsibility. With a reassuring present, our focus remains on kaizen, the continual holistic improvement in our systems, processes, operations, contracts, technology and ultimately the way we do our business.

This philosophy forms the foundation of our theme for our Sustainability Report for FY 17-18 - “Execution, Efficiency, Excellence”.

Reporting Year

GAIL follows the financial year, April 01 to March 31 for the purpose of reporting its financial accounting and performance. The same period has been used for reporting its sustainability performance. This is the company's 8th sustainability report and the reporting content is based on GAIL's economic, social and environmental performance in financial year 2017-18. The electronic version of this report is available on our website for sustainability report www.gailsustainabilityreport.com.

Data Management

This report covers economic, social and governance related data from April 01, 2017 to March 31, 2018. The data presented in this report has been captured using GRI Standards and their methodologies. The report also presents a detailed description of the GAIL's engagements with the various stakeholders and myriad initiatives that were undertaken to meet the stakeholders' aspirations. The report also covers material aspects that are important to our business as well as stakeholders. In addition to this, various plans, projects and strategic approaches to various sustainability issues have also been discussed.

This year we have tried to adapt a new structure of reporting in order to offer

an easy readability for the readers and provide them with an understanding about the organization. The GRI content and linkages with other guidelines is available in the later section of the report and purposefully kept at the end to maintain the flow of readability.



List of Operation/ Locations included in the Report





Our commitment to Sustainable Development Goals

As a responsible corporate citizen and a government undertaking, GAIL consistently endeavors to create a positive value for our stakeholders. We aim to align our business goals with national and global priorities. With this perspective, we have highlighted our initiatives aligned to achieve the SDGs. The relevant SDGs have been mapped to different sections of the report and depicted through the SDG icons.

Report scope and boundary

This year we have added a new operational location, Kochi Pipeline region, into the boundary of the report.

The scope of the company's reporting on the various parameters covers all

the locations of the company except joint ventures, subsidiaries, leased facilities, outsourced operations, and other entities.

This report is based on a manuscript compiled by functional departments and each of the process owners identified for the respective material aspects.

Data validation and assurance

This report has been assured by external assurance agency, M/s Emergent Ventures India Pvt. Ltd. This is a Type 2 moderate level assured report based on AA1000AS (2008) standard. The assurance process includes data verification at different sites of GAIL that will help in improving our processes and data management mechanisms.

Communicating GAIL's sustainability performance to its stakeholders in a transparent manner is of utmost importance to us. Stakeholder

views are among the most crucial elements that help us in this respect. Our stakeholders can share their constructive feedbacks or queries about the report to Shri R K Choubey, CGM (SD) at choubeyrk@gail.co.in, Shri Arvind Kumar Namdeo, GM (SD) at arvind.namdeo@gail.co.in and also reach us at sustainability@gail.co.in.

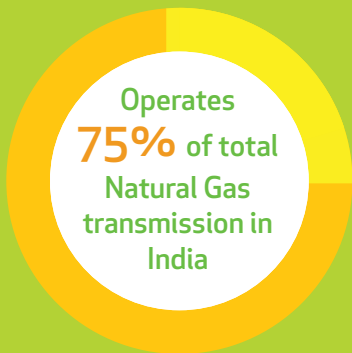
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02

GAIL's Story





GAIL's Story



GAIL (India) Limited, previously known as Gas Authority of India Limited, was established on August 16, 1984 and is headquartered in New Delhi, India. GAIL is a limited company domiciled in India with its equity shares listed on the Bombay Stock Exchange (BSE) and the National Stock Exchange (NSE). GAIL has two overseas wholly-owned subsidiaries, viz., GAIL Global Singapore Pte. Limited in Singapore and GAIL Global USA Inc. in the US. As on March 31, 2018, Government of India holds 53.59% in the paid-up equity capital of the company.

GAIL was conceptualized with an objective to leverage the natural gas reserves of India and create gas sector infrastructure for an uninterrupted energy supply to fuel the country's economic and industrial growth. With this objective in mind, GAIL received a massive economic and strategic push from the government during its formative years. We have now become a self-sustained natural gas company with presence in all aspects of the natural gas value chain including exploration and production, processing, transmission, distribution and marketing.

An overview of the organization

Keeping in sync with the developmental needs of the economy, GAIL has undergone strategic diversifications into petrochemicals and liquid hydrocarbons over the years. We have also ventured into various collaborative projects and further diversified the company's portfolio into power, liquefied natural gas re-gasification and city gas distribution (CGD).

At present, GAIL is the largest natural gas provider company of India, also holds the reputation of having the widest and the most reliable services in the country. We were conferred Maharatna status by the Government of India, recognizing our huge market penetration and service quality. We are currently a major contributor in meeting the energy needs of the nation and further aspire to drive an era of industrial growth fueled by clean energy. Further, we conduct our business strong compliance management. Our systems built on the

principles of transparency and ethics.

We are now striving to expand our footprint to international markets. In line with this strategy, we recently acquired participating interest in shale assets in the US, LNG operations trading in Singapore and CGD joint ventures in Egypt and China. Further, we are now sourcing gas through international Sale Purchase Agreement (SPAs) from different regions and countries, including the Middle East, the US, Russia and Australia.

GAIL is India's apex natural gas company with an extensive state-of-the-art natural gas pipeline network of 11,400 km and over 2,030 km of





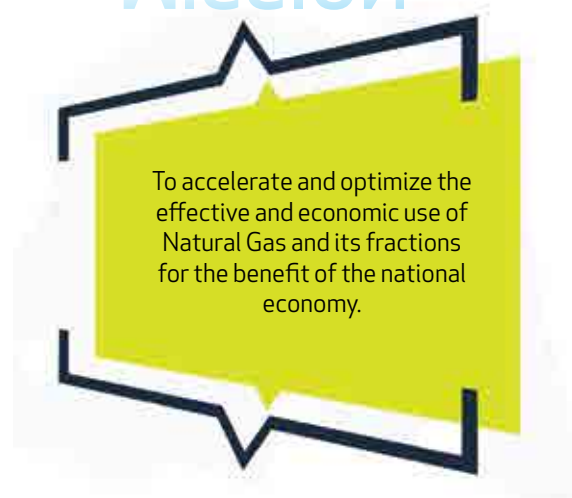
LPG' pipeline, benefiting millions of customers. Being a natural gas company, GAIL makes substantial contribution towards India's energy security and also plays a vital role in the socio-economic development of the country. This makes GAIL an

important contributor towards India's dream of "access-to-energy-for-all". This is also in line with the increased thrust being placed by the Government of India (GoI) in progressing towards a gas-based economy. While GAIL enjoys a huge domestic customer

base, it has also successfully marked its presence on the world map for its developed supply capacity and market penetration. GAIL aspires to drive India towards a gas-based economy for a greener tomorrow.



MISSION





Key elements of GAIL's Vision

1 Ethics

We are transparent, fair and consistent in dealing with all people. We insist on honesty, integrity and trustworthiness in all our activities.

2 Customer

We strive relentlessly to exceed the expectations of our customers, both internal and external. Our customers prefer us.

3 Shareholders

We meet the objectives of our shareholders by providing them superior returns and value through their investments in us.

4 Technology

We believe technology is the key to the future success of our organization. We advocate use of 'best-in-class' technologies.

5 People

We believe our success is driven by the commitment and excellence of our people. We attract and retain result-oriented people who are proud of their work and are satisfied with nothing less than the very best in everything they do. We encourage individual initiative by creating opportunities for our people to learn and grow. We respect the individual rights and dignity of all people.

6 Safety, Health and Environment

We promote highest levels of safety in our operations, health of our employees and a clean environment. We strive for continuous development of the communities in which we operate.





Business Portfolio



Natural Gas

- Over 11400 km of Natural Gas Pipeline and Sophisticated Gas Management System
- Total Sales Volume of 85 MMSCMD achieved during 2017-18
- 26 new Last Mile Connectivity rolled out during 2017-18



Petrochemicals

- Total Sales of 674 TMTs of polymers from Pata
- Total Production of 666 TMT and 205.56 TMT of Polymer from Pata and BCPL respectively
- Marketer of subsidiary BCPL's polymers
- Participation in OPAL



Liquid Hydrocarbon

- 6 Gas Processing Plants Producing LPG, Propane, Pentane, Naphtha etc.
- Total Production Capacity of 1.3 MT
- Total Production of 1.28 MT during 2017-18, of which 80% is LPG and propane



LPG Transmission

- First company in India to own and operate pipelines for LPG transmission
- Share of about 8% of Indian LPG market in LPG production and 4 % in LPG sales
- 2038 km LPG pipeline network
- Supplies to PSU Oil Marketing Companies namely IOCL, BPCL and HPCL ex-GPUs at Import Parity Price





City Gas Distribution

- CGD networks along the pipelines at Varanasi, Patna Ranchi, Jamshedpur, Cuttack and Bhubaneshwar being developed
- Set up Rich-Lean Gas Corridor and the Waste Heat Recovery Projects at Hazira & Vijaiapur, respectively



E & P

- A part of vertical integration Participation in 10 blocks (operator-1 on-land block)
- Discovery of hydrocarbons and crude oil from these blocks
- Revenue of INR 631 crore from these blocks during 2017-18
- Presence in Myanmar & USA



Power & Renewables

- 118 MW Wind Power Plant and 10 MW Solar Power Plant
- Participation in RGPPL (Capacity 500 MW)

GAIL Timeline



Formation of GAIL

1984



HVJ Pipeline

1988



Entry into LPG

1990



Entry into CGD

1994



Navratna Status

1997



Entry into Petrochemicals

1999



First LNG Import

2004



First SPOT LNG at Dahej

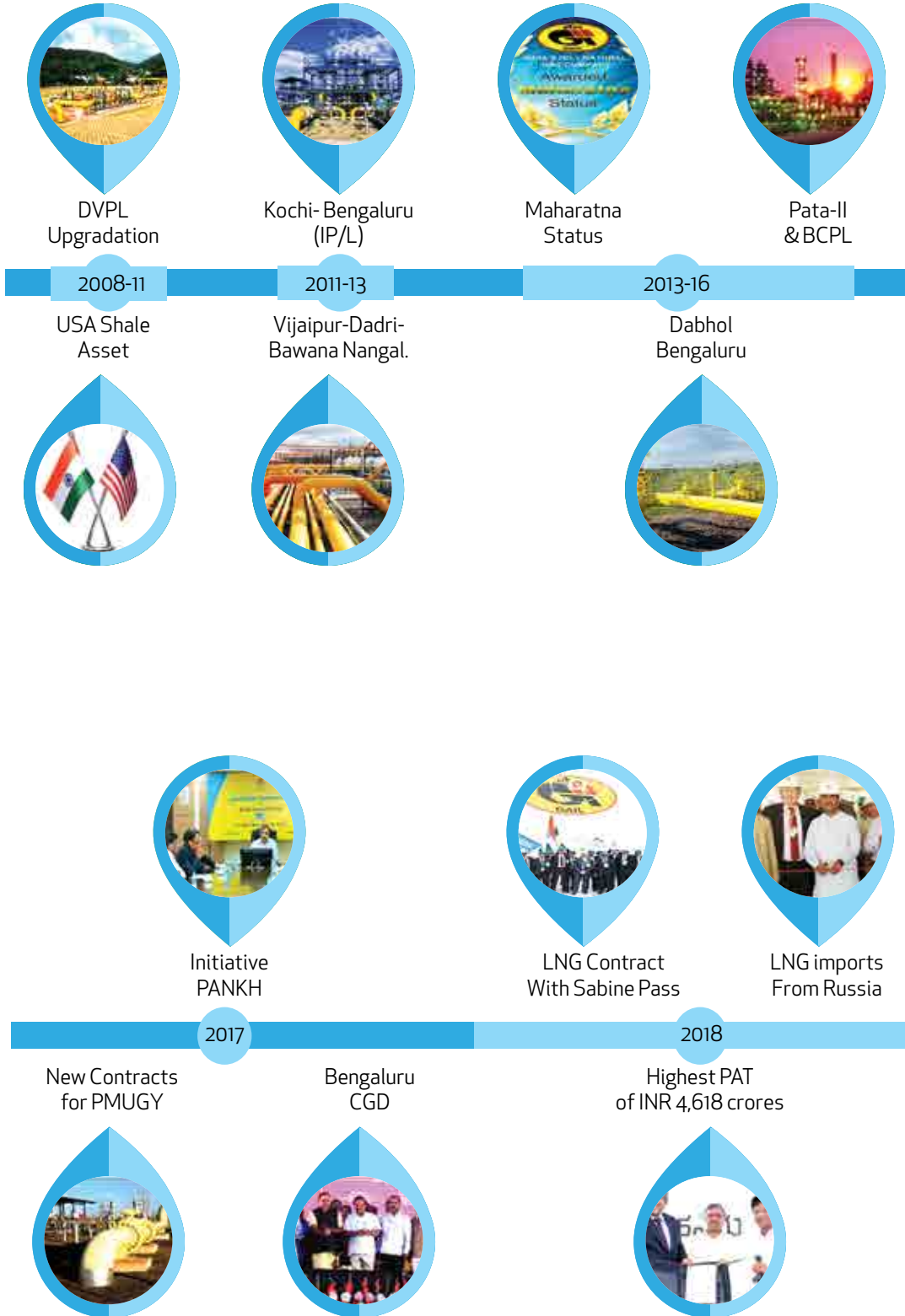
2006



GAIL Gas Formed

2008







Our Footprints





Our presence, subsidiaries and joint ventures



Domestic Subsidiaries

- Brahmaputra Crackers & Polymers Ltd. (BCPL-70%)
- GAIL Gas Ltd. - GAIL's wholly owned subsidiary (100%)



Overseas Subsidiaries

- GAIL (Global) Singapore Pte. (100%)
- GAIL (Global) USA Inc. (100%) GAIL Global (USA) Inc.(100%) subsidiary of GAIL (Global) USA Inc.)



Joint Ventures

- Petronet LNG Limited (125%)
- GAIL China Gas Global Energy Holding Limited (50%)
- ONGC Petro Additions Limited (49.21%)
- TAPI Pipeline Company Limited (5%)
- Natural Gas Company 'Nat Gas' (5%)
- Fayum Gas Company (19%)
- GAIL China Gas Holding Limited (5%)
- Talcher Fertilizers Limited (29.67%)
- South-East Asia Gas Pipeline Company Limited (4.17%)



City Gas Distribution (CGD)

- Mahanagar Gas Limited - MGL (32.50%)
- Indraprastha Gas Limited - IGL (22.50%)
- Bhagyanagar Gas Limited - BGL (49.97%)
- Green Gas Limited - GGL(49.97%)
- Central U.P. Gas Limited - CUGL (25%)
- Maharashtra Natural Gas Ltd. - MNGL (22.50%)
- Aavantika Gas Limited - AGL (49.97%)
- Tripura Natural Gas Co. Limited - TNGL (48.98%)
- Vadodara Gas Limited - VGL (32.93%)

Through GAIL Gas Limited

- Goa Natural Gas Private Limited
- Haridwar Gas Private Limited
- Kerala GAIL Gas Limited
- Andhra Pradesh Gas Distribution Corporation Limited





Awards and recognitions

Corporate

- GAIL was included in the "FTSE4Good Emerging Market Index", a market-leading tool for investors seeking to invest in companies with a strong management of Environmental, Social and Governance (ESG) risk, for second year in a row.
- GAIL was amongst the finalists of S&P Global Platts-Global Energy Award in the "Industry Leadership Award Midstream" category.
- GAIL reached the final stage of "BML Munjal Awards-Business Excellence through Learning and Development".

CSR

- CSR Project of the Year Award for Srijan- by India CSR Network Social Footprints CSR Award

2018 by CIM Global and CMAI Association of India.

- "The Golden Globe Tigers Award 2018 for Excellence & Leadership"- Fun & Joy at Work.
- "2nd ICSI CSR Excellence Award 2017 for Best Corporate (in Large Companies Category)" by ICSI.
- "FICCI CSR Awards 2016-17 for Category 2: Education, Skill Development and Livelihood under Public Sector Companies (PSUs)" for Project Avant by FICCI.
- "Economic Times 2Good CSR Rating"- the only PSU to be feted in "All Round Excellence" category by The Economic Times.

HSE

- GAIL was conferred with two National Safety Council of India Awards for the year 2016 under two different categories.

- GAIL Hazira-Vijaipur-Jagdishpur (HVJ) compressor station, Vijaipur was declared as a winner of the second level award -Shreshtha Suraksha Puruskar (Silver Trophy) in the "manufacturing sector category".

- GAIL GPU & Compressor Station, Vaghodia was declared as the winner of the fourth level award (Prashansa Patra in the above category).

- GPU Vaghodia and Gandhar won the British Safety Council "International Safety Award-2018".

- GAIL was conferred with the award for "Best Implementation of BBS in Indian Industry" by the Forum of Behavioural Safety, Mumbai.

TQM

- GAIL was conferred with "Best Overall Performance Award for Upstream Sector Company" by PCRA/MoP&NG for Saksham activities.



The Presidential Award was presented to Dr. Ashutosh Karnatak, Director (Projects) by NACE International





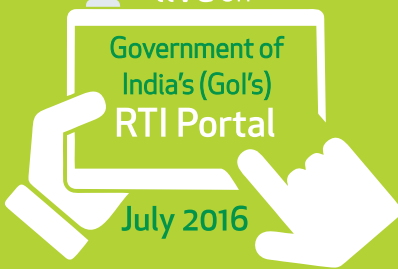
03

Corporate Governance

GAIL has been
live on

Government of
India's (GoI's)
RTI Portal

July 2016



In FY 17-18, 98% of
Public Grievances



have since been
Resolved





Corporate Governance



We aim to ensure that the highest standards of corporate governance and accountability to support the effective management of our businesses. Our focus remains on ascertaining the highest standards of ethical and responsible conduct of business to create value for all our stakeholders including regulators, employees, customers, vendors, investors, and society. GAIL's corporate governance processes are designed to ensure efficiency, transparency, accountability, responsibility, ethics, and integrity across the entire value chain.

We firmly believe in building a sustainable company that recognizes the short and long-term impact of its activities on the economy, society, and the environment.

Governance structure

The Board of Directors is governed by a formal Board Charter setting out its composition, processes, and responsibilities. One of the Board's key responsibilities is to ensure that the corporate governance within the organization is in line with the industry's best practices. The Board undertakes various strategic decisions critical for successful business operations while upholding good corporate governance.

We have implemented advanced systems and processes for the proper functioning of the internal controls. We review our internal audit and compliance procedures intensively and efficiently. GAIL complies with SEBI (Listing Obligations and Disclosure Requirements) Regulations, 2015 and the Department of Public Enterprise (DPE) guidelines on corporate governance. The Board of Directors has an appropriate balance of skills, experience, independence and knowledge required to discharge their duties and responsibilities effectively. All the Board members carry expertise and competencies for addressing environmental, social and governance-related criticalities through a strategic approach. The Board constitutes of Functional Directors (Whole Time),

Non-Executive Directors (Government Nominee) and Non-Executive Directors (Independent). As on 31st March, 2018, there were 14 Directors on the Board comprising of 5 Functional Directors including the Chairman & Managing Director, 9 Non-Executive Directors (comprising of 2 Government Nominee Directors and 7 Independent Directors). The Board includes two women Directors out of a total representation of 14 Directors. Details on the composition of the Board and its committees is available in the Annual Report for FY 2017-18, which is available at http://gailonline.com/pdf/InvestorsZone/AnnualReports/Annual_Report_2017_18.pdf.





Our Board of Directors



Mr. BC Tripathi
Chairman & Managing Director



Mr. Ashutosh Karnatak
Director (Projects)



Mr. Subir Purkayastha
Director (Finance) &
Chief Financial Officer



Mr. P.K. Gupta
Director (HR)



Mr. Gajendra Singh
Director (Marketing)



Mr. Manoj Jain
Director (Business
Development)



Mr. Ashish Chatterjee
Part Time Director



Ms. Indrani Kaushal
Part Time Director



Mr. S. K. Srivastava
Part Time Non-official
(Independent) Director



Mr. Anupam Kulshreshtha
Part Time Non-official
(Independent) Director



Mr. Sanjay Tandon
Part Time Non-official
(Independent) Director



Mr. Dinkar Prakash Srivastava
Part Time Non-official
(Independent) Director



Dr. Anup K. Pujari
Part Time Non-official
(Independent) Director



Mr. Rahul Mukherjee
Part Time Non-official
(Independent) Director



Mr. Jayanto Narayan Chaudhary
Part Time Non-official
(Independent) Director



Ms. Banto Devi Kataria
Part-time Non-official
(Independent) Director



Ms. Suchitra Sharma
Chief Vigilance Officer





As a Central Public Sector Enterprise (CPSE) under the administrative control of the Ministry of Petroleum and Natural Gas (MoPNG), Government of India, the Directors are nominated/appointed by the Government of India through MoPNG. Appointments, preparation of eligibility criteria and the process of selection of the Board members are carried out by Public Enterprise Selection Board (PESB) as per the applicable statutory provisions. As per Articles of Association of the company, the Board has delegated the powers to CMD and Functional Directors of the company.

matters in their areas or purview. All decisions and recommendations of the committees are placed before the Board for information or approval.

Board Committees play a crucial role in the governance structure of the company. The Committees deliberate on the matters referred to it by the Board. Important information and data is distributed in writing to the members of the committees well in advance of the meeting so as to allow them to discuss. Recommendations of the committees are submitted to the Board to take decisions on the

to improving the performance and effectiveness, we identify areas of improvement and benchmark against best practices. The evaluation of the directors' performance with respect to governance of economic, environmental and social topics is done by the appointing authority, Government of India.

Continuous evaluation ensures that the board is staffed and led appropriately, Directors are effective in fulfilling their obligations, and reliable processes are in place to satisfy important oversight requirements.

S.No.	Committees of the Board	Number of meetings held in FY 17-18
1	Corporate Social Responsibility Committee	3
2	Audit Committee	13
3	HR Committee	4
4	Stakeholders Relationship Committee	1
5	Stakeholders' Grievance Redressal Committee	3
6	Business Development and Marketing Committee	10
7	Finance Committee	2
8	Nomination and Remuneration Committee	4
9	Sustainable Development Committee	2
10	Empowered Contracts and Procurement Committee – ECPC	3
11	Empowered - LNG/Polymer	3

Further, as per delegation of powers, the CMD is empowered to delegate the powers vested in him to any of the executives of the company.

We have adopted "The Code of Conduct for Board Members and Senior Management Personnel" which reaffirms GAIL's commitment to enhancing the ethical and transparent processes while managing the affairs of the company.

Committees of the Board

The Board is primarily responsible for the constitution of the Board Committees, which focus on specific areas and make informed decisions within the framework of delegated authority, and make specific recommendations to the Board on

referred matter. As a part of the regulatory requirement, various Board committees have been constituted by the Board to meet regularly, ensuring efficient implementation of strategic decisions. The number of meetings of each committee is held during the reporting period 2017-18 are mentioned in the table above.

Performance of the highest governance body

The Board is strongly informed about the company, its businesses, and concerns, which enables them to take effective decisions, thereby meeting stakeholders' aspirations and ensuring positive impacts on environment and society. With a view

Performance evaluation, remuneration and incentives

At GAIL, performance evaluation is based on the composite score of financial and non-financial parameters, prescribed in GAIL's MoU with the Ministry of Petroleum and Natural Gas (MoPNG). This composite score helps determine the company's MoU rating, based on which, the variable pay bracket is determined. Corporate MoU score is a part of the performance the parameter of CMD, Director, EDs and CGMs. Corporate MoU encompasses the parameters on business, financial and non-financial aspects such as CSR, sustainability, human resource,



research and development (R&D), etc.

GAIL has achieved an MoU rating of 'Excellent' for the financial year 2017-18. The MoU for the year 2017-18 was signed between Chairman & Managing Director, GAIL and

Secretary (P&NG), Government of India on 03 July 2017.

The MoU 2017-18 was majorly aligned towards achieving GoI's vision of India being a gas-based economy. The thrust, while fixing MoU targets, was on increasing the number of PNG connections, CNG stations, implementation of green corridor and other critical aspects including the key financial parameters, gas marketing, gas transmission, project implementation, capital expenditure, etc.

Related Party Transactions) for any issues pertaining to related party transactions. The issues related to conflict of interest are disclosed to stakeholders through annual and sustainability reports. GAIL also maintains a quarterly corporate governance report for the disclosure.

01

The ratio of the highest annual compensation of an individual to the median annual total compensation of all employees (excluding the highest paid individual) is 2.99



02

The median percentage increase in annual total compensation of all employees (excluding highest paid individual) for the year 2017-18 is 0.78%



03

Percentage increase in the total annual compensation for the highest paid individual from FY 2016-17 to FY 2017-18 is 79.29%



Sustainability governance

We have a comprehensive and well laid out "Sustainable Development Policy" to integrate economic, environmental and social concerns into our core business and to create value for our internal and external stakeholders.

Further, we have a board-level "Sustainable Development Committee" (SDC) which is not only responsible for strategizing sustainability processes, policies, and initiatives at GAIL, but also reviews the emergency response plan and the Health, Safety, and Environment (HSE) performance. Since stakeholders also play a crucial role in building an organization's sustainability ecosystem, their consultation is incorporated in the Board's identification and management of economic, environmental and social impacts, risks and opportunities.

The committee is headed by an Independent Director with Director (Projects) and Director (Business Development) as members, who regularly meet to oversee and monitor the sustainability developments and initiatives at the company.

With ethical, social, environmental and health issues under the umbrella of sustainable development, SDC met twice in FY 2017-18 and concluded with the following decisions for driving sustainability practices across the organization's operations.

Avoidance of conflict of interest

As a public sector enterprise, we understand the vitality of maintaining stakeholders' trust. Thus, effective management of conflict of interest at the Board-level becomes an imperative task for the organization.

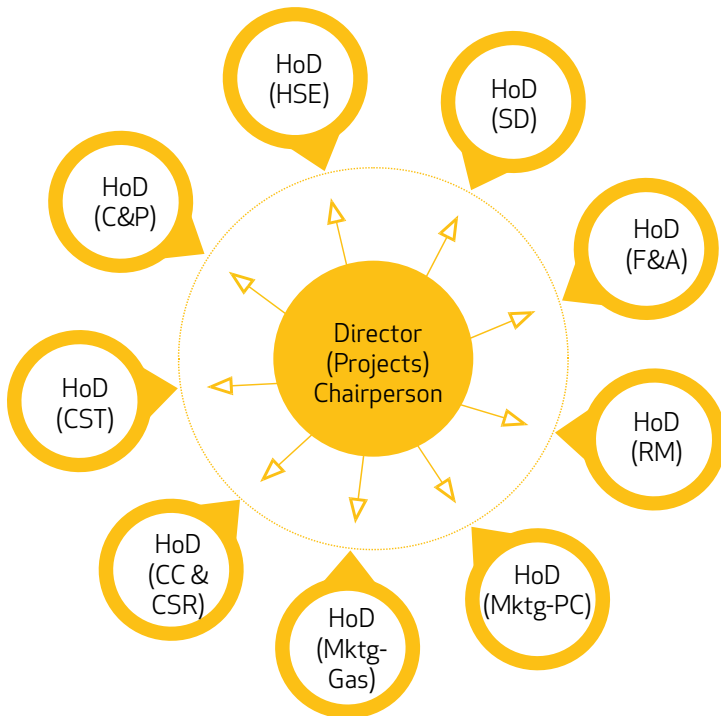
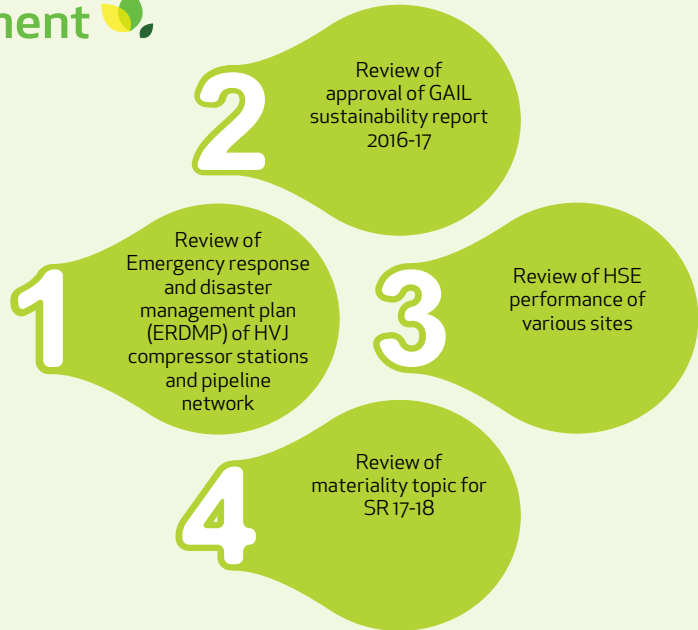
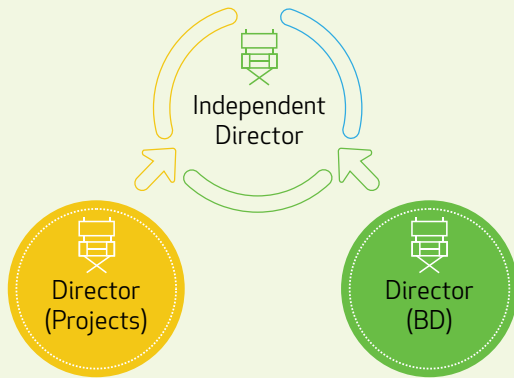
In terms of conflict of interest, we maintain a sophisticated system, the description of which is given below, to avoid and deal with such situations.

- In case a Director is directly or indirectly interested in a particular agenda/matter, he abstains himself from participation in discussion of such an agenda;
- Related Party Disclosure(s) is made as per applicable Accounting Standards and The Companies Act, 2013. As per this Act and clause 49 of the Listing Agreement, approval of the Audit Committee and /or Board and/or Shareholders as required is taken for Related Party Transactions;
- Each Director gives the disclosure of his interest in any company's or body's corporate firm, or other association of individuals by giving a notice in writing and the same is put up to the Board.

As per the SEBI Listing Obligation and Disclosure Requirements (LODR) Regulations, 2015, GAIL has a dedicated policy, "Related Party Transaction Policy" (Policy on Materiality of Related Party Transactions and Dealing with



Sustainable Development Committee



Sustainable Development Steering Committee

The Sustainable Development Steering Committee is responsible for direct supervision of the sustainability initiatives and processes at GAIL.

It is a multi-disciplinary committee comprising of departmental heads and aims to provide a focused solution for the on-ground issues related to sustainability.

Internal control systems and their adequacy

Our internal control system consists of a well-defined organizational structure, manuals and operating

procedures for business units and service entities. This system ensures efficiency, reliability, completeness of accounting records and timely preparation of reliable financial and management information. In addition, it also ensures compliances of all applicable laws and regulations, optimum utilization and protection

of the organization's assets. We have also undertaken an exercise through a consultant to reassure adequacy and effectiveness of internal controls. The consultant has conducted International Finance Corporation (IFC) compliance study and framed Risk Control Matrix (RCM) for several processes.





We have an independent, in-house **Internal Audit department**, consisting of professionally qualified persons from the accounting and engineering fields. The Internal Audit department functionally reports to the Audit Committee and administratively reports to the Chairman and Managing Director.

Internal Audit, through risk-focused audits, reviews the organization's risk management, the business processes and internal controls. The audit assignments are conducted as per the annual audit program approved by the Audit Committee. The Audit Committee of the Board regularly reviews significant findings of the Internal Audit department and the Controller and Auditor General (CAG) audit.

Internal audit also suggests measures on economy, effectiveness and efficiency, with which resources are employed and utilized, which further helps the organization to design preventive measures to avoid errors or irregularities.

These preventive measures are being regularly reviewed for effectiveness and improvement by the internal audit department. Besides this, the team of internal audit department also carries out promoters' audit of subsidiaries, joint ventures and Exploration and Production (E&P) blocks

Ethics and Integrity: We believe in maintaining the highest ethical standards in executing all business processes. There are various regulatory requirements and internal codes that are required to comply across the organization and any sort of non-compliance calls for disciplinary action or penalization within organizational jurisdiction. These codes and regulations are applicable for all employees, including the senior leaders of management and contractual employees. These laws include anti-corruption, anti-trust, anti-boycott, trade sanctions and export control laws of other countries applicable to cross-border business activities.

Some of the important policies that are applicable across GAIL are:

- Code of Conduct
- Conduct, Discipline and Appeal (CDA) Rules/Standing orders
- Fraud Prevention Policy
- Whistle Blower Policy
- Code of Fair Disclosure and Conduct
- Code of Conduct to regulate, monitor and report trading by insiders
- Code of Conduct for board members and senior management personnel

Besides, the above codes, we have also incorporated the Policy for Determination of Materiality and Disclosure for timely disclosure of information to help facilitate our investors in making well-informed investment decisions. This policy is in accordance with Regulation 30 of SEBI LODR, 2015.

Related party transactions: In keeping with the requirement of Regulation 23 of SEBI LODR, 2015 and the Companies Act, 2013, the audit committee of GAIL reviews the details of Related Party Transactions on a quarterly basis. The approval of audit committee/or board/or shareholders as required, is taken for related party transactions.

In order to ensure transparency in the system for the benefit of vendors and suppliers, various initiatives such as e-tendering, e-payments, Bill Watch System, etc. have been put in place.

Anti-corruption: GAIL abides by the guidelines and circulars of the Central Vigilance Commission (CVC) for dealing with issues related to bribery or corruption at the organization level. The policy applies to the wholly-owned subsidiaries of GAIL as well as to the joint ventures where equity held by GAIL is over 50%. As per CVC guidelines, we also organize various programs and events for schools and colleges and also for GAIL employees and their families to sensitize the stakeholders about the ill effects of corruption, during the Vigilance Awareness Week. A magazine titled "Jagrook" containing CVC circulars,

articles and case studies related to vigilance is hosted on our intranet for easy accessibility for our employees.

In order to promote transparency and accountability, GAIL has nominated Central Public Information Officer (CPIO)/Central Assistant Public Information Officer (CAPIOs)/appellate authorities across its various units to provide information to citizens under the provisions of the Right to Information (RTI) Act, 2005. Further details on GAIL's incorporation of Right to Information (RTI) Guidelines, Management Information System (MIS) report on RTI applications received by GAIL, Record Retention Schedule, RTI Audit Reports and other related information can be found on http://www.gailonline.com/final_site/RTI.html.

GAIL has been "live" on Government of India's (GoI's) RTI portal since July 2016 and provides information online as well as offline for the RTI applications received in hard copies. GAIL also observes Vigilance Awareness Week annually, to instill a transparent, accountable and corruption-free work culture across all its units. Various activities like poster making, essay, painting, slogan writing, quiz and debate competitions are organized to attract huge participation at this awareness program.

For FY 2017-18, GAIL's Corporate RTI Cell has 100% disposal rate in respect of RTI applications received and disposed of. As on 31 March 2018, we had a pendency of 17 RTI applications, which were disposed-off subsequently within time schedule/as per the provisions of the RTI statute. Further, GAIL has received no penalty/adverse remarks from the Central Information Commission (CIC) for the year 2017-18 in respect of the second appeal filed by appellants.

The Whistle Blower Policy, Fraud Prevention Policy, and Integrity Pact have been instituted to strengthen the organization against corruption and make the vigilance system more robust. These policies are applicable to all GAIL employees, including GAIL's subsidiaries and joint ventures.





Grievance redressal: Stakeholders trust is of paramount importance to GAIL and we strongly believe in responsible and timely redressal of stakeholders' grievances. An online grievance redressal forum called "Samadhan" is accessible to all the stakeholders for reporting and resolution of any grievance related to the organization. The complaints regarding vigilance, corruption, forgery, cheating, misappropriation, favors, willful negligence, reckless decision making, the blatant violation of systems and procedures, irregularities in the exercise of delegated power can be lodged on to GAIL's website at http://www.gailonline.com/final_site/onlineComplains.html. There has been no confirmed incident of corruption that has been reported to the vigilance department.

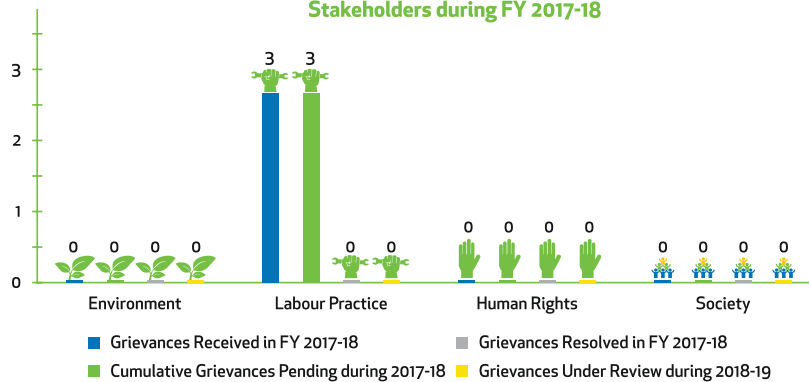
There is a separate online grievance redressal system for employees' grievances, which is under the supervision of the Corporate HR team. The HR manager in-charge is responsible for addressing the grievances registered by the employees and ensuring their timely redressal. The grievances get escalated to higher authorities in case of non-redressal within an assigned period. An option to appeal further is also available to the employees in case dissatisfaction is received in the response.

Customers can also provide feedback regarding product quality by registering service requests/complaints/incidents through our webpage. There is a Centralized Public Grievance Redress and Monitoring System (CPGRAMS) in place where all the written complaints are received

from across all work centers are uploaded. The portal is accessible to all citizens for lodging their grievances and complaints online, which are received by MoPNG. During 2017-18, a total of 139 public grievances through CPGRAMS were received, out of which 136 (98%) have since been resolved, while the remaining three are in the final stages of reply.

In addition to these forums, we understand the importance of regularly engaging with our stakeholders. We have established various forums and platforms to address grievances and engage with our stakeholders such as investors, customers, suppliers, communities and NGOs, among others. We have elaborately explained these platforms in the Stakeholder and Materiality section of this report.

Grievances/Complaints received through CPGRAMS from Internal Stakeholders during FY 2017-18



Grievances/Complaints received through CPGRAMS from External Stakeholders during FY 2017-18



Note: The grievances given in the table pertain to the year 2017-18 and have been received through CPGRAMS portal, handled/monitored by Department of Administrative Reforms and Public Grievances, Government of India.





04

Risk Management

Results of risk assessment

are reported to all relevant stakeholders for

Review

Inputs

Monitoring

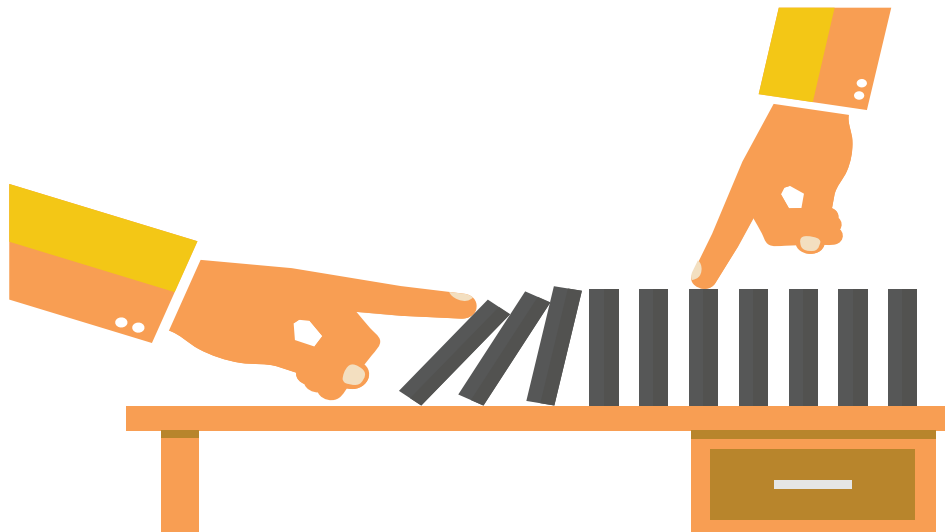


We have a comprehensive and detailed 'Risk Management Policy' to ensure sustainable business growth





Risk Management



We, at GAIL, follow a holistic, integrated, structured and disciplined approach to manage risks with the objective of maximizing shareholders' value. Our approach to manage risks particularly includes identification, assessment and prioritization of risks followed by coordinated and economical application of resources to minimize, monitor and control the probability and/or impact of unfortunate events or to maximize the realization of opportunities.

We have a comprehensive "Risk Management Policy" to ensure sustainable business growth with stability. At GAIL, we establish a structured approach to risk management. The primary objective of the policy is to promote a proactive approach for analysis, reporting and mitigation of key risks associated with the business in order to ensure a sustainable business growth.

The risk management policy lays out an Enterprise Risk Management Framework with an objective to integrate risk management in the overall strategic and operational practices, as a comprehensive set of components that provides the foundation and organizational arrangements for designing, implementing, monitoring, reviewing and continually improving risk management. The risk management framework broadly constitutes of a well-defined risk management process and risk management institutional structure.

effectiveness of the company's risk management system on an annual basis.

As shown in the figure adjacent a dedicated Corporate Level Risk Steering Committee (CLRSC) is also established to review the status of all corporate level key risks including economic, environmental and social on a quarterly basis. In addition, there is a Risk Management Committee that meets on a bi-annual basis to deliberate on the matters before placing them in front of the

Risk management institutional structure

The Board of Directors is the highest governance body that reviews the effectiveness of our risk management processes. The Board, through the audit committee, oversees the establishment and implementation of an adequate system of risk management across the company. The board comprehensively reviews the





audit committee. The status is then presented to the board for approval in the annual meetings.

While GAIL's top management looks after business and economic risks, there are specific groups that work

on identification, strategizing and reporting the environmental and social risks:

- HSE group - Coordinates all risks pertaining to environmental and safety issues

- CSR group- Coordinates all risks pertaining to social and CSR-related issues

The specific objectives of the Risk Management Policy are:



To establish a risk intelligence framework for the organization



To ensure that all the current and expected risk exposures of the organization are identified, qualitatively and quantitatively evaluated, analyzed and appropriately managed



To establish ownership throughout the organization and embed risk management as integral part of the business rather than a standalone system



To enable compliance with the relevant legal and regulatory requirements and international norms



To help the decision makers of the organization explicitly take account of uncertainty, the nature of that uncertainty, and work towards a solution to address it

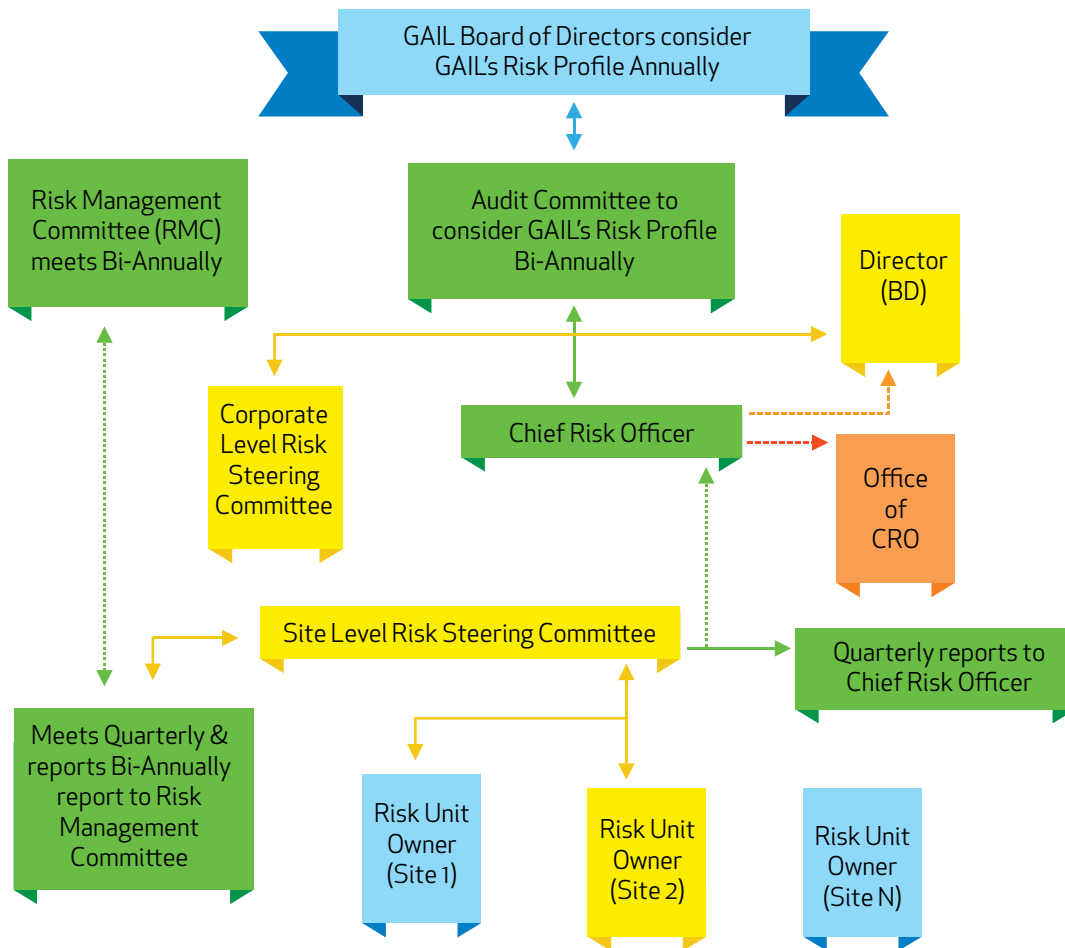


To assure demonstrable achievement of objectives and improvement of financial stability of the organization





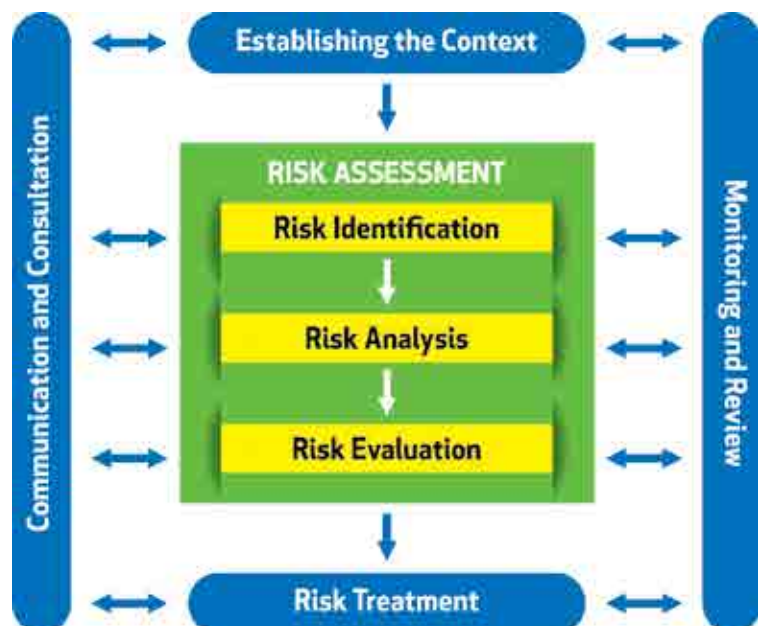
Risk management organizational structure



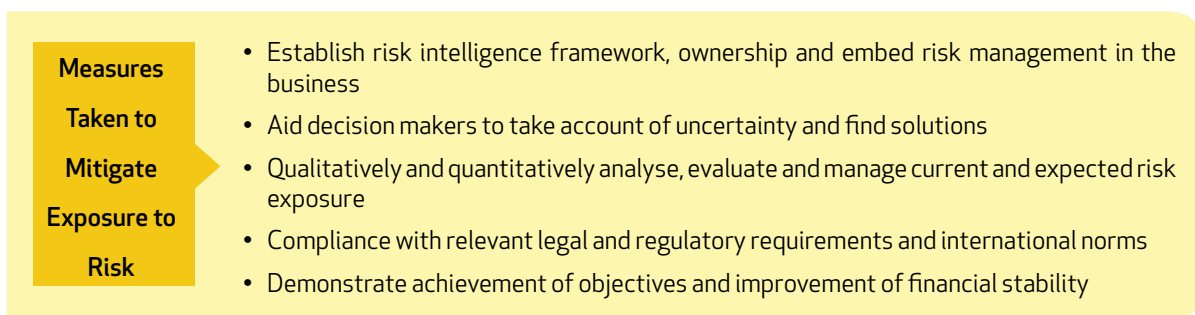
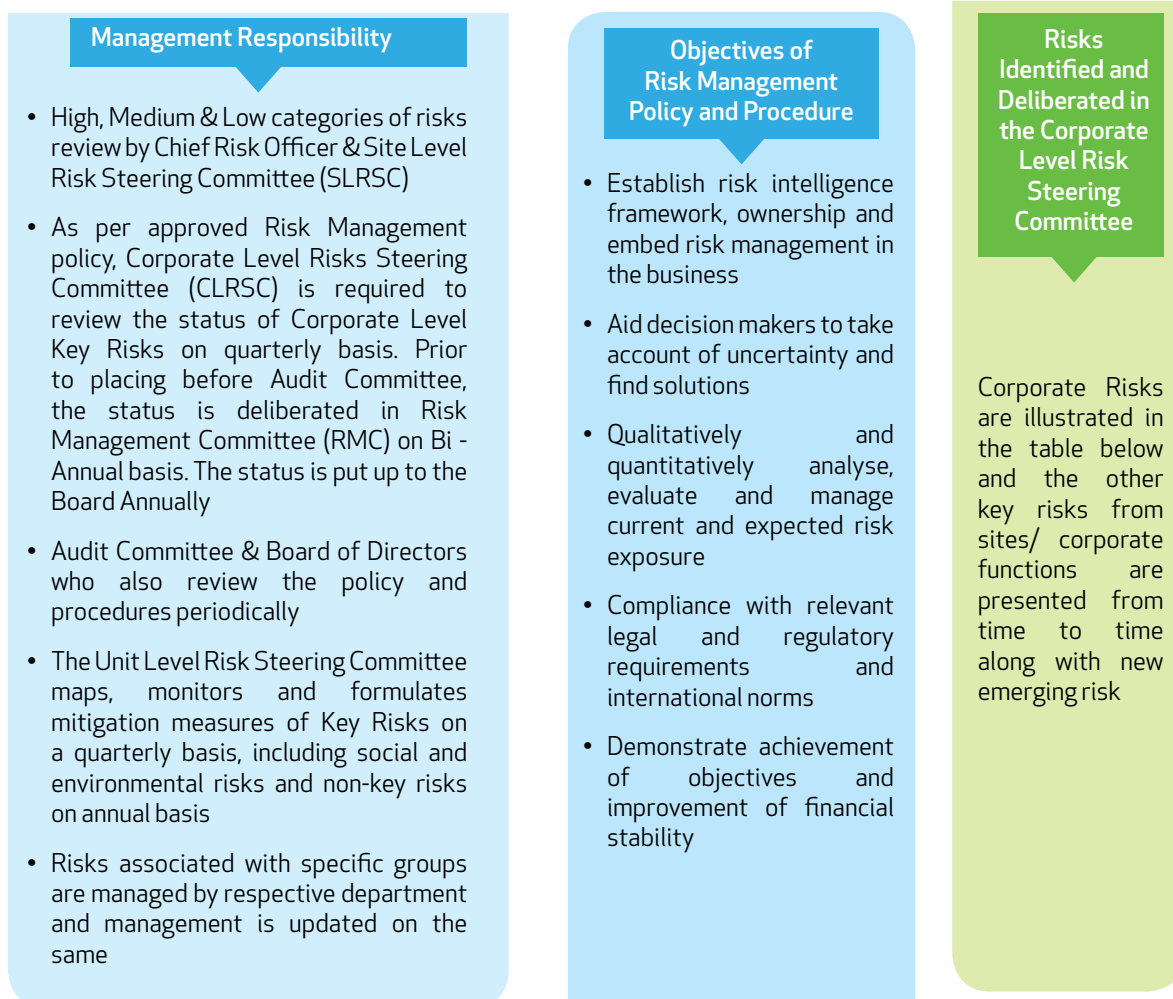
Risk management process

The risk management process adopted has been customized to the business processes of our company and is schematically shown in the figure.

Reporting is an integral part of our processes and critical from a monitoring perspective. Results of risk assessment are reported to all relevant stakeholders for review, inputs and monitoring. The existing risk reporting structure followed in GAIL is shown in figure above.



Process diagram depicting the process of reporting risk



Key corporate level risks

During the Corporate Level Risk Steering Committee (CLRSC) meetings, the following risks have

been identified, backed by GAIL's risk management framework and policy.

GAIL has also developed mitigation strategies for the identified risks.

The next section lists the identified risks and briefly describes the mitigation strategies for the respective risks





Top risks and mitigation strategies adopted

In general, the risks faced by GAIL have a long gestation period and it is difficult to bind them in terms of FY. The following risks have been identified and deliberated in Corporate Level Risk Steering Committee (CLRSC) meetings as well as other corporate level meeting in line with the risk management framework and policy of GAIL.

GAIL is initiating efforts to adapt strategies to mitigate the identified risks.



1

Risk description: Take or pay risk on 8.73 MMTPA internationally sourced LNG

Cheniere (USA) 3.5 MMTPA March 2018, DCP (USA) 2.3 MMTPA Dec 2017, Gazprom (Russia) 2.5 MMTPA January 2018 and Gorgon (Australia) 0.43 MMTPA January 2017.

Mitigation measure

- Take or pay risk on 5.8 MMTPA sourced from USA
- Take or pay risk on 2.5 MMTPA LNG from Gazprom
- Take or pay risk on 0.43 MMTPA LNG from Gorgon

2

Risk description: Risk of reduction in profitability of petrochemicals

Mitigation measure

- Production of marketable grades. Aggressive marketing to ensure enhanced polymer sale and profitability
- Expanding market by export measure
- Optimization of feed stock and conversion cost (C2,C3 and polymer)

3

Risk description: Risk of delay in project execution due to delay in obtaining right of use (RoU), land

Mitigation measure

- Liasioning with state and district administration for resolving the issues and expectations of farmers and land owners is being done for RoU acquisition in addition to CSR activities and sensitization as well as by educating through awareness campaign for the local populace in the project area (s).
- Approved policy for acquisition of permanent land through government procedures and direct negotiation with farmers and land owners is in place.



4

Risk description:
Risk of underutilization of pipeline due to low downstream drawl and low pipe line capacity trade

Mitigation measure

- Targeted liquid fuel consumers around GAIL's pipelines to switch over to natural gas
- Last mile connectivity (LMCs)
- Introduced more flexible terms in GTA, uniform guidelines for fasters connectivity of CGD entities.
- Approved guidelines on amicable settlement of disputes with consumers, shippers under Gas Transportation Agreement applicable for small shippers up to 0.1 Million Metric Standard Cubic Meter per Day (MMSCMD).
- Taken up with Petroleum and Natural Gas Regulatory Body (PNGRB) and MoPNG for synchronization of CGD bidding along with upcoming pipelines and providing priority to those cities that are already connected with pipelines.
- Organized (through Zonal Offices) Customer Meets regularly.

5

Risk Description: Major LPG leakage in Receipt Terminal (RT) and Sectionalizing Valve (SV) stations, and LPG pipeline

Mitigation measure

- Regular monitoring of health and integrity of pipeline as per integrity management system
- Monitoring of any pipeline leakage by utilizing online leak detection system (LDS)
- Implementation of emergency response and disaster management plan (ERDMP)
- Hot and mobile flare system as well as evacuation of LPG into OMCs storage
- Installation of the flare systems

6

Risk Description:
Risk of third party damage and encroachment in pipelines due to developmental and road construction and widening activities

Mitigation measure

- Regular monitoring of pipeline Right of Use (ROU) for new encroachment
- Implementation of integrity management system and adherence to Operations and Maintenance (O&M) guidelines.
- Increased ROU surveillance by helicopters and foot patrolling
- Propagating information regarding the pipeline locations, sensitizing people to inform GAIL prior to carrying out any activity, and disseminating awareness about the possible consequences due to pipeline damage.
- Displaying warning and safety boards at vulnerable locations and wall writing at prominent places in villages and towns through which the pipeline crosses.
- Implementation of Pipeline Intrusion Detection System (PIDS) on a trial basis completed
- Drone trial has been completed at SV, IP section and Kulwara (MP) in GREP and VDPL monitoring of ROU through drone has to be explored.





7

Risk description: Risk of regulatory noncompliance

For example, unbundling of business of GAIL

Mitigation measure

PNGRB regulation on unbundling of Natural Gas (NG) transportation and marketing business has been challenged in the high court by GAIL, an affidavit has been filed by MOPNG in support of GAIL's position.

8

Risk description: Risk emanating out of GAIL's comfort letter to bank for providing Prime Bank Guarantee (PBG) (₹ 5,200 crore) to GAIL gas in connection with Bengaluru CGD Project

Mitigation measure

- PNGRB MWP for Inch km of pipeline to be laid (cumulative)
- 3rd year MWP (cumulative) of PNGRB 1266 (achieved)
- PNGRB domestic connection cumulative target was 65,578 (as on 17 February 2018). A catch up plan for achieving the balance work of initial five years MWP and request for relaxation in the timeline of third year of MWP to Q1 of 2018-19.
- Details of promotional scheme launched
- Exemption of application fee from domestic customers for registration.
- Exemption of payment of domestic PNG bill for a period of three months from the date of commencement of PNG supply for customers registered under this scheme.
- Customer awareness about PNG through FM Radio and leaflets through newspaper are being done on regular basis

9

Risk description: Upside risk (opportunity) of an early turnaround for impaired investment in RGPPL

Mitigation measure

- Impairment of GAIL's equity ₹ 783 crores in Ratnagiri Gas and Power Private Limited (RGPPL) considered in FY 2016-17.
- The mitigation efforts are being made to gain on an upside risk (opportunity) of an early turnaround of this impairment.
- Demerger of RGPPL in process
- Break water





05

Sustainability at GAIL



Sustainability Charter for
GAIL's objectives,
actions and aspirations

In FY 2017-18

Total

38



Sustainability projects
by 19 sites of ₹ 31 Crores





Sustainability at GAIL



Since its inception, GAIL has been committed to being a responsible corporate citizen. Our vision statement, "Be the leading company in natural gas and beyond, with global focus, committed to customer care, value creation for all stakeholders and environmental responsibility" focuses on national economic development through securing cleaner energy and value creation for all stakeholders while ensuring our responsibility towards the environment.

GAIL became the youngest PSU to be accorded the "Maharatna" status among all the public sectors in India, which demonstrates Government of India's confidence on us. The onus lies on the company to reciprocate through a responsible growth without compromising on the environment and society.

GAIL is guided by the principles of accountability and transparency. In 2011, we formally began our sustainability journey. We believed that although we were a few steps behind, taking small yet strategic measures in the right direction under the dynamic leadership of the top management was even more imperative.

GAIL pro-actively took up its sustainability issues by actively involving the Board-level Sustainability Committee headed by an Independent Director, to regularly monitor the sustainability initiatives and performance. A Steering Committee involving heads of departments was formed to plan, oversee and implement on-ground sustainability activities. Subsequently, to effectively implement the initiatives at the site level, we have a multi-disciplinary site-level committee along with focused sustainability team working at corporate level. A part of the corporate planning and strategy during the initial years, sustainability has now become an independent department in 2017.

In 2012, we formulated Sustainability Policy providing direction to sustainability

efforts. Being transparent and taking accountability is the key direction while dealing with stakeholders. From FY 10-11, we began communicating and transparently disclosing the company's performance on the economic, social and environmental fronts through our sustainability reports.

Over the years, we have strengthened the internal system and data management that has helped GAIL in measuring, monitoring and managing sustainability performance. It has served as a management tool helping the company re-look at its systems, policies and procedures.

In 2017, with strengthened awareness and sensitivity at sites over the years, we initiated the Annual Sustainability Work Plan for GAIL's sites. This gives a flexibility to the sites to take up relevant projects in





Dr. Ashutosh Karnatak, Director (Projects) inaugurating the Sustainability Seminar titled "Aligning with Sustainability trends and defining actions" by lighting the lamp on 08.10.2018 at GAIL, Noida

the various aspects of sustainability. To monitor the progress made after the implementation of these projects, a digital platform "e-Pragati" has been established. The e-Pragati module captures the details of all the projects and tracks the progress made through listed milestones. Every project is distinguished through a unique work ID and its completion date is displayed in the system. There are some milestones against every project with unique milestone IDs for

which the start and the competition dates are also present. Whenever a milestone is completed by the site, the system automatically displays the next milestone due for completion. The expenditure made against each project can also be tracked through the budget column present in the module. The system also allows providing a detailed information that needs to be updated against each milestone. Further, information regarding the benefits and impact of every

project in achieving the sustainable development targets of the company are also provided on the portal.

At GAIL we understand that sustainability is an umbrella concept, which includes aspirations and targets that encompass various parameters of the social, governance, economic and environmental aspects. Earlier aspirations target covered mainly environmental parameters. In order to cater sustainable development

Sustainability Annual Plan of Sites

FY 17-18

38 Projects

19 Sites

INR 31.30 Crores Expenditure

Key Project Areas

11 Energy

5 Solar

4 Water

9 Waste

7 Tree Plantation

1 BBS

1 Efficient Printer





holistically, it was considered prudent to align the Sustainability Aspirations of GAIL with our business objectives. Thus in 2018, we initiated the process to revisit the sustainability aspirations after top-level deliberations.

As a first step to form a well-rounded sustainability roadmap, an Executive Director (ED)-level committee was formed which included members from varied business segments of GAIL. The initial deliberations, feedback and recommendations/suggestions from the various subject matter experts, has taken into consideration. These recommendations have also been deliberated in the 9th Sustainable Development Steering Committee (SDSC) meeting chaired by Director (Projects) with representation from major sites of Pata and Vijapur. The Finalization of the Sustainability aspirations is under progress.

As a step towards mainstreaming sustainability across the organisation, GAIL developed the Sustainability Charter. This charter will serve as the guiding force for GAIL's future objectives, actions and aspirations. The Charter follows an integrated approach for embedding environmental and social concerns into the corporate DNA while establishing a leadership platform towards sustainability and climate action.

Our Pata Petrochemical Plant is working on energy efficiency benchmarks in collaboration with the Bureau of Energy Efficiency (BEE) to set the standards of carbon emissions and specific energy consumption with the petrochemical sector becoming a part of the PAT (Perform, Achieve & Trade) Scheme.

During the reporting period 2017-18, a total expenditure of ₹7.43 lakh was incurred by GAIL for the purpose of training and educating its employees on topics related to environment. Additionally, all the 65 new recruits were trained for sustainability-related programs along with 47 other employees of GAIL.

Inauguration of Waste Composite Machine at GAIL Jubilee Tower, Noida



Inauguration of Waste Composite Machine at GAIL Jubilee Tower Noida



Sh. Narendra Kumar, ED (O&M), inaugurating Waste Composite Machine at GAIL Jubilee Tower Noida

Our initiative towards environmental protection and Swachh Bharat Abhiyaan, a Waste Composite machine has been set up at GAIL Jubilee Tower Noida on 26/03/2018. Using the kitchen and horticulture waste, organic manure will be prepared from this machine. GAIL Jubilee Tower maintenance department has added one more point to its green building certificate.



Stakeholder Engagement and Materiality



Engagement with stakeholders, understanding their perspective and incorporation in GAIL's policies





Stakeholder Engagement and Materiality



Stakeholder engagement

Every organizational decision impacts its stakeholders, both directly and indirectly. These stakeholders primarily influence the decision making and are critical opinion makers. Therefore, GAIL makes it a priority to engage with its stakeholders to understand their perspective and incorporate these in its strategy and policies. Stakeholder management concept is, thus, now a widely accepted norm among corporates to ensure accountability of the organization towards society. At GAIL, we adhere to the concept of strategic engagement and holistic management of stakeholders for a sustainable growth.

Being a public sector enterprise, we not only aim at continued business profitability but also strive to achieve a socially and environmentally balanced growth in the long run. The concept of stakeholder engagement is firmly embedded in the strategic management of the organization and we believe in creating an atmosphere of cooperation and compassion in amicably solving the issues that arise in this domain.

GAIL conducts a detailed stakeholder analysis as the first step towards stakeholder engagement. Through stakeholder analysis, we aim to identify and understand the nature of impact, direct or indirect, on individuals, groups or entities. The following steps are followed as a part of the stakeholder analysis process:



Hon'ble President felicitates students from CSR initiative 'GAIL Utkarsh' who cleared JEE IIT advanced exam

Hon'ble President of India Shri Ram Nath Kovind felicitated students from underprivileged sections of society who cleared the JEE IIT Advance 2018 examination after intensive coaching under GAIL Corporate Social Responsibility initiative 'GAIL Utkarsh'.

The felicitation program was held at the Indian Institute of Technology (IIT) campus here. The occasion was also graced by Dr. Ashutosh Karnatak, GAIL officiating Chairman and Managing Director



- Identify and map all internal and external stakeholders
- Assess the nature of each stakeholder's influence and importance
- Construct a stakeholder priority matrix to identify stakeholder

influence and importance

- Monitor and manage stakeholders' relationships

We have identified eight key stakeholder groups for which we conduct materiality assessment and attempt at understanding

their influence on the organization. Depending on their influence and the value they create for the organization, we design a suitable engagement mechanism for them. The key stakeholders and essential elements of engagement process and sample dates are schematically represented below:

Stakeholder	Engagement Mode	Frequency of engagement	Meetings in 2017-18	Engagement teams	Engagement focus
Employees	Satisfaction survey, grievance redressal, suggestion schemes, CMD Open House, emails, Sustainability Survey, Committees Meets, journals, associations and union meets, cultural functions	Annual, quarterly, monthly, daily and also as and when it is required	GAIL Foundation Day: August 16, 2017 Samvaad: July 05, 2017 Sustainability Workshop: December 7-8 and 13, 2017 Certification Course on Metering: 8-15 January 2018	HR Dept., HR - Employee Relations and Policy, Corporate Operations and Maintenance, Health Safety and Environment Department, and Corporate Sustainability Department	Project action planning, best practice implementation, HSE training, skill development, tracking performance indicators, and grievance redressal



Stakeholder	Engagement Mode	Frequency of engagement	Meetings in 2017-18	Engagement teams	Engagement focus
Suppliers	Analyst Meet, Annual General Meet and conference calls	Annual, quarterly, monthly, daily and as and when it is required	MSME Meet: July 12, 2017 Vendor Meet: June 15, 2017 GAIL-Gazprom: Jan 16, 2018 Sabine Pass LNG Import: Mar 06, 2018 Gas Turbine Operators Meet: Oct 10, 2017	Human Resource Department, Corporate Operations and Maintenance, and Health Safety and Environment Department	Relationship building, progress reports submissions, discussions on procurement agreements and Sales and Purchase Agreements (SPAs)
Customers	Customer Interactive Meets and customer feedback	Annual, quarterly and need-based	Customer Meet: 19 July 2017 GST Awareness Meet: 14 July 2017	Marketing Department and Total Quality Management Department	Understand customers' needs, getting customer feedback on the new product, customer satisfaction index, customer ledger
Communities	Community meetings, project meetings, annual reviews, and samvaad	Annual, quarterly, monthly, daily and need-based	Swachh Bharat Pakhwada: 1-31 July 2017 GAIL Utkarsh Super 100: 13 February 2018 (Dehradun)	Corporate Social Responsibility Department	Executing CSR initiatives and interventions Grievance redressal
Government and regulators	MoUs, QPR, open house sessions, meetings, and written views/comments to PNGRB on various regulatory matters	Annual, quarterly and need-based	PMUG Clearance: 1 November 2017 Bengaluru CGD: 19 June 2017 Bhubaneswar PNG supply: 20 October 2017	Regulatory Affairs Dept., Law Dept., Corporate Planning Dept., Liaison & Parliamentary Affairs Dept. and Company Secretariat	Relationship building, performance appraisal through MoUs, progress reports submissions, discussions on major investment plans





Stakeholder	Engagement Mode	Frequency of engagement	Meetings in 2017-18	Engagement teams	Engagement focus
Shareholders	Analyst Meet, Annual General Meet, Conference call and website hosting of financial information	Annual, quarterly, monthly and need-based	IIFL's Enterprise India Investors Conference: 21-23 February 2018	For institutional shareholders and analysts: finance and accounts For small shareholders: Press information from Company Secretariat	Company's ESG Performance Reporting, addressing concerns of the future challenges and mitigation measures
Industry associations	Supplier meet, emails, meetings, Samadhan and Samvaad	Annual, quarterly, monthly and need-based	Oil & Gas HSE Conclave: 6 December 2017 (New Delhi)	Contracts and Procurement Department, and Projects Department	Integrity Pact, Pre-Tender and Pre-Bid Meeting, Settlement Advisory Committee, Reverse Auction, Bill Watch System, File Movement System, e-Tendering
Financial institution	Analyst Meet, Annual General Meet and Website hosting of financial information	Annual, quarterly, monthly and need-based	Bankers' Meet: 21 August 2017	For institutional investors and analysts: Finance and accounts For retail investors: Company Secretariat	Company's ESG Performance, addressing concerns on future challenges, and financial risk management

Materiality analysis

In the context of this report, materiality refers to the principle of focusing on the company's sustainability initiatives and reporting on the issues that have the most significant impact on the economic, social and environmental aspects of the business as well as those that are of an interest to GAIL's stakeholders.

We conduct materiality assessment on a periodic basis to ensure that the sustainability issues critical to the business and stakeholders

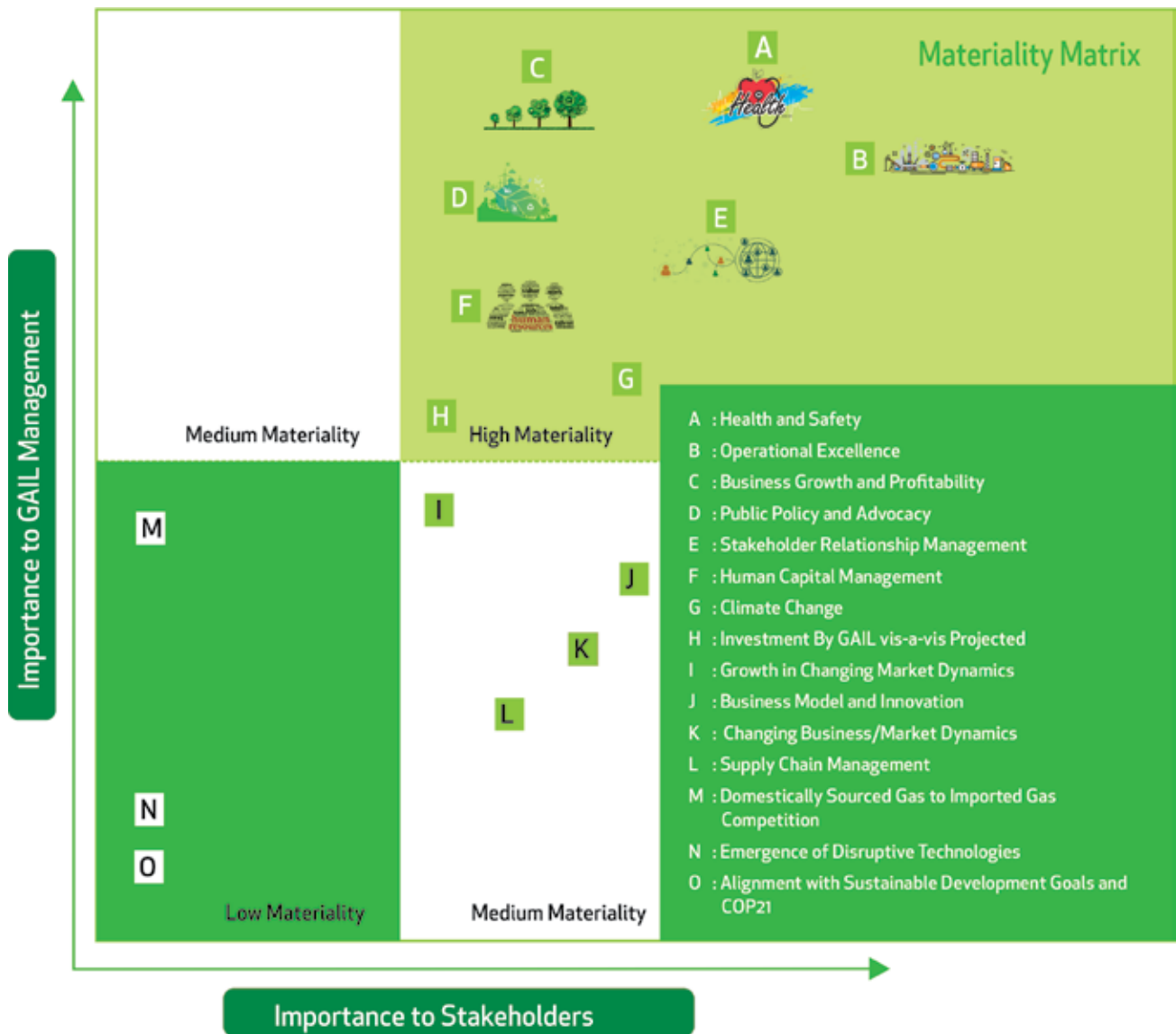
are prioritized and strategically addressed. These identified issues are analyzed to help shape the company's sustainability strategy, thus providing the basis for goal setting and resource allocation. This further helps the company in outlining the reporting priorities. The most recent materiality assessment was carried out during the reporting year, i.e., FY 2017-18.

Process and methodology

The materiality study comprises of four phases:

- **Preparatory phase:** In this phase, GAIL's (internal and external) stakeholders were mapped alongside a list of the "universal" topics relevant to the company's business. A total of 70 universal topics relevant to the gas industry were listed in this phase.
- **Discussion phase:** To identify key focus areas important to GAIL, the 70 universal topics identified were further screened by departmental heads of Total Quality Management (TQM), Corporate Communications and Corporate Social Responsibility (CSR), Marketing – Petrochemicals-



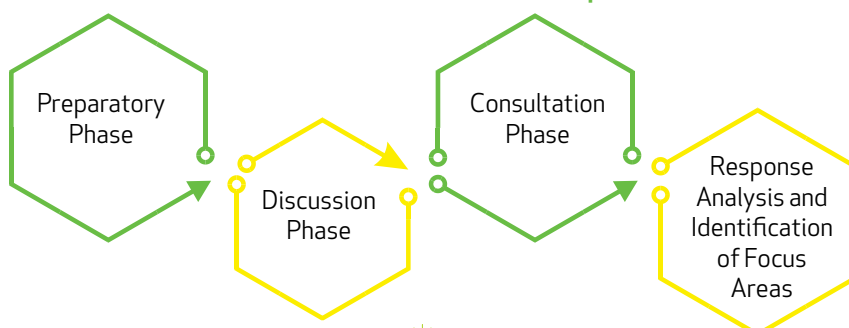


Marketing, International Sourcing, Contracts and Procurement, Sustainability, Finance and Accounts, Domestic Gas Marketing, Regasified Liquefied Natural Gas (RLNG) and Corporate Strategy Planning and Advocacy. In this phase, 15 key focus

areas were finalized for further consideration and discussion including areas of significant organizational impact, as well as broader sustainability trends that affect GAIL.

• **Consultation phase:** In this phase, GAIL's internal stakeholders (employees), and external stakeholder groups important to GAIL (customers, suppliers, contractors, NGOs and communities) were validated and ranked according to their key focus areas.

Step-wise Identification of Focus Areas from Universal Topics



• **Response analysis and identification of focus areas:** The feedbacks received from stakeholders on the 15 key focus areas were qualitatively and quantitatively analyzed to identify the top priorities for each stakeholder.



Materiality matrix

The primary result of our materiality assessment process was a set of sustainability issues mapped on a materiality matrix. The vertical axis of the matrix denotes importance to the company, whereas the horizontal

axis represents the importance of these issues to our stakeholders. The matrix for FY 17-18 is depicted on the adjacent page

In this report, we have highlighted GAIL's approach towards the identified material topics and company-specific aspects in detail. The review of the

material topics are done as per the laws of the land to ensure compliance and better course of strategic actions. Each material topic has been discussed in detail in the subsequent chapters. The mapping of the final material topics ranked high with stakeholders is given in the table below.



Sustainability Seminar organized at GAIL and TERI. The event was chaired by Dr. Ashutosh Karnatak, Director (Projects)

Material aspect	Sub-aspect	Boundary	Major stakeholder
Health and safety	Occupational Health and Safety	Within and beyond GAIL	Employees
	Customer Health and Safety		Suppliers
	Asset Integrity and Process Safety		Contractors NGOs and Communities
Operational Excellence	Material	Within GAIL	Customers Employees Suppliers Contractors
	Water		
	Energy		
	Biodiversity		
	Emission		
	Effluents and waste		
	Asset productivity		
	Environmental investments		
	Grievance mechanism for impact on society		
	Transport		
Overall environmental grievance mechanism			



Material aspect	Sub-Aspect	Boundary	Major stakeholder
Business growth and profitability	Economic performance Diversification and opportunities Market presence Indirect Economic Impacts	Within and beyond GAIL	Customers Employees Suppliers Contractors NGOs and Communities
Public policy and advocacy	Anti-competitive behavior Anti-corruption Public Policy Compliance management	Within and beyond GAIL	Customers Employees Contractors NGOs and communities
Stakeholder Relationship Management	Procurement practices Supplier environmental assessment Supplier assessment for impact on society Supplier human rights assessment Supplier assessment for labor practices Indigenous rights Marketing and communication Product service labelling Products and services Local community Procurement practices Adequacy of transparent communication	Within and beyond GAIL	Customers Suppliers Contractors NGOs and communities
Climate Change	GHG emission management GHG reduction Other emissions management Ozone Depleting Substances (ODS) reduction	Within and beyond GAIL	Customers Employees Suppliers Contractors NGOs and communities





Material aspect	Sub-aspect	Boundary	Major stakeholder
Human capital management	<ul style="list-style-type: none"> Employment Workforce management Training and education Employee Diversity Employment and Labor Practices Human Rights Investment Non-discrimination Human rights grievance mechanism Freedom of association and collective bargain Forced and compulsory labor Child labor Equal remuneration for men and women Labor practices grievance mechanism Security practices 	Within GAIL	<ul style="list-style-type: none"> Employees Contractors
Investment by GAIL vis-à-vis projected	<ul style="list-style-type: none"> Exploration and production Gas pipeline network LNG terminals Gas-based manufacturing industries City gas distribution 	Within and beyond GAIL	<ul style="list-style-type: none"> Customers Suppliers Government and regulatory bodies
Growth in changing market dynamics	<ul style="list-style-type: none"> Gas-based economy Investments across product value chains Policy reforms Clean energy market SPAs and purchase contracts 	Within and beyond GAIL	<ul style="list-style-type: none"> Customers Suppliers Government and regulatory bodies
Business model and innovation	<ul style="list-style-type: none"> LNG and LPG transmission City gas distribution Exploration and production Gas marketing Market presence Supply chain 	Within and beyond GAIL	<ul style="list-style-type: none"> Customers Suppliers Contractors Government and regulatory bodies





Material aspect	Sub-aspect	Boundary	Major stakeholder
Changing business/market dynamics	Gas-based economy Government policies Clean energy market Market share Diversification and opportunities	Within and beyond GAIL	Government and regulatory bodies Suppliers
Supply chain management	Ethical procurement Opportunities for MSEs Supplier engagement Digitalization Green procurement	Within and beyond GAIL	Suppliers Government and regulatory bodies Contractors NGOs and communities Employees
Domestically sourced gas to imported gas competition	SPAs and purchase contracts Government policies Mergers and acquisitions	Within and beyond GAIL	Suppliers Government and regulatory bodies Contractors Customers
Emergence of disruptive technologies	Research and development Diversification and opportunities Technological utilization	Within GAIL	Employees Suppliers Contractors
Alignment with Sustainable Development Goals and COP21	Climate change initiatives Procurement practices Water management Effluent and waste management Investment on Environmental Protection ESG Risk Mitigation	Within and beyond GAIL	Employee Contractors Suppliers Government and regulatory bodies NGOs and communities

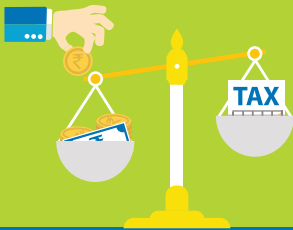




07

Business Growth

In FY 17-18,
GAIL registered highest ever



Profit after Tax (PAT) of
₹4,618 crore

GAIL today is amongst the top



Global LNG players





Business Growth



Owing to the fast-paced economic growth over the period, India has become world's sixth-biggest economy, as per World Bank figures for 2017 with a gross domestic product (GDP) of \$2.597 trillion. In terms of the energy consumption, our country is fourth largest in the world. As per BP Statistical Review 2018, world's primary energy consumption grew at 2.2% while that of India's rose by 4.6% in 2017 with a share of 5.6% of global primary energy. Globally by fuel, natural gas accounted for the largest increment in energy consumption (3%), followed by renewables and then oil. Our country's gas consumption rose by 6.9% in 2017, increasing for a second successive year and its share in India's energy mix is around 6.18%.

The Indian market has consumed around 143 MMSCMD of natural gas during 2017-18 and net LNG and domestic gas sales stood nearly equal. India has imported a record 72 MMSCMD of gas i.e., 20 MMTPA of LNG during the period. As per BP Statistical review 2018, natural gas imports in the country rose by 9% y-o-y. These volumes will further grow as delivery of cargoes from new contracts has already commenced. Natural gas is seen to dominate the mainstay sectors of fertilizer and power. It is also a preferred fuel in households and industries.

“

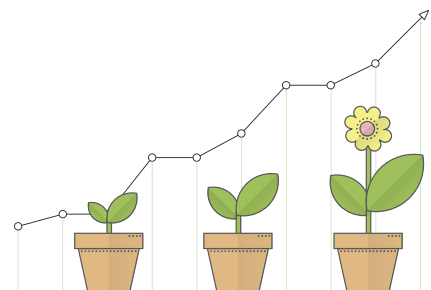
“GAIL operates in a scenario of volatile market prices, ever-fluctuating demand side, complex regulatory regimes and compliance framework and tight project scheduling. Despite these challenges, GAIL has been able to register a growth in sales volume in all segments, viz., liquid hydrocarbons, natural gas sales and transmission and petrochemical. GAIL registered highest-ever Profit after Tax (PAT) of ₹4,618 crore, during the financial year 2017-18. This has been possible through a robust financial planning, eye on cost control and better risk mitigation.”

”

Director (Finance)

Economic Performance of GAIL (FY 2017-18)

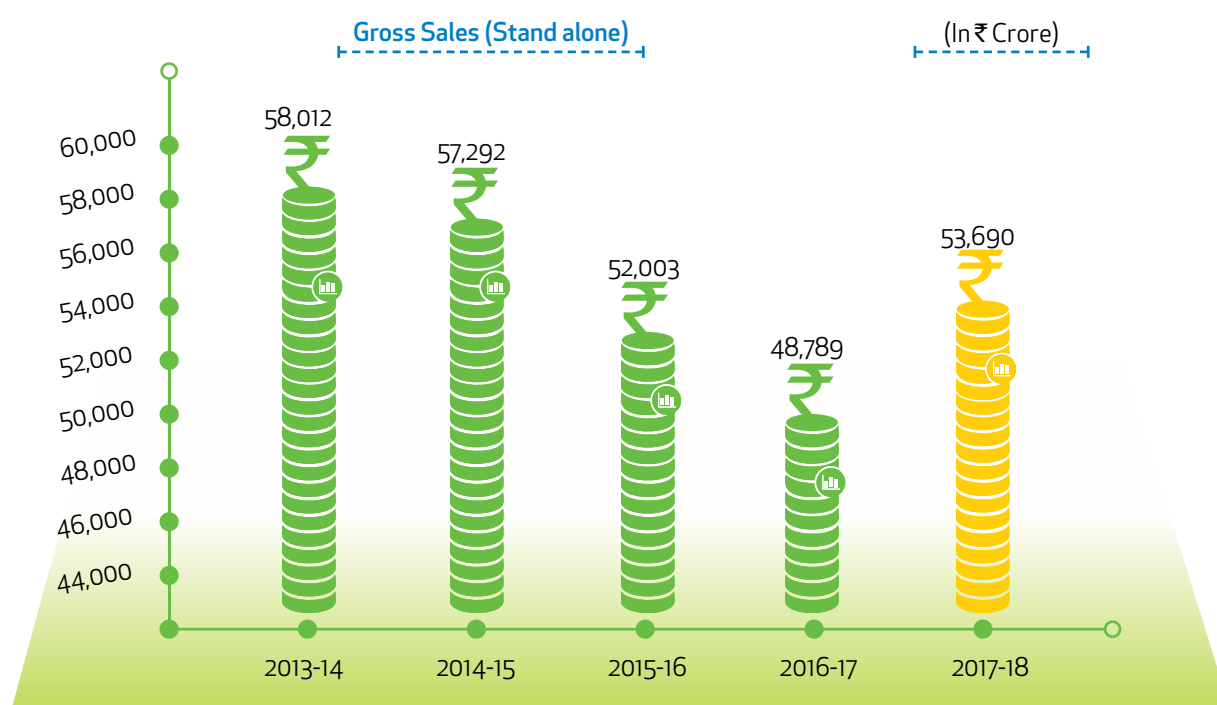
For the current reporting period (2017-18), we registered a turnover of ₹53,690 crore, an increase of 10% against previous reporting period. The PAT for current reporting period increased by 31.8% to ₹4,618 crore.

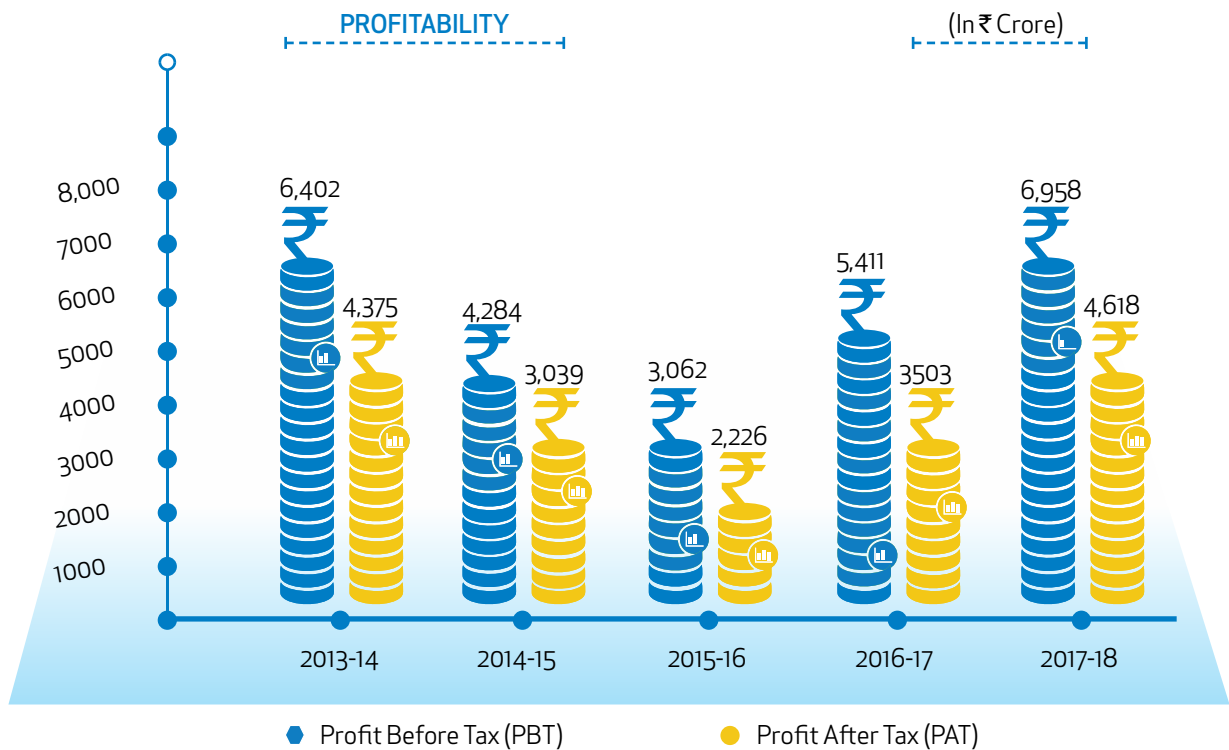
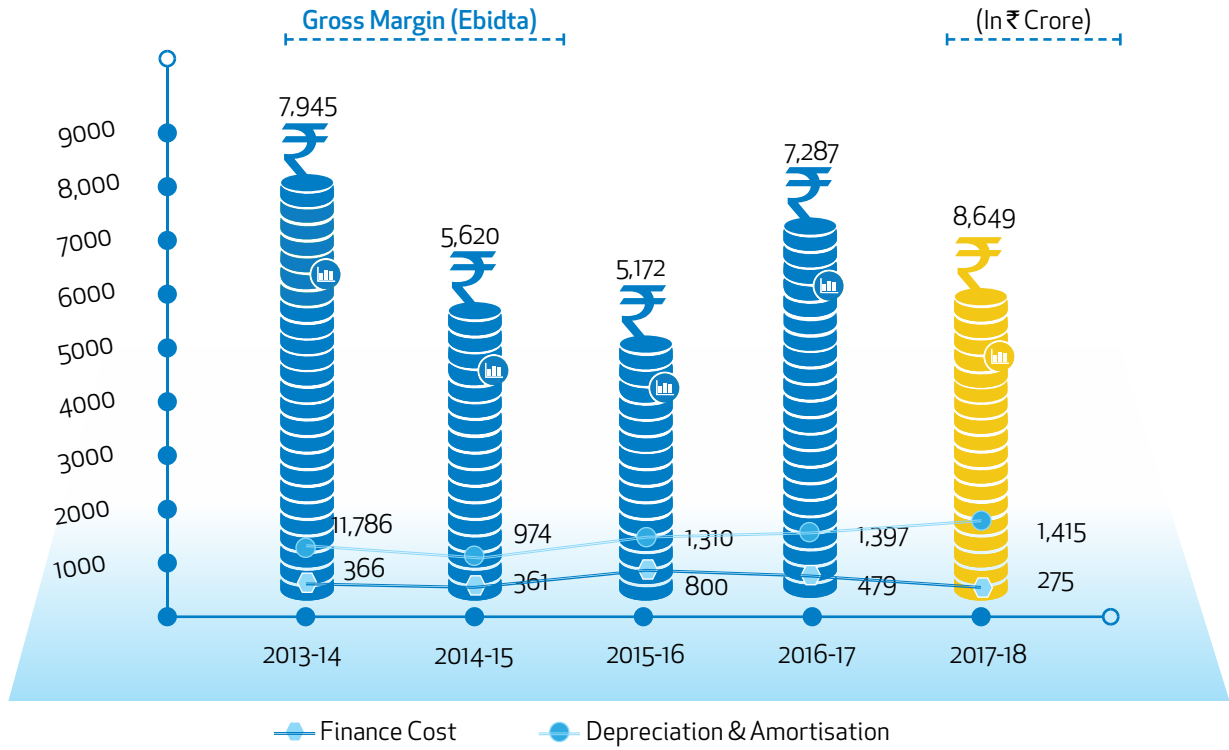


Segment-wise financial performance 

		FY17 vs. FY18 (INR crore)		
SL.No.	PARTICULARS	2016-17	2017-18	Growth
		Apr-Mar 17	Apr-Mar 18	%
(I)	SALES TURNOVER (GROSS)			
1	Natural Gas Transmission	4,195	4,446	6
2	LPG Transmission	514	558	9
3	Gas Marketing	34,630	38,021	10
4	Petrochemicals	5,626	5,788	3
5	LPG and Other Liquid Hydro Carbons	3,139	4,179	33
6	Unallocated	686	697.59	2
	TOTAL SALES	48,789	53,690	10
(II)	PROFIT BEFORE TAX (PBT)			
1	Natural Gas Transmission	2,252	2,815	25
2	LPG Transmission	257	273	6
3	Gas Marketing	1,519	1,256	(17)
4	Petrochemicals	216	106	(51)
5	LPG and Other Liquid Hydro Carbons	1,246	2,304	85
6	Unallocated	(78)	204.25	360
	TOTAL PBT	5,411	6,958	29

Key Financial Highlights





Economic value generated and distributed *

Economic value generated

Economic value generated	FY 16-17 (₹million)	FY 17-18 (₹million)
Total revenue including other income (net of ED)	4,98,306	5,46,535

Economic value distributed

Economic value distributed	FY 16-17 (₹million)	FY 17-18 (₹million)
Operating cost	4,17,317	4,60,563
Employee Wages and Benefits	14,588	17,505
Payments to providers of capital	19,873	20,342
Payment to government	22,032	26,925

* Economic value generated and distributed calculation methodology is different from other reported data

Financial assistance received from Gol for Urja Ganga project during the reporting period, 2017-18

Initiatives and strategy for future growth

In line with the strategy formulated during the year 2011, GAIL has been treading on the path of moving from being a natural gas company to an integrated energy company with global footprints, which is reflected from the strategic moves taken in the past particularly in the area of international LNG sourcing, expansion of gas infrastructure and expansion of polymer portfolio, etc. In the period from 2014 to 2016, GAIL faced temporary setbacks in gas marketing and polymer segments due to a drastic slump in global crude prices and reduced domestic gas consumption. However, GAIL showed strong resilience in the 2017-18 and achieved highest-ever profitability with enhanced gas sales and liquid hydrocarbons production.

With changed business environment in India as well globally, GAIL has taken up

fresh strategy exercise to define the next phase of growth. In this exercise, GAIL shall be chartering strategic initiatives under business areas of gas marketing, gas transmission, petrochemicals, liquid hydrocarbons, city gas distribution and other businesses, including imperatives on the skill and talent development.

Business outlook

Natural Gas

Continued economic growth and higher industrial consumption of energy

coupled with burgeoning population, will increase the demand for energy exponentially. Moreover, India is striving to reduce its dependency on crude oil imports while moving towards cleaner fuels for meeting its energy needs and conserving the environment. This scenario is expected to put a tremendous demand pressure on domestic production of natural gas.

GAIL has been involved in natural gas sourcing, trading, marketing and transmission for more than three decades. GAIL's natural gas pipeline infrastructure is primarily connecting



Natural Gas

Key Business :

Natural Gas Transmission,
Gas marketing, LNG Trading



various gas sources to different gas markets. It is essentially helping in bridging the physical gap between demand and supply centers of various industry sectors including power, fertilizer and CGD in an efficient, safe and eco-friendly manner. GAIL is also exploring new markets for the natural gas and liquefied natural gas trading.

Natural Gas sourcing and trading

To meet the growing energy demand of the Indian economy, enhancing energy security of India and ensuring that availability of gas supplies do not act as a bottleneck in the development of gas sector in India, GAIL has been

taking requisite steps for contracting gas. GAIL had contracted LNG from the US (5.8 MMTPA) and Russia (2.5 MMTPA). The reporting year witnessed supplies from Sabine Pass in March 2018, Cove Point in April 2018 and GMTS (a subsidiary of Gazprom, Russia) in June 2018.

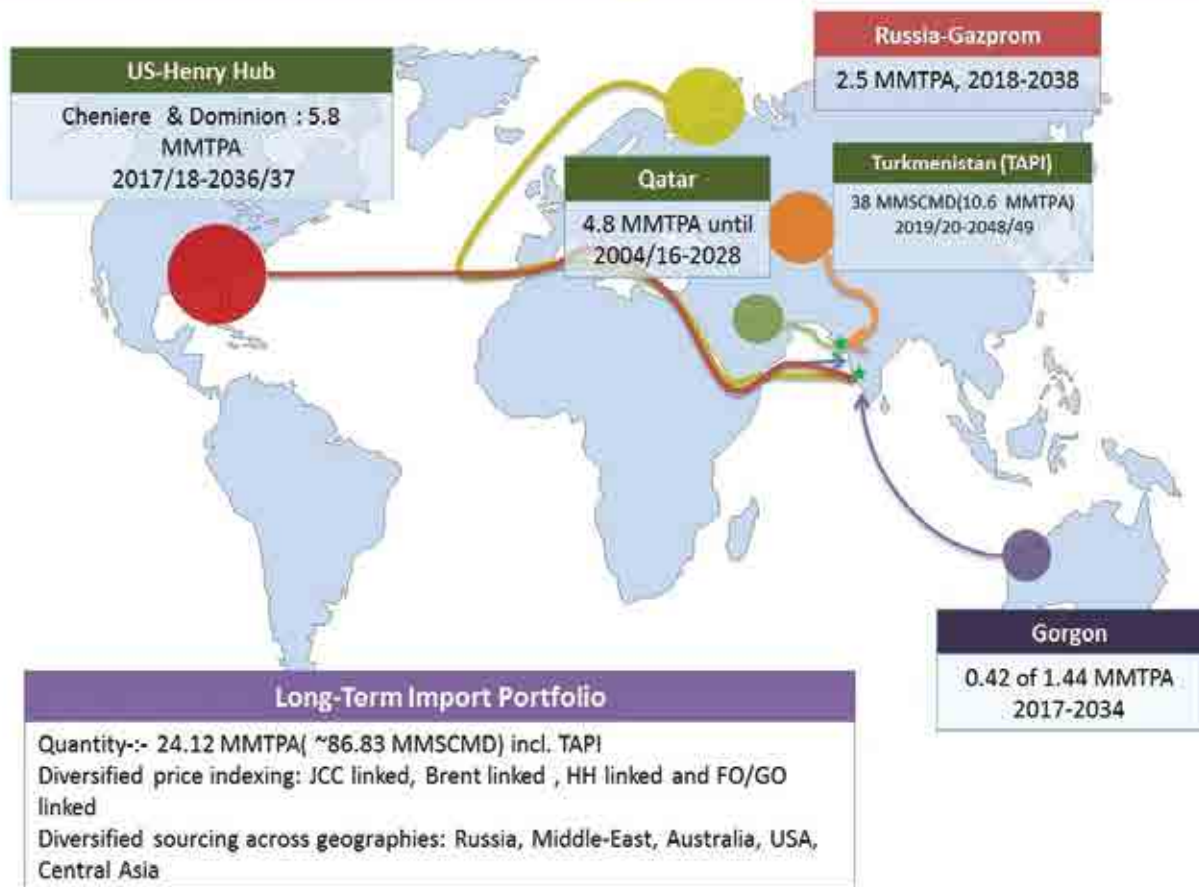


Despite the intense volatility in global gas sector, we have been able to connect and synchronize our strategic plans with market assessment and have executed it to achieve the desired results. The year has seen several firsts for GAIL in LNG, like mid-term destination swaps, international LNG sales, ship chartering to use our resources in most optimal manner; and successfully put GAIL as a notable player in LNG industry. Our efforts to provide India a reliable, secured and an uninterrupted supply of clean energy continues unabated through extending our reach to new areas and customers.



Director (Marketing)

GAIL's Sourcing Portfolio



Further, to cater to the requirement of the domestic market, GAIL has also imported 53 LNG cargoes (approximately 3.43 MMTPA) during the reporting year from various international sources on short-term and spot basis. Marking an important milestone, we sold four LNG cargoes in the international market during the reporting year.

As part of GAIL's energy sourcing strategy, the first Russian long-term LNG cargo arrived at the Dahej LNG terminal in Gujarat in June 2018. The cargo is part of contract signed by GAIL with Gazprom Marketing & Trading Singapore (GMTS), a subsidiary of Gazprom, Russia. The LNG vessel "LNG Kano" which carried 3.4 TBTU (Trillion British Thermal Unit) of LNG was received by India's Union Minister of Petroleum & Natural Gas and Skill Development & Entrepreneurship, Shri Dharmendra Pradhan. With this milestone, GAIL has now become the first Indian public-sector company to source LNG from Russia on a long term. It has contracted to import 2.5 MMTPA of LNG from Gazprom Marketing and Trading Singapore on a long-term basis.

For importing gas from Turkmenistan, GAIL is pursuing the Turkmenistan-Afghanistan-Pakistan-India (TAPI) Pipeline project. Gas Sales and Purchase Agreement (GSPA) to import 38 MMSCMD gas into the

With commencement of supplies from Sabine Pass, Cove Point and Gazprom, GAIL joined the league of top 10 LNG portfolio holders (around 14 MTPA).



country has already been signed. TAPI Pipeline Company Limited (TPCL), the Pipeline Consortium, has been incorporated in Isle of Man to build, own and operate the TAPI Pipeline, and State Concern Turkmengas has been appointed as the consortium

leader. The Shareholders Agreement and the Investment Agreement pertaining to initial equity infusion by the shareholders have also been signed. During the current reporting period, the front end engineering design (FEED) of the project has been completed and bids of long lead items (LLIs), such as line pipes and valves, have also been received.

In addition, GAIL continues to source and market LNG from Qatar and Australia, besides cargoes, through spot purchase and medium-term contracts.

We have been taking focused measures which have resulted in substantial savings and ensuring availability of natural gas in the Indian market at a reasonable price. Some of the key measures are listed below:

- Through our long-term contracts, we have created geographical and indexation diversification of LNG supplies. Linkage to different indices in our LNG portfolio has mitigated risk and has allowed GAIL



1st Liquefied Natural Gas (LNG) cargo under long-term contract with Russia that arrived at Dahej was received by Shri Dharmendra Pradhan, Minister for Petroleum & Natural Gas and Skill Development & Entrepreneurship



to offer stable and competitive pricing to our consumers.

- GAIL is now actively trading LNG in the international market and chartering ships which is in line with the company's globalization strategy and allows GAIL to channelize supplies as per the demand in the Indian market.
- GAIL has concluded various deals towards de-risking the portfolio significantly including time swap and destination swap transactions to ensure delivery of competitively priced LNG in the Indian market.
- GAIL is actively undertaking hedging to manage commodity price risk.
- Demerger of Ratnagiri Gas and Power Private Limited (RGPPL) resulting in separation of LNG terminal into Konkan LNG Private Limited (KLPL) has further strengthened GAIL's position in the Indian gas market. The access to the Dabhol LNG terminal would provide greater operational flexibility to GAIL in the LNG business. During the reporting period, 17 LNG cargoes were unloaded at the Dabhol Terminal.

first loading at Sabine Pass Terminal in Louisiana, US and discharged at Dabhol terminal, India in March 2018. GAIL is planning to hire additional ships in future based on the requirement of transporting volume to India and/or elsewhere subsequent to international sales and swap transactions.

regasification capacity in the country. It is in the process of booking 1.5 MMTPA capacity at the proposed Dhamra LNG Terminal. This is over and above existing booked capacity at Dahej, Kochi and Dabhol.

Dhamra LNG Terminal Private Limited (DLTPL), a wholly-owned subsidiary



1st Liquefied Natural Gas (LNG) cargo under long-term contract with USA that arrived at Dahej was received by Shri Dharmendra Pradhan, Minister for Petroleum & Natural Gas and Skill Development & Entrepreneurship

LNG Shipping

GAIL hired its first LNG vessel 'Meridian Spirit' on time charter basis in September 2017. The vessel did its



GAIL's 1st LNG cargo from the US aboard 'Meridian Spirit'

LNG Regasification Terminals

Presently, GAIL is evaluating various opportunities for setting-up LNG

of Adani Petroleum Terminal Private Limited (APTPL), is developing a 5 MMTPA LNG regasification terminal at the Dhamra Port in Odisha. This will act as a feed for the Jagdishpur-Haldia-Bokaro-Dhamra Pipeline (JHBDPL). During 2017-18, the ground breaking ceremony for the project was held at Dhamra Port.

Post demerger of RGPPL and formation of Konkan LNG Private Limited to run the LNG terminal at Dabhol, the terminal has been successfully revived and is capable of importing 1.9 MT of LNG. Further, the terminal's ability to run 5 MT capacity would be possible once the construction of breakwater begins, which is scheduled to be completed by March 2022.

Natural Gas Marketing

Natural gas trading continues to be the focus area of GAIL. During FY





2017-18, gas sales clocked 84.05 MMSCMD in India (out of total sale of 85 MMSCMD), compared to 81.21 MMSCMD in the previous financial year. Domestic gas available to the company for marketing increased to 51.94 MMSCMD in FY 2017-18 as against 48.8 MMSCMD in the previous financial year, while contributing 61% to the marketing volume. The balance volume of 39% was serviced through imported long-term and spot volumes. Major supplies of natural gas include fuel to power plants, feedstock for gas-based fertilizer plants, CGD, LPG extraction and consumption in other industrial sectors. GAIL holds around 60% market share in India's gas marketing business.

Fertilizer sector: GAIL's total sale of natural gas in the fertilizer sector during the current reporting period was 28.85 MMSCMD (including 11.67 MMSCMD of domestic gas) as against 27.58 MMSCMD (domestic 12.09 MMSCMD) in previous reporting period. During the reporting period, GAIL firmed up Gas Supply Agreement with upcoming fertilizer plants for about 12 MMSCMD, supply of gas shall commence from early 2019.

Power sector: GAIL's total sale of natural gas in the power sector during current reporting period was 23.27 MMSCMD (including 18.97 MMSCMD of domestic gas) as against 23.91 MMSCMD (domestic 19 MMSCMD) in previous reporting period. The Power System Development Fund (PSDF) Scheme of the Ministry of Power for the gas-based power sectors, w.e.f. April 1, 2017 expired and GAIL continues to explore the opportunities for the supply of natural gas to gas-based power generation units at affordable prices.

City gas distribution: GAIL's total sale volume to CGD sector continues to show positive growth. GAIL sold 17.43 MMSCMD to the CGD sector as against 15.4 MMSCMD in the previous reporting period. As on March 31, 2018, GAIL caters to 26 CGD companies supplying gas (CNG, PNG and industrial gas) to 70 cities.

First phase of Pradhan Mantri Urja Ganga project is likely to be completed before scheduled target of December 2018

GAIL (India) Limited has placed a pipe laying orders of ₹780 crores for approx. 530 km for pipeline connectivity from Bokaro (in Jharkhand) to Angul (in Odisha) Jagdishpur-Haldia and Bokaro-Dhamra Natural Gas Pipeline (JHBDPL) project. With these awards, major contracts of the project, i.e., pipe supply and laying contract orders for 2200 km have been finalized.

The prestigious 2655 km-long JHBDPL project, also known as the 'Pradhan Mantri Urja Ganga' project was inaugurated by Hon'ble Prime Minister of India in July 2015. The project is progressing in full swing and first phase of the project will be completed before the scheduled target date of December 2018. GAIL till date has committed over ₹7400 crores for the project which will pass through the state of Uttar Pradesh, Bihar, Jharkhand, West Bengal and Odisha.

2,655 km Gas Pipeline of Prosperity

#PradhanMantriUrjaGanga

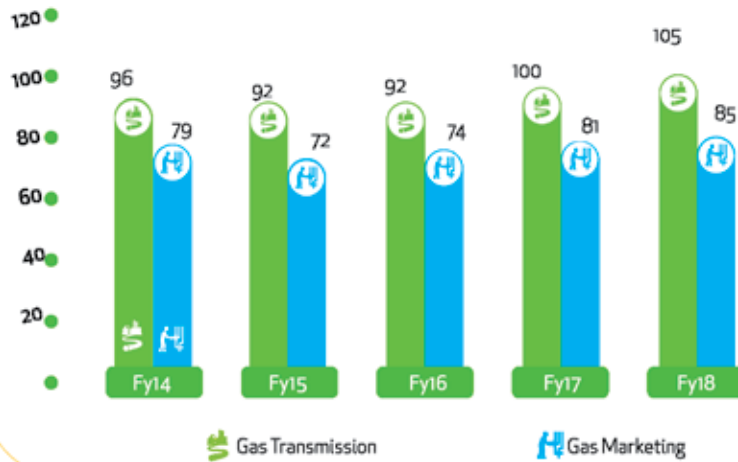
Natural Gas Transmission

GAIL owns and operates a network of around 11,400 km of natural gas high pressure trunk pipeline with a pan-India capacity to handle volumes of around 206 MMSCMD constituting 75% of natural gas transmission capacity in the country. The average gas transmission during the current reporting period 2017-18 was 105.23 MMSCMD, compared to 100.4 MMSCMD in the previous reporting period.

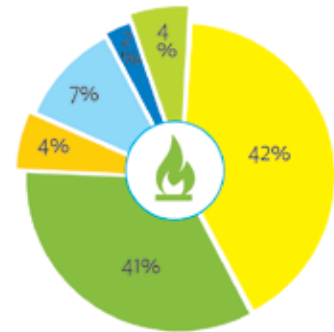




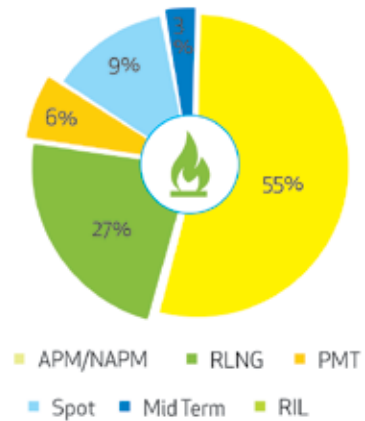
Gas Volume Trend (MMSCMD)



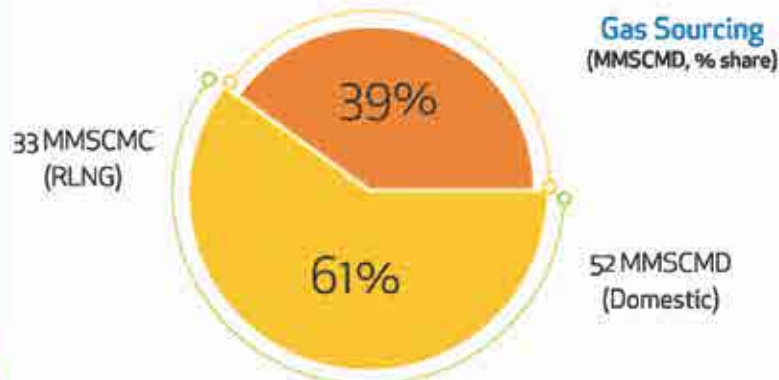
Gas Transmission Mix



Gas Marketing Mix



Gas Sourcing & Sector Wise Supply (FY 2018)



Sector Wise Supply



- Imported gas primarily consists of long-term RLNG, mid-term RLNG and spot
- Major sources for domestic gas are ONGC (Administrative Price Mechanism and Non Administrative Price Mechanism), Panna-Mukta and Tapti (PMT) at Administrative Price Mechanism & Production Sharing Contract prices, Ravva, Ravva satellite, etc.
- Highest demand of Natural Gas is from Power and Fertilizer companies

* Others include Steel, Refineries, Sponge Iron, overseas Petrochemicals, GAIL Internal consumption etc.





Liquid Hydrocarbon

GAIL operates six gas processing units (GPU), located in Vijaipur (two units), Pata, Vaghodia, Usar and Gandhar, having a production capacity of 1.3 million Metric Tonnes (MT) of LPG and other liquid hydrocarbons. LPG is only being sold to PSU oil marketing companies (OMCs) while other LHC products are being sold directly to the industrial customers.

In the current reporting period, total liquid hydrocarbon production was about 1.28 million MT, which included LPG, 0.16 million MT of propane, 0.03 million MT of pentane and 0.09 million MT of Naphtha. Over 80% of the total hydrocarbon production constituted of LPG and propane.

We are planning to set up Propane Dehydrogenation (PDH)-based polypropylene Petrochemical plant in Usar. The possibility of setting up a polypropylene plant of 60 KTA capacity at Pata, Uttar Pradesh, based upon the available propylene from the existing plant, is also being explored. We are under discussions with various stakeholders regarding greenfield naphtha/ethane-based petrochemical complex in Andhra Pradesh.

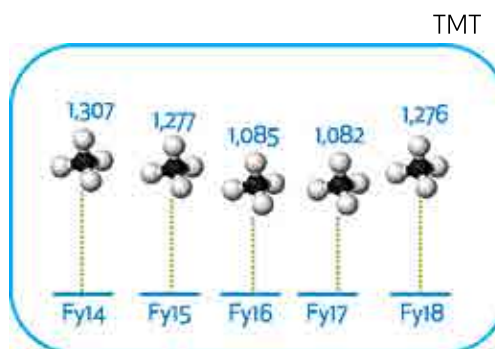


Liquid Hydrocarbons

Key Business :

LPG and LHC Production, Polymer Production and LHC Marketing

Liquid Hydrocarbons Sales



LPG Transmission

GAIL is the first and the only company in India to own and operate 2,038 km of exclusive pipelines for LPG transmission for third-party usage across two major networks namely Jamnager-Loni Pipeline (JLPL) and the Vizag-Secunderabad Pipeline (VSPL). A pipeline network of 1,415 km of pipelines connect the western and northern parts of India and the remaining 623 km of pipeline is in the southern part of the country connecting Eastern Coast. The LPG transmission system has a capacity to transport 3.8 MMTPA of LPG. With laying of exclusive pipelines for LPG transmission in the various parts of the country, GAIL has contributed to replace the mode of transportation by road required to deliver LPG from production facilities to various customers, which is less emission intensive.



LPG Transmission

Key Business :

LPG Production, Transmission and Marketing

During the current reporting period, JLPL and the VSPL networks together achieved a throughput of 3.72 MMTPA as against 3.36 MMTPA in the previous reporting period. The design capacity of JLPL is being augmented from 2.5 to 3.25 MMTPA and is expected to be commissioned in 2018.

GAIL also produces LPG through fractionation in gas processing units, known as straight run LPG. GAIL's LPG is an eco-friendly fuel and provides a cheaper and effective means of reducing pollution and increasing productivity. GAIL's

LPG Transmission





GAIL has a share of about 8% in LPG production and 4% in LPG sales in India.

LPG is being supplied to PSU Oil Marketing Companies namely IOCL, BPCL and HPCL, ex-GPUs at import parity price. Currently, GAIL has six fractionating units at five locations in the country having a production capacity of 1.5 million MT. In total, an increase of about 15% has been observed in GAIL's LPG sales for the current reporting period as compared to previous reporting period.

Petrochemicals

GAIL is producing a slew of polymer products while creating, maintaining and ensuring a safe and clean environment. GAIL's polymer products are environment-friendly and fully recyclable. GAIL owns and operates a gas-based petrochemical complex at Pata, District Auraiya, in Uttar Pradesh. The company has a world-class Sclairtech solution polymerization process to produce Linear Low Density Polyethylene (LLDPE) and High Density Polyethylene (HDPE), with a nameplate capacity of 210 KTA and has two slurry-based polymerization processes to produce HDPE, with a nameplate capacity of 100 KTA each. As a recent advancement, GAIL has doubled the polymer production capacity from 410 KTA to 810 KTA at Pata Plant by commissioning a new

gas phase Unipol PE Process with a nameplate capacity of 400 KTA to produce HDPE/LLDPE.

GAIL's petrochemical subsidiary (70% equity holding) Brahmaputra Cracker and Polymer Limited (BCPL) has a capacity of 280 KTA. We have the marketing rights of the BCPL plant taking the total marketing portfolio to 1.09 MTPA. Further, we have a joint venture with ONGC and GSPC, i.e., ONGC Petro-Additions Limited (OPAL) with a 1.4 MMTPA capacity plant at Dahej. During the current reporting period, the overall production from the petrochemicals complex was 671 TMT.

In order to be placed as a market leader in petrochemical production and marketing, especially in Asia, the focus remains on developing export capability by increasing the capacity utilization as well as by improving the number and quality of grades produced. During the current reporting period, we exported 56,345 MT of polymers to Asian markets as a step in this direction. The company's market share in the domestic polyethylene market has improved significantly and we have become second largest player in the Indian market with a portfolio of over 1 MMTPA of polyethylene. GAIL and BPCL together have a combined production share of 21.4% of the HDPE and LLDPE market in the country.

Petrochemical Marketing Group (PMG)

GAIL's marketing network consists of Petrochemical Marketing Group (PMG), Noida, Marketing Services Group (MSG), Pata, 13 zonal offices, GAIL Polymer Technology Centre (GPTC), Noida, SAP Centre, Noida and is strategically located network of 42 consignment stockists with 58

Banker's Meet 2017 by GAIL

GAIL annually organizes interactive meet with its partners in financial sector including bankers, lenders, arrangers, credit rating agencies and consultants to sustain cordial relationship with them.

Continuing with the trend and to further enhance the corporate image of GAIL and to strengthen the good relationship with our financial partners, GAIL Bankers' Meet 2017 was successfully organized on 21 September, 2017 at New Delhi.

The meet was chaired by Honourable Director (Finance) Sh. Subir Purkaystha and other senior officials from finance department also attended the meet. The officials of our banker, lender, arranger, credit rating agency and consultant participated in the event and approx. 200 members attended the meet. The meeting began with presentation on GAIL's financial performance followed by an interactive session.

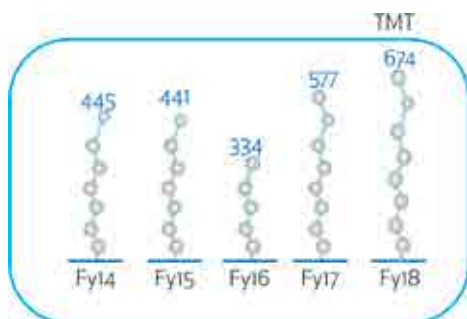


The objective of GAIL's investor relations activities is to develop a long-term relationship of trust with various stakeholders and in particular the shareholders, investors and analysts, through fair process of information disclosure. GAIL maintains open channels of communication as it engages with the various stakeholders. In order to pursue these objectives at all times, GAIL continuously discloses necessary information and conducts various investor relations activities including interactive meetings

Director (Finance)



Petrochemicals Sales



stock points located across India, which are being augmented to ensure that the customer needs are met on time and efficient pre- and post-sales services are provided. GAIL has plans to approximately double the strength of consignment stockists in the near future.

PMG looks after the marketing activities pertaining to petrochemical products in GAIL. Main functions of PMG include:

- Product pricing, sales and production planning
- Sales policy
- Consignment stockist appointment and management
- Setting and monitoring of sales targets
- Coordination with zonal offices
- Budgeting
- Exports and imports
- New projects and strategy
- MIS

GAIL annually caters to more than 2,086 customers, spread throughout the length and breadth of the country, to meet their requirement of LLDPE and HDPE.

City Gas Distribution

GAIL has been a pioneer in the implementation of city gas distribution (CGD) since early 1990s and has been involved in secondary distribution of natural gas to domestic, industrial and commercial customers through pipes as piped natural gas (PNG) and in compressed form to the automotive segment as compressed natural gas (CNG). In the domestic segment, PNG is used as substitute of LPG and other more polluting fuels like coal, wood, etc. In industrial and commercial

installations, PNG replaces fuels like furnace oil (FO), light diesel oil (LDO), propane, commercial LPG, coal, wood, pet-coke, etc.

Currently, we are operating in 38 cities throughout India, directly and through our eight joint ventures/subsidiaries in the major cities of Delhi, Mumbai, Hyderabad, Bengaluru, Pune, Varanasi, Patna, etc. Out of the total 43 lakh PNG household connections in India, GAIL is catering to more than 50% of the households. As on 31 March 2018, GAIL is operating 915 CNG stations across the country. During the current reporting period, we registered additional five lakh households and 120 CNG stations.

With the vision of being the leading company in retail, distribution and marketing of natural gas, GAIL Gas Limited, a wholly-owned subsidiary of Maharatna GAIL (India) Limited, was established in May 2008. GAIL Gas Ltd. and its JVCs are operating in 11 geo-graphical areas.

During the current reporting period, GAIL Gas Ltd registered an increase of 63.9% in its annual turnover and 24.6% in PAT as against previous reporting period.

As part of URJA Ganga project, GAIL has been awarded with six cities namely, Varanasi, Bhubaneshwar, Cuttack, Patna, Ranchi and Jamshedpur. GAIL has also added a new leaf in gas retail marketing in addition to Jagdishpur-Haldia and Bokaro-Dhamra Natural Gas Pipeline (JHBDPL) by executing a joint venture agreement with Greater Calcutta Gas Supply Corporation Limited (GCGSCL), for operating city gas network in Kolkata extending over 1,500 km and have set an ambitious target of connecting over 1.4 million households.

Further, GAIL has set up more than 1,200 km of green corridor, namely, Delhi-Mathura-Agra, Mumbai-Pune Expressway, Kanpur-Lucknow and Udaipur-Agartala-Khowai.



City Gas Distribution

Key Business :

Commercial Projects for Gas Distribution

Bengaluru CGD project

Around ₹600 crore has been incurred towards laying of the 2,684 inch-km pipeline network, providing connections to over 50,000 households, and commissioning of five CNG stations.

Around 5000 households are already drawing PNG along with 70 industrial and commercial connections.

Exploration and Production

GAIL entered into exploration and production (E&P) as a means to secure more reserves for energy security of the nation. E&P segment of business was conceived to not only give a strategic push to GAIL's business but also to secure reserves and ensure supply. E&P has given a competitive edge to GAIL in many ways. These are:

- Integration in supply chain
- Secured natural gas supplies



- Balancing of business portfolio
- Exploiting global opportunity

GAIL is currently participating in 10 E&P blocks, out of which eight blocks are in India (two in Assam, four in Cambay, one Cauvery one in Kutch, Gujarat) and two blocks are overseas (A-1 and A-3 blocks in Myanmar). GAIL has partnership in these blocks with various companies such as ONGC (one), OIL (one), GSPC (two), BPRL (one), Hardy Exploration & Production (one), JOGPL (one) and Daewoo (two) as operators.

Hydrocarbon discoveries are in place in nine E&P blocks. Blocks with hydrocarbon discovery are: CB-ONN-2000/1, CB-ONN-2003/2, CB-ONN-2010/11, CB-ONN-2010/8 (Cambay Onland in Gujarat), Block A-1 and A-3 Myanmar, AA-ONN-2002/1 (Tripura Onland), GK-OSN-2010/1 (Gujarat Kutch Offshore) and CY-OS/2 (Cauvery Offshore).

Production of crude oil is in progress from Cambay Onland blocks CB-ONN-2000/1 and CB-ONN-2003/2 @ 650 barrels per day. Production of gas is in progress in two blocks in Myanmar (A-1 & A-3). Development activities have been initiated in Tripura Onland Block (AA-ONN-2002/1). Further, we have participated in blocks on offer under Open Acreage Licensing Policy (OALP) – I bid round in Cambay, Rajasthan and Assam basins.

GAIL is also a member of National Gas Hydrate Programme (NGHP) being coordinated by Directorate General of Hydrocarbons (DGH) and is actively involved in activities related to gas hydrate exploration.

Coal Gasification

GAIL is also entering into coal gasification by setting up a surface coal gasification-based urea project at Talcher, Dist. Angul, Odisha through a JV company namely "Talcher Fertilizers Ltd.". The JV has been formed with consortium partners namely GAIL, Coal India Limited (CIL), Rashtriya Chemicals and Fertilizers (RCF) (each having a stake of 29.67%) and Fertilizer Corporation of India Limited (FCIL) (10.99% equity). The JV company will be the first coal gasification plant for production of ammonia/urea in India. The project, with an estimated cost of ₹11,611 crores, is envisaged for the production of 2200 MTPD ammonia and 3850 MTPD urea. The success of this project would pave the way for the production of fertilizers from the abundantly available domestic coal, thus resulting in lesser dependency on their imports.

Details of the TFL JV company - (Promoters: GAIL-29.67%, RCF-29.67%, CIL-29.67% and FCIL-10.99%).

The following major activities have either been completed or are under completion:

- Coal gasification technology shortlisted

- Environment clearance has been received
- Project DFR has been approved
- MoU signed with IOCL for supply of pet coke in August 2017
- Comfort letter assuring 12% post tax project IRR issued by DoF and NITI Aayog
- Financial appraisal of project DFR done
- In principal captive coal mine allotment received
- One critical activity viz., site grading work has been awarded on 30 July 2018
- Drilling activities for mining DFR preparation commenced at North Arkhapal coal mine from May 2018
- Bids for coal gasification and ammonia/urea tender have been received and same are under evaluation

A Proud Moment to share

GAIL turns a new leaf in gas retail marketing along JHBDPL by executing Joint Venture Agreement (JVA) with GCGSCL (a Govt. of West Bengal entity) for operating city gas network in Kolkata G.A. extending over 1500 sq.kms

This historic agreement paves the way for GAIL to steer the Joint Venture Company with 76% equity stake. The new subsidiary Bengal Gas Company Limited has set an ambitious target of connecting over 1.4 million households and setting-up 70 plus CNG stations at an investment of over Rs. 500 crore within the next five years. Addition of Kolkata into GAIL's CGD portfolio provides us with a unique distinction of emerging as a major operator of City Gas Distribution across metropolitan cities in India.

Kolkata JVA was signed in the presence of CMD, GAIL and Chief Secretary, Govt. of West Bengal at the Sate Secretariat, Kolkata.



Exploration and production

Key Business :

Exploration, Extraction and production of Hydrocarbons





08

Operational Excellence



**Integrated
Management
System (IMS)**
implemented at
GAIL

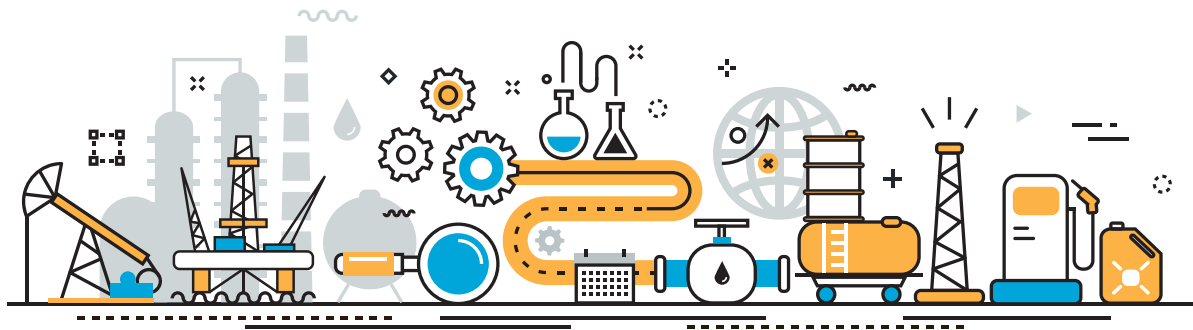


**Pipeline RoU
Monitoring** through
Satellite imaging





Operational Excellence



Over the years GAIL has established itself amongst the top natural gas companies in the world. It has marked its presence in the entire gas value chain from exploration of natural gas (NG), NG marketing, NG and LPG transmission to processing of gas-based value-added products such as LPG, LHCs and petrochemicals.

Besides expansion of GAIL's business portfolio along the value chain, the company has expanded to new geographies through enhanced business development activities leading to new business areas and improved scale of operations.

Through a combination of experienced team of employees, project management skills and effective operation and maintenance capabilities, GAIL is providing its customer with an efficient and timely response as well as quality products and services.



GAIL (India) Limited Group has been included in the "FTSE4Good Emerging Index" for second year in a row.

FTSE is a market-leading tool for investors seeking to invest in companies that have strong management of ESG risk.

We aspire for





Our Approach

GAIL's sustainability approach is driven by the company's sustainable strategy which aims to create a better tomorrow that extends beyond the clean energy business. This strategy helps in improving the operating standards, as efficiently as possible, minimizing adverse impacts on natural resources and the environment and maximizing positive impact on society, while continuing to deliver excellence to GAIL's customers. It influences all aspects of the company's business decisions, from designing and operating plants to engaging with the customers, employees and the communities where we operate.

Operational Excellence

GAIL's approach for achieving the vision for world-class performance is outlined in the company's O&M objectives which focuses mainly on low operating cost, high energy efficiency, high reliability, inventory control, safety and an uninterrupted supply of NG and LHC with quality.

The company's policy resonates with the belief of ensuring the highest level of operate-ability and availability. We aim at achieving the maximum productivity of assets by regular maintenance and monitoring controlling and reporting. Individual roles and responsibilities are defined across the operational systems and are assessed from time to time for their efficient functioning.

GAIL's operational excellence is driven by numerous components which lead to enhanced efficient asset performance, which in turn helps in profit maximization.

The components of operational excellence help GAIL in:

- Ensuring delivery of best quality products to the customers
- Ensuring safety of employees, associated communities, properties and assets of GAIL

- Developing competency and skills of employees and promoting employee motivation
- Maintaining efficient stakeholder management relationship and delivering quality products and services to achieve customer satisfaction
- Adapting to newer technologies to promote efficient and environment-friendly O&M activities
- Embedding safety, quality and integrity management of all assets throughout the value chain of O&M
- Performing business in a long-term sustainable manner, while rightfully fulfilling the interest of the organization and its stakeholders
- Complying to all statutory, legal and regulatory requirements and government guidelines
- Empowering employees by defining individual roles, responsibilities, and accountability to drive performance improvement



"Safety First is the mantra we operate with. It is our consistent endeavor to develop a world-class natural gas infrastructure with a focus on safety of pipelines, systems and processes. We have given priority to environmental consideration throughout the various phases of project execution and operation. Our aim is to grow with a long-term approach to systematically improve our efficiency and quality in the way we operate. Excellence at GAIL, rests on the trinity of people, health and perception (PHP) with due importance to performance. By focusing on continuous improvement of processes and increased efficiency across project sites, GAIL has focused on overcoming the challenges in this dynamic sector. While aiming for excellence and efficient systems and processes, the organization looks towards improvements in project execution, energy management and energy efficiencies, among other areas. With growing global and national concerns on climate action, GAIL focuses on providing energy security and cleaner alternatives to India's burgeoning population while also acting on opportunities to control emissions, improve efficiencies and protect the sustainability of our operations. We believe our endeavors will be enablers of change and we strive to build excellence in our systems, procedure, practices, policies and strategies."



Director (Projects)

Leadership Responsibility

Leadership is one of the defining factors of operational excellence. GAIL's department heads recognize the importance of the sustainability approach and take a leadership role in setting up relevant systems and processes, priorities, performance measures and monitoring of progress.

The company's organizational culture encourages employees to take responsibility to ensure that these systems and procedures have fully and effectively complied with national and international regulations.



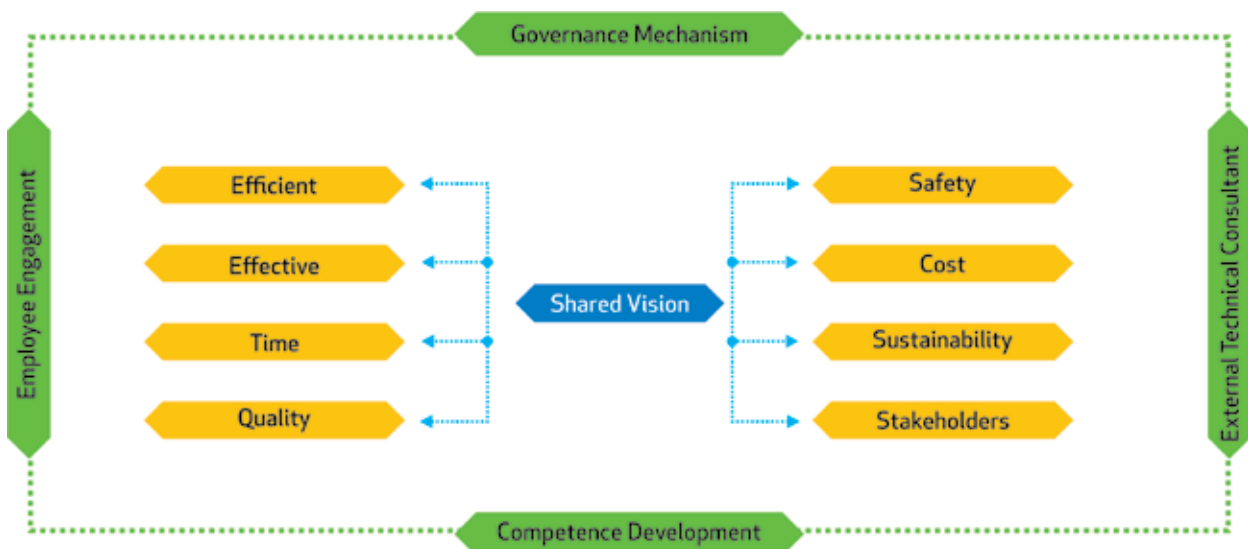


Operations and Maintenance at GAIL

GAIL's approach for achieving its vision for world-class performance forms the core of the company's O&M objectives. The O&M policy determines the objectives, targets, and actions for asset maintenance, their life cycle assessment and review for refurbishment and replacement.

For efficient functioning of the pipelines, we have empaneled certified subject matter experts (SMEs) of international repute. A system has been developed for carrying out root cause analysis of incidents through a three-tier investigation mechanism, i.e., an internal committee at first level, External Technical Consultants such as Engineers India Limited (EIL) at the second level and an internationally-reputed independent agency at the third level. To prevent the recurrence of any similar incident, the recommendations of the three committees are integrated and corrective measures are taken.

In recognition to outstanding contribution in combating corrosion issues in pipelines, and generating awareness in the industry, NACE International, USA has awarded prestigious "Presidential Award" to Dr. Ashutosh Karnatak, Director (Projects), GAIL. The award was presented to Director (Projects) by Dr Samir Degan, President NACE International on 18 April 2018 at Phoenix, Arizona, the US, in presence of incoming President of NACE International for 2018-19 Mr. Jeffrey L. Didas. This prestigious award is given for the first time to any Indian national in the history of 75 years of NACE International.



Components of operational excellence

Performance	Ensure timely, assured and best quality product delivery and services to customers
Safety of people and asset	Ensure safety for employees, associated communities, properties, and assets of the organization
Talent management	Develop competency and skills of employees and promote employee motivation
Culture of excellence and customer delight	To maintain an efficient stakeholder management relationship and deliver quality products and services to achieve customer satisfaction








Components of operational excellence

Best - in - class standards and systems across the value chains	<ul style="list-style-type: none"> Adapt to newer technologies to promote efficient and environment friendly O&M activities Embed safety, quality and integrity management of all assets throughout the value chains of O&M
Sustainable business operations and compliance	<ul style="list-style-type: none"> Perform business in a long-term sustainable manner, while rightfully fulfilling the interest of the organization and its stakeholders All statutory, legal and regulatory requirements and government guidelines to be complied by and performing beyond internal targets set
Responsibility and accountability	Empowering employees by defining individual roles, responsibilities and accountability to drive performance improvement





GAIL (India) Limited
(A Govt. of India Undertaking - Maharatna Company)


Operations and Maintenance Policy


With a Vision to be the leading company in Natural Gas and Beyond and a Mission to accelerate and optimise effective and economic use of Natural Gas and its fractions, GAIL endeavours to be the finest company in the operation of its assets; achieved through adopting safe, reliable, efficient and environmentally responsible systems and practices.

While delivering the products and services to all its customers, the company endeavours to operate its plants, pipelines and machineries in most efficient and safe manner by adopting best in class practices and embracing 'Safety for all stakeholders' in every sphere of its business.

GAIL, while operating and maintaining its facilities, is committed to:

- ◆ Safety of Public, Employees and Properties & Assets belonging to the Organization / Public.
- ◆ Keep "Safety Management", "Quality Management" and "Integrity Management" of all assets, in entire value chain of O&M.
- ◆ Operate business in a manner that is sustainable in long term, serving to the best interest of GAIL and its stakeholders.
- ◆ Achieve productivity with best efficiency and cost effective methods to enhance profit.
- ◆ Ensure availability of equipment, tools, spares and services for uninterrupted operations.
- ◆ Benchmarking Performance indicators at par with the Global best and target to achieve the same.
- ◆ Leverage Technology and address Technological obsolescence to promote Efficient and Environment Friendly O&M activities.
- ◆ Deploy best Practices having defined Roles, Responsibilities and Accountability at all levels with proactive and value based approach.
- ◆ Comply with all requirements of Statutory, Legal, Regulatory and Govt. guidelines and go beyond in setting internal targets.
- ◆ Have efficient stakeholders' management at all levels and deliver reliable, quality products and services to the satisfaction of the customer.
- ◆ Develop employees' Competency, Skills and enhance Employee Motivation.
- ◆ Having a Policy for Communication with all employees and stakeholders.
- ◆ Efficient Monitoring, Control, Reporting Mechanism and documentation.
- ◆ Periodic review of the policy for continual improvement in O&M system.


(B C Tripathi)
 Chairman & Managing Director






Focus areas for functional excellence has been abbreviated as S2OMES-TEA which stands for:

- Safety & Security
- Efficient Operation
- Best Maintenance Practices
- Environment Management
- Stakeholder Management

- Adopting a state of art Technology
- Education and Learning
- Award and Appreciation

Various initiatives were taken to adopt emerging technology, align with global best practices and to improve operational efficiency. During the reporting period, 25 initiatives were

undertaken by O&M department, 20 of which could be completed within the reporting period and five have been carried forward to 2018-19.

The details of the initiatives and benefits reaped, both tangible and intangible, during 2017-18 is provided in table below:

S/N	Initiatives details	Impact
1	<p>Implementation of OFC-based pipeline intrusion detection system (PIDS)</p> <p>PIDS has been implemented in Piyala to Loni section of JLPL and Vizag to IP-1 section of VSPL on a trial basis.</p> <p>The basic principle of operation is based on the optical fiber sensing technique to define and detect any event, produce alarm and spread the necessary communication to all concern by the way standard OTDR display. The system employs distributed acoustic sensing (DAS)-based technology.</p> <p>Types of events detected by the system are:</p> <ul style="list-style-type: none"> • Manual excavation using hand tools • Machine excavation • Vehicle movement in RoU • Agricultural activities in RoU • Seismic activity • Valve detection • Fiber break • Pig location, etc. 	<p>This is a proactive mitigation measure for third party intrusion detection in pipeline RoU (Right of Use). Unlike other methods which are reactive in nature, it provides a real-time detection and identification of third party events in RoU. Thus the security of the pipeline system is improved as compared to other methods.</p>
2	<p>Performance monitoring and analysis on the five zeroes</p>	<p>Quarterly Integrity Report introduced elaborating the performance of the KRAs and KPIs of the Pan-India pipeline Network on the five zeroes</p>
3	<p>Concept of model terminals introduced to standardize design across all GAIL installations, including the upkeep of terminals aesthetically and documenting it as per the regulatory requirements,</p>	<p>The pipeline installations/terminals, viz. intermediate pigging stations, SV stations, PR stations, receiving terminals, and gas dispatch terminals have been commissioned in different phases and with different philosophies. Hence, it felt essential to develop guidelines for upkeeping the GAIL's stations in a unified standard. The model station guidelines are conceptualized by integrating the various aspects of gas installations which includes entrance, sign boards, control room, process area, boundary wall, color coding, approach road and internal pathways, electrical system, sewerage system, sanitation and sustainability initiatives.</p>

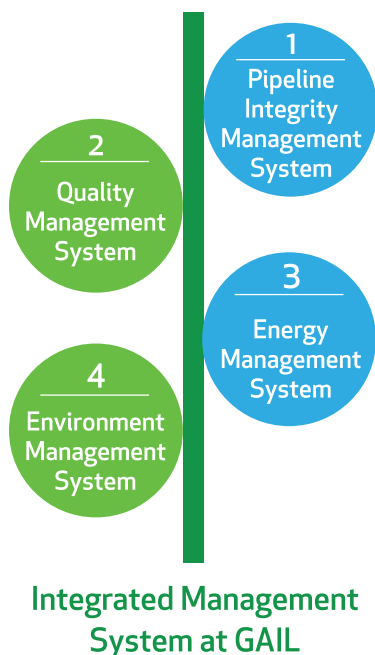
Integrated management systems

GAIL's Integrated Management

System (IMS) consists of Pipeline Integrity Management System; Quality Management System, Energy Management System, and Environment Management System.

The company's IMS ensures a seamless functioning of operations and helps us to achieve the objectives of manufacturing of a quality product and uninterrupted operations.





Asset integrity and productivity service reliability

The company's policy for asset integrity management recapitulates its view to determining the objectives, targets, and actions. It also covers the policy of asset maintenance by predictive, preventive schedules, followed by turnaround schedules.

We, at GAIL, ensure the safety of pipelines from the initial phase. The pipelines and their supporting infrastructure is designed in accordance with the national and international standards such as the American Society of Mechanical Engineers (ASME), Oil Industry Safety

Directorate (OISD) and Petroleum and Natural Gas Regulatory Body (PNGRB). We also observe guidelines used by the American Petroleum Institute (API), British Standards (BS), Canadian Standards, Deutsches Institut für Normung (DIN), National Association of Corrosion Engineers (NACE) and National Fire Protection Association (NFPA). GAIL's Central Pipeline Integrity Management System (CPIMS) maintains the integrity of the extensive network of gas pipelines, which is done by showing the status derived by recording threats, risks, the possibility of failure and compliance to statutory regulations through GIS data and temporal data consolidation. This results in the reduction of risk of pipeline failure, insurance cost, and the downtime. Accordingly, the life of the pipeline is also increased by initiating preventive maintenance based on data collection and analysis at an appropriate time.

Asset performance is ensured by reviewing the risk assessment and prioritizing the identified risks on the basis of the data collected for diagnosing threats, fitness for purpose (FFP) assessment and corrosion growth so that the mitigation measures can be sorted out. Pipeline design and standardized integrity assessment processes are also stored on the system and seamlessly made available to relevant and authorized users across operations.

NG and LPG pipelines are monitored through application software (APPS) in a phased manner. The tool also provides operation and planning tools for safe, reliable, optimum and economic operation of the pipeline networks.

For the creation of systems and processes for managing the integrity of all owned and operated pipelines, we have a Central Integrity Management Group (CIMG) within the corporate O&M Department at Noida, India. Further, to formulate the integrity management at the regional level, we have Regional Integrity Management Groups (RIMG), having the following major functions:

- Identify and effectively manage all the potential threats to pipeline integrity
- Strategize, identify, monitor, control, audit and demonstrate improvement on risk prevention/mitigation of each hazard

Monitoring and managing pipeline RoU

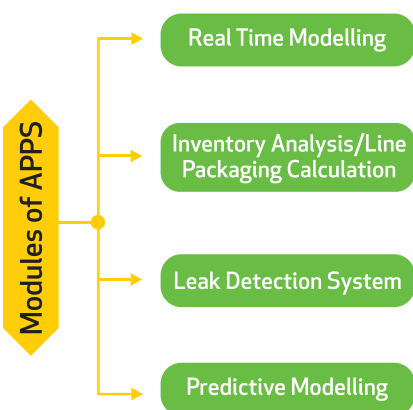
Encroachment Policy

With the increase in activities of inhabitants and their subsequent consequences, encroachments in pipeline RoU are a potential source of threat to the safety and integrity of the pipeline. It is observed that a significant number of encroachments have come up over a period of time in GAIL RoU. After analyzing the data collected from the various sites on pipeline encroachment, it is observed that some encroachments exist since GAIL either took-over the pipeline or laid them and some have come up in the due course.

GAIL Sahyogi Scheme

GAIL Sahyogi Scheme is an effort towards improving the engagement with villagers/farmers/stakeholders/general public and to create awareness about pipeline safety and security among nearby population/villagers along the pipelines. They will report any unwanted activities such as excavation, encroachment, washout, exposure, drilling, boring, leakage (if any), construction in or nearby pipeline RoU and attempt of any pilferage, etc. to nearby maintenance base of GAIL. Sahyogis get a suitable incentive/reward during their association with GAIL. Currently, this scheme is being implemented at four locations on a pilot basis and based on the outcome, it will be implemented at other locations also.

In this scheme, one or more person, identified by GAIL in villages/towns/cities/RoU land owner etc., who are living in the vicinity of the pipeline route keep vigil on GAIL's asset and report/stop/inform any activities which are detrimental to the pipeline's safety. The respective regional





pipeline headquarters implement the scheme by engaging an agency for extending their services for managing the Sahyogi Scheme. In the year 2017-18, at NCR of JLPL, NG network under Khera jurisdiction and Cherlapally of VSPL, 93 incidents (mostly pertaining to digging and excavation) have been averted due to timely information by GAIL Sahyogi.

Foot patrolling along RoU of pipelines

One of the important O&M activities for monitoring the condition of pipelines is foot patrolling along the RoU of pipelines. The frequency of foot patrolling is being done on a fortnightly/monthly/quarterly basis by security guards. In addition, GAIL engineers are also doing foot patrolling along the pipelines once in a year. The foot patrolling with gas detector adds value to the exercise. The cross country pipelines cross through difficult terrains like canals, ponds, mushy fields, etc. which cannot be accessed especially during the monsoon. Remote detection allows the user to safely survey areas which are difficult to reach. This method, saves time during detection of leakage which leads to productivity gains, reduced operation and maintenance costs and a safer survey.

RoU monitoring through satellite imaging

In order to establish the efficacy of the latest pipeline monitoring technology, namely, high resolution low orbit satellite imaging, a pilot project on remote surveillance of pipeline RoU through satellite was taken up recently for a stretch of 610 km in DVPL pipeline by the R&D department in collaboration with the National Remote Sensing Centre (NRSC). The process of satellite imaging helps to mark new encroachments, washouts, etc.

Compliance management

GAIL believes that compliance is not only about complying with laws and regulations, but also about conducting

sound and fair business activities that conform to corporate rules and social norms, to meet the expectations of stakeholders and earn their trust. We have an in-house legal compliance management system (LCMS) that ensures compliance with all national and relevant international regulations.

We undertake a regular audit to review the compliance and implementation of our standards. These audits are conducted by health, safety and environment (HSE) corporate teams and internal audit team and include inspections, employee interviews and detailed reviews of regulatory issues at each facility to ensure complete compliance with national, regional and local regulations. The board-level audit committee reviews and assesses the compliance level of projects. The responsibility of compliance lies with the respective heads of departments.

During the reporting period, 2017-18, no incidents of non-compliance concerning product and service information and labeling, marketing communication, customer data privacy and socio economic compliance were reported.

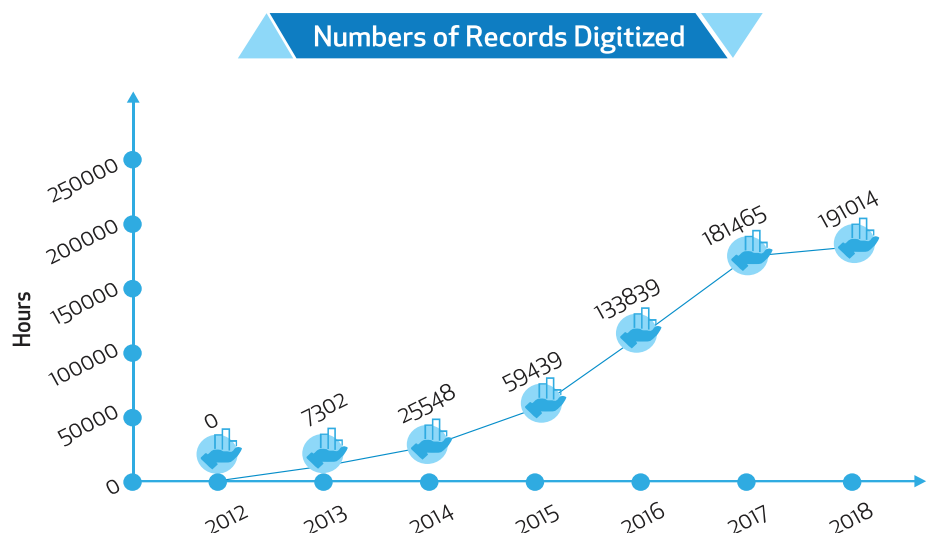
Digital transformation

GAIL is giving paramount importance to digitalization of data and adoption of advanced modern technologies. In December 2017, GAIL undertook a new initiative of utilizing advanced technology of Unmanned Aerial Vehicle (UAV/DRONE) for ensuring safety and reliability of its pipelines against encroachments, washouts, sabotage, excavations and construction work for a 27 km stretch of pipeline RoU in the Shivpuri district of Madhya Pradesh.

The technology of having aerial surveillance through UAVs equipped with cameras and sensors for cross-country pipelines passing through forests, inaccessible areas, rivers and environmentally sensitive areas is an effective option overcoming the limitations of present practices of pipeline monitoring undertaken by foot patrolling and air surveillance using helicopters.

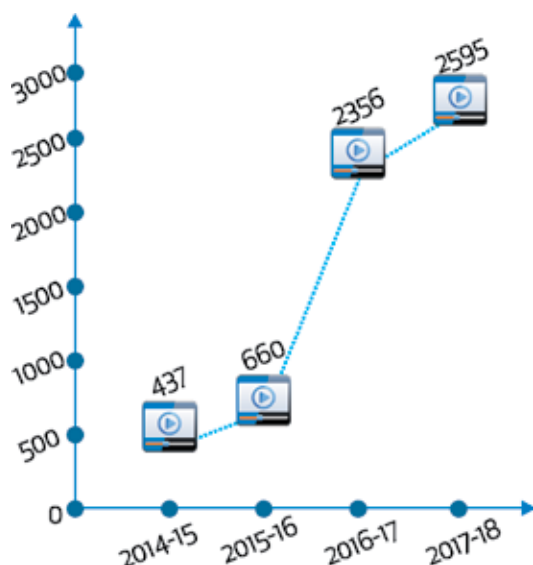
Information Security Management System (ISO 27001:2013) has been successfully implemented in our

The table given below depicts the increased use of EDMS over the years:





Video Conferencing Hours



system. Currently, a Security Operations Centre (SOC) has been established simultaneously with an advanced persistent threat mitigation system to disarm the new kinds of cyber-security risks. For enhancing the network connectivity and information security, we have put in place the latest private cloud infrastructure and initiated several new projects.

GAIL implemented an enterprise-wide Electronic Document Management System (EDMS) in 2012 to move towards a "paper-light" office, providing an opportunity to reduce the use of paper as the system not only cuts down cost and time, but also reduces distribution/handling efforts and increases business productivity.

We have also taken initiatives to promote and integrate IT into existing systems for quick resolution of issues and better decision making. One such initiative is video conferencing for meeting targets and accelerating issue resolution and decision making. The graph above shows a gradual increase in the number of video conferencing hours at GAIL across various reporting periods.

Digital yatra

In order to institutionalize the concept of 'Digital Thinking' and establish GAIL as a world-class organization

with strong digital support, Digital Yatra initiative was incorporated. This initiative is expected to leverage the benefits of state-of-the-art analytics, mobility and collaboration platforms to support GAIL's business functions, including plant operations and maintenance by integrating Information Technology (IT) systems with plant and pipeline systems.

The following steps have been identified for accomplishing the goal of digitalization:

- Upgradation of security posture for operational technology (OT) systems
- Data integration between the OT and IT systems
- Security and risk assessments of OT systems and their interfaces with IT systems
- Assessment by expert agencies certified by, Indian Computer Emergency Response team under the Ministry of Electronics and IT (CERT-IN), Government of India
- Improvements of infrastructure, architectures, governance models and Standard Operating Procedures (SOPs)
- Alignment of assessments and outcomes to comply with the global standards like IEC-62443

and National Critical Information Infrastructure Protection Centre (NCIIPC)

Various actions have also been undertaken depending on the identified requirements for the application of advanced technological integration and state-of-the-art monitoring systems in order to ensure safety, security and integrity of pipelines using a proactive approach to prevent incidents. A list of the initiatives that have been undertaken so far have been highlighted below:

Linked Control Rooms of multiple Plants for joint and synchronised operations along with intergration of critical and sensitive machines with the ERP systems

Maintenance recording at field, status monitoring on Mobile dashboards have been made operative for maintenance need of pipelines

As for Internet of Things (IoT) application, Annalyser Data is linked with the online portal of Pollution control Board. E-Log field operators are being implemented

Gas billing to customers is automated by integrating the field sensors form Gas Metering Devices to the ERP systems for invoicing and on-line field reports





Product loading automation systems have been designed to link the data of loading from weigh bridge sensors and safety inspections with SAP-ERP

Real Time Pipeline Intrusion Detection Systems using Oxygen Free Copper (OFC) based acoustic sensing have been up in place

IP based cameras have been put across 140 installations along with mobile digital devices interfaced with GPS and sensors on field assets

Digital interventions for real time monitoring of critical and emergency operations have been incorporated to improve the response of 'Quick Response Teams'

Drones and satellite surveillances are being used to detect pipeline security breaches

GAIL hosts Industry Meet on "Digitization to Next Level With OT-IT Convergence"



Industry meet on Digitization to next level with OT-IT Convergence' on 27/12/2017 at GAIL Jubilee Tower, Noida

Cashless transactions at GAIL Township

We have taken an initiative, in line with the Digi-Dhan campaign, to impart awareness on digital payment methods and cashless transactions to the employees, their families, contractual workers, CISF staff, the local vendors, and shopkeepers at the township at GAIL Vijaiapur (MP), going completely cashless under this initiative.

Mobile App for pipeline information

GAIL has developed a mobile-based application software which will facilitate accessibility of ready data based for pipeline parameters covering more than 40 attributes from any location through GSM mobile having GPRS. The attributes covers pipeline diameter, length, thickness, design parameters, source details, crossing details, statutory permission details, integrity survey details, encroachments and defect repair history.



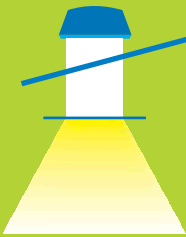


09

Energy and Environment



Advanced Day Lighting System Project



at Vijaipur Plant
utilizes sunlight
to provide light.



in FY 2017-18





Energy and Environment



Since energy is a critical requirement for operations at the company's facilities, we make use of a cost-effective and environmentally-friendly energy mix. Energy management system has been implemented at Vijaiapur, VSPN, JLPL Network, Gandhar. Natural gas - the cleanest-burning hydrocarbon is the main fuel for GAIL's total direct energy consumption. Natural gas, when used instead of higher carbon fuels such as coal and diesel, helps meeting the increasing demand while lowering the greenhouse gas (GHG) emissions and air pollution.

Energy Management

We understand the long-term environmental and economic implications of continued high levels of energy usage. Hence, we are dedicatedly exploring ways to bring energy efficiency and cost saving in the business processes. In a phased manner, we are switching to renewable sources of energy for business operations. Multiple wind and solar energy projects have been installed and commissioned over the past years at various units to incorporate renewable energy in day-to-day operations at GAIL. Also, the combined investment for supply, commissioning and installation of solar power systems at various GAIL units was ₹1.56 crore.

nominated for 'National Award for Excellence in Solar Energy' under Green Investment, Best Solar Utility of the Company and Rooftop Enabler of the Year categories.

As a result of all these initiatives, GAIL has been



Energy saving initiatives at GAIL

- I. Roof-top solar plant for Pata Complex: In an effort towards accelerating India's solar Photo Voltaic (PV) program and moving towards a more clean energy driven operations, GAIL India Limited commissioned a 5.67 MW captive solar PV plant in December 2017, sprawling over a roof area of 65,000 sq.m. This is India's second largest roof top solar PV plant and is also first roof top solar plant in the hydrocarbon industry. Captive solar power initiative of GAIL has a generation capacity of 79.30 Lakh units/ annum. Built at a cost of ₹4.3 crore/MW, this solar plant is expected to reduce carbon emissions by 6,300 MT per annum and contribute towards achieving India's climate goals. GAIL's solar rooftop project is also a step under 'Make in India' with Indian vendors entrusted for manufacture, supply and execution.
- II. Installation of LED lights: At GAIL's Pata plant, a total of 10511 LED lights were installed in the various locations inside the plant and township premises such as sub stations, offices and on-field locations at GAIL Pata in the year 2017-18.
- III. Total electricity saved due to replacement of conventional lighting system with LED lamps in the FY 2017-18 at GAIL Pata and township premises is

4,58,406.5 KWH.

- IV. Advanced Day Lighting System (ADS): The ADS project at Vijapur plant envisages utilizing natural sunlight through ADS units as an alternative to energy intensive fluorescent tube lights or conventional electrical lighting systems. The project included installation of ADS units at C&P and EIL warehouses including weather proofing and testing. Daylight controller sensors were installed for measuring ambient illumination levels and activation electrical lighting as and when illumination levels fell below the set values. Total cost of ADS installation and project execution was reported to be ₹8,82,734.

- a. The equivalent cost reduction in terms of energy saved amounts to be ₹1,26,000 per year with a payback period of less than five years. ADS is expected to help Vijapur plant reduce its carbon foot print in terms of reduced GHG emissions equivalent to 16 tons of carbon dioxide equivalents (CO₂e)/year.

- b. Other benefits included:

- Ensured lumen output as per industrial lighting standards - OISD 149 with a minimum light intensity 100 lux equivalently without dark spots

- Easy ADS integration with existing electrical lighting system
- Negligible operation and maintenance costs as compared to electrical system
- Human factor - Better health, well-being and comfort
- Environmental factor - Less conventional energy consumption

- V. Heat recovery steam generators: At GAIL's Vaghodia plant, three heat recovery steam generators (HRSG) are installed. These HRSGs are unfired, natural circulation, cross flow type heat exchanger designed to recover maximum waste heat from the flue gases of gas turbine exhaust. Each HRSG unit is designed to generate 30 tons per hour (TPH) of steam at 30kg/cm² (g) pressure and 325°C temperature at maximum continuous rating (MCR) case.

- VI. Installation of energy efficient equipment: Replacement of NCR O&M: For SVs and IPs and customer terminals, phase-wise replacements of 386 conventional tube lights (36W) with LED tubes (20W) were undertaken at 105 stations along with replacement of 57 old ACs with Bureau of Energy Efficiency (BEE)-rated inverter technology based ACs.

Energy efficiency

Energy security and energy equity, i.e., the accessibility and affordability of energy supply across the population continue to be amongst the biggest developmental challenges for India. Accessibility of low-cost energy requires a significant investment in both improving energy efficiency as well as energy infrastructure. Various

schemes like UJALA (Unnat Jyoti by Affordable LEDs for All) have been initiated by the government to improve efficiency considering the existing and evolving energy scenarios. Supporting the government's continuous thrust for implementing energy efficiency measures, GAIL has deployed integrated energy management system with activities like energy consumption monitoring, periodic

energy audits, corrective actions implementation and use of energy saving measures, in order to reduce its energy consumption.

Material consumption

GAIL's key business activities range from gas transmission and marketing to processing (for fractionating LPG,





propane, pentane, etc.); transmission of liquefied petroleum gas (LPG); and production and marketing of petrochemicals like high-density polyethylene (HDPE) and linear low-density polyethylene (LLDPE). In 2017-18, GAIL processed 25,496 MMSCM of natural gas, highlighting an increase of 7.5% from 2016-17 and consumed 1700 MMSCM of natural gas for making products. Besides natural gas, GAIL uses numerous materials in production which exert an impact on people and the environment as a result of their procurement, transport, usage and disposal. We make strenuous efforts to ensure that valuable raw materials are recycled. The company's aim is to ensure that negative impacts on the environment are reduced as much as possible or entirely avoided. This helps in enhancing GAIL's reputation and reducing costs.

Climate change and emission management

The momentum to address the causes of climate change is gathering pace and governments across the globe are showing increased commitment to coordinated action to reduce carbon emissions. This has, in turn, put onus on industries to help countries move gradually towards low carbon economies and help their governments address the climate change risks more effectively.



In line with this cause, we have signed a Memorandum of Understanding (MoU) with Federation of Indian Petroleum Industry (FIPI) for participation in a study "Climate Change Risks: Preparedness for Oil and Gas Sector". The study aims to provide a comprehensive analysis and suggest suitable measures for the threats posed by climate change to the oil and gas sector.

The Enterprise Risk Management Policy has been rolled out across the organization outlines the risk assessment climate change-related issues. Committees have been formed

at both corporate and site levels to initiate mapping, monitoring and formulating mitigation measures for the identified key risks which are then presented to the Board annually for decision-making.

We track emissions released by the facilities and work to reduce air pollution from operations. We regularly report our greenhouse gas (GHG) emissions in line with the recommendations of the Intergovernmental Panel on Climate Change.

GHG emissions

For monitoring and reporting our GHG emissions, we follow the international guidelines of the Greenhouse Gas Reporting Standard by World Business Council for Sustainable Development (WBCSD), ISO 14064- 2006 and American Petroleum Institute (API), a compendium of GHG emissions methodologies for oil and natural gas industry - 2009. We track the six major GHGs: carbon dioxide (CO₂); methane (CH₄); nitrous oxide (N₂O); hydro fluorocarbons (HFCs); perfluorocarbons (PFCs); and sulfur hexafluoride (SF₆). We express our carbon footprints in terms of carbon dioxide equivalents (CO₂e). Energy sources account for more than 99% of our GHG emissions. GAIL's GHG inventory includes direct emissions from the combustion of fossil fuels, primarily natural gas, flaring, venting and indirect emissions from purchased electricity at our manufacturing sites, offices and training centers.

Reducing emissions is one of the key areas for the company to contribute towards addressing the problem of climate change. Apart from reduction of energy consumption achieved through efficiency measures, additional steps undertaken include:

- Using electricity generated from solar plates installed in plants
- Transporting majorly through pipeline networks, thereby reducing transportation through vehicles and subsequently reducing vehicular emission
- Preventing emissions due to open venting at our storage and pumping facilities

Other air emissions

We have significantly reduced the release of air emissions over the past years and have prioritized improving it continuously. Most of the air emissions originate due to burning of fuels or venting. Year-on-year air emissions from these activities have decreased due to GAIL's design initiatives to minimize environmental impact. Online plant emission parameter and effluent discharge parameter from respective analyzers have been connected to CPCB and UPPCB website for cloud-based monitoring as first Industrial Internet of Things (IIOT) system commissioned at GAIL Pata.

Ozone-depleting substances

GAIL policy prohibits the use of ozone depleting substances (ODS) in its premises. Ozone-depleting substances are used as refrigerants in facility, vehicle air conditioning systems and various equipment-cooling systems. Although, ODS may be released during the normal operation or failure of these systems, the total amount released is not significant from a company-wide perspective. Elimination of ODS as refrigerant is managed consistently. Compared to 2016-17, there has been 33% reduction in ODS gas consumption.

Water management

Water is an important resource for GAIL and is mainly used for cooling and sanitary purposes. Rationing measures at the sites compromise the company's productivity. Therefore, we are setting the target at all the sites for making a contribution towards conservation of water resources and keeping its consumption as low as possible. The objective of water management is also linked to SDG 14 which emphasizes on clean water.

In 2017, our total water consumption was 23 million cubic meters, an increase of 8.5% as against the 2016 level. Around 96% of total water



GHG reduction initiatives

Emission Control Measures at Pata

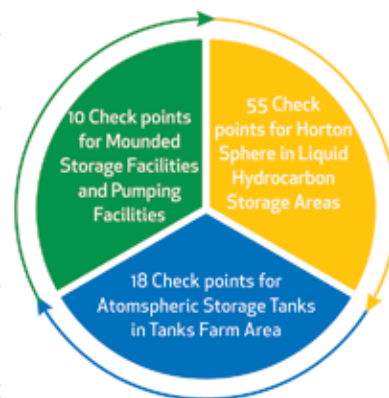
There are 14 Horton Spheres in the Storage Area (PC-1) to store pressurized Liquid Hydrocarbons (LHC) like Ethane-Propane Mix (08 Spheres), Ethylene (1 Sphere), Propylene (2 Spheres), Hydrogenated C4 Mix (1 Sphere) and Butene-1 (2 Spheres).

Issue: The different sources of open venting identified in this facility are:

- Sampling point that are used to issue samples from the respective sphere for analysis
- Venting facility for initial priming or depressurization of LHC while handing over to maintenance.
- The Thermal Safety Valves (TSV) provided at three process lines connected to each sphere, one Inlet/Outlet line, one vapor balance line and one pump recirculation line.

The TSVs at the Receipt Header, Pump Suction Header and Pump Discharge Header of the storage tanks at the Tank Farm were also identified as sources of open venting. Tank Farm area constituted 8 Atmospheric Storage Tanks that store LHCs like Naphtha (02 Tanks), Mixed Fuel Oil (02 Tanks) and 1 storage tank each for storing Wash Oil, N-Hexane, Cyclohexane and Diesel.

- TVS's d/s vent line open to atmosphere
- Tanker/arm depressurization line open to atmosphere



Areas of concern: The following two areas of concern were identified for solving the open venting issue:

- Rerouting of open vents into closed loop flare system may require hot tapping in flare headers of HC lines
- For the MOC of the flare headers, low temperature of different discharges was another area of concern

Actions Taken: The following initiatives were taken to mitigate open venting issue:

- A network of SS line was laid to join sampling points of different spheres, TSV and Pump Priming Discharge manifolds. The outlets of different discharges were connected to vent header of PC-II through a main header which lead to cold blowdown system
- To route the discharges from different TSVs (of atmospheric storage area) was connected with the inlet line of closed blow down drum in new gantry area of PC-II through a main header. After a set level of discharges are collected, they are then pumped to 141-TT-002 (GHU Fuel Oil Tank).
- Open vents in loading area were rerouted to either existing Pentane Flare KOD or to cold blowdown system.

consumption is from surface water sources and the rest is from ground water, rain water and municipal water. We have installed rainwater harvesting system in all the facilities and corporate offices to improve the ground water table.

Areas affected by withdrawal of water: **Zero**

The discharge of water at manufacturing sites is monitored to validate compliance with Central Pollution Control Board (CPCB)/ State Pollution Control Board (SPCB) effluent limit. Wastewater

from processes is treated, through effluent treatment plants (ETP). The treatment includes adjusting pH, removing suspended solids and reducing Biological Oxygen Demand (BOD), if any. In addition, the company engages best management practices to prevent unwanted pollutants from entering waterways via surface contamination and run-off.

Many of the GAIL facilities have zero discharge buildings except Pata plant. However, the total waste water discharge of 1.3 million cubic meters was reported during the reporting

period. No water bodies were affected by this discharge. A total of 0.5 million cubic meters, i.e., 2.1% of water was reported recycled and reused as a percentage of total water withdrawn for consumption.

Extensive sampling of wastewater ensures that treated water meets the company's strict requirements. The treated waste water is used for various non-potable uses like horticulture, gardening, etc. We ensure reusing maximum amounts of waste water at all installations.



Increasing Water Efficiency Initiative

Various initiatives aimed at reducing wastage of water and optimizing its usage were undertaken at several GAIL units. A brief description of all these initiatives is mentioned below:

- At NCR, O&M, 10 rain water harvesting systems have been installed in 2017-18
- At Gandhar plant, water sprinkler system have been installed for horticulture management at the cost of ₹37 lakhs. The sprinkler system is expected to optimize the use of water consumption and will also enhance the wastewater's utilization capacity.
- At GAIL Pata, rain water harvesting systems have been installed in all major buildings. During the reporting period,

approximately 2900 m3 of water was reported to be harvested.

- At IPS Mansarampura, rain water harvesting system have been installed at the cost of ₹2.4 lakh which resulted in recharging 9666 m3 of ground water during the reporting period.

Greenbelt and Biodiversity Management

Environment & ecological sustainability is one of the focus areas of GAIL which requires a scientific plan and an expert supervision to address the issues arising in this domain. GAIL has a well-defined Environment Management Plant to address issues related to environment

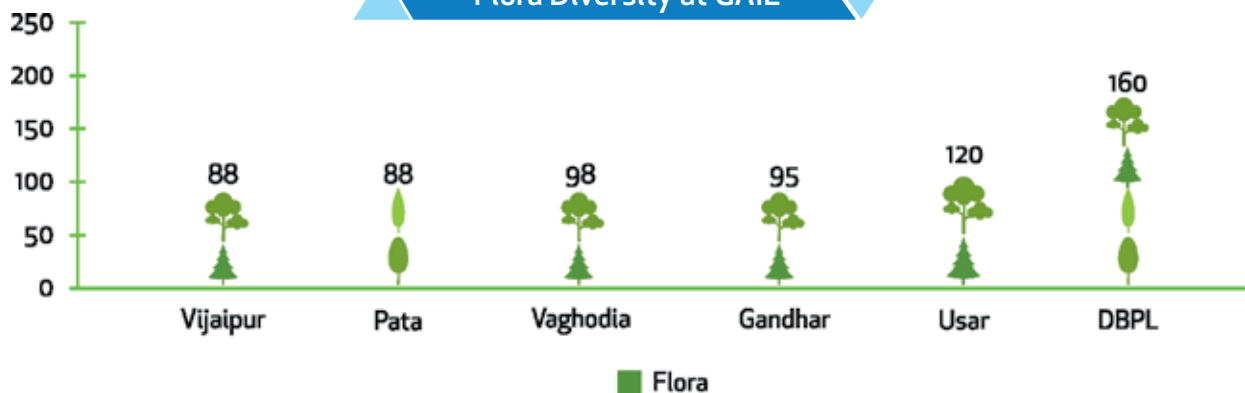


and biodiversity. We conduct regular surveys as well as studies pertaining to environment and ecology of the area in and around GAIL units to ensure prevention and timely mitigation of issues.

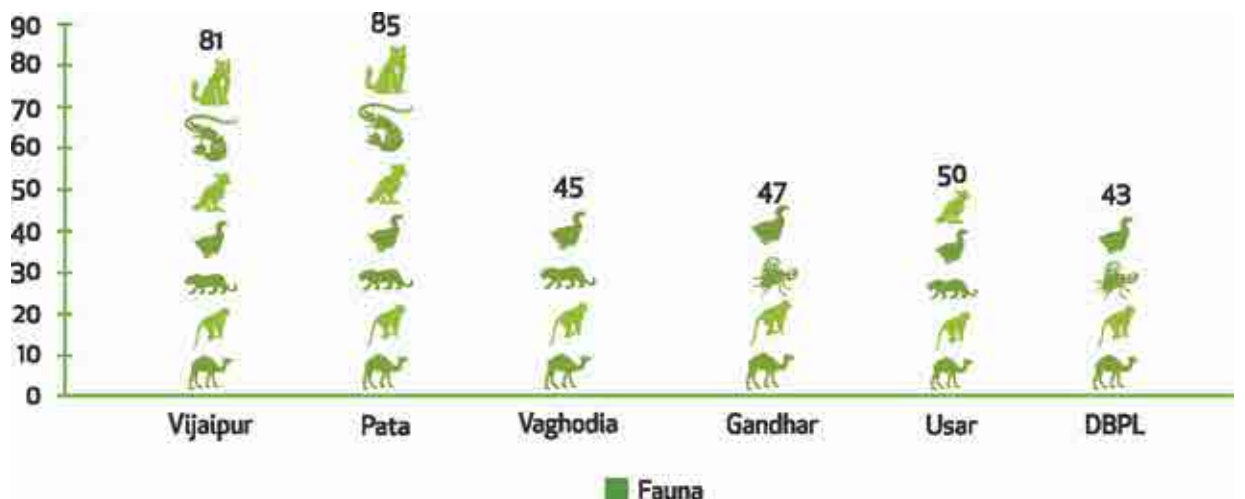
This system has contributed meaningfully to Goal 14 and Goal 15 of the SDG and are positively impacting life, both, under the water and on the land.

There are no protected habitats within 10 kms of any operating site of GAIL. A bare minimum area is used for pipelines, which generally have a lifespan of 25-30 years. Thus, once the pipeline is laid permanently and the forest area is restored, they remain untouched until the requirement of maintenance arises. Also, we utilize less than 1/3rd of the RoU for the pipelines passing through forest areas. This strictly limits the pipelines in creating a negative impact of on the environment.

Flora Diversity at GAIL



Fauna Diversity at GAIL



Green-belt Areas

Green-belt areas have been developed with the help of local management at various premises. These areas comprise of diverse and indigenous species of flora and fauna. The water bodies within these belts also contain huge water reservoirs and are home to various aquatic species.

GAIL sites having significant green-belt areas are:

- Petrochemical Complex at Pata along with the township
- Vijaipur Complex along with the township
- GPU Gandhar and the township
- GPU Vaghodia
- LPG Recovery Plant, Usar
- Dabhol – Bengaluru Pipeline

Biodiversity Assessment

Biodiversity assessment is carried out periodically to keep a check on the environmental and ecological health of the area falling under the green-belt and to identify the mitigation measures and preventive actions that need to be undertaken.

GAIL installations are also home to a few of the species falling under Schedule I of Wildlife (Protection) Act and threatened categories of International Union for Conservation of Nature (IUCN). Such species which have been found at GAIL sites. The data captured during the Biodiversity Assessment carried out for 2017-18 is shown on adjacent page.

Waste Management

Waste is produced during the gas processing process. We follow the guiding principle of primarily avoiding waste, recycling it or professionally disposing it after the other options have been exhausted, at all the sites.

This enables GAIL to protect the environment, reduce negative impacts on local communities and also adopt a cost-effective approach in business.

Case Study

Recyclable waste recovery at Pata

This initiative was undertaken at GAIL Pata for disposal of waste/old documents through recyclers with the help of C&P department. In the first phase, separate departmental committees were formed for the identification of old documents as per the Document Retention Policy of GAIL Pata. In the second phase, all the identified old documents were handed over to the Document Control Service Department. While the confidential papers were shredded in-house by the paper shredder machine, the remaining documents were sent to industrial shredder for further processing.

A contract to dispose off the waste papers was then lined up through MSTC by inviting tenders.

We record locally the amount of material that has been recycled or sent away for disposal. A distinction is drawn in these categories between hazardous and non-hazardous waste. Reduction of waste that requires disposal is our priority.

All hazardous wastes like used oil, slop oil, Effluent Treatment Plant (ETP) sludge, tar, molecular sieves, spent carbon or tar ash are either disposed to recyclers and reprocessing facilities approved by State Pollution Control Board (SPCB) or sent to SPCB authorized Treatment Storage and Disposal Facilities (TSDFs).

Apart from environment-friendly disposal, various initiatives are undertaken frequently to minimize the company's material intensity by implementing the 3R principle

(Reduce-Reuse-Recycle) and ensure a more efficient waste management procedure.

Zero spills reported in FY 2017-18.

Research and Development

As the world transitions towards an environmentally and socially inclusive approach for development, GAIL's management has also decided to give this momentum a thrust through its research and development activities in clean fuel area. GAIL is consistently allocating a budget of 1% of PAT towards R&D. The R&D efforts have led to various novel developments and eight patent applications were filed during the



Tree Plantation During Swachh Bharat fortnight



Case Study

1. Wealth-out of-Waste (WOW) Project at Cauvery Basin

At Vijaipur plant, a waste segregation and recycling initiative was undertaken to ensure reduced dumping of recyclable waste. Through WOW, GAIL promotes the 3R concept of Reuse-Reuse-Recycle. GAIL collaborated with M/S ITC Limited Tiruchy for segregation and recycling of waste paper and managed to save ₹25,000 without any additional expenditure.

2. Organic Waste Composting (OWC) Project at Vijaipur

Project details: The WOW program at Vijaipur plant has been taken a step ahead to cater to the needs of eco-friendly management of bio-degradable waste. This project was implemented as per the proposal made in Sustainable Development Annual Plan for FY 2017-18 to convert all bio-degradable wastes like kitchen, garden and horticultural waste into manure.

Actions taken: An integrated Organic Waste Composting (OWC) project was commissioned in second week

of July, 2017.

- Segregation facility for organic and inorganic waste has been set up.
- All bio-degradable waste is converted into manure - a combined processing capacity of 1 MT (for both township and plant).
- The manure, thus obtained, is used for internal consumption and for community development.

All segregated non-biodegradable waste is disposed through recycler with disposal certificate.

Benefits

- Helps in compliance under MSW Rules, 2016
- Helps in utilizing rich compost as manure at GAIL nurseries thus substituting consumption of chemical fertilizers
- Results in savings of ₹1.23 lakhs per year

Any amount of manure that is left out after internal consumption is used under CSR for community development through marketing option.

3. Waste management and land reclamation at Pata

Disposal of waste polymer and other scrap material lying near Pata plant's nursery was undertaken during the reporting period.

Various decisions related to machine waste, liquefied petroleum (LP) wax, flaked material, poly-fills, filters, scraps and other waste materials were made in order to streamline the process of waste management.

Based on the decisions made, the following actions were taken:

- Approximately 15 MT of non-shredable machine waste was collected and removed from the site to be sold to recyclers.
- Horticulture waste was lifted from the site and sent to burn pit.
- Miscellaneous wastes like damaged filters, chairs, wooden scrap and paper wastes were collected and dumped at C&P yard for further actions.
- 1880 kg of LP wax was lifted from the nursery site, out of which 720 kg of LP flakes were generated.

year. For FY 17-18, expenditure on R&D was ₹28.84 crore.

R&D activities are aligned to improvise clean fuel generation and business process efficiency. The focus areas of R&D activities are:

Key Initiatives

a) Bio-based fuel

The following two initiatives have been undertaken under this category during the reporting period:

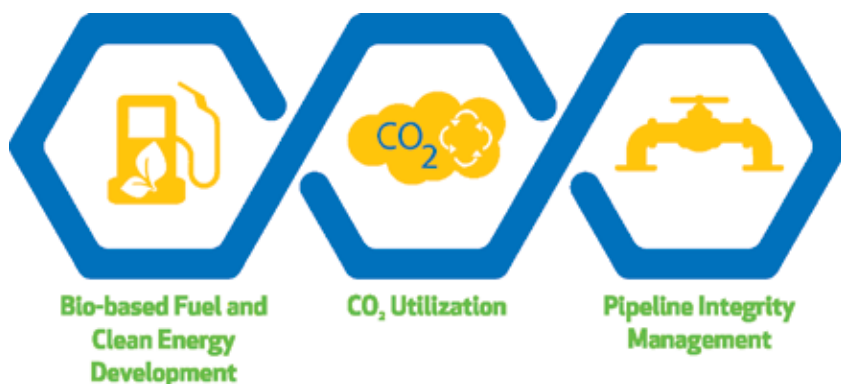
- Eco-friendly method of biological pretreatment of lignocelluloses of agricultural residues is being carried out to produce bio-ethanol. Further, efforts are being made to make this process more energy efficient.
- Co-pyrolysis of bio-residue through microwave treatment is also being carried out under this initiative.

b) Clean energy development

Under this category the following two initiatives were undertaken:

- Low-emission natural gas combustor as a hybrid heating source for supercritical CO₂ Brayton cycle is being developed
- Methane production from marine hydrate is also being explored to augment the availability of natural gas. Studies are being carried out to on low pressure methane storage in micro porous





mixed linker materials was carried out for its suitability for the development adsorbed natural gas technology.

c) CO2 utilization

Combustion and sweetening processes are two main causes of CO2 emission encountered at GAIL. In order to minimize this emission, a pilot project was undertaken for development of new solvent for the gas sweetening process. Research was also initiated to carry out microbial fixation of CO2 to the biomass production and further conversion into useful products like fertilizers or biofuels. Besides this, a pilot project for production of valuable chemicals using photo bioreactors has been initiated at Pata facility. Performance evaluation and validation of the identified CO2 reforming catalysts are being carried out for the same. Electro catalysts are also being tried for Solid State Electrochemical reduction of CO2 to value added products.

d) Pipeline integrity management

In order to better manage pipeline network, GAIL continued the remote monitoring of pipeline RoU through high resolution satellite images. GAIL undertook a new initiative of utilizing advanced technology of Unmanned Aerial Vehicle (UAV/DRONE) for ensuring safety and reliability of its pipelines against encroachments, washouts,

sabotage, excavations and construction work for a 27 km stretch of pipeline RoU in the Shivpuri district of Madhya Pradesh.

e) Land Fill Gas Project

A pilot Landfill Gas (LFG) project at Ghazipur landfill site, Delhi is currently operational in a landfill area of 10 acre. It comprises of landfill gas extraction and flaring stations and a total of 20 landfill gas extraction wells. As a measure for GHG mitigation, approximately 50 m3/hr of landfill gas is being extracted and safely destroyed in the enclosed flare. This project was validated and registered with United Nations Framework Convention on Climate Change (UNFCCC) under Clean Development Mechanism

(CDM). Approximately 12000MT of CO2 equivalent of methane has been captured and destroyed through this project since its commissioning.

f) Development of PEM Fuel Cell

GAIL's R&D is currently working on development of Novel, a nanocomposite-based adsorbents for storage of hydrogen and development of PEM fuel cells. In addition, new material development works in quantum dot, perovskite and dye sensitized-based PV solar cells are being pursued for enhancing their conversion efficiency.

g) Start-up initiatives

In its endeavor to promote start-up culture in India, GAIL came up with initiative "Pankh" which aims at providing financial assistance to breakthrough start-up ideas that have the potential to grow in scale and become profitable companies in the long run. This initiative was launched on 25 July 2017 and a web portal was made available for submission of start-up proposals.

To begin with, GAIL created a fund of ₹ 50 crore to be invested in start-ups of both core (up to 80%) and non-core (up to 40%) areas. A "Start-Up Policy" and "Process Manual and Guidelines" were prepared detailing the methodology and procedures for scrutinizing and awarding the received proposals.

During the reporting period a total of 42 proposals were received out of which 32 were found to be complete

“

GAIL consistently strives for collaboration with technology houses to bring the latest technology. The company's start-up initiative "Pankh", is an effort in this direction to incubate and support new ideas. The initiative, which is also aligned to the priority of the nation to develop an ecosystem that promotes entrepreneurship and start-ups, supports young entrepreneurs and also explores opportunities that align with our business.”

”

Director (BD)



and were shortlisted for further evaluation. Eventually, investment agreement was signed with four start-ups for a total commitment of ₹5.12 crore. Further investment agreements are in process for finalization of six more selected start-ups.



In addition, GAIL has signed MoUs on cooperation with IIT Madras Incubation Cell and IIM Lucknow Incubation Centre for supporting the start-ups incubated by them.

Total Quality Management

Total quality management (TQM) is a management system made up of four basic components:

- Leadership
- Teamwork
- Scientific approach to problem-solving
- Satisfying the needs of customers

Leadership at GAIL has provided the organization with the necessary strategy and supervision in steering the organization towards growth. It has also helped the workforce at GAIL realize the direction in which the organization is headed to and how they can contribute to it. For this, Enterprise Risk Management Policy was rolled out across the organization to help review high, medium and low risks for the organization. Risk Steering Committees have been formed at both corporate and site level to review risk status quarterly and deliberate in Risk Management Committee bi-annually before placing them before audit committee. The audit committee and the Board of Directors review the policy and procedures periodically to ensure smooth business.

Various departments work in tandem to ensure uninterrupted operation and timely mitigation of issues in the operation. We undertake quality circle (QC) projects for cultural and process change through employee engagement which helped to improve employee morale and performance.

During the current reporting period, a total 161 QC projects have been registered and 132 QC projects were successfully completed with financial saving of around ₹10.68 crores. Additionally, we have implemented Delivering Experimental Learning through Application (DELTA) initiative to bring continual improvement in Project Directorate through implementation of improvement ideas at sites.

The TQM scientific approach to problem-solving includes concepts of data-based decision-making, use of statistical tools and a structured approach to solving problems. Considering the above specified overarching benefits, an integrated management system for our pipelines and transmission assets was incorporated to ensure seamless gas transmission process. Remote Monitoring System has also been installed to identify and timely address any issue arising with the pipeline network.

Apart from these initiatives, we have also conducted Stakeholder Satisfaction Survey in the month of March 2018 with an objective primarily to assess the satisfaction of stakeholders and identify strengths and areas in need of improvement. A total of 2,086 active customers were picked up from SAP based on the transactions during the last six months (September 2017 to February 2018). Details of active customer number as picked up from SAP are as below:

- Petrochemical Marketing Business: 1,311
- Natural Gas Business: 630
- Liquid Hydrocarbon Marketing Business: 145

Implementation Improvement Innovation at GAIL (IIIG)

In order to ensure effective monitoring of crucial activities and achieving their compliance with standard norms and regulation in timely manner, IIIG was constituted in GAIL IIIG provides an interface between sites and top

management, to generate data and information with greater transparency and accountability and ensuring timely communication of information from sites to top management for a smooth functioning of Project Directorate. It has also worked on the following key areas:

- Development of "Online Monitoring Tools" for project implementation, issue resolution (like ICE i.e., Issue-Constraints-Exceptions, Work Registers and Critical Issue Monitoring Tool), capturing minutes of meetings/ record notes, feedback reports from EDs/GMs/DGMs, etc. in coordination with Business Information System (BIS).
- Ensuring compliance of instructions and guidelines from various ministries and aligning actions w.r.t. management instructions and guidelines.
- Monitoring schedule progress of project activities, critical O&M activities, exception monitoring and ensuring prompt corrective measures.
- Ensuring compliance w.r.t. initiatives for sustainable development, energy efficiency and environment.
- Innovation in day-to-day working through tools like SLICE and organizing technical trainings, workshops and knowledge sharing sessions to help form SMEs within GAIL for relevant areas.

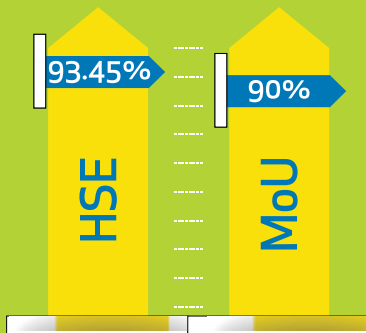




10

Health and Safety

0 
FATALITIES
FY 17-18
INCIDENT
FREE YEAR



HSE Score against the MoU target





Health and Safety



Our Approach

Safety is central to GAIL's culture. our commitment to personal and process safety begins at the top of the organization which is then reinforced at every level. GAIL has a practice to include key safety metrics in its annual incentive plan formula for executives and employees.

The Company's safety programs and practices are designed to deliver continuous improvement, with the goal of having everyone across the operations return home safe, every day. Each employee and contractor is personally responsible for adhering to the HSE policy and supporting GAIL's ultimate goal of zero incidents.

We are committed to ensure high standard of health and safety at workplace. Robust policies and practices are in place throughout the operations to measure health and safety performance, demonstrate progress and identify areas for improvement have been conducted.

GAIL's Health and Safety Policy signed by the Chairman and Managing Director sets out the company's overarching commitments in relation to health and safety including injury management. The policy applies to all employees, contractors, products, services, and joint ventures under GAIL's operational control. The implementation of HSE Policy at all sites is periodically monitored through internal and external audits, HSE verification checks and periodic visits by senior officials. Besides having a well-defined health and safety management framework for the employees, we cover all health and safety topics through formal agreements with trade unions and through terms of contracts with the company's suppliers.

GAIL's HSE vision

Be the undisputed leader in the natural gas market in India and a significant player in the global natural gas industry, by growing aggressively while maintaining the highest level of operating standard



We protect the health and safety of our own employees and those of our partner companies.





Leadership

Strong and dedicated safety leadership is an essential component of GAIL's efforts to achieve a "zero harm" and "safe work environment". An effective safety culture requires proactive commitment, accountability and continuous reinforcement from all levels of management, including the Board of Directors. The Director (Projects) and Director (BD) monthly review safety performance report. The Board Committee reviews the safety performance, audit findings recommendations, strategic priorities and significant incidents in the reporting period.

Management System

GAIL's Health, Safety and Environmental (HSE) Management System (HSEMS), consisting of 18 elements, forms the framework by which we manage HSE risks across the business. The company's system is based on the requirements as per the Oil Industry Safety Directorate (OISD) Standards and best practices in vogue in peer industries. The HSEMS provides a systematic and consistent approach for reducing Health, Safety & Environment risks in operating activities. We believe that delivering safe, compliant and reliable operations will lead to sustainable competitive advantage.

Safety Monitoring

We have safety committees at sites consisting of total 495 representatives (including management and non-management representative). The number of management representatives is 303, while the number of non-management staff is 192. The safety committee meets quarterly providing a planned forum for proactive discussion on health and safety matters across the organization to systematically address any issue with regards to occupational health and safety.

In addition to periodical monitoring on implementation of HSE Policy, internal and external audits of the HSEMS are

18 Elements of HSEMS





undertaken to facilitate a culture of continuous improvement at various levels in organization.

Focus areas

We continue to prioritize safety improvement efforts in those areas that have the greatest opportunity both in terms of injury rate and population. As a hazard prone industry, maintaining the highest health and safety conditions within the organization is of utmost importance. Disaster Prevention, Fatality Prevention and Personal Safety are GAIL's priority areas. Each of the priority areas is described in subsequent section.

Disaster prevention

The company's focus on prevention of high consequence incidents such as a major fire or explosion from process safety hazards in the facilities, or during transportation of NG and LPG continued during the year.

The key improvement activities in this area are

- In-depth periodic Hazard and Operability (HAZOP) studies to ensure that critical risk controls are implemented and sustained.
- Regular scrutiny of integrity of the pipeline by the Centralized Pipeline Integrity Management System (CPIMS)
- Real time surveillance of pipelines to protect them from third party damage through the help of Pipeline Intrusion Detection System (PIDS)
- Engaging local communities residing near our pipeline areas for raising awareness regarding the importance of pipeline integrity (under GAIL Sahyogi Scheme)
- Training our drivers involved in transportation of inflammable products by seeking professional support.

Awareness Program on Natural Gas Pipeline Safety with the District Disaster management Officer (District Raigad) at Collector's Office



Photographs taken during Awareness Program on Natural Gas Pipeline Safety with the District Disaster Management Officer (District Raigad) at Collector's Office dated 25/04/2017

Fatality prevention

GAIL's focus on prevention of fatalities also continued during the year.

The foundations of fatality prevention strategy are near miss reporting, auditing of significant risks, risk management basics (e.g., permit to work and management of change), and implementation of protocols that prescribe to higher levels of mandatory risk controls than traditional and historic standards.

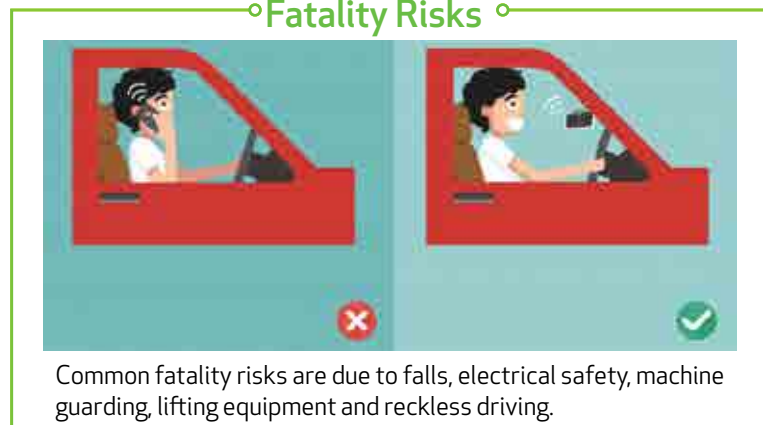
Hazard and near miss reporting are our foundation for maintaining risk awareness, especially for high consequence disaster and fatality risks.

These practices ensure that actions are taken before harm occurs. For the last two consecutive years, there has been no fatalities at GAIL.

Personal safety

Personal safety has been identified as one of the most important focus areas for improving the company's safety performance. During the year, we continued to maintain our focus on prevention of common injuries from non-fatal risks such as manual handling, trips and falls etc. It has been analyzed that lack of exercise of safety practices is one of the primary reasons leading to minor accidents in any organization and with the same stands true for GAIL. We continue to invest in reducing such risks through the implementation of Behavior Based Safety (BBS) training and sensitization of site people on safety aspects. This is supported by risk assessments, training in standard operating procedures, health assessments and monitoring, and near miss reporting.

Fatality Risks



Sustaining “Behavior Based Safety” drive implementation is a big challenge. Understanding this challenge, following actions have been taken to drive/sustain BBS at respective sites:

- Development of web-based BBS centralized portal to facilitate the observation feedback process and smooth implementation of BBS across all GAIL installations.
- Steering committee headed by OICs and functional committees headed by respective HoDs have been constituted to drive further BBS at their respective sites.
- 119 lead trainers have been developed at sites for further transformation of safety culture at their respective sites.
- Effective implementation of behavioral based safety at all locations and for all employees working at site through awareness workshops, training and sensitization.
- BBS promotional schemes to encourage employees and contract workers.
- In addition, with site specific awareness program, regional safety leadership-cum-BBS workshops are being organized on quarterly to penetrate BBS further.

Health assessment is undertaken as per occupational health measures and medical surveillance programs. Under this set of guidelines, specific procedures to monitor employees' health have been defined and the same is monitored at corporate level through Corporate Occupational Health Committee.

Additionally we have introduced stringent HSE requirement in the purchase and procurement documents/contracts in order to enhance safety in the company's supply chain.

We ensure that all personnel working at sites have undergone health check-ups at least once during the year, while employees at offices, including

corporate offices, are being monitored (health check) based on GAIL's internal guidelines.

Embedding safety controls

We remain vigilant in the company's focus on H&S risks, ensuring that appropriate controls are in place to address these risks and that people are appropriately trained. These measures include the following:

a) Safety Management System including Management of Change (MoC) through SAP

Safety Management System comprises of three main functionalities such as Incident Management System, Risk Assessment and Job Safety Analysis, and Management of Change. The primary aim of implementing Incident Management System and Risk Assessment is to enhance the safety aspects in operational environment through systematic capturing of risk factors, risk evaluation and risk mitigations by pro-active approach as well as through the detailed root-cause analysis post-incident. The purpose of implementing management of change is to effectively manage the changes in the organization through step-by-step analysis of the change with respect to its nature and probable consequences, approval of the change by the concerned authority, implementation of the change and analysis of its post-implementation effects and finally updating of relevant documents incorporating the change. Impacts and benefits of the Safety Management System include the following:

- * Systematic recording of incidents, risk assessments and management of change
- * Uniform process for incident management, risk assessment and MOC across GAIL

- * Information communication through workflow and emails
- * Online availability of identified hazards, risk levels, controls for safe work as well as root-cause analysis for prevention of recurrence of the incident
- * Monitoring of the progress/completion/delay of implementation of recommendations/tasks with individual responsibilities
- * System-defined investigation process for incident and near miss
- * System generated regulatory and statutory reports
- * Top risk dashboard for all locations
- * Analytical multi-dimensional reports for risk analysis and incident management

b) Personal protective equipment

GAIL's aim is to use engineering controls as the primary method for protecting its employees and contractors. The second line of defense involves an adjustment of the work procedure and/or the introduction of mechanical devices to eliminate/minimize the exposure of workers to occupational health or safety hazards. Lastly, the third line of defense against potential hazards is the use of Personal Protective Equipment (PPE). These requirements are communicated to all employees and contractors through regular training programs and posters at sites which visually depict any specific requirement of PPE for that particular area of work. Mandatory safety talks are carried out prior to commencement of any job. Regular audits are conducted on the usage of PPE in areas of exposure and any noncompliance is viewed seriously.

c) Emergency preparedness



Emergencies and disasters are unpredictable and strike without warning. GAIL's emergency preparedness and response program helps protect the employees, the surrounding communities and the environment.

In order to prepare for such emergencies, we have implemented an emergency preparedness plan in accordance with PNGRB Regulations known by Emergency Response & Disaster Management Plan (ERDMP). The plan aims to assist with the planning and execution of appropriate actions in response to specific emergencies. The company's plans account for common emergencies, such as responding to fires, location specific emergencies, such as responding to earthquakes.

The laid out plans are then regularly tested for effectiveness, through management reviews, audits and annual drills. The discrepancies are noted and corrective actions are completed to ensure these remain effective. Following an emergency, business resumption plans are implemented to ensure effective processes are in place to restore business operations post any such potential emergency.

As per the incidents reported to PNGRB for FY 17-18, a total of six

cases were reported for Level 1 Incident and zero for Level 2 and 3 incident. This number was nine for the year 2016-17.

d) Training on safe work practices

GAIL's systems are only as good as the competency of the company's individuals. To ensure that the two go hand-in-hand, we provide training to individuals for specific procedures and processes laid out by the company. Each process has corresponding roles and responsibilities that are allocated to individuals across the site. The trainings are structured to include information with respect to legislation and industry guidance, company policy, local rules and procedures, individual and team responsibilities, procedures and standards, first aid response and case histories of accidents or near misses involving failure of the safety systems. At the end of the training program, individuals are assessed through testing on the procedures discussed and demonstration exercises. During the reporting period, 10.2% of full-time employees were trained for health and safety and various procedures of the organization.

e) Contractor safety

GAIL's contractors comprises nearly 70% of the total workforce hours. The company's ability to be a safe operator depends on part

of the capability and performance of those who help us carry out the work. GAIL's standard model contracts include health, safety and security requirements. Bridging documents are necessary in some cases to define how our Health Safety and Environment Management System (HSEMS) and those of contractors co-exist to manage risk on a site. Contracts involving work that could result in the most serious safety risks demand our highest scrutiny. We conduct pre-contract quality, technical, health, safety, security and environmental audits for these contractors on a risk-prioritized basis, and provide structured oversight while the work is carried out.

f) Security

Managing security risks is part of GAIL's efforts to protect its staff, contractors, nearby communities and the environment. In line with the goal of no harm to people, we carefully assess the security threats and risks to the company's operations. We work with Central Industrial Security Force and partner with them to safeguard our facilities and provide a safe and secure working environment for employees and contractors.

Major Incident Statistics



Health and Safety Performance

GAIL measures and tracks the safety performance using a number of lagging performance indicators based on reported safety incidents. GAIL also tracks leading indicators of health and safety to provide insight into trends.

- We have achieved average HSE score of 93.45% during FY 2017-18, which is well above the MoU target of 90%.
- In 2017, following steady and significant improvements in our safety performance over the past decade, the number of reportable injuries per million working hours was zero.
- During FY 2017-18, Lost Time Injury Frequency Rate (LTIFR), reportable injuries, occupational diseases and fatalities were reported to be zero.

Health and Safety Initiatives At GAIL

FY 2017-18 saw various health and safety related initiatives undertaken by the company's corporate HSE team:

- Oil & Gas HSE Conclave on theme "Shaping HSE Culture Amidst



**A Goal
We Can All Live With**

Global Challenges" organized on 8th - 9th December 2017 at Noida. This HSE conclave was conducted to draw a focus on the much-needed paradigm shift in GAIL's approach and transforming HSE culture, making business processes more efficient, maintaining safety and reliability of high risk organizations. This conclave was organized for the benefit of entire oil and gas

Mutual Aid Meeting held at GPU Gandhar

On 22.06.2017 meetings with Mutual Aid members from M/s ONGC, CPF Gandhar and M/s IOCL, Bottling plant, Gandhar was arranged at GPU Gandhar. As part of Mutual Aid Agreement between M/s GAIL(India) Limited, Gas Processing Unit, Gandhar with M/s ONGC, CPF Gandhar and M/s IOCL, Bottling plant, Gandhar, regular meetings with Mutual aid members to be done. Further, in compliance to the other statutory requirements like OISD, ERDMP, MB Lal recommendations, etc. and to have an effective coordination during emergency situations, an interactive session was organized. Meeting was organized in the chairmanship of Sh. U P Bhagat, GM (O&M)-OIC, Gandhar.



industry in India.

- Consultancy services of M/s. DNV GL hired for review of HSE management system implementation at GAIL Study being carried out at PC-Pata, JLPL, HVJ compressor and Corporate HSE covering all operation segments. Study for gap identification with respect to industry best safety practices is also under scope of study.
- Center for Chemical Process Safety (CCPS) Asia Pacific Regional Technical Steering Committee Meeting and Process Safety Awareness Program organized at GAIL Jubilee Tower on 23 January 2018.
- An in-house incident reporting system developed for all sites. It was implemented at all RGMs, NGMC and Process Control rooms.
- Safety inspection of GAIL's zonal marketing office buildings carried out to check the suitable safety and fire protection measures. Safety inspection of zonal marketing office buildings was carried out at Chandigarh, Chennai, Hyderabad and Ahmedabad.
- Annual occupational checkup status of employees incorporated in E-PMS for motivating employees to undergo an annual health checkup.
- Various incidents/measures were taken and industrial case studies were circulated on monthly basis to all employees of GAIL for better safety awareness and avoiding incidents in future.
- Various online quiz programs were organized through GAIL Intranet for the benefit of all employees. Prizes are also awarded to quiz winners.



Health and Safety Seminars

Oil and Gas HSE Conclave

Oil & Gas HSE Conclave organized by GAIL (India) Limited on theme 'Shaping HSE Culture Amidst Global Challenges' at Hotel Radisson Blu, Noida on 8th - 9th December 2017. The theme was chosen to draw a focus on the well-needed paradigm shift in our approach and transforming HSE Culture, making business processes state-of-the-art, maintaining safety and reliability of high risk organizations. Through this conclave, efforts were put the oil and gas industry learnings and experiences in the field of HSE Management for the benefit of entire industry. 324 participants from more than 40 oil and gas organizations and institutions, 11 exhibitors and more than 50 speakers participated in this first of its kind Oil & Gas HSE Conclave. Internationally renowned speakers shared their knowledge and vast pool of experience on various aspects like HSE leadership, contractor safety, fire safety management, process safety, HSE benchmarking, etc.

Highlights of the conclave

- Nukkad Natak (skit) was performed by the theatre group Abhigyan Nattya Manch, which was based on the theme "Oil and Gas Pipeline Safety in the country"
- Padmashri Dr. K.K. Aggarwal, the renowned cardiologist and current President of the Indian Medical Association, gave an enlightening speech wherein he attached a philosophical insight to the concept of health and wellness, and spoke



Dr. Ashutosh Karnatak inaugurating the HSE Conclave by lighting the lamp.



Shri P K Gupta, Director (HR), addressing the esteemed audience during the HSE Conclave.



on the numerous benefits of not just allopathy, but also the ancient sciences of Ayurveda and homeopathy.

- Ms. Deepa Mallik, an Indian athlete and medalist at the Paralympic Games and a motivational speaker was invited to the conclave as a guest speaker to share her life story with delegates and inspire them.

CCPS Asia Pacific TSC meeting and Process safety awareness Program

Center for Chemical Process Safety (CCPS) Asia Pacific Regional Technical Steering Committee Meeting and Process Safety Awareness Program organized on 23 January 2018 at GAIL Jubilee Tower. Industry experts from ONGC, HPCL, BORL, Reliance, Adani Gas, HMEL, Vedanta cairn, Tata Steel & DNV GL, etc. and process safety officers from process plants shared their views and experiences on this occasion.

GAIL Pata team presented "Case Study of High Rise Column's PSV Discharge Open to Atmosphere" and Reliance Industries Process Safety Executive presented their case study on "Implementing Learnings in Shift Operations 'Risk Based

Approach" in the program "Learning from Incidents" of CCPS meeting.

A "Workshop on Process Safety Metrics-Implementing API-RP-754 2nd Edition" was also conducted during the program.

CCPS meeting concluded with the following take away:

- The challenge is to learn as much as possible about the causes of accidents and near misses that have already happened in order to prevent reoccurrence.
- To continuously improve upon process safety performance, it is essential that companies in the chemical and petroleum industries implement effective leading and lagging process safety metrics.
- Effective process safety automation, risk analysis and hazard identification in plant operation to keep the operations running within specified limits and to set more precise limits to maximize profitability, ensure quality and safety
- CCPS Process Safety Professional Certification Course is helpful to ensure process safety officer's professional knowledge and commitment to staying updated about the latest developments in the process safety.
- At the end Sh. Shakeel Kadri, ED (CCPS) honored GAIL by presenting a memento, which was received by Sh. S P Garg, CGM (HSE), for organizing this meeting.



Shri MV Ravi Someswarudu, OIC, Pata presenting a memento to Shri Shakeel Kadri, ED (CCPS).





11

Public Policy and Advocacy

GAIL Gas Bengaluru signs



for promotion and adoption of #CNG as the choicest fuel for the commercial fleet at Bengaluru



During the reporting period,



1.46% of employees were given anti-corruption training



Public Policy and Advocacy



India is currently witnessing economic transformation marked by an unwavering industrial and social growth. While on one hand the government is determined to provide a steady push to this growth, it also intends to realize its climate change and sustainability commitments. The Government of India is considering a gradual shift to a gas-based economy as the solution to ensure an undeterred economic development while addressing the climate change issue. GAIL takes pride in being a strong facilitator for this strategic shift in the country.

As a public sector enterprise, GAIL has an underlying responsibility of advancing its business while ensuring public good. GAIL takes this responsibility as an opportunity to do its bit in perpetuating the age-old maxim of growth through cooperation for a long-term value generation.

At GAIL, we regularly undertake dialogues with the various government bodies like MoPNG, PPAC, OISD, PCRA, etc. to understand an intended

outcome of their sustainability vision and to ensure that the organization's contribution is in sync with it. From time to time, we also collaborate and partner with various NGOs, think-tanks and academic institutions on various issues to maximize the company's ability to deliver social and environmental good.

GAIL's areas of endeavors on public policy and advocacy have centered on three focus areas, as shown in figure below:



Expanding its global presence through its participation in projects/ventures along the natural gas value chain. With changed business environment in India as well globally, GAIL is revisiting its strategy to define the next phase of growth while enabling us to explore new business opportunities within or outside energy sector which have the potential to turn into long-term growth engine for GAIL. Through this exercise, GAIL shall be chartering strategic initiatives under various business area of gas marketing, gas transmission, petrochemicals, liquid hydrocarbons, city gas distribution and other businesses including imperatives on the skill and talent development.



Director (Business Development)





Transparency in Doing Business

Clean Energy for Clean Air

Combating Climate Change Risks

Transparency in doing business

GAIL understands that each stakeholder – government, suppliers, customers, community and employees – brings certain elements to the table which are unique and complementary. Thus, for a long-term profitability and sustenance, a trust-driven stakeholder relationship is of paramount importance. Having a transparent system across the value

chains helps build a strong stakeholder relationship.

We have set up systems and processes to maintain an efficient and effective communications with all the stakeholders. The details of various modes of communication have been shared in the Stakeholder Engagement and Materiality chapter. Various complaints received and resolved during the reporting period for different stakeholders is indicated in graph below:

Stakeholder Complaint Redressal for FY 2017-18



GAIL's developments: Support to major initiatives of Govt



Government of India has initiated new policies to attract investments in the gas sector so that domestic production can be increased. Some of the key policy initiatives are:

- 100% allocation of domestic gas for CNG and PNG
- Auction based e-Bid RLNG mechanism for utilization of stranded gas-based power generation capacity
- Marketing and pricing freedom for new gas production from deep/ultra deep waters and high pressure-high temperature areas.





GAIL Management at Investors meet 2018

- Hydrocarbon Exploration Licensing Policy, HELP is an innovative policy for the future which provides for a uniform licensing system to cover all hydrocarbons such as oil, gas, coal, bed methane, etc. under a single licensing framework.
- Policy for grant of extension to the production sharing contracts for small, medium sized and discovered fields.
- Marginal Field Policy-Discovered Small Field Policy
- Uniform Licensing Policy-Hydrocarbon Exploration and Licensing Policy
- Policy on testing requirements for discoveries made under New Exploration and Licensing Policy (NELP) Blocks.

Anti-competitive behavior: GAIL is signatory to United Nations Global Compact (UNGC) India Chapter and abides by its principles on Human Rights, Labour Standards, Environment and Anti-Corruption. GAIL also follows a standard protocol by the Competition Commission of India on ethical behavior and fair competition in the market.

GAIL follows national laws and regulation to immediately address any report on persons involved in unethical conduct or anti-competitive behavior within the organization.

The cases which were settled/pending with regard to unfair trade practices, anti-competitive behavior, and monopolization as identified against GAIL:

- GSPCL filed a case against GAIL before PNGRB claiming Restrictive Trade Practice (RTP) for not allowing to change connectivity from GAIL-PLL to GSPL-PLL connectivity. PNGRB held against GAIL. GAIL challenged the same before Appellate Tribunal for Electricity (APTEL) which decided in favor of GAIL. GSPCL appealed against that order before the Supreme Court which is pending
- GSPC Gas filed a case against GAIL claiming RTP before PNGRB but the same was held in favor of GAIL. GSPC Gas had filed an appeal against the said order before APTEL and the order of PNGRB was reversed. Now GAIL has filed an appeal before Supreme Court, which is pending.
- GSPCL filed a case against GAIL before PNGRB claiming RTP alleging that their request for booking capacity on Reasonable Endeavour (RE) Basis has been rejected by GAIL which amounts to RTP. PNGRB held against GAIL. GAIL appealed against the judgment in APTEL and Supreme Court which vide order dated 13 January 2016 set aside the

order of PNGRB and remanded a complaint to PNGRB for re-considerations. PNGRB again held against GAIL. GAIL has a preferred appeal before APTEL which is pending.

- Sabarmati filed a case against GAIL and BPCL before PNGRB claiming RTP, which PNGRB held RTP on part of BPCL and not on the part of GAIL. BPCL has appealed against the judgment in APTEL and has made GAIL a party and same is pending for disposal.
- Sravanthi Energy Pvt. Ltd., Beta Infratech Pvt. Ltd. and Gamma Infraprop Pvt. Ltd. had filed complaint before PNGRB alleging RTP against GAIL which was decided against GAIL by PNGRB vide order dated 11 April 2016 and imposed a penalty of ₹10 lakhs against GAIL and directed GAIL to cease RTP and pay cost of ₹2 lakh each to each party. Also directed to return the BG and SD to the parties. GAIL has filed an appeal before APTEL, which stands pending.
- Omax Autos and Rico filed a complaint before CCI against GAIL alleging abuse of dominant position in the market. CCI vide order dated 16.10.2016 directed DGI to conduct an investigation against GAIL for such an abuse. During investigation, two more cases were filed by Rathee Steel and Mohan Makein Ltd and were also referred to the DGI for investigation. The said investigation has been completed wherein GAIL has cooperated with the DGI by furnishing all the relevant information and documents as required by the DGI. The DGI has submitted his report to the CCI for consideration.
- Gujarat Industries Power Company Limited (GIPCL): GIPCL had also filed a complaint against GAIL before CCI for alleging abusing its dominant position in the market. However, CCI declined the complaint. But GIPCL appealed against that order before COMPAT, which directed





an investigation by DGI against GAIL for such an abuse. GAIL has filed an appeal against the said order before the Supreme Court, wherein the direction for investigation has been stayed and is pending before the Supreme Court.

- A RTP complaint has been filed by Reliance Industries Ltd. against GAIL. GAIL filed an application before PNGRB for referring the dispute to arbitration, which was rejected by PNGRB vide order dated 22 December 2016, therefore, GAIL has preferred an appeal before APTEL against the said order of PNGRB. APTEL has referred the appeal back to PNGRB for consideration. PNGRB in its hearing dated 04 May 2018 directed the parties to settle the issue amicably. The matter was listed for an update on settlement on 30 August 2018.
- M/s. Pioneer Gas Power Ltd has filed a complaint alleging RTP

against GAIL for charging ship or pay charges under the GTA. The said complaint is pending before PNGRB.

- RTP complaint filed by Pacific Development Corporation Limited against GAIL in 2016-17 was amicably settled and later Pacific Development withdrew their complaint from PNGRB on 06.02.2018

During the reporting period, 2017-18, 1.46% of employees were given anti-corruption training. Apart from these trainings, GAIL also organizes regular awareness workshops in order to ensure its workplace and operational processes remains corruption-free. We conduct periodic risk assessment of all operational units for identifying risks related to corruption and during the reporting period, no significant risk of corruption was identified and reported.

GAIL's Legal Compliance Management System (LCMS) ensures compliance to

all national and relevant international regulations and regulatory compliance requirements across the various segments. Online LCMS also ensures periodic review and audit. The Environmental Management System helps maintain the environmental standards and manage emissions, effluents and waste in operational processes.

Separate budgets are created for timely adherence to all the statutory compliances. The Directorate General of Hydrocarbons (DGH) has been entrusted with the obligation of advancing exploration and sound management of petroleum and natural gas resources as well as nonconventional hydrocarbon energy while balancing regard for the triple bottom-line.

Suppliers

The company's business demands strong and reliable relationship with suppliers and vendors. For this, we have developed a system which ensures transparency in our processes for the benefit of the vendors and suppliers. For the prevention of corruption and endorsing good governance, numbers of system reformations were implemented enabling effective utilization of its resources. Some of these are:

- Integrity pact mechanism
- Pre-tender and pre-bid meeting
- Conciliation through Settlement Advisory Committee
- Reverse auction
- Bill Watch System
- File movement system
- e-tendering

Clean energy for clean air

We believe that the industry's role must go beyond its own operational boundaries and should be one that seeks to vigorously advocate solutions to the various sustainability

Knowledge sharing session by Deputy Chief Labor Commissioner (Central) at GAIL Bengaluru

A knowledge sharing session of Labour Law Provisions and its Compliances was organized by GAIL Bengaluru. Dy Chief Labour Commissioner (Central), Assistant Labour Commissioner (Central) and Labour Enforcement Officer (Central) of Bengaluru were guest invitee in the program. EICs of GAIL Bengaluru- DBPL and GGL Bengaluru attended the Session. Assistant Labour Commissioner shared his presentation on Labour Laws-Practical Aspects for Managers. Interactive session with the EICs was held where EICs of GAIL and GGL got various clarifications on Labour Law Provisions and its compliances.





challenges. In doing so, the conscious emphasis must be on timely response to potential issues and a strategic business alignment to help prevent them from becoming chronic. One such issue is that of air pollution.

In October 2017, the Supreme Court of India banned use of pet coke in Delhi-NCR, Rajasthan, Haryana and Uttar Pradesh to help curb the recurring air pollution issue in the northern states. It further urged all the states and union territories to gradually shift from pet coke and furnace oil to clean fuels.

Urban air pollution is largely a result of combustion of fossil fuels that are used in transportation, power generation, industrial sector and other economic activities. The government has formulated National Clean Air Program (NCAP) as a medium-term national level strategy to tackle the increasing air pollution problem across the country in a comprehensive manner. It puts an emphasis on the crucial role of natural gas as a cleaner form of fossil fuel.

GAIL being a flagship company of India in natural gas promotes the idea of moving towards a gas-based economy. GAIL has a vast network of gas pipelines in India. Most of the industries using these fuels can switch over to natural gas depending on the availability of gas pipeline infrastructure. GAIL has the necessary infrastructure for supplying gas to these industries.

When burned, natural gas releases up to 50% less CO₂ than coal and 20-30% less than oil. When used in power generation or as a transport fuel natural gas results in negligible emissions of sulfur dioxide (SO₂), nitrogen oxides (NO_x), mercury (Hg), and particulates compared with other fuels. The increased use of natural gas offers a significant contribution to improved local air quality and public health.

Considering the life cycle impact on environment and health, natural gas is a more benign fossil fuel compared to coal and liquid fuel. Unlike coal, natural gas does not require huge amount of water for its purification



GAIL Gas Bengaluru signs an MoU with Uber for promotion and adoption of #CNG as the choicest fuel for the commercial fleet at Bengaluru and also collaborate to expand CNG ridership pan-India.

and it does not contaminate the ground water. Further, it is either transported through pipeline as gas or closed cryogenic vessel as liquid and therefore does not contaminate air during transportation. The differential between the life cycle emissions of air pollutants and greenhouse gases between coal and gas-based power plants is huge.

As an emerging economy, India also needs sustainable sources of energy to keep our growth engines running and natural gas can play the role of a "bridge fuel to the future". India has already set a target of raising the share of gas to 15%. The Government of India realizes that gas can play a significant role in a number of areas:

- Reducing emissions – supporting NDC commitments
- Supporting clean air in cities (by phasing out of FO and pet coke for industries, diesel for automotive for instance)
- Providing financially viable solutions as a fuel for long-distance transportation (LNG for road transport)
- Supporting an increased penetration of renewables by providing balancing generation
- Reducing import bill by substituting liquid fuels in industries

GAIL has played a commendable role in combating air pollution in Delhi. A study by the Washington DC-based resources for the future, which studied air pollution in the capital for 15 years (1990-2005), said the conversion to CNG for public transport had made the "most significant" impact on air quality.

Further GAIL has also contributed towards preserving the world heritage Taj Mahal by developing gas infrastructure at Taj Trapezium and providing natural gas to Mathura refinery and industrial belt of Agra/Firozabad where coal was being used during the late 90s.

Natural gas can play a larger role than what it is contributing today for achieving cleaner urban air quality for India and other emerging developing countries.

Further, in a bid to contribute to the government's effort to combat air pollution, GAIL supports and promotes the 'Hawa Badlo' initiative to bring about a change in air quality through environment-friendly practices in day-to-day life.

The initiative aims to promote electric vehicle, switching to CNG, carpooling and use of public transport. Currently, the number of people engaged with this initiative is 6.8 million and growing.



Salient features

- It is a people's initiative to spread awareness about hazardous levels of air pollution and finding measures to fight the same
- It is an independent national digital movement which aims to assemble knowledge, network, innovation and outreach to come together on a single platform to protect human health and country from the effects of air pollution
- It also aims to position natural gas as the plausible solution to the menacing problem of air pollution.

Combating climate change risk

GAIL is working actively towards addressing the risks related to climate change. Being a clean energy company, it is also keen on finding solutions to problems arising out of these risks and converting them into business opportunities.

GAIL closely follows global and national developments and studies related to climate change to remain in tune with the changing risks and opportunities.

Natural gas is a good fit for decarbonizing India's energy system, as it plays a dual role in both replacing carbon-intensive fuels and facilitating the development of renewable power.

The increasing use of gas in non-power sectors will allow to reduce CO₂ emissions and improve air quality as gas will replace (or complement) higher emitting oil products: fuel oil/naphtha and pet coke in the industrial sector, diesel in transportation and traditional biomass, and LPG and kerosene in the residential/commercial sectors.

Considering the life cycle, benign fossil fuel's impact on environment and health natural gas is much more as compared to coal and liquid fuel. Being a clean fuel, it does not require huge amounts of water for its purification and it does not contaminate the ground water. Further, it is either

CII Roundtable on North East Region Hydrocarbon Vision 2030



A roundtable on North East Region (NER) Hydrocarbon Vision 2030 was organized by Confederation of Indian Industry (CII) on 30 November 2017 at Agartala.

Experts from industry and officials from Government of Tripura, ONGC, GAIL, TNGCL, etc. participated in the program. Sh. M. Nagaraju, IAS, Principal Secretary, Department of Industries & Commerce, Finance; Government of Tripura gave a perspective of the government on the various aspects of developing a hydrocarbon network in line with the NER Hydrocarbon Vision 2030.

The presentations on the actions on NER Hydrocarbon Vision 2030 were also given by GAIL. On behalf of GAIL, Sh. Lalit Maurya, GM/OIC Agartala gave the presentation on the actions taken by GAIL at various levels in line with the vision. He informed that GAIL shall act as the nodal agency to coordinate the activities for executing cross-country pipeline projects to connect NER with national gas grid and implementing city gas distribution projects in various cities of NE states.

transported through pipeline as gas or closed cryogenic vessel as liquid and therefore does not contaminate air during transportation. Difference between the emission level of pollutant and greenhouse gas from entire life cycle of coal and gas-based power plant is huge and also gas-based power plant has a significant advantage over coal-based plant.

Substituting road transportation of LPG - With laying of exclusive pipelines for LPG transmission in various parts of the country, GAIL has contributed to replace the mode of transportation by road required to deliver LPG from production facilities to various customers, which is less emission intensive.

Partnership with TERI

In its commitment to take leading steps in tackling climate change issues, GAIL partnered with The Energy Research

Institute to form a Council for Business Sustainability (TERI-CBS) in 2015. TERI-CBS is a common platform for various Indian corporate houses to come together in developing a vision on understanding and managing climate change issues. The vision of this council is aligned with various government schemes and policies.

We, along with TERI, have also developed a document which outlines the Indian corporate vision on various aspects of tackling climate change and aligning the vision with government schemes in this direction, which was launched at India Pavilion of Conference of Parties (COP) 21 held in Paris in December 2015. An MoU between FIPI (erstwhile PetroFed) and TERI for undertaking climate change study was also signed in the presence of Sh. Dharmendra Pradhan, Minister of State (I/C), Petroleum & Natural Gas and Sh. K.D. Tripathi, Secretary, M/o Petroleum & Natural Gas and representatives from oil and gas industry.



This study is aimed at providing an insight into:

- Threats posed by climate change to oil and gas sector and participating companies.
- Way forward to tackle the challenges as well as risks posed by climate change.
- Suitable measures for the oil and gas sector to achieve India's INDC target of reducing emission Intensity of GDP by 33-35% below the levels in 2005 by 2030.

Advocacy through coalitions and associations

- International Gas Union (IGU): It is a global association aimed at promoting the technical and economic progress of the gas industry. It is working with GAIL for developing the gas sector in India. GAIL represents India as "Charter Member" at IGU. GAIL along with IGU promotes the "Asia Gas Partnership Summit", a global conference aimed at discussing industry issues and developing gas market in Asia. In the reporting period, we partnered with IGU to host the 5th International Energy Forum-International Gas Union (IEF-IGU) Ministerial Gas Forum in New Delhi with the theme "Gas for growth; improving economic prosperity and living standards".
- International Group of Liquefied Natural Gas Importers (GIIGNL): Offers GAIL a forum for exchange of information and experience among the industry counterparts to enhance safety, reliability and efficiency of LNG imports activities and the operation of LNG imports terminals.
- FIPI (erstwhile PetroFed): GAIL is "Category A" member of FIPI and is also a part of the governing council. FIPI functions as oil industry interface with the government, regulatory authorities, public and representative bodies

of traders in India to work on issues such as optimization of resources, promoting safety, tariff, investments, healthy environment, and energy conservation among other issues related to industry.

- Standing Conference of Public Enterprises (SCOPE): It is an apex body representing the entire spectrum of public sector enterprises (PSEs) in India. SCOPE has representations in various high-level committees/boards and helps its member PSUs to present their views at the various platforms.
- Federation of Indian Chambers of Commerce & Industry (FICCI): CMD, GAIL is the member of its Executive Committee and Co-Chair of FICCI Hydrocarbon Committee.
- FICCI works towards deliberating on issues related to energy security of the country and supplement various efforts of the Government of India and other bodies engaged in this area through its intellectual input.
- Governing Body of World Energy Council (WEC) India: GAIL is the country member of WEC and takes an active participation in the activities of WEC for development of natural gas in India.
- Global Reporting Initiative (GRI) Focal Point India's Sustainability & Transparency Consortium: GAIL is the founding member of GRI-STC. It engages with business leaders, national governments, regulators, sustainability experts, think tank bodies and professional institutes to discuss issues related to sustainability reporting. GAIL also represents in GRI Corporate Leadership Group on Reporting 2025, GRI Gold Community and GRI South Asia Advisory Group
- United Nations Global Compact Network India (UN GCNI): UN GCNI promotes principles on human rights, environment, anti-

corruption and labor standards.

- CPMA: GAIL is a member of Chemicals & Petrochemicals Manufacturers' Association (CPMA), which is the apex forum representing the Indian petrochemical industry. The association offers its members a podium to collectively present their ideas, voice concern and offer suggestions on relevant issues. It provides a linkage between the industry, government and the society.
- Pipeline Operators Forum (POF): GAIL joined this non-profit, technical forum comprising of representatives of global pipeline operators for enabling pipeline integrity engineers to share and build best practice, thereby raising the standard of pipeline integrity management. The main objectives of POF are:
 - * To promote pipeline integrity management globally, work with industry to improve quality of pipeline integrity management and the services provided.
 - * To upgrade and develop in-Line inspection (ILI) specifications, best practices and other relevant documentation.
 - * Share experiences and best-practices of integrity management issues within members (meetings and forum discussions).
 - * Maintain an environment with access to developed documentation, specifications.

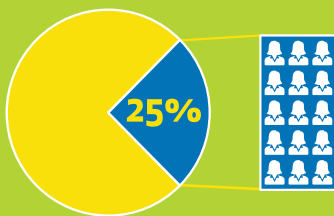




12

Human Capital at Core

New Hiring of Female Candidates



Y-o-Y increase



were conducted for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings.





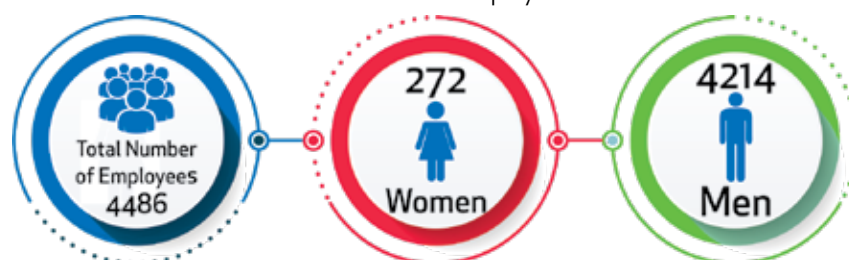
GAIL aims to work collaboratively with its supply chain to improve performance and create shared value. We consistently review the processes and procedures to help drive the right actions and foster continuous improvement. Apart from daily site level interactions, the period from 20th -24th day of every month have been designated as a "Samadhan" meeting which is conducted by the respective Executive Directors to effectively resolve any existing and anticipated bottlenecks. Through Samadhan, we are finding immediate solutions to ensure uninterrupted vendors services are provided in the most efficient, qualitative and transparent way.

GAIL's success depends on having a great place to work and a highly-skilled workforce that stays motivated to

online recruitment/e-recruitment in SAP.

For the interview panel, a selection of experts from the relevant field is made. For facilitating a holistic assessment of the potential candidate, a trained psychologist is also a part of interview board apart from other experts. Principle of diversity and inclusion are given due attention while drawing the interview panel so that candidates from all possible backgrounds are assessed objectively during hiring process.

Benefit Fund Trust and Provident Fund Trust apart from other benefit plans that include gratuity, post-retirement medical benefits, earned leave benefits, terminal benefits, half pay leave and long service award. GAIL offers a higher qualification incentive to motivate employees to attain higher qualification relevant to their function. GAIL is also among the first PSUs to provide a two year child care paid leave to female employees. All this has resulted in a positive environment to ensure a higher retention and lower employee turnover.



deliver their best throughout their engagement with GAIL. Attracting the right people ensures a healthy talent pipeline and providing effective trainings, development opportunities, advancing diversity and ensuring health and safety to help the organization achieve business growth. All the data related to workforce is monitored and captured through SAP ERP system in place and is systematically analyzed to help improve our workforce management strategies.

The people strategy at GAIL is broadly divided into two categories, as shown below:



Talent attraction and retention

Recruitment is undertaken at the induction levels to infuse young talent in the organization. Before initiation of the recruitment process, in-house availability of the personnel is adjudged. GAIL has also leveraged IT to a great extent by making use of

Recruitment at GAIL comes with attractive compensation packages and several perquisites like house building advance, conveyance advance, furnishing advance, and computer/laptop advance. GAIL also makes contribution towards Superannuation

Capability building

At GAIL, human capital is considered to be the most valuable asset that accounts for the biggest reason for the success or failure of the organization.





Implementation of Learning Management System (LMS)

In order to increase knowledge level of GAIL officials and to ensure access, reach and flexibility of learning across pan-India; the necessity of e-learning management system was felt. The Learning Management System (LMS) will host series of e-learning contents like ASME/API standards, OISD standards, PNGRB regulations, SOPs, etc. which are essential for GAIL operations. This will have learning texts, PPTs, animations, audio-visuals, etc. to help in easy interactive learning. Further assessment of the learner will ensure that the concerned person has attained the requisite skills.

their reporting and recommending executives.

Based on training needs identified through TNA, an annual training calendar is prepared in which all the employees are allotted with one functional or cross-functional and behavioral training for that financial year.

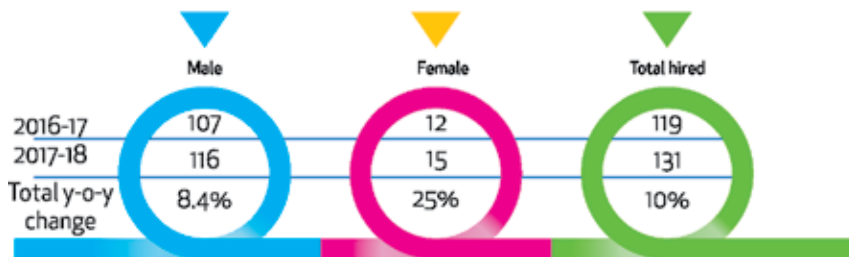
The training programs organized by GTI include hazard identification techniques and risk analysis, business modelling, and financial analysis through excel, hedging and risk management, LNG industry development in the international scenario including shipping and global energy market and competition.

A Senior Management Development Centre (SMDC) carries out an annual evaluation of the senior management with an aim to assess the potential on parameters of relationship management, analytical problem solving, building capability, achievement orientation, execution excellence, planning, organizing and foresightedness and communication. This helps GAIL in identifying and promoting talent and further enables it to create a pipeline of its future leaders.

GAIL also organizes training program for its superannuating employees to ensure a smooth transition to their new life. These programs include trainings on financial investments, company benefits and other legal obligations.

For the new joiners, apart from the existing training and onboarding structure, GAIL has introduced a Mentorship Program. In this program, the new recruits are assigned a mentor, working at a senior executive level, to provide necessary guidance on all personal and professional front

New Hiring (in Numbers)



As we move deeper and deeper into a knowledge-based economy that depends on information, knowledge and high-level skills, human capital will become increasingly important.

The skills and abilities of individual workers outweigh the financial capital, technology or processes of the organizations which are just off-shoot of human capital.

GAIL introduced an objective and robust KRA/ KPI and competency-based online PMS framework to ensure objective and holistic assessment of individual's performance. The MoU is cascaded down to performance of each and every employee. A company-wide deployment of employees on rotational program that includes diverse and enriching assignments warrants a rich and uninterrupted pool of talent for leadership roles. Besides the focused and intense in-house training system, the company has also looked globally to gain new capabilities and access to resources.

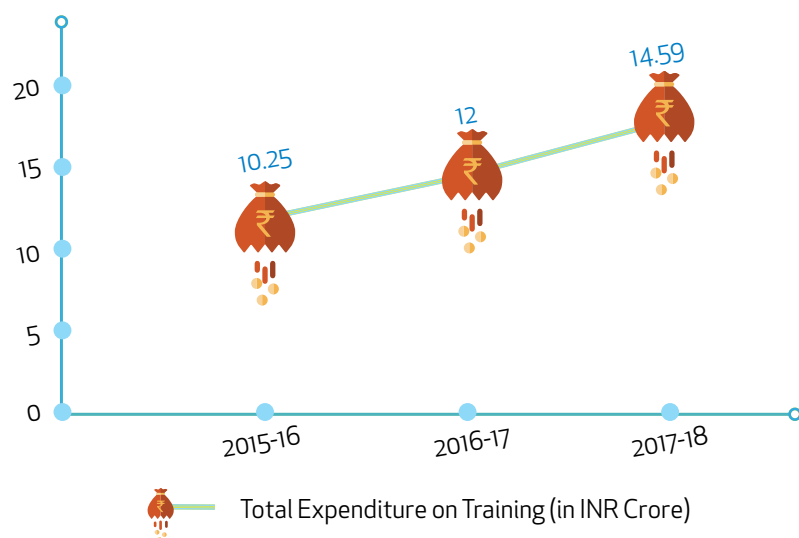
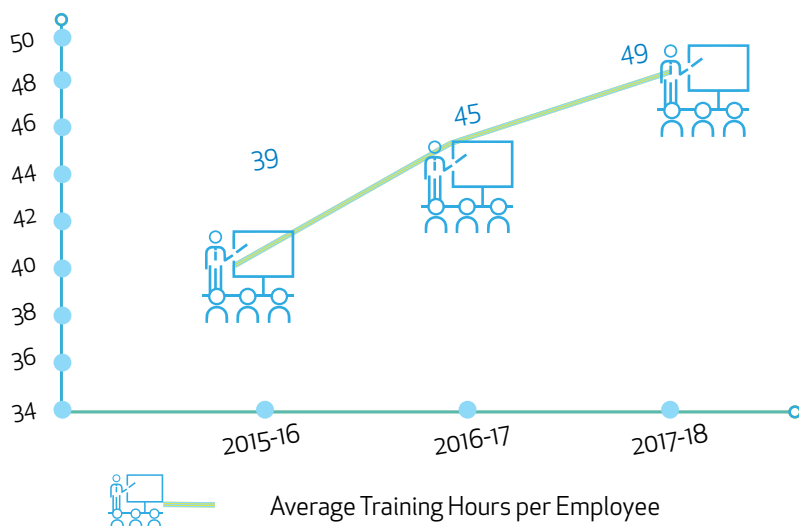
GAIL believes in developing as a learning organization hence continues to invest in knowledge sharing with new recruits and also amongst peers. Hiring people with the required skill sets also ensues a new induct of ideas and knowledge, one from which the entire organization benefits.

Capacity building and talent development lies at the core of GAIL's people strategy and forms one of the key focus areas for the company to work upon. We have two training facilities:

- GAIL Training Institute (GTI), Noida set up in the year 1997
- GAIL Training Institute (GTI), Jaipur set-up in 2005

Both these training institutes roll out a comprehensive electronic Training Need Assessment (TNA) System for all executives every year where the training needs of all executives are assessed with the inputs from employees as well as from





during their formation years at GAIL.

GAIL Workforce

A	Total number of permanent employees	4486
B	Total number of permanent women employees	272
C	Total number of casual/temporary/contractual employees	15,405

D	Total number of employees with disabilities	95
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Skill upgradation workshops are organized for respective functional areas on periodic basis. All the employees posted at sites and projects are given mandatory safety awareness training. Various knowledge sharing programs like online quizzes and competitive events organized on various occasions like Safety Week, National Safety Day, etc. for bringing out the positive change in behavioral aspects.

The table below shows the percentage of employees who were given safety and skill up-gradation training in FY 17-18:

Skill and Safety Training

A	Permanent employees	95.31
B	Permanent women employees	94.23
C	Permanent male employees	95.38
D	Casual/Temporary/Contractual employees	100% - safety awareness
E	Employees with disabilities	99

Apart from the aforementioned trainings, a brief description of all the training programs organized at GAIL is mentioned below:

- A year-long comprehensive induction, orientation and on-the-job training program for 65 executive trainees who joined GAIL is in place and being executed for the FY2017-18. The program encompasses technical, functional, managerial as well as behavioral interventions, apart from on-the-job training at major work centers.
- Management development program for newly promoted DGMs/GMs/EDs was conducted at GTI in June 2017.
- As a knowledge management initiative, 10th Knowledge Sharing Seminar was organized at GTI Noida during 21st-22nd September 2017. Out of total 90 papers in four different categories (O&M of pipelines and compressor stations, O&M of gas processing units/LPG/LNG plant, O&M of petrochemical plants and corporate functions), 18 shortlisted papers were presented and evaluated by the jury. Best paper was awarded in





In-house certification course on metering systems



For the first time in GAIL, an in-house certification course on Metering was conducted from 8 January 2018 to 15 January 2018. The in-house modules developed for imparting a detailed training on the various metering systems installed in GAIL was followed by a written test and an interview.

This training helped in enhancing knowledge and skills of the participants which got reflected in their day to day metering related O&M activities. This also helped in developing the in-house trainers on the subject.

each category.

- GTI Organized training programs in the capability building areas identified in Strategy 2020 Such as Petrochemical and LHC Marketing and Pricing; Regulatory Affairs in Oil & Gas Sector; LNG Industry Development in International Scenario including Shipping; Hedging and Risk Management; Advance Bidding, Strategies for Hydrocarbon Exploration and Licensing Policy (HELP); Global Energy Markets & Competition and Energy Trading, Risk Management.
- A Training program-cum-familiarization test was

conducted by GTI for eligible S7 and S4 employees for promotion.

- A total of 596 programs were conducted for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings.

(i) Employee motivation

For any organization, talent attraction and its retention depends on its organizational culture and the ultimate employee motivation resulting from it. GAIL, thus, invests a tremendous amount of effort in understanding the employees'

perception and grievances to help create a congenial working environment for the employees and contractual workers.

In an endeavor to gain an in depth understanding of the views and concerns of the employees, GAIL carries out an organization-wide employee engagement survey - "GAIL Pulse". GAIL Pulse aims to share insights on the current engagement levels and also on specific areas of improvement in the organization that need management's attention. The GAIL PULSE 2015 detailed report was discussed in an Action Planning Workshop. Action Planning Workshop has been conducted on 5 October 2016 at GAIL's corporate office. Senior HR executives at CO and HR incharges at Pata and Vijaipur were invited to participate in the Action Planning Workshop.

On the basis of the findings of the engagement survey, various HR/HRD Initiatives viz., Job Rotation Framework, Corporate challenge Scheme, Corporate Communication Strategy and Youth Engagement Plan have been conceptualized and are currently under consideration.

Ministry of Petroleum and Natural Gas (MoPNG) had constituted a task force for giving recommendations for improving the HR management in the CPSEs under its administrative control. The task force was chaired by Dr. Sanrript Misra, CEO, Carbon Black Business and Director (HR)-Aditya Birla Mgt. Corp. Pvt., and its main term of reference was talent management in CPSEs. As part of the above task force, an industry-wide engagement platform for young executives named YOUphoria. Under this umbrella, GAIL conducted two contests viz., Name/Logo/Brand contest and Corporate Photography Contest for its executives below 35 years of age garnering a tremendous response for the contests.

With the broad objective of sensitizing the different appraising authorities regarding various processes related to performance management framework



Photograph taken during mini-marathon organized for women at GAIL, Noida.





in GAIL and One-day workshop on Performance Management and art of giving feedback was conducted by GAIL at different locations. Around 370 executives of different grades participated in the workshop.

Some key initiatives taken up by GAIL to boost employee retention include freedom of expression of thoughts and ideas through a number of communication channels like suggestion scheme; long service awards, and attractive perks and benefits. We also aim to promote the values of diversity and inclusivity throughout our workforce.

Leadership development and succession planning

Considering GAIL's growth strategy and business targets for the coming years, it is essential to identify and develop internal talent pipeline of leaders who are competent and best suited for taking up leadership positions. Company's endeavor in National Gas Grid, LNG Marketing and expansion of CGD business are providing unprecedented learning and growth opportunities to the employees. As part of our preparedness for coming challenges, GAIL has put in place an Integrated Leadership Development Framework and a Succession Planning Framework for facilitating leadership development and career planning.

GAIL Succession Planning Framework is primarily an executive development-oriented initiative. It is aimed to put in place a structured framework to ensure adequacy of talent pool/skill set availability, both in terms of quantity and quality of potential successors, in line with the company's business plan. Ready availability of sufficient talent pool will help the company to take prompt decisions in cases of unanticipated vacancies and/or business requirements. GAIL Succession Planning Framework is applicable on the positions up to three levels below the Board level in senior

management executive levels. These positions are Executive Director (E-9 Grade), Chief General Manager (E-8 Grade) and General Manager (E-7 Grade).

GAIL Integrated Leadership Development Framework has covered around 1300 senior/middle level executives in E9 to E5 grades. The development strategy comprises of two focused talent development interventions: 360 Degree Feedback Exercise and Senior Management Development Centre (SMDC) Exercise.

360 Degree Feedback instrument is an online tool developed to assess the overall developmental areas of an executive from the view point of superiors, co-workers and subordinates. It was initially launched for E-6 to E-9 grade executives in 2015-2016, which was later extended to E-5 grade executives in 2016-17. The exercise got a positive and enthusiastic response from the executives and as high as 95% response rate was achieved in the first year of introduction of this exercise.

We also ensure that the employees receive regular performance appraisals and reviews on their work to keep them skill-efficient and motivated towards work. During the reporting period, 2017-18, 100% of employees received regular performance and career development reviews.

Further, SMDC exercise has been undertaken for senior executives in E-5 and above grades. SMDC has been conducted for senior executives in Chief Manager and above grades and as of now, around 1300 senior executives have been covered under this exercise. In order to fill in the developmental gaps of such executives identified through SMDC exercise, a comprehensive Individual Development Plan (IDP) has been drawn up for all the participants of SMDC exercise.

Enabling systems, processes and policies

GAIL remains committed to equal rights for all gender and the same is reflected in our compensation policy. GAIL has also allowed Child Care leave (CCL) for a period of maximum of two years (730 days) for female employees having up to two eldest surviving minor children in order to take care of them.

Corporate Medical Cell keeps a regular track of individual employee health check-ups. A doctor is always within the reach for any GAIL employee, whether at corporate base or at other sites. Company-wide preventive health check-ups are mandatorily done for employees. Centralized Medical Cell collates the crucial health parameters and same are analyzed and used as a feedback mechanism for review of various policies and practices. Various programs to spread awareness and cope up with changing lifestyles are conducted regularly covering issues like fitness, yoga, stress management, lifestyle management and nutrition.

Considering how an employee spends majority of his/her time within office premises, GAIL ensures to provide sport activities, gym and recreational facilities that are made available at its major work-centers. We also have a well-structured GAIL Sports Promotion Policy, which underlines our commitment to sports and associated factors, viz., team spirit; healthy competition and fitness. Events like Cyclothon were organized for all employees to promote good lifestyle.

The feeling of camaraderie and companionship is created over a host of celebrations held as GAIL family. We celebrate various festivals and occasions with the extended GAIL family including GAIL Foundation Day, Independence Day, Diwali Mela, etc. to keep our employees and their family connected to each other.

As part of the HR systems integration, performance assessment forms an important factor in determining the performance-related pay (PRP). The





PRP/variable pay scheme is based on the performance of the company; unit and individuals. There is an elaborate framework to assess unit performance which has a linkage to the PRP/variable pay admissible to individual employees. As stated before, adoption of Bell Curve Approach and variable pay has led to generating acute awareness about the individual/team performance and its leverage on incentive receivables.

Ethical recruitment and labor practices

GAIL believes in providing fair and equal opportunity to all eligible candidates during recruitment process. For most of the entry-level vacancies, recruitment is done through national level exams. Being a Maharatna company with a vast operational boundary, GAIL is in constant search for attracting talent, which is only possible through an ethical and transparent selection procedure.

While talent acquisition is an important activity for the right workforce creation, talent management is another important area identified by GAIL to not only retain this talent pool but also to provide them with an excellent work environment.

GAIL has 100% representation of its workforce at formal joint management health and safety committees that help us create awareness on occupational health and safety-related topics so

that employees can take adequate steps. A minimum notice period of 15 days is given to employees in the event of any operational change to ensure safety and efficiency at workplace.

We have also worked on maintaining a diverse and inclusive workforce. We promote an environment that is based on virtue and inclusion, where all employees can develop to their full potential and no suffering or discrimination is incurred on grounds of caste, creed, age, belief, disability, ethnicity, gender, gender identity, marital or civil partnership status, political opinion, race, religion, or sexual orientation. Apart from inclusive workforce, we follow ethical labor practices. During FY 2017-18, no incident of child labor or forced labor or human rights violation was reported.

In our effort to have a more inclusive workforce, we made attempts on scouting talent from our local community.

There is complete compliance with the Equal Remuneration Act, 1976 and there is no discrimination in wages based on gender. Despite inherent challenges within our sector towards recruitment and retention of women employees, we have been focused in our efforts to create a conducive environment for them.

The Women's Cell at GAIL is focused on reaching out to the women workforce, initiate discussions and adequately address their concerns including sexual harassment at workplace. We have a Policy on Prevention,

Prohibition, and Redressal of Sexual Harassment of Women at Workplace in line with the requirements of the Sexual Harassment of Women at the Workplace (Prevention, Prohibition & Redressal) Act, 2013. An Internal Complaints Committee (ICC) has been set up to redress complaints received regarding sexual harassment.

(i) Employee engagement and empowerment

GAIL not only believes in an inclusive workforce but also in an inclusive effort to drive a business that is responsible and accountable to all its stakeholders. GAIL follows a no discrimination policy to achieve an inclusive workforce and employee empowerment. It upholds the freedom of association and collective bargaining by recognizing and supporting the workers' unions, officers' associations, women's forums, SC/ST employees, etc. In GAIL, there are two unions representing the interests of their respective workmen/staff.

- GAIL Employees Association (GEA) – A representative body of non-executives posted at various field offices/plants/installations across the country except the corporate office.
- GAIL Karamchari Sangh (GKS) – A representative body of non-executives posted at corporate office.

Employee complaints for the FY 2017-2018:



Additionally, we have Ladies' Clubs at our operational sites and have instituted GAIL women's awards to promote their involvement and enhance satisfaction.

No. of sexual harassment cases received in 2017-18:
Nil

Parental leave status	Gender	2016-17	2017-18
Number of employees entitled to parental leave	Male	4,097	4,213
	Female	257	271
Number of employees that took parental leave	Male	142	157
	Female	18	14
Number of employees who returned to work after parental leave ended	Male	142	157
	Female	18	14
Employee returned to work after parental leave ended who were still employed 12 months after their return	Male	141	156
	Female	18	14
Retention rates of employees who returned to work after parental leave ended	Male	100	100%
	Female	100	100%

Compensation Information

Percentage increase (from FY 16-17 to FY 17-18) in annual total compensation for the organization's highest-paid individual	79.29%
Median percentage increase (from FY 16-17 to FY 17-18) in annual total compensation for all employees (excluding the highest-paid individual)	0.78%
Ratio of the annual total compensation for the organization's highest-paid individual to the median annual total compensation for all employees (excluding the highest-paid individual).	2.99
Decline in the total annual compensation for the highest paid individual from FY 2016-17 to FY 2017-18	7%
Increase in annual employee cost from FY 2016-17 to FY 2017-18.	5%

At GAIL, the total number of permanent employees as members of recognized association is 842, i.e., 18.65% of the total employee representation in the collective bargaining.

Discussions with employee collectives both at work center and corporate levels are held on monthly/ bi-monthly/quarterly basis. We adhere to Section 9A of Industrial Dispute Act 1947 and Schedule 4 for providing notice



Women Pride Honor Celebration organized on the occasion of International Women Day 2018 at GAIL

period regarding significant operational changes. GAIL also ensures a fair representation for the contractual employees. GAIL ensures coverage of all relevant health and safety related requirements as applicable for permanent employees and such matters are covered in the formal agreements with trade unions.

(ii) Human rights

Building an engaged, healthy and inclusive workforce is crucial to GAIL. We follow the highest standards of professional behavior and maintain reverence of all associated with the company. We have zero tolerance towards any act to that leads to the violation of the human rights. We also have a zero-tolerance policy followed for child and forced labor and ensure that no such employment occurs at any of our operations. No incident of engagement of child or forced or compulsory labor has been reported in FY 2017-18. One of the company's core values is to respect and protect human nobility. We are a signatory to the United Nations Global Compact (UNGC) which has specific focus towards human rights. We are also committed to UN Guiding Principles on business and human rights.

We are one of the few organizations in the oil and natural gas sector in the country



Promotion of Khadi

From being a popular cottage industry across India during the freedom movement in Indian pre-independence times, Khadi has come a long way.

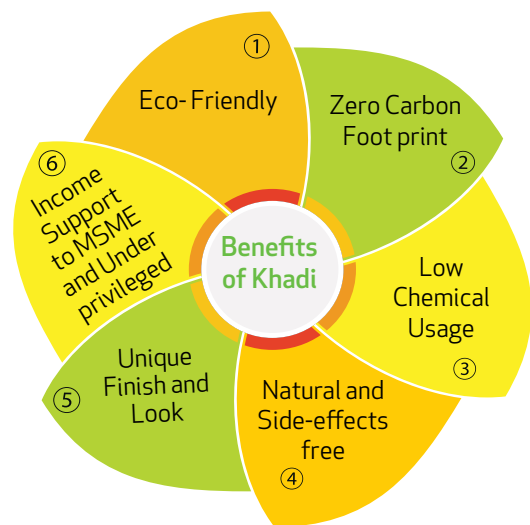
According to Directorate General of Foreign Trade, Alok Vardhan Chaturvedi, Khadi sector provide employment opportunities to around 80 lakh people across the nation and he suggests that a timely push from government through assistance and promotions can provide long-term sustainability of this eco-friendly and side-effects free fabric.

Khadi in present times is being promoted in India by Khadi and Village Industries Commission, Ministry of MSME, Government of India. With further promotion of Khadi through Prime Minister's "Mann Ki Baat" in October 2017, sales of Khadi and handicrafts products rose by 90% over the previous recorded sales. During Diwali season in 2017, a record rise of 680% in sales of Khadi gift coupons was observed across the nation.

'Khadi for nation, Khadi for fashion' is slowly resulting in placing the fabric as an indigenous fabric on the world map and increasing opportunities for weavers, medium-micro-small khadi enterprises and handlooms industries. This growth has not only helped them realize profits through increased demand but has also served as a means of improving their economic and social conditions.

Keeping in sync with this momentum, GAIL distributed 12,000 Khadi gift coupons to each and every employee in 2017. The distribution of these gift coupons is aimed at promoting this indigenous sector and help benefit the underprivileged weaver, SHG, MSME and tribal population dependent on Khadi sales for income generation.

We, at GAIL, feel proud and passionate about being able to contribute meaningfully towards this movement. Over the period of time, GAIL has been able to contribute a total sum of ₹5.38 crores towards the growth and perpetuation of Khadi sector.



to have implemented the SA 8000 standard for ensuring decent working conditions for our employees. GAIL's induction process comprises of training on GAIL's CDA rules to develop understanding on these aspects. Training programs on labor laws and outsourcing conducted by GAIL Training Institute cover almost majority of aspects of human rights. Every year such programs are conducted as a part of annual training plan for the executives, non-executives and contractual employees.

We comply with the Presidential Directives and other instructions/ guidelines issued from time to

time pertaining to Policies and Procedures of Government of India. These directives are regarding reservation, relaxations, concessions, etc. for scheduled castes (SCs), scheduled tribes (STs), other backward classes (OBCs) and persons with disabilities (PWDs) in direct recruitment.

While 100% of the operations are subjected to regular human right reviews and impact assessment, in FY 17-18, out of the total employees, 6% received a training 4600 hours on policies and procedures concerning aspects of human rights that are relevant to operations.

We also have a defined policy in places for prevention of sexual harassment at the work place. It is ensured by the concerned executive at every location to comply with the relevant statutes. All the security personnel have been trained on specific procedures on human rights applicable to security services.



13

Our Corporate Social Responsibility



FY 17-18 CSR Expenditure
2.63 % of Average net profit
of the
preceding 3 financial years

CSR Initiatives



GAIL is proud to be associated with the Statue of Unity project as a part of its CSR initiatives and has contributed ₹ 25 Crores for this project.



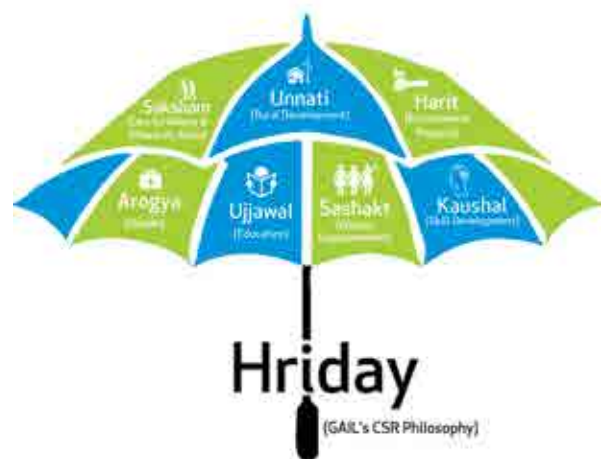


Our Corporate Social Responsibility



GAIL is committed towards creating a better world by making people's lives better in communities around us and the society at large. We believe that for any organization to operate responsibly, it becomes critical for them to have deep and meaningful engagements with multiple social and ecological challenges being faced by communities around them. Being a clean-energy company, we believe that it becomes all the more important to have long-term commitments to such engagements.

Our CSR Umbrella



“GAIL firmly believes that Corporate Social Responsibility (CSR) plays a major role in the development of any country and therefore, it has made CSR an integral part of its ethos and culture. GAIL goes beyond the realms of statutory compliances and makes efforts to the economic development while improving the quality of life of the local community around our work centers, and the society at large. To amplify its outreach efforts, GAIL spent 2.63% of the average net profit of the preceding three years on CSR projects/activities in FY 2017-18 (₹ 91.65 Crore) against the stipulated 2% spend (₹ 69.67 crores).”

Director (HR)



This, in turn, would not only enlighten the company's business interest but also reflect GAIL's strategy and intent of contributing to the social good. No incidents of violation of rights of indigenous people were reported in 2017-18 at any of the operational site. At GAIL, we undertake initiatives consulting all stakeholders through proper engagement process in which we invite representatives of media, government officials, community, knowledge partners and civil societies to ensure a holistic approach towards decision making in matters related to communities.

During the reporting period,

- Total number of operations with local community engagement, impact assessments and development programs were 100%.
- Total number of operations with significant actual and potential negative impacts on local communities were zero

"Hriday", GAIL's CSR philosophy, is an umbrella concept which includes focused efforts on care for elderly and differently-abled, rural development and environmental projects.

GAIL has adopted a multi-stakeholder approach, collaborating with communities, governmental and non-governmental organizations, academic institutions and others, in an effort to identify emerging issues, develop projects and effectively respond to challenges. GAIL endeavors to follow best practices in identifying, implementing, sustaining and monitoring its CSR interventions to maximize sustainability, scalability and transparency.

To supervise and drive all CSR initiatives at GAIL, a CSR Committee was formed in compliance with the provisions of Section 135(1) of the Companies Act, 2013. Its composition as on 31.03.2018 is:

- Sh. B. C. Tripathi, Chairman of the Committee – C&MD

- Sh. P.K Gupta – Director (HR)
- Sh. Sanjay Tandon – Independent Director
- Sh. Anupam Kulshreshtha – Independent Director

CSR Policy of GAIL is hosted on the company's website, www.gailonline.com.

Social programs and expenditure

The total CSR expenditure of GAIL during FY 2017-18 was ₹91.65 crore.

This amounts to 2.63% of the average net profit of the preceding three financial years. This is beyond the mandated limit of 2% as stipulated under Companies Act, 2013, demonstrating GAIL's commitment towards the community.



People receiving Health services through Mobile medical units (MMU) under GAIL's flagship healthcare project "Aarogya"



Key intervention and outcomes

GAIL is resolved to expand and strengthen its community programs to the best of its capacity. This is a reaffirmation of GAIL's belief that in carrying social responsibility and sustainability, seeing the larger integrated picture is important at the time of execution of programs in the individual domains. The outcome of these well-executed programs, thus, impact the larger canvas of community development.

As identified under Schedule VII of the Companies Act, 2013, GAIL has identified seven broad areas of CSR intervention, each of which is titled by the objective they seek to achieve:

- I. Arogya (Wellness) - Nutrition, health and sanitation and drinking water projects
- II. Ujjwal (Towards a bright future) - Education initiatives
- III. Kaushal (Skill) - Livelihood generation and skill development initiatives
- IV. Unnati (Progress)- Rural development
- V. Sashakt (Empowerment)- Women empowerment initiatives
- VI. Saksham (Capable) - Care of the elderly and differently-abled
- VII. Harit (Green) - Environment centric initiatives.

In addition to the identified focus areas, GAIL undertakes certain new initiatives every year to make a positive impact on the environment and stakeholders including consumers, employees, investors, communities



	GISS Season-1 2015-2016	GISS Season-2 2016-2017	GISS Season-3 2017-2018
Number of Event Districts	53	107	120
Total Number of States	10	27	29 & 7 UTs
Total athlete Participants	25,000	1,13,547	1,24,000

#MakingIndiaOlympicReady

and others. This section details out the key initiatives implemented by GAIL in 2017-18 and subsequently lists activities undertaken under the identified focus areas.

- a) Key initiatives undertaken during the year (2017-18)

GAIL Raftaar Athletic Talent Hunt

- Key activities: The GAIL Indian Speedstar talent scouting saw the participation of 1,29,462 participants from 120 districts in 2017-18. In its 3 years journey, it covered 278 nodal districts across

India with a total participation of 2,69,039 participants so far. In 2017-18 (Season III), a national camp of six days was organized from 16 to 21 February 2018 at International Youth Hostel, Chanakypuri, New Delhi for the selected 246 athletes from 24 states, wherein they were provided with best facilities to stay under the guidance of good coaches. An international training camp for 25 days was conducted at Racer's Track Club, Kingston, Jamaica in February 2018 for 14 extremely talented athletes shortlisted from first two seasons of the project. At the National Finale for Season III, held

Preparing Indian athletes to excel in Olympic

Mr. P.K Gupta, Director (HR), GAIL reviewed the status of GAIL Speed Star training of 25 shortlisted candidates including appointment of full time coach and physiotherapist for athlete, provision of supplements and shoes and spikes, altitude training provided to candidates, taking care of the nutritional need of the selected candidates, engagement of sports biomechanics and video analysing devices.



on 22 February 2018, nine athletes were selected to be further trained and nurtured along with 14 already selected athletes of Season I and II, to bring laurels for the nation in Olympics 2020.

- **Outcome:** This initiative is expected to promote sports culture amongst the youth of the country, which is the clarion call of Hon'ble Prime Minister Shri Narendra Modi, to encourage the youth to come forth and make sports a part of their life.

GAIL Shrijan

- **Key activities:** Started in 2013, as a response to catastrophic flashflood occurred in Uttarakhand, which wrecked havoc in the valley, Project Shrijan (Creation) has extended a long-term support to the affected communities in an integrated manner by adopting a multi-sectoral and multi-hazard approach. The project, aimed at rehabilitation of 10 villages of Rudraprayag district of Uttarakhand, facilitates their return to normalcy with an overall objective to minimize loss in case of future disaster situations.

Major components of the project in the current year include:

- * Operation of radio station in Agastyamuni Block, Rudraprayag
- * Conducting workshops at village- and block-levels for creating awareness against domestic violence and alcoholism and auto woolen garment machine in CRTC Lawn for skill generation
- * Setting up organic roof top café at CRTC Ukhimath for generating revenue for CRTC and make the project sustainable
- * Establishing sanitary napkin unit to address women hygiene issues
- * Providing packaging

and wrapping training to beneficiaries for marketing the products manufactured at CRTCs

- * Installation of solar street lights in villages and establishment of sale outlet in Dehradun and Noida (GAIL's residential colony)
 - **Outcome:** The project has covered over 23,000 people directly and indirectly. Skill trainings have been extended to over 7,000 individuals in 28 skills. In total, three community resource training centers (CRTCs) have been established wherein various income generation units such as spice making, juice making, bakery, etc. have been set up.
- The project has garnered many

awards and accolades. The most recent includes India CSR Award 2018. It was also selected as a finalist for UPS International Disaster Relief and Resilience Award, given by Business in the Community (BITC) Network, UK.

Mobile Medical Units (MMUs) (Arogya)

- **Key activities:** Supported 31 mobile medical units, spread out in 11 states across India, namely, Uttar Pradesh, Madhya Pradesh, Bihar, Jharkhand, Punjab, Delhi/NCR, Uttarakhand, Gujarat, Andhra Pradesh, Odisha and Maharashtra.

Each Arogya MMU includes:

- * Qualified MBBS doctor
- * Nurse (ANM)

Swachh Bharat Pakhwada

Swachhta Pakhwada was observed all across GAIL from 16th to 31st July, 2017. During the Pakhwada, various activities were undertaken to meaningfully contribute towards cleanliness drive and also to spread the Swachhta message.

Highlights:

- Covered 600 Safai Sathis under health checkup camps at various work centers e.g. Vizag, Lucknow, Gandhar, Bharuch, Vijapur, Chandigarh, Abu Road, Hyderabad, Noida, Corporate Office
- Organized special Health Checkup camps for Truck Drivers
- Organized Special Health Camps for free health Check-ups
- Distributed medicines for occupational, life-style and other diseases
- Carried out cleanliness activities through Shram Daan by employees at the Swachh Iconic Places/adopted monuments of GAIL- Safdarjung Tomb and Purana Quila on 16th July 2017 and 22nd July 2017 respectively to spread the message of the Swachhta.



Glimpses of Swachhta Pakhwada at Old Fort, Delhi

- * Lab technician
- * Pharmacist
- * Essential medicines
- * Diagnostic kit (Swashtya Janch Machine)
- * Information and awareness material on health and hygiene

A single MMU covers five to eight villages per week, and extends primary health services to approx. 25,000 patients, annually. All MMUs are GPS-enabled and geo-fenced, for remote monitoring and supervision which enables real time monitoring.

The Project Arogya MMU healthcare services include:

- * Free doctor's consultation
- * Free distribution of medicines
- * Basic diagnostic tests
- * Referral to other healthcare facilities

Information and awareness material on rights and entitlements, government social security schemes and health programs is also provided. Quarterly eye-screening and medical health check-up camps are also conducted under Project Arogya.

b) Major projects under identified focus areas

AROGYA-Overall wellness, covering health and sanitation, drinking water and nutrition-related initiatives

- **Description:** Supplementing government's efforts in health, sanitation, water and nutrition, GAIL is taking proactive efforts to address the issues (mentioned above) through its various initiatives.
- **Key activities**
 - * Supported 31 MMUs
 - * Promoted HIV prevention through mass awareness, Sexually Transmitted Infections (STI) treatment and HIV testing through STI clinics for truckers visiting GAIL installations in Pata (Auraiya, UP) and Vijaipur (Guna, MP).
 - * Facilitated installation of 353 hand pumps in various districts of Uttar Pradesh and Bihar to improve access to potable water for thousands of families.
 - * Undertook activities in the domain of sanitation

UJJWAL - Education-centric initiatives

- **Description:** Facilitated infrastructure development and renovation programs including setting up of smart classes at the various government schools, in Karnataka, construction of junior colleges in Telangana, etc.
- **Key activities**
 - * Identified 100 students through a meticulous selection process, out of which 99 students qualified IIT-JEE, as declared on 30 April 2018..





Candidates trained in skills of various disciplines at Skill Development Institute (SDI) at Raebareli

- * Started construction of hostel for children from tribal families at Bhubaneswar, Odisha; junior colleges at Kodangal and Kosgi, Telangana
- * Supported an incubation centre at NIT-Rourkela, etc.
- * Extended scholarships to 174 students through GAIL Charitable and Education Trust.
- * Provided scholarship to 600 violence affected children in Assam, J&K and Odisha in partnership with National Foundation for Communal Harmony.
- * Undertook various infrastructure development initiatives in government schools at Telangana and Madhya Pradesh.

KAUSHAL- Livelihood generation and skill development initiatives

- **Description:** Enabling and empowering the marginalized, so that they become agents of change through skill development initiatives.
- **Key activities**
 - * Operating two skill schools at Guna (MP) and Mamidikuduru

(East Godavari, Andhra Pradesh) wherein over 1200 candidates trained in skills ranging from General Engineering programs including welders, fitters, electricians, solar technicians, CMC operators, instrument technicians, assistant surveyors, assistant masons, welding assistants, auto CAD, etc.

- * Conducted training for 126 candidates in plastic products manufacturing, injection molding and raffia plant processing in four centers of Central Institute of Plastics Engineering and Technology (CIPET) at Guwahati, Imphal, Chennai and Aurangabad.
- * Supporting setting up of Hydrocarbon Sector Skill Council (HSSC) and Skill Development Institutes (SDI) at Vizag, Kochi, Raebareli and Bhubaneswar.
- * Establishing sanitary napkin unit at Guna (MP).

In order to provide skills training and employment to the youths in U.P., GAIL has established Skill Development Institute (SDI) at Raebareli in association with an oil and gas PSUs, namely BPCL, ONGC, IOCL, HPCL, Oil India, EIL, and Balmer and Lawrie. SDI, Raebareli has started functioning from its campus at Indian Telephone Industries, Raebareli since November 2017 with the launch of first batch of three-month long program on Pipe Fitter (city gas distribution).

Pipe Fitter (city gas distribution) is first-of-its kind program to provide skilling in city gas distribution sector, which contributes towards the development of infrastructure in smart cities. Each batch of these programs imparts training to 30 students as per the norms of National Skill Development Corporation. All these

programs are aligned to the National Skill Qualification Framework (NSQF) - Level 4 of Government of India and duly approved by Hydrocarbon Sector Skill Council and National Skill Development Corporation.

UNNATI- Rural development and infrastructure initiatives

- **Description:** Guided by the sustainability line approach, i.e. the society's economic competitiveness is interlinked to its social, economic and environmental health, GAIL has implemented initiatives that accelerate rural development.
- **Key activities**
 - * Made investments in asset creation through construction of bridges, drainage systems, roads, community resource halls and compound walls.
 - * Development work in various villages, infrastructure development, etc. at Anantapur (Andhra Pradesh), East Godavari (Andhra Pradesh), Vaghodia (Gujarat), and the various districts of Madhya Pradesh.
 - * Installed 1,392 solar street lights units and 675 solar lanterns in identified villages of Uttar Pradesh, Bihar and Andhra Pradesh.

SASHAKT - Women empowerment initiatives

- **Description:** GAIL believes that a woman's position is a true reflection of a society's progress and we must focus on women-centric initiatives.
- **Key activities**
 - * Conducted gender sensitization, legal awareness





and employability skill training for 180 adolescent girls and women from urban slums of Delhi

- * Imparted various skill training to women including apparel design, food processing, bee keeping, organic farming, product design and financial literacy

Saksham - Care of the elderly and differently-abled

- **Description:** Focusses on special education initiatives for persons with disabilities.

Harit - Environment-centric initiatives

- **Description:** Focusses on environment-centric initiatives.

Employee engagement for communities

GAIL CSR organized "Spread the Warmth" from 11-22 December 2017, wherein GAIL's employees donated clothes, woolens, winter essentials and other useable items for the underprivileged, homeless and needy people in and around Delhi. The employees participated with enthusiasm and donated woolens, blankets, clothes for men, women and children, shoes, etc. for the lesser privileged and homeless people. Similar activities are also conducted by different sites of GAIL by providing support through visiting nearby communities and providing necessary items by collective employee contribution beyond CSR.

Swachh Bharat initiatives

As a part of Hon'ble Prime Minister's call for a movement towards a cleaner India, GAIL supported construction/renovation of 4,305 toilets in government schools and other public places, spread over ten districts in Odisha, three districts each in Andhra Pradesh and Uttar Pradesh, four districts in Bihar, two districts in Uttarakhand and one district each in Madhya Pradesh, Karnataka and Telangana since 2014 till current year. GAIL has also supported for the maintenance of sanitation infrastructure created in these schools in order to ensure continuous usage of the utilities created.

Swachh iconic places

GAIL has adopted and committed for cleanliness and maintenance of Taj Mahal, Agra and Yamunotri, Uttarkashi, under its CSR initiatives. Swachh Iconic Places (SIP) which is a special initiative under Swachh Bharat Abhiyan, focused on select iconic heritage, spiritual and cultural places in India. The project focusses on overall upkeep and cleanliness of both the identified places.

Highlights

- Municipal solid waste management
- Street sweeping
- Landscape pruning
- Maintenance and removal of horticulture waste
- Installing fountains in parks
- Operation and maintenance of water vending machines, etc.

GAIL is supporting establishment of local wireless internet network including IP-based electronic surveillance system with PTZ camera and monitoring hardware/software, etc. with components focusing on overall development of underdeveloped Yamunotri Shrine of aesthetic importance.

Social Footprints CSR Award 2018

Highlights

- 93 community toilets constructed in Bhadohi and Allahabad in Uttar Pradesh.
- Provided 114,000 household garbage bins and 2,600 100L capacity public dustbins at Agra, Gandhar, Nasirabad, Delhi NCR, Chandigarh and Kanpur.

Contribution towards Statue of Unity

GAIL is proud to be associated with the Statue of Unity project as a part of its CSR initiatives and has contributed ₹25 crores for this project.

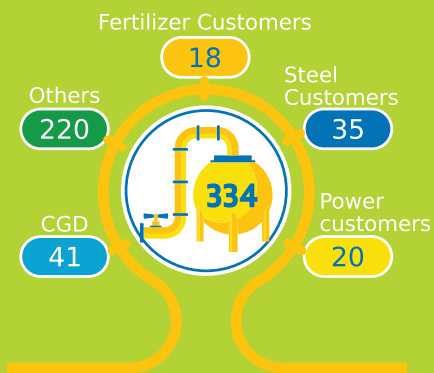
The Statue of Unity is being constructed in the area surrounding the Sardar Sarovar Dam in the Narmada district of Gujarat. This statue is an iconic 182 meter tall landmark dedicated to Sardar Vallabhbhai Patel, a visionary leader and statesman hailed as the Iron Man of India. The bronze plated statue symbolizes a unified India.





14

Customers



RLNG customer base of
334 customers



GAIL Received best supplier
award from Tata Motors





Customers



GAIL is striving to meet twin objectives of enhancing India's energy security and at the same time providing better value to its customers. GAIL regards its customers as partners in growth and works with them to improve the quality of services and products. Through its mission statement, GAIL acknowledges its commitment towards customers. We have a legacy of providing an uninterrupted availability of natural gas and LPG in order to serve all its customers round-the-clock.

GAIL through its subsidiaries and joint venture companies introduced city gas projects in India for natural gas supplies to households, commercial and transport sectors. The major supplies of natural gas include fuel to power plants (23%), feedstock for gas-based fertilizer plants (33%) and LPG extraction. Additionally, natural gas is also supplied to steel industry, refinery and household consumers.

GAIL supplies the cleaner fuel across Indian states through its pan-India pipeline network providing connectivity to its customers that ensures supply of cleaner fuel. In total, GAIL has RLNG customer base of 334 customers, which includes 18 fertilizer customers, 35 steel customers, 20 Power customers, 41 CGD and 220 others (incl. automotive, ceramics, pharma, paper, glass, chemicals, aluminum, food, etc).

We served 2,086 customers during this reporting period.

Giving customers an apex priority,, GAIL pays undisputed attention in formulating and implementing

specific measures to ensure improved satisfaction levels and improvised contract clauses for its customers. We have been taking various initiatives including digitalization of procedures, implementing health and safety measures, collating feedback, addressing customer's concerns and engaging with customers at regular intervals. The subsequent section details out measures taken under each of the above specified domain.

In order to create an agile environment that engages customers, delivers information to them faster, limits number of touch points and reduces





Petrochemical Business Meet organized at GAIL with Consignment Stockists

processing time, GAIL has digitalized several processes. Some of the key digital initiatives implemented during the current year include:

- Developed online system to create "Measurement Analysis Report" which analyses the trend in gas consumption data for each business location and identifies any deviation from average consumption of the customer. This statistical tool flags in case of drastic change in consumption pattern.
- Developed portals for customer self certification and Goods and Service Tax Network (GSTN).
- Developed digital system for signing and sending customer sale invoices electronically.
- Developed auto alert system for dispatches to facilitate customers to plan their inventories
- Developed GIS mapping project which brings all pipeline assets on a digital platform for planning new customer connectivity.

Technical excellence

GAIL ensures technical services and product related queries about GAIL polymer grades is provided to all its customers through GAIL Polymer Technology Centre (GPTC), located in Noida, Uttar Pradesh. GPTC acts as an interface between the customers and the plant. It is the core property of GAIL's polymer product development

and customer services. GPTC is equipped with state-of-the-art world class facilities like Twin Screw Extruder, Lab Scale Film Plant, Capillary Rheometer, Haake Rheocord, Universal Tensile Tester, MFI Machine, ESCR Equipment, Compression Moulding Machine, Izod Impact Tester, Colorimeter, Tear Tester, Haze Meter, Differential Scanning Calorimeter, FTIR, Weatherometer, etc.

GAIL GPTC Noida

GPTC is committed to provide the following services to the customers to forge a long lasting profitable partnership with GAIL:

- Customer complaint redressal
- Guidance to proper selection of GAIL grades
- New application development and promotion for customer benefits
- Continuous development and modification of GAIL grades to meet market needs
- Representation in BIS committees related to plastics
- Testing of polymer samples
- Presentation in various technical forums
- Entrepreneurial guidance

Customer Engagement

GAIL undertakes various customer engagement initiatives with an objective to develop greater brand loyalty and strengthen its competitive advantage. Regular customer engagement enables access to timely information about market intelligence, build and strengthen customer relationships to augment sales and address customer's concern, suggestions and grievances.

We organize "customer meets" across locations to appraise all customers of recent developments and customer oriented initiatives by GAIL. These meets ensure interaction on mutually beneficial business relationship and facilitate knowledge sharing particularly on the benefits of environment-friendly NG fuel, such as ease of use, continuous supply, etc.

An online suggestion box is also available for customers to share their requirements and expectations, raise operational concerns and provide feedback on new product development. Online customer complaint portal is also available for customers to register their complaints, track status and receive responses from the relevant departments with no delays.

GAIL also organizes third-party Customer Value Management (CVM) visits for understanding the perception of a product or service's value in the market place through surveys which ask customers a series



GPTC Lab at GAIL



of predefined questions. These questions are also asked from the competitors' customers to establish the equivalent value for competitors' offers. A simple calculation gives a ratio score based around a parity score of one in comparison with our business with the competition. In the recent third party CVM conducted on 75 selected customers, GAIL received a score of 8.0 in petrochemical business, 8.2 for natural gas business and 8.6 for liquid hydrocarbon business, leading to overall score of 8.2 against the international bench mark of 7.0.

All the business segment-wise summary of interaction with customers is provided by third party as "voice of customer" and "quality perspective on strength and improvement area", which is taken with marketing group for implementation.

Customer satisfaction

In order to improve the company's products and services, we seek continuous feedback from our customers, which is analyzed and deliberated at various levels for identifying actions areas and

Customer Connect Meet (GAIL, Mumbai)



Photograph taken during Customer Connect Meet organised by GAIL, Mumbai dated 24/06/2018

monitoring progress on the same. In this regard, an annual survey is conducted to check the level of customer satisfaction on several parameters such as our product quality, usability of product, technical support, delivery of material, packaging, service quality, concerns, and suggestions for improvement. On a half yearly basis, this customer feedback is collected through an online survey.

The Weighted Average Stakeholder Satisfaction Index score for FY 2017-18 is 88.30%.

Addressing concerns

Customer complaints are inevitable, no matter how streamlined our business. GAIL firmly believes in acknowledging and effectively dealing with the complaints. We have a robust system in place to resolve the complaints quickly and in the most effective way. We also maintain a comprehensive record of all customer complaints, from the initial problem to the eventual solution. The record is periodically assessed to identify any common complaints, and take necessary steps to improve company.



Glimpse of GAIL's stall at a leading exhibition of India.

MoPNG e-Seva: An official social media based grievance redressal platform for Oil & Gas Sector

The MoPNG e-Seva is an online portal designed to answer any queries regarding petroleum and gas related service. With a number of consumer benefits, this portal makes it easier for customers to reach out to the government and have any grievances around petroleum, gas pipelines and PNG, CNG. An extension of the Gas Leak Helpline - 1906, this service enables consumers to address any issues through social media itself.

With over 50 queries being sent out every day through Twitter, this portal provides a single point of conversation for every consumer. Responses are sent out in real-time, ensuring there is no further delay in grievance addressal. All one needs to do is reach out to the portal @MoPNGeSeva on Facebook or @MOPNG_eSeva on Twitter and response will be sent back at the earliest.

Plast India 2018



PlastIndia Meetings & Interactions @ GAIL Pavilion, PlastIndia 2018, 7th-12th Feb 2018





15

Suppliers



6 Engineer-in-Charge (EIC) coaching programs were organized for EICs of GAIL to make them aware on the various aspects of contracts

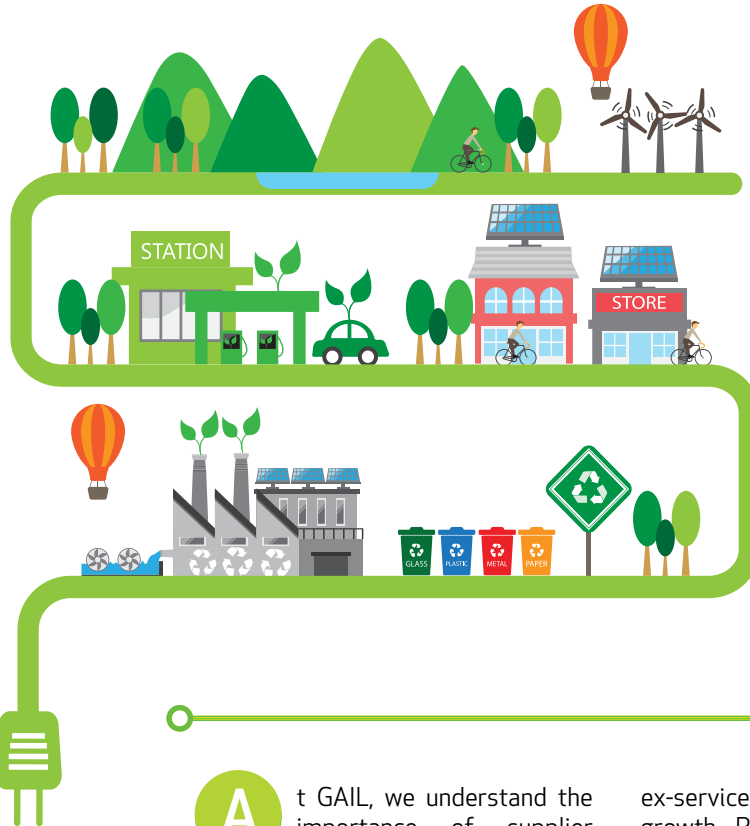


100% of the new suppliers have been screened through Environmental, Human Rights and Labour Practice Criteria.





Suppliers



Suppliers are at the heart of organizational process and activities and are thus, critical for the success of organization in the market. Suppliers play an instrumental role in providing essential material inputs and services that ensure that the organization is well equipped to generate value throughout the supply chain. Such a value created throughout the supply chain results in a long-term customer satisfaction. A well-planned and efficient supplier relationship management, results into beneficial effects.

At GAIL, we understand the importance of supplier management and adopt a strategic approach to efficiently manage all suppliers. Various initiatives such as Bill Watch System, e-tendering, e-payments, etc. have already been implemented in the past for the benefit of vendors and suppliers to bring transparency in procurement systems and processes. We extend Integrity Pact and Fraud Prevention Policy to all suppliers to ensure a fair and robust process of procurement of materials and services. GAIL adheres to the principles of United Nations Global Compact (UNGC) which enlist principle on anti-corruption. Also, all contracts placed by GAIL contain Health, Safety and Environment Policy approved by GAIL.

GAIL follows the Presidential directives and guidelines issued by the Government of India regarding reservation in services for SC/ST/OBC/PWD (Persons with Disabilities)/

ex-servicemen to promote inclusive growth. Rosters are maintained as per the directives and are regularly inspected by the Liaison Officer(s) of GAIL as well as the Liaison Officer of the Government of India to ensure proper compliance.

We are one of the few organizations in the oil and natural gas sector to have implemented the SA 8000, auditable certification standards for decent workplaces. SA 8000 is based on the UN Declaration of Human Rights (UNHR), conventions of the International Labour Organization



(ILO), UN and national law was implemented at GAIL Hazira. We voluntarily commit to these policies and towards human rights and uphold them with the right intentions.

The issue of human rights is central to good corporate citizenship leading to a healthy bottom-line.

Ethical procurement

We believe in giving equal opportunity to all, thus we follow a no discrimination policy in awarding contracts to suppliers and vendors. We also understand the company's responsibility is not only maintaining a transparent and accessible channel for suppliers and vendors but also towards society and environment in all material and service procurements.

We have thus put various systems and conditional checks in place to ensure that the procurement process maintains the highest ethical standards. All the suppliers are screened using environmental and social criteria before awarding any contract. Upon selection, the suppliers are further assessed for their impact on environment and society to ensure that the supply chain remains environmentally and socially responsible.

General conditions of contract: All vendors and suppliers, that we do business with, have to comply with all General Conditions of Contract (GCC). This General Conditions of Contract covers provisions related to the impact on:



Total procurement of goods and supplies – ₹	₹ 89,970 million
Total procurement of goods and supplies from local suppliers	₹ 85,904 million
Percentage of new suppliers that have been screened through environmental, human rights and labor practice criteria	100%
Percentage of new suppliers that has been screened through the criteria for impacts on society	100%
Percentage of suppliers identified having significant actual and potential negative impacts on society	Zero
Percentage of suppliers identified having significant actual and potential negative impacts on society with which relationship has been terminated	Zero

As per the provisions of GCC, the supplier engaged with GAIL is required to follow all government or statutory policies or rules which require the suppliers to provide various facilities

like separate toilets, washing places for men and women, compulsory canteen facilities and medical services for all its personnel. All the significant investment agreements and contracts with suppliers include human rights clauses for initial screening. No grievances related to human rights were filed during the reporting period.

EIC Coaching Program

Engineer-in-Charge (EIC) coaching programs were organized for EICs of GAIL to make them aware on the various aspects of contracts. Through this program, they are also given an insight into the provisions related to society, environment, labor practice and human rights and their implementation during the execution of the contracts.

Six EIC coaching programs were conducted during the reporting period which saw a total participation of approximately 250 EICs of GAIL.

No child labor practice: GAIL does not endorse child labor within its premises and has strict guidelines to ensure the same in its engagement with its suppliers. Thus, the company's labor-supply contractors are required to obtain labor permission from GAIL authority where there is a mandatory clause of declaration by the contractor that they do not engage in child labor. As per the government's rules, the minimum age limit prescribed for employment or contract labor is 18 years which is maintained across all the units.

The total distribution of contract employees working across various GAIL premises is given in the table below:

Contract employee distribution (Numbers)	2015-16	2016-17	2017-18
Security staff male	2,599	2,244	2,118
Security staff female	4	4	4
Regular contract worker-male	15,287	15,672	13,000
Regular contract worker-female	362	329	283



Opportunity for MSEs: We have implemented "Public Procurement Policy" for Micro and Small Enterprises (MSEs) with an aim to provide fair opportunity to small vendors and suppliers for an inclusive growth. Through this policy, we intend to encourage participation of these micro and small-scale vendors into tender bids. Some of the key highlights of this policy are:

- Waiver from Earnest Money Deposit (EMD) and providing purchase preference.
- Introduction of e-procurement process to reduce the paper work and to speed up the tendering process.
- Conducting pre-tender or pre-bid meeting to ensure wider participation and to educate vendors on the tendering process.
- Understanding the challenges faced by MSEs in bidding process.

All the above measures have helped in bringing down the transaction cost, helping the local and small vendors to quote in large numbers with ease and to reduce the tendering cost involved in submission of bulky bid documents.

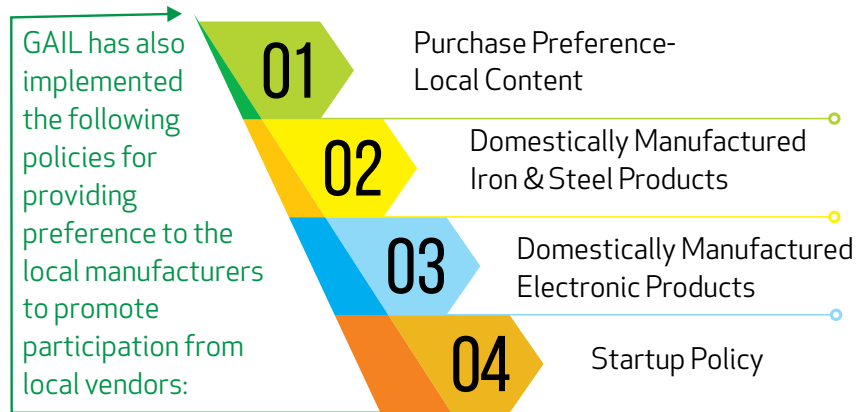
Through this policy, we target 20% of procurement from micro and small enterprises with a sub target of 4% of the procurement to be made from MSEs owned by scheduled caste or scheduled tribe entrepreneurs.

Promoting domestic manufacturing sector: In line with the spirit of Make in India, Indigenisation (INDEG) Groups were formed at the apex and site levels. These groups meet regularly to plan and take initiatives on indigenization. Details of this initiative are mentioned below:

- We have established "Meter Prover Facility" at Hazira (Gujarat) for developing proving meters for GAIL and other companies in India.
- Replacing various chemicals used in our business processes with indigenously manufactured varieties.
- Extending "Demo Route"

methodology in pipeline coating works for promotion of Indian pipe coating manufacturers. As a result of this initiative, there are now 19 domestic bidders as compared to no domestic bidder for line pipe in 1985.

and arbitration regarding clauses, methodologies and procedures pertaining to award and execution of contracts. GAIL organized four vendor coaching programs in this regard during the reporting period.



- Production and procurement of N-hexane (a process fluid/solvent in HDPE-1, HDPE-2, Butene-1 and new Butene-1 plants earlier being sourced from M/s Exxon Mobil Chemical Asia Pacific-Singapore) is now being procured from M/s. Hindustan Petroleum Corporation Limited.

Supplier engagement

We have set up a transparent system of supplier interaction at GAIL. While we ensure interactions with all the suppliers and vendors through various forums like vendors meet, meet with micro and small enterprises, industry conclave, etc., we also take initiatives to make them aware of its requirements.

In order to encourage more participation of suppliers and vendors of varied size and scale into the bidding process, we undertook a unique initiative of vendor coaching programme, wherein the bidders are given coaching on the process of participation in GAIL's tender. They are guided through the process of both pre-award and post award terms and conditions for the live tenders. This is done to reduce and subsequently eliminate the instances of disagreements, disputes

Vendor Coaching Program at GAIL, Jubilee Tower, Noida




Photographs taken during Vendor Coaching Programme held on 10/05/2018 at GAIL Jubilee Tower, Noida

A Vendor's Meet was organized by Corporate Contracts and Procurement Department on 1 November 2017 at India Habitat Centre, Delhi during the





Annual Vigilance Awareness Week. The meet was attended by more than 200 vendors from across India. The objective of the meet was to connect with all suppliers and make them aware of the steps taken by GAIL (India) Limited in enhancing efficiency and transparency in its tendering process. It was also aimed at providing a platform to the suppliers and vendors to voice their concerns and challenges faced by them.

given a grace period of seven days for submission of EMD in physical form from bid submission date. Only generic BEC like Proven Track Record (PTR), turnover, net worth and working capital are being kept in tender. Pre-bid meeting is conducted for vendors to clarify and educate them on the company's clauses and procedures relating to tender bidding.

This initiative consists of health monitoring of contracts (HMC) and preventive dispute resolution mechanism (PDRM). The health monitoring of the contracts includes periodic review of various contract management aspects like settlement of claims for additional work done, deviations or amendments in the contracts, issues and disputes related to contract and the work. PDRM ensures that these issues are resolved in time. HMC and PDRM are undertaken quarterly to address prompt closure of the issues on these aspects, avoiding any pile up of issue for resolution at the time of closure of the contracts.

We follow a rate contract system of procurement for the regularly purchased items to synchronize the plant requirement with phase-wise supply provision. These contracts are mostly reviewed within every two or three years.

During the reporting period, 2017-18, no major change happened in the location of suppliers, the structure of the supply chain, or relationships with suppliers (including selection or termination). No significant actual and potential negative impact of our supply chain on environment or society was reported.

Samadhan facilitates timely decision making through a collaborative approach with the concerned departments within the organization.

Entrepreneurship Development Project

GAIL in association with M/s HPCL organized an Entrepreneurship Development Project (EDP) for the development and mentoring of SC/ST entrepreneurs. The project included a 35-days long residential program for selected entrepreneurs. It was inaugurated on 09 September 2017 at Skill Development Institute at Visakhapatnam.

Thirty-five budding entrepreneurs were selected and trained in trading skills by officials of GAIL and HPCL.

Digital transformation

In an effort to renovate the company's operations and streamline them to the new digital economy, we have made gradual movement towards integrating digitalization in business processes by putting various tools and mechanisms in place. We have incorporated online management tools like Bill Watch System, cashless transaction, File Movement System, paperless transaction, etc. GAIL's IT team continuously works with various departments to provide solutions to the internal and external customers, and extend IT-enabled services across the entire process.

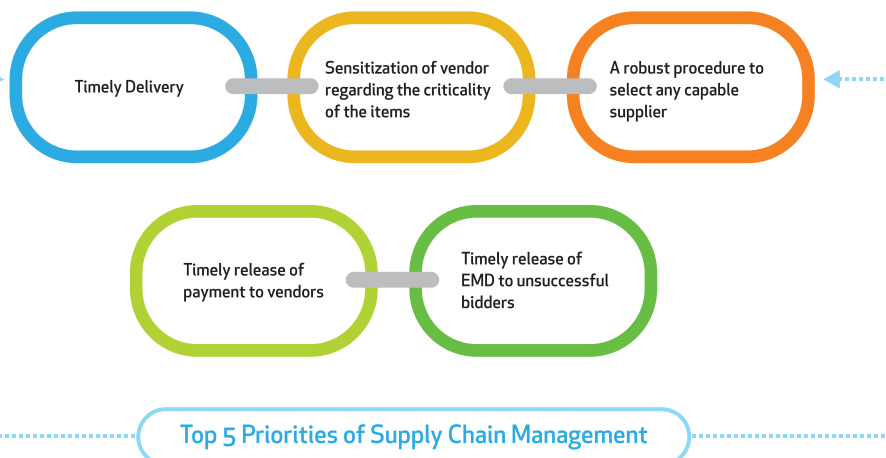
Samadhan

Samadhan is a supplier and contract management initiative followed at GAIL as stakeholder management practice w.r.t. vendors and suppliers. It aims at building the confidence and trust relationship with vendors and suppliers by bringing in consistency and transparency in tendering procedure (for execution and post execution stages) and prompt resolution of disputes in an amicable manner.

Supply chain management

We have taken some major steps in easing the process of bidding in tenders and encouraging a wider participation of suppliers and vendors. All tenders valuing over ₹7 lakh are hosted on GAIL's tender website and Government website. Bid Evaluation Criteria (BEC) is also made available online. Bidders who meet the evaluation criteria may bid through a hassle-free e-tendering process. Further, intimations of tender are also sent to prospective vendors.

Participating vendors are





Vendor Development Initiative - Smart Meters on 15 February 2018

With an objective to develop and persuade the vendors having technological capacity, GAIL Gas took the initiative of bringing all the participating vendors in EESL's tender and emerging vendors of smart meters on one platform to discuss the opportunities available in the smart metering segment of CGD industries and its future growth. GAIL Gas Limited organized an "Interactive Meet on Smart Meter Vendors" on 15 February 2018. Nine prospective players including Larsen & Toubro Ltd., HPL Electric & Power Ltd., ITI Ltd and Genus participated in this meet. CGM – HOD (C&P) of GAIL, COO and GM (C&P) of GAIL Gas Limited shared some critical aspects of developing smart meters with features commensurate with the industry demand while being cost effective.

The following are some of the highlights of our digitalization initiatives:

- Post GST implementation, we introduced a web link for the vendors to facilitate them in submitting their GST details on

GAIL's website to avoid any delay in processing their payments.

- As per the C&P procedure, the requirement of publication of Notice Inviting Tender (NIT) in newspapers has been discontinued. Instead, tender notices are hosted online on GAIL's website, consultant's websites (if applicable), Central Public Procurement Portal and Government e-Marketplace (GeM) and other websites as advised by the Government of India.
- Tender notices are also sent to prospective suppliers, manufacturers, contractors on the current supplier lists available with GAIL to ensure timely communication and proper competition.
- We have also developed a program for sending mass e-mails to help cater to our business-to-business (B2B) communication requirements with all our vendors and suppliers available in GAIL data base (except blacklisted vendors or vendors put on holiday).
- E-tendering for all tenders above ₹7 lakh with an objective to reduce paper consumption both at GAIL and at the supplier side.

incorporate social and environmental concerns in our procurement process.

We work towards identifying and implementing measures that could help us take positive steps towards our intent of green and responsible procurement. We have, thus, taken strategic initiatives towards procurement of energy efficient and sustainable products by setting the following criteria to be considered:

- Loading criteria in tenders for procurements of compressors, turbines, generators, etc. for fuel consumption.
- Star rating of electrical equipment.
- Green building concept in all new building projects.
- Compulsory buy back of old PCs, laptops, cartridges, etc. by supplier supplying such new items
- Procurement of new lighting and lighting fixture of LED only
- Automatic switching off lights in utility area to avoid extra consumption of power

As per the decisions taken by Sustainable Development Steering Committee (SDSC), a minimum three star rating has to be considered in the specification while procuring electrical items and all air-conditioners over 10 years of use have to be replaced after doing a cost benefit analysis.

Green procurement

We are committed towards creating minimal adverse environmental and social impacts in carrying out all operations. We also dedicatedly search for means and methods to



Performance Snapshot

Material consumption	Unit	2015-16	2016-17	2017-18
NG Processed	MMSCM	22,060	23,726	25,496
NG to Product	MMSCM	966	1,430	1,700
Lean NG to Pipeline	MMSCM	19,515	18,880	22,577
Associated Material	MT	13,428	16,026	16,079
Packaging Material	MT	1,693	3,025	3,451
Recycled material	MT	0	0	22.7

Energy Consumption (GJ)	2015-16	2016-17	2017-18
Direct Energy	3,79,00,494	4,66,47,856	4,95,74,184
Indirect Energy ^a	18,47,583	22,05,429	32,27,712
Renewable Energy	80,943	92,075	1,14,120
Energy from NG Flaring ^b	3,91,379	5,20,210	7,43,343
Energy from LPG Flaring	5,240	4,914	5,658
Energy from NG Venting	6,63,733	6,27,439	5,95,648
Energy from LPG Venting	5,468	6,809	6,682

Energy Source (GJ)	2015-16	2016-17	2017-18
Diesel	14,467	18,438	15,900
Natural Gas	3,21,61,593	3,63,96,411	3,53,73,606
Residual Fuel	57,20,433	1,02,33,007	141,86,643
Total Direct Energy	3,79,00,494	4,66,47,856	4,95,74,184
Total Energy Intensity	20	22	25

Energy saving (GJ)	2015-16	2016-17	2017-18
Total energy saved ^c	42,987	3,954	208,497

GHG saving (MTeCO ₂)	2015-16	2016-17	2017-18
Total GHG saved ^d	3,599	1,005	1,2955

Renewable energy generation (GJ)	2015-16	2016-17	2017-18
Wind	5,71,230	8,13,707	7,25,538
Solar	34,790	36,189	40,416
Total renewable energy	6,06,020	8,49,897	7,65,954

Air emissions (Tons/Annum)	2015-16	2016-17	2017-18
SPM	360	476	352
NO _x	1,318	1,770	1,794
CO	425	1,432	1,925
SO _x	133	206	227



Air emissions (Tons/Annum)	2015-16	2016-17	2017-18
VOC	12	53	75
R-134a	165	264	300

ODS gas consumption	2015-16	2016-17	2017-18
R22 (Kg/Annum)	3,154	3,433	2,587

GHG emissions (tCO ₂ eq)	2015-16	2016-17	2017-18
Scope 1 emissions	25,49,023	29,50,694	29,28,776
Scope 2 emissions*	4,20,835	5,05,399	7,33,843
Total GHG emissions	29,69,858	35,49,335	36,62,619
GHG intensity (GHG emissions in tCO ₂ e/turnover in ₹ Crore)	57	72	68

Water (Million m ³)	2015-16	2016-17	2017-18
Total water consumption	17	21	21.7
Total waste water generated	1.6	1.7	1.7
Total waste water discharged	1	1.3	1.3
Water recycled/reused	0.5	0.2	0.5

Type of Waste disposal	2015-16			2016-17			2017-18		
	Solid (MT)	Liquid (Litres)	Misc. (No.)	Solid (MT)	Liquid (Litres)	Misc. (No.)	Solid (MT)	Liquid (Litres)	Misc. (No.)
Incineration	6,058	0	0	6,904	0	0	2,160	0	0
Landfill	9	0	20	3	0	0	9	0	0
Onsite storage	218	19,677	991	0	625	3	1	4,250	193
Recycle	3,549	13,94,264	8,461	3,034	3,88,058	4,464	43,271	6,30,278	4,261
Other	627	44,113	2,236	855	1,10,597	1,105	2,706	73,116	10,487

E&P waste type	2016-17	2017-18
Mud and drill cutting (MT)	1,415	0 (Due no activity in block where GAIL is operator)

Environmental fine and notices	2015-16	2016-17	2017-18
Show cause notice received (Nos)	0	1	0

Environmental expenditure (₹ million)	2015-16	2016-17	2017-18
Treatment and disposal of waste	5	6	31
Depreciation and maintenance cost of equipment used in pollution control	40	11	94
External services for environmental management	10	8	13
External certification of management systems	1	3	3
Personnel for general environmental management activities	31	20	36
Extra expenditure for installing cleaner technologies	4	19	9.
Insurance for environmental liability	52	56	53





Environmental expenditure (₹ million)	2015-16	2016-17	2017-18
Other environmental costs	5	11	27
Total environmental expenditures	148	134	264
Environmental fines	0	0	0

Health and safety of employees	Unit	2015-16	2016-17	2017-18
Management representatives in safety committees	Numbers	300	315	311
Non-management representatives in safety committees	Numbers	196	206	199
Near miss cases-Male	Numbers	342	411	750
Near miss cases-Female	Numbers	3	2	6
Minor injuries-Male	Numbers	2	1	8
Minor injuries-Female	Numbers	1	0	0
Reportable injuries-Male	Numbers	1	0	0
Reportable injuries-Female	Numbers	0	0	0
Lost days due to reportable injuries-Male	Numbers	6,045	0	0
Lost days due to reportable injuries-Female	Numbers	0	0	0
Fatalities-Male	Numbers	1	0	0
Fatalities-Female	Numbers	0	0	0
First aid cases-Male	Numbers	0	14	6
First aid cases -Female	Numbers	0	0	1
Man-hours worked-Male	million-man--hours	6.5	6.6	6.4
Man-hours worked-Female	million-man--hours	0.2	0.2	0.3
Occupational diseases - Contract employee-Male	Numbers	0	0	0
Occupational diseases - Contract employee-Female	Numbers	0	0	0
LTIFR-Male	Reportable injuries per million-man-hours worked	0.1	0	0
LTIFR-Female	Reportable injuries per million-man-hours worked	0	0	0
Severity rate-Total	Lost Days per million-man-hours worked	897	0	0
Fatality rate-Male	Fatalities per million-man-hours worked	0	0	0
Fatality rate-Female	Fatalities per million-man-hours worked	0	0	0

Health and safety of contract employees	Unit	2015-16	2016-17	2017-18
Near miss cases-Male	Numbers	198	197	321
Near miss cases-Female	Numbers	0	0	0
Minor injuries-Male	Numbers	3	2	42
Minor injuries-Female	Numbers	0	0	1





Health and safety of contract employees	Unit	2015-16	2016-17	2017-18
Reportable injuries-Male	Numbers	3	0	0
Reportable injuries-Female	Numbers	0	0	0
Lost days due to reportable injuries-Male	Numbers	6,068	0	0
Lost days due to reportable injuries-Female	Numbers	0	0	0
Fatalities-Male	Numbers	2	0	0
Fatalities-Female	Numbers	0	0	0
First aid cases-Male	Numbers	55	54	67
First aid cases-Female	Numbers	0	4	4
Man-hours worked-Male	million-man-hours	28.3	26.5	25.0
Man-hours worked-Female	million-man-hours	0.5	0.32	0.42
Occupational diseases - contract employee-Male	Numbers	0	0	0
Occupational diseases - Contract employee-Female	Numbers	0	0	0
LTIFR-Male	Reportable injuries per million-man-hours worked	0	0	0
LTIFR-Female	Reportable injuries per million-man-hours worked	0	0	0
Severity rate-Total	Lost Days per million-man-hours worked	211	0	0
Fatality rate-Male	Fatalities per million-man-hours worked	0.07	0	0
Fatality rate-Female	Fatalities per million-man-hours worked	0	0	0

Permanent Employee Distribution (Numbers)	2015-16	2016-17	2017-18
Senior management (E7-E9)-Male	259	250	277
Senior management (E7-E9)-Female	7	8	8
Middle management (E4-E6)-Male	1,416	1,508	1544
Middle management (E4-E6)-Female	47	54	58
Junior management (E0-E3)-Male	1,491	1,481	1535
Junior management (E0-E3)-Female	162	160	170
Non-management (S0-S7)-Male	899	854	852
Non-management (S0-S7)-Female	36	35	36
Senior management (E7-E9): <30 years age	0	0	0
Senior management (E7-E9): 30 To 50 years age	64	58	56
Senior management (E7-E9): >50 years age	202	200	229
Middle management (E4-E6): <30 years age	0	0	0
Middle management (E4-E6): 30 To 50 years age	1,144	1,136	1102
Middle management (E4-E6): >50 years age	319	426	500
Junior management (E0-E3): <30 years age	545	464	434
Junior management (E0-E3): 30 to 50 years age	823	838	896





Permanent Employee Distribution (Numbers)	2015-16	2016-17	2017-18
Junior management (E0-E3): >50 years age	285	339	375
Non-management (S0-S7): <30 years age	121	125	162
Non-management (S0-S7): 30 To 50 years age	687	645	610
Non-management (S0-S7): >50 years age	119	119	116
Employee turnover-Management	72	76	70
Employee turnover-Non-management	9	7	19

Permanent Employee Distribution (Numbers)	2015-16	2016-17	2017-18
Employee turnover -Age <30-Male	17	29	23
Employee turnover -Age <30-Female	2	5	1
Employee turnover -Age 30 to 50 years age-Male	13	8	9
Employee turnover -Age 30 to 50 years age-Female	2	3	1
Employee turnover -Age >50 years age-Male	45	41	53
Employee turnover -Age >50 years age-Female	2	1	2
New employee hired during FY: Male	134	107	204
New employee hired during FY: Female	2	12	17

Contract Employee Distribution (Numbers)	2015-16	2016-17	2017-18
Security staff male	2,599	2,244	2,118
Security staff female	4	4	4
Regular contract worker-Male	15,287	15,672	13,000
Regular contract worker-Female	362	329	283

Training (Hours)	2015-16	2016-17	2017-18
Management employee (Direct)-Male	1,54,468	1,55,436	1,85,476
Management employees (Direct)-Female	9,456	11,276	12,392
Workmen (Direct employees)-Male	31,192	26,960	8,863
Workmen (Direct employees)-Female	760	792	202.50
Contractual Labor (Operations)-Male	43,266	45,712	54,120
Contractual Labor (Operations)-Female	1,166	900	1,763
Permanent employee-Physically disabled	2,212	2,230	2,967.50
Contract worker-Physically disabled	4	0	0
Training for direct employees (GTI Noida and Jaipur based)	1,28,160	1,44,672	1,68,640





Employees Returned to Work After Parental Leave	Gender	2016-17	2017-18
Number of employees entitled to parental leave	Male	4,097	4,213
	Female	257	271
Number of employees that took parental leave	Male	142	157
	Female	18	14
Number of employees who returned to work after parental leave ended	Male	142	157
	Female	18	14
Employee returned to work after parental leave ended who were still employed 12 months after their return	Male	141	156
	Female	18	14
Retention rates of employees who returned to work after parental leave ended	Male	100	100%
	Female	100	100%

Exploration & Production Reserves	2017-18
Estimated net total resource base (million BOE) 2P	48
Development type	Shallow Water / Onland
Net total resource base (%)	97%/3%

Note:

- *a The increase in indirect energy consumption is due to recently concluded commissioning activities at some GAIL sites. Energy Consumption patterns are likely to improve post stabilization of these units over some period of time.
- *b The energy from Natural Gas (NG) Flaring has increased in FY 2017-18 due to Expansion of two major sites Pata and Vijapur of GAIL.
- *c The increase in Energy savings is due to the modification done in the methodology of evaluating and calculating the energy savings.
- *d The increase in Energy savings has resulted in the corresponding increase in the GHG savings
- *e The scope 2 GHG emissions have increased due to the increase in Energy consumption.





Independent Assurance Statement

GAIL India Limited ("GAIL") engaged Emergent Ventures India Pvt. Ltd. ("EVI") for carrying out an independent assurance of their Sustainability Report ("Report") for the financial year 2017-18 covering the reporting period from 1 April 2017 to 31 March 2018. The assurance process has been conducted in accordance with the requirements of Assurance Standard AA1000AS (2008). Adherence to the principles laid out in AA1000AS (2008) and GRI Standards including the Oil and Gas Sector Disclosures (OGSD) have been used to evaluate the Report.

The facilities covered under the Report are GAIL's Gas Processing units at five locations (Pata, Vijapur, Vaghodia, Gandhar, Usar), one Petrochemical Plant at Pata, Natural Gas Compressor stations (Hazira, Vaghodia, Jhabua, Khera, Vijapur, Dibiyapur, Kailaras & Chainsa), LPG pumping / receiving stations (Loni, Mansharampura, Nasirabad, Abu Road, Samakhiali, Jamnagar, Kandla, Vizag, G Konduru and Cherlappali), Regional pipeline offices at NCR, Baroda, Mumbai, Puducherry, Rajahmundry, Agartala and DBPL, office buildings at Corporate office New Delhi, GAIL Training Institute (GTI) at Noida & Jaipur and Offices at Jubilee Tower, Info-Hub at Noida, Zonal Marketing offices.

Limitations

Assurance is subject to no physical verification of inventory of material consumed, waste generated, emissions and effluents etc. Assurance relied solely on the documentation maintained and provided by the company. The scope of assurance does not cover the statements in the report that describe companies approach, strategy, aim, expectation, aspiration or beliefs or intentions.

Independence

The verification has been carried out by experts from environment & energy management, climate change and sustainability areas. No member of the verifier team is involved in any way in the preparation of the Report.

GAIL's responsibility

GAIL is responsible for preparing the Report in accordance with GRI Standards and for maintaining effective internal controls over the data and information disclosed.

Verifier's responsibility

In performing the assurance activities, verifier's responsibility is to the management of GAIL only in accordance with the terms of reference agreed between EVI and GAIL. EVI do not therefore accept or assume any responsibility for any other purpose or to any other person or organization. The assurance statement should not be taken as a basis for interpreting the GAIL's overall performance.

Scope and level of assurance

EVI has been engaged to provide Moderate Level Type 2 Assurance for the following:

- Adherence to the principles of inclusivity, materiality and responsiveness laid out in AA1000AS (2008).
- Adherence to the principles of accuracy, balance, clarity, comparability, reliability and timelines laid out in the "In Accordance- Core" reporting requirements of GRI standards.
- Adherence to General disclosures and Topic specific disclosures for "In Accordance- Core" reporting requirements of GRI standards as follows:

General Disclosures and Management approach (GRI 102, GRI103): The reported information on General Disclosure along with Management approach as per disclosure requirements for 'In Accordance' – Core option of reporting.

* Disclosures 102-1 to 102-13 (Organizational profile)





- * Disclosure 102-14 (Strategy)
- * Disclosure 102-16 (Ethics and integrity)
- * Disclosure 102-18 (Governance)
- * Disclosures 102-40 to 102-44 (Stakeholder engagement)
- * Disclosures 102-45 to 102-56 (Reporting practice)
- * Disclosures 103-1 to 103-3 (Management Approach)

Topic Specific Disclosures: Performance Indicators for identified material Aspects as below: Economic

- * Disclosures 201-1, 201-3 (Economic performance)
- * Disclosures 202-1, 202-2 (Market presence)
- * Disclosures 203-1, 203-2 (Indirect economic impacts)
- * Disclosures 204-1 (Procurement practices)
- * Disclosures 205-1 (Anti- corruption)
- * Disclosures 206-1 (Anti-competitive behavior)

Environmental

- * Disclosures 301-1, 301-2 (Materials)
- * Disclosures 302-1, 302-3, 302-4 (Energy)
- * Disclosures 303-1, 303-2, 303-3 (Water)
- * Disclosures 304-1 (Biodiversity)
- * Disclosures 305-1, 305-2, 305-5 to 305-7 (Emissions)
- * Disclosures 306-1 to 306-5 (Effluents and waste)
- * Disclosures 307-1, (Compliance)
- * Disclosures 308-1 , 308-2 (Supplier environmental assessment)

Social

- * Disclosures 401-1 to 401-3 (Employment)
- * Disclosures 402-1 (Labor/management relations)
- * Disclosures 403-1 to 403-4 (Occupational health and safety)
- * Disclosures 404-1 to 404- 3 (Training and education)
- * Disclosures 405-1 , 405-2 (Diversity and equal opportunity)
- * Disclosures 406-1 (Non-discrimination)
- * Disclosures 407-1 (Freedom of association and collective bargaining)
- * Disclosures 408-1 (Child labor)
- * Disclosures 409-1 (Forced or compulsory labor)
- * Disclosures 410-1 (Security practices)
- * Disclosures 411-1 (Rights of Indigenous peoples)
- * Disclosures 412-1 to 412-3 (Human right assessment)





- * Disclosures 413-2 (Local communities)
- * Disclosures 414-1 to 414-2 (Supplier social assessment)
- * Disclosures 415-1 (Public policy)
- * Disclosures 417-2, 417-3 (Marketing and labeling)
- * Disclosures 418-1 (Customer privacy)
- * Disclosures 419-1 (Socioeconomic compliance)

Activities undertaken

A number of activities have been undertaken for this assurance, maintaining independence and objectivity:

- a. Review of draft Report to check alignment of reported data reported against respective economic, environment & social topics mentioned in GRI Standards.
- b. Review (sample check) of the data provided used in the Report and related worksheets;
- c. Review (sample check) of data monitoring and recording and reporting including other internal processes and controls;
- d. Site visits to GAIL's Corporate Office at New Delhi, GAIL Training Institute (GTI) and Jubilee Tower at Noida, Regional pipeline offices and Zonal Marketing offices at Mumbai, four operational sites located in India i.e. Petrochemical Plant at Pata (U.P.), Gas Processing Unit and Compressor Stations at Vijaipur (M.P.) and Vaghodia (Gujarat), and Compressor Station at Jhabua (M.P.)
- e. Video conferencing with GAIL personnel of two sites, Karaikal (Cauvery PL) and Kailaras.
- f. Findings on identified gaps on data monitoring, recording and reporting, review of responses & closure of gaps.

Conclusion

Based on the Moderate Level Type 2 Assurance procedures conducted and evidence obtained, nothing has come to our attention that causes us to believe that, in all material respects the Report is not in conformance with the "In Accordance-Core" reporting requirements of GRI Standards and AA1000 AS (2008).

Observations and Recommendations

- Principle of Inclusivity: GAIL has applied the principle of inclusivity in engaging with its stakeholders. Different departments engage regularly with their relevant stakeholders through multiple engagement channels.
- Principle of Materiality: GAIL has followed a structured process of materiality determination to report key material issues.
- Principle of Responsiveness: GAIL has applied the principle of responsiveness with respect to its stakeholders. Company has well defined system for responding to any concern raised by key stakeholders.

During assurance activity, no evidence is found which indicates that GAIL has not applied the principles of inclusivity, responsiveness and materiality in engaging with its stakeholders and preparing sustainability report.

Without affecting the overall conclusions on the Report, the following recommendations are made:

- Data accuracy and reliability is very high in most of the cases. However, in some areas where data is entered manually and data is updated multiple times chances of error exist. Company may go for enhanced usage of SAP, Automation and reduction in manual data management and reporting.
- Organization has reported achievements, initiatives and performances clearly. Some areas like supplier assessment and sustainable supply chain may be further explored for possible improvements and adoption of sustainability principles throughout the supply chain.
- Well defined process and methodology of materiality assessment has been mentioned. However, company may further elaborate risks to sustainable environment and society due to company's operations.





- Awareness level of onsite personnel towards updated GRI standard reporting requirements may be further enhanced through regular training.
- Social and environment impact analysis at critical operations may be conducted due to change in operations, adoption of new technology and CSR initiatives.
- Company may consider preparing a roadmap for reduction of GHG emissions.

For Emergent Ventures India Private Ltd.

Atul Sanghal

Business Head – Sustainability & Climate Change

Emergent Ventures India Private Ltd.

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Date: 14/08/2018



AA1000

Licensed Assurance Provider

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Glossary

API	American Petroleum Institute	ASME	American Society of Mechanical Engineers
CPCB	Central Pollution Control Board	CPSE	Central Public Sector Enterprise
CVC	Central Vigilance Commission	CMD	Chief Managing Director
CFC	Chloro fluoro carbon	CGD	City gas distribution
CNG	Compressed natural gas	CSR	Corporate social responsibility
CSI	Customer satisfaction index	CERT	Computer emergency response team
DVPL	Dahej-Vijaipur Pipeline	DGM	Deputy General Manager
DGH	Directorate-General of Hydrocarbons		
ED	Executive Director	E&P	Exploration and Production
FY	Financial year	FICCI	Federation of Indian Chamber of Commerce and Industries
GTI	GAIL Training Institute	GPU	Gas Processing Unit
GJ	Giga-Joules	GRI	Global Reporting Initiative
GHG	Green House Gas		
HVJ	Hazira-Vijaipur-Jagdishpur Pipeline	HSE	Health safety and environment
IT	Information technology	IMS	Integrated management system
IPIECA	International Petroleum Industry Environment Conservation Association	IA	Internal audit
JLPL	Jamnagar-Loni Pipeline	JV	Joint venture
KG	Krishna Godavari		
LPG	Liquefied Petroleum Gas	LHC	Liquid Hydro Carbons
MoU	Memorandum of Understanding	MT	Metric Tons
MMSCMD	Million Metric Standard Cubic Metres per Day		
MoEFCC	Ministry of Environment, Forest and Climate Change	MoPNG	Ministry of Petroleum and Natural Gas
NCR	Non Capital region	NH	National highway
NG	Natural Gas	NGO	Non-government organization
NACE	National Association of Corrosion Engineers	NFPA	National Fire Protection Association
NOx	Oxides of Nitrogen	NDC	Nationally determined contribution





API	American Petroleum Institute	ASME	American Society of Mechanical Engineers
OHSAS	Occupational Health Safety Assessment Series	ONGC	Oil and Natural Gas Corporation Limited
OISD	Oil Industry Safety Directorate	OMC	Oil Marketing Companies
OBC	Other Backward Castes	ODS	Ozone Depleting Substances
PNGRB	Petroleum and Natural Gas Regulatory Board	PPAC	Petroleum Planning and Analysis Cell
PNG	Piped Natural Gas	PCB	Pollution Control Board
PE	Poly-Ethylene	PAT	Profit After Tax
PBT	Profit Before Tax	PPP	Public Private Partnership
PCRA	Petroleum Conservation Research Association		
RGPPL	Ratnagiri Gas and Power Private Limited	RLNG	Re-gasified Liquid Natural Gas
R&D	Research and Development	RTI	Right To Information
SPM	Suspended Particulate Matter	SD	Sustainable Development
SDG	Sustainable Development Goal	SCOPE	Standing Conference of Public Enterprises
TERI	The Earth Research Institute	TMT	Thousand Metric Tons
tCO2e	Tons of Carbon Dioxide Equivalent	TPA	Tons per annum
TDS	Total Dissolved Solids		
UNGC	United Nations Global Compact		
VSPL	Vizag Secunderabad Pipeline		



GRI Content Index



GRI Standard	Disclosure	Section and Subsection	Page Nos. and/or URL	Omission
GRI 101: Foundation 2016				
General Disclosures				
Organizational Profile				
GRI 102: General Disclosures 2016	102-1 Name of the organization	GAIL's Story: Organizational Overview Section	20	
	102-2 Activities, brands, products, and services	GAIL's Story: Organization Overview Business Portfolio and Joint Ventures and Subsidiaries section Business Growth: Business Outlook	20, 21, 6, 107	
	102-3 Location of headquarters	GAIL's Story: Organizational Overview Section	20	
	102-4 Location of operations	GAIL's Story: Organizational Overview, Business Portfolio and Joint Ventures and Subsidiaries sections	20, 21	
	102-5 Ownership and legal form	GAIL's Story: Organizational Overview Section	20	
	102-6 Markets served	GAIL's Story: Organization Overview and Our presence, subsidiaries and joint ventures section	20, 21	
	102-7 Scale of the organization	Performance Snapshot: Permanent Employee Distribution table		
		GAIL's Story: Organization Overview section Business Growth: Business Outlook		
		Business Growth: Economic Performance of GAIL (FY 2017-18) and Sector-wise Financial Performance sections	20, 60, 64, 141	
	102-8 Information on employees and other workers	Performance Snapshot: Permanent Employee Distribution table and Contract Employee Distribution table	141	-
	102-9 Supply chain	GAIL's Story: Organization Overview Business Growth: Business Outlook	20, 60, 64	-
	102-10 Significant changes to the organization and its supply chain	GAIL's Story: Organization Overview	20, 135	-





GRI Standard	Disclosure	Section and Subsection	Page Nos. and/or URL	Omission
		Performance: Supply Chain Management section		
	102-11 Precautionary Principle or approach	Risk Management: Risk Management Framework	38	-
	102-12 External initiatives	Public Policy and Advocacy: Advocacy through Coalitions and Associations section	108	-
Strategy				
	102-14 Statement from senior decision-maker	CMD's Message	13	-
	102-15 Key impacts, risks, and opportunities	Risk Management: Key Corporate Level Risks for GAIL section	41	-
Ethics and integrity				
	102-16 Values, principles, standards, and norms of behavior	Governance: Internal Control Systems and their Adequacy section	34	-
	102-17 Mechanisms for advice and concerns about ethics	Governance: Internal Control Systems and their Adequacy section	34	-
Governance				
	102-18 Governance structure	Governance: Governance Structure and Committees of the Board section	30, 32	-
	102-19 Delegating authority	Governance: Governance Structure section	30	-
	102-20 Executive-level responsibility for economic, environmental and social topics	Governance: Governance Structure section	30	-
	102-21 Consulting stakeholders on economic, environmental and social topics	Governance: Governance Structure section	30	-
	102-22 Composition of the highest governance body and its committees	Governance: Board of Directors section	31	-
	102-23 Chair of the highest governance body	Governance: Board of Directors section	31	-
	102-24 Nominating and selecting the highest governance body	Governance: Governance Structure section	30	-
	102-25 Conflicts of interest	Governance: Avoidance of Conflict of Interest section	33	-
	102-26 Role of highest governance body in setting purpose, values, and strategy	Governance: Governance Structure section	30	-





GRI Standard	Disclosure	Section and Subsection	Page Nos. and/or URL	Omission
	102-27 Collective knowledge of highest governance body	Governance: Governance Structure section	30	-
	102-28 Evaluating the highest governance body's performance	Governance: Board of Directors section	31	-
	102-29 Identifying and managing economic, environmental, and social impacts	Governance: Sustainability Governance	33	-
	102-30 Effectiveness of risk management processes	Risk Management and Governance	30-32	-
	102-31 Review of economic, environmental, and social topics	Risk Management: Risk Management Framework Governance: Committees of the Board	38, 32	-
	102-32 Highest governance body's role in sustainability reporting	Governance: Sustainability Governance section	33	-
	102-33 Communicating critical concerns	Governance: Sustainability Governance section	33	-
	102-34 Nature and total number of critical concerns	Governance: Sustainability Governance section	33	-
	102-35 Remuneration policies	Governance: Remuneration and Incentives section	32	-
	102-36 Process for determining remuneration	Governance: Remuneration and Incentives section	32	-
	102-37 Stakeholders' involvement in remuneration	Governance: Remuneration and Incentives section	32	-
	102-38 Annual total compensation ratio	Governance: Remuneration and Incentives section	32	-
	102-39 Percentage increase in annual total compensation ratio			
Stakeholder Engagement				
	102-40 List of stakeholder groups	Stakeholder Engagement and Materiality chapter	50	-
	102-41 Collective bargaining agreements	Human Capital at the Core: Employee Engagement and Empowerment subsection	116	-
	102-42 Identifying and selecting stakeholders	Stakeholder Engagement and Materiality chapter	50	-
	102-43 Approach to stakeholder engagement	Stakeholder Engagement and Materiality chapter	50	-
	102-44 Key topics and concerns raised	Stakeholder Engagement and Materiality chapter: Materiality section	53	-





GRI Standard	Disclosure	Section and Subsection	Page Nos. and/or URL	Omission
Reporting Practices				
	102-45 Entities included in the consolidated financial statements	About The Report: Reporting Boundary section	18	-
	102-46 Defining report content and topic Boundaries	About The Report: Reporting Boundary section	18	-
	102-47 List of material topics	Stakeholder Engagement and Materiality chapter: Materiality section	53	-
	102-48 Restatements of information	About the Report	16	-
	102-49 Changes in reporting	About the Report		
	Stakeholder Engagement and Materiality: Materiality Analysis section	16, 53	-	
	102-50 Reporting period	About The Report: Reporting Year	17	-
	102-51 Date of most recent report	About The Report: Reporting Year	17	-
	102-52 Reporting cycle	About The Report: Reporting Year	17	-
	102-53 Contact point for questions regarding the report	About the Report: Data Validation and Assurance	18	-
	102-54 Claims of reporting in accordance with the GRI Standards	About the Report	16	-
	102-55 GRI content index	GRI Content Index	149	-
Material Topics				
<p>The material topics include GRI material topics, health and safety, operational excellence, business growth and profitability, human capital management, stakeholder relationship management, public policy and lobbying, climate change, regulatory issues and uncertainty in government policy, communication and relationship with stakeholders, skilled manpower, innovation, changing business/market dynamics (specially renewables and electric vehicles), investment by GAIL vis-à-vis projected growth in changing market dynamics, GAIL's position in India in mid-term, supply chain management and alignment with sustainable development goals and COP21).</p>				
Management Approach				
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its boundary	Stakeholder Engagement and Materiality: Materiality Analysis section and Materiality Matrix sub-section	52, 53	-
	103-2 The management approach and its components	Health and Safety	94	-
		Operational Excellence	74	
		Business Growth and Profitability	60	





GRI Standard	Disclosure	Section and Subsection	Page Nos. and/or URL	Omission
		Public Policy and Advocacy	102	
		Stakeholder Relationship Management	50	
		Climate Change	86	
		Human Capital Management	110	
		Investment by GAIL vis-à-vis Projected	57	
		Growth in Changing Market Dynamics	57	
		Business Model and Innovation	129	
		Changing Business and Market Dynamics	150	
		Supply Chain Management	135	
		Domestically Sourced Gas to Imported Gas Competition	58	
		Emergence of Disruptive Technologies	100	
		Alignment with Sustainable Development Goals and COP21	11-12	
	103-3 Evaluation of the management approach	Health and Safety	96, 99	-
		Operational Excellence	74	
		Business Growth and Profitability	62	
		Public Policy and Advocacy	102	
		Stakeholder Relationship Management	51, 103	
		Climate Change	86	
		Human Capital Management	110	
		Investment by GAIL vis-à-vis Projected	57	
		Growth in Changing Market Dynamics	57	
		Business Model and Innovation	128	
		Changing Business and Market Dynamics	150	
		Supply Chain Management	135	
		Domestically Sourced Gas to Imported Gas Competition	58	
		Emergence of Disruptive Technologies	100	
		Alignment with Sustainable Development Goals and COP21	11-12	
Topic-specific disclosures				
Economic				





GRI Standard	Disclosure	Section and Subsection	Page Nos. and/or URL	Omission
Economic Performance				
GRI 201: Economic Performance 2016	201-1 Direct economic value generated and distributed	Business Growth and Profitability	60	-
	201-2 Financial implications and other risks and opportunities due to climate change	Energy and Environment	86	-
	201-3 Defined benefit plan obligations and other retirement plans	Stakeholder Relationship Management	110	-
	201-4 Financial assistance received from government	Business Growth and Profitability	60	-
Market Presence				
GRI 202: Market Presence 2016	202-1 Ratios of standard entry level wage by gender compared to local minimum wage	Human Capital Management	115	-
	202-2 Proportion of senior management hired from the local community	Human Capital Management	115	-
Indirect Economic Impact				
GRI 203: Indirect Economic Impact 2016	203-1 Infrastructure investments and services supported	Growth in Changing Market Dynamics	60	-
	203-2 Significant indirect economic impacts	Business Model and Innovation	60	-
Procurement Practices				
GRI 204: Procurement Practices 2016	204-1 Proportion of spending on local suppliers	Changing Business and Market Dynamics	132	-
Anti-Corruption				
GRI 205: Anti-corruption 2016	205-1 Operations assessed for risks related to corruption	Supply Chain Management	102	-
	205-2 Communication and training about anti-corruption policies and procedures	Domestically Sourced Gas to Imported Gas Competition	102	-
	205-3 Confirmed incidents of corruption and actions taken	Emergence of Disruptive Technologies	102, 105	-
Anti-Competitive Behavior				
GRI 206: Anti-competitive Behavior 2016	206-1 Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	Public Policy & Advocacy	105	-





GRI Standard	Disclosure	Section and Subsection	Page Nos. and/or URL	Omission
Materials				
GRI 301: Materials 2016	301-1 Materials used by weight or volume	Mentioned in Performance Snapshot	137	-
	301-2 Recycled input materials used	Mentioned in Performance Snapshot	137	-
	301-3 Reclaimed products and their packaging materials	Mentioned in Performance Snapshot	137	-
Energy				
GRI 302: Energy 2016	302-1 Energy consumption within the organization	Performance Snapshot	137	-
	302-2 Energy consumption outside of the organization	Performance Snapshot	137	-
	302-3 Energy intensity	Performance Snapshot	137	-
	302-4 Reduction of energy consumption	Performance Snapshot	137	-
	302-5 Reductions in energy requirements of products and services	Energy and Environment: Energy Management section	137	-
Water				
GRI 303: Water 2016	303-1 Water withdrawal by source	Energy and Environment: Water Management section	138	-
	303-2 Water sources significantly affected by withdrawal of water	Energy and Environment: Water Management section	138	-
	303-3 Water recycled and reused	Performance Snapshot and Energy and Environment: Water Management section	138	-
Biodiversity				
GRI 304: Biodiversity 2016	304-1 Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	Energy and Environment: Greenbelt and Biodiversity Management section - Biodiversity Assessment sub-section	88	-
	304-2 Significant impacts of activities, products, and services on biodiversity	Energy and Environment: Greenbelt and Biodiversity Management section	88	-
	304-3 Habitats protected or restored	Energy and Environment: Greenbelt and Biodiversity Management section	88	-
	304-4 IUCN Red List species and national conservation list species with habitats in areas affected by operations	Energy and Environment: Greenbelt and Biodiversity Management section	88	-





GRI Standard	Disclosure	Section and Subsection	Page Nos. and/or URL	Omission
Emissions				
GRI 305: Emissions 2016	305-1 Direct (Scope 1) GHG emissions	Performance Snapshot and Energy and Environment: Climate Change and Emission Management	137, 138	-
	305-2 Energy indirect (Scope 2) GHG emissions	Performance Snapshot and Energy and Environment: Climate Change and Emission Management	137, 138	-
	305-3 Other indirect (Scope 3) GHG emissions	Performance Snapshot and Energy and Environment: Climate Change and Emission Management section	137, 138	-
	305-4 GHG emissions intensity	Performance Snapshot	137	-
	305-5 Reduction of GHG emissions	Performance Snapshot	137	-
	305-6 Emissions of ozone-depleting substances (ODS)	Performance Snapshot	137	-
	305-7 Nitrogen oxides (NOX), sulfur oxides (SOX), and other significant air emissions	Performance Snapshot	137	-
Effluents and Waste				
GRI 306: Effluents and Waste 2016	306-1 Water discharge by quality and destination	Performance Snapshot and Energy and Environment: Water Management section	137, 138	-
	306-2 Waste by type and disposal method	Performance Snapshot	137	-
	306-3 Significant spills	Operational Excellence: Waste Management section	89	-
	306-4 Transport of hazardous waste	Operational Excellence: Waste Management section	89	-
	306-5 Water bodies affected by water discharges and/or runoff	Energy and Environment: Water Management section	87	-
Environmental Compliance				
GRI 307: Environmental Compliance 2016	307-1 Non-compliance with environmental laws and regulations	Performance Snapshot	140	-
Supplier Environmental Assessment				
GRI 308: Supplier Environmental Assessment 2016	308-1 New suppliers that were screened using environmental criteria	Supplier: Ethical Procurement section	133	-
	308-2 Negative environmental impacts in the supply chain and actions taken	Supplier: Ethical Procurement section	133	-



GRI Standard	Disclosure	Section and Subsection	Page Nos. and/or URL	Omission
Employment				
GRI 401: Employment 2016	401-1 New employee hires and employee turnover	Performance Snapshot	141	-
	401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees	Human Capital at the Core: Talent attraction and retention section	110	-
	401-3 Parental leave	Performance Snapshot	140, 142	-
Labour / Management Relations				
GRI 402: Labor/ Management Relations 2016	402-1 Minimum notice periods regarding operational changes	Human Capital at the Core: Ethical Recruitment and Labour Practices section	116	-
Occupational Health and Safety				
GRI 403: Occupational Health and Safety 2016	403-1 Workers representation in formal joint management-worker health and safety committees	Performance Snapshot and Human Capital at the Core: Employee Engagement and Empowerment	116, 132, 140	-
	403-2 Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities	Performance Snapshot	140	-
	403-3 Workers with high incidence or high risk of diseases related to their occupation	Performance Snapshot	140	-
	403-4 Health and safety topics covered in formal agreements with trade unions	Health and Safety: Management System and Suppliers chapter	95	-
Training and Education				
GRI 404: Training and Education 2016	404-1 Average hours of training per year per employee	Performance Snapshot Human Capital at the Core: Capability Building section	111, 141	-
	404-2 Programs for upgrading employee skills and transition assistance programs	Human Capital at the Core: Capability Building section	111	-
	404-3 Percentage of employees receiving regular performance and career development reviews	Human Capital at the Core: Capability Building section	111	-
Diversity and Equal Opportunity				





GRI Standard	Disclosure	Section and Subsection	Page Nos. and/or URL	Omission
GRI 405: Diversity and Equal Opportunity 2016	405-1 Diversity of governance bodies and employees	Corporate Governance: Governance Structure and Human Capital at the Core: Talent Attraction and Retention	32, 110	-
	405-2 Ratio of basic salary and remuneration of women to men	Human Capital at the Core: Talent Attraction and Retention	110	-
Non-Discrimination				
GRI 406: Non-Discrimination 2016	406-1 Incidents of discrimination and corrective actions taken	Human Capital at the Core: Ethical Recruitment and Labor Practices	116	-
Freedom of Association and Collective Bargaining				
GRI 407: Freedom of Association and Collective Bargaining 2016	407-1 Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	Human Capital at the Core: Employee Engagement and Empowerment	116	-
Child Labor				
GRI 408: Child Labor 2016	408-1 Operations and suppliers at significant risk for incidents of child labor	Human Capital at the Core: Ethical Recruitment and Labor Practices section Suppliers: Ethical Procurement section	116, 132	-
Suppliers: Ethical Procurement section				
GRI 409: Forced or Compulsory Labor 2016	409-1 Operations and suppliers at significant risk for incidents of forced or compulsory labor	Suppliers: Ethical Procurement	132	-
Security Practices				
GRI 410: Security Practices 2016	410-1 Security personnel trained in human rights policies or procedures	Human Capital at the Core: Ethical Recruitment and Labor Practices	116	-
Rights of Indigenous Peoples				
GRI 411: Rights of Indigenous Peoples 2016	411-1 Incidents of violations involving rights of indigenous peoples	Our Corporate Social Responsibility	120	-
Human Rights Assessment				
GRI 412: Human Rights Assessment 2016	412-1 Operations that have been subject to human rights reviews or impact assessments	Human Capital at the Core: Ethical Recruitment and Labor Practices	116	-
	412-2 Employee training on human rights policies or procedures	Human Capital at the Core: Ethical Recruitment and Labor Practices	116	-





GRI Standard	Disclosure	Section and Subsection	Page Nos. and/or URL	Omission
	412-3 Significant investment agreements and contracts that include human rights clauses or that underwent human rights screening	Human Capital at the Core: Ethical Recruitment and Labor Practices Suppliers: Ethical Procurement	116, 132	-
Local Communities				
GRI 413: Local Communities 2016	413-1 Operations with local community engagement, impact assessments, and development programs	Our Corporate Social Responsibility	120	-
	413-2 Operations with significant actual and potential negative impacts on local communities	Our Corporate Social Responsibility	120	-
Supplier Social Assessment				
GRI 414: Supplier Social Assessment 2016	414-1 New suppliers that were screened using social criteria	Suppliers: Ethical Procurement	201	-
	414-2 Negative social impacts in the supply chain and actions taken	Suppliers: Ethical Procurement	201	-
Public Policy				
GRI 415: Public Policy 2016	415-1 Political contributions	Public Policy and Advocacy: Government and Regulatory Bodies	104	-
Customer Health and Safety				
GRI 416: Customer Health and Safety 2016	416-1 Assessment of the health and safety impacts of product and service categories	Operational Excellence: Compliance Management	80	-
	416-2 Incidents of non-compliance concerning the health and safety impacts of products and services	Operational Excellence: Compliance Management	80	-
Marketing and Labelling				
GRI 417: Marketing and Labelling 2016	417-1 Requirements for product and service information and labelling	Operational Excellence: Compliance Management	80	-
	417-2 Incidents of non-compliance concerning product and service information and labelling	Operational Excellence: Compliance Management	80	-
	417-3 Incidents of non-compliance concerning marketing communications	Operational Excellence: Compliance Management	80	-





GRI Standard	Disclosure	Section and Subsection	Page Nos. and/or URL	Omission
Customer Privacy				
GRI 418: Customer Privacy 2016	418-1 Substantiated complaints concerning breaches of customer privacy and losses of customer data	Operational Excellence: Compliance Management	80	-
Socio-economic Compliance				
GRI 419: Socioeconomic Compliance 2016	419-1 Non-compliance with laws and regulations in the social and economic area	Operational Excellence: Compliance Management	80	-
GRI G4 : Oil and Gas Sector Disclosures				
OG1	Volume and Type of Estimated Proved Reserves and Production	Business Growth: Exploration and Production section; Performance Snapshot	70, 142	
OG2	Total amount invested in renewable energy	Energy and Environment: Energy Management section	84	
OG3	Total amount of renewable energy generated by source	Mentioned in Performance Snapshot	137	
OG4	Number and percentage of significant operating sites in which biodiversity risk has been assessed and monitored	Energy and Environment: Greenbelt and Biodiversity Management	88	
OG5	Volume and disposal of formation or produced water	Performance Snapshot and Energy and Environment: Water Management	139	
OG6	Volume of flared and vented hydrocarbon	Energy and Environment: Climate Change and Emission Management	86	
OG7	Amount of drilling waste (drill mud and cuttings) and strategies for treatment and disposal	Performance Snapshot and Energy and Environment: Waste Management	89, 139	
OG10	Number and description of significant disputes with local communities and indigenous people	Our Corporate Social Responsibility chapter	120	
OG13	Number of process safety events, by business activity	Health and Safety: Health and Safety Initiatives at GAIL	100	



Linkages with NVG SEE Principles

Principle No.	NVG-SEE	Linkages with sustainability Report FY 2017-18 sections
1	Businesses should conduct and govern themselves with Ethics, Transparency, and Accountability	Corporate Governance; Risk Management
2	Businesses should provide goods and services that are safe and contribute to sustainability throughout their life cycle	Customers; Suppliers
3	Businesses should promote the wellbeing of all employees	Human Capital at Core
4	Businesses should respect the interests of, and be responsive towards all stakeholders, especially those who are disadvantaged, vulnerable and marginalized.	Our Corporate Social Responsibility
5	Businesses should respect and promote human rights	Human Capital at Core
6	Business should respect, protect, and make efforts to restore the environment	Operational excellence; Energy and Environment
7	Businesses, when engaged in influencing public and regulatory policy, should do so in a responsible manner	Public Policy and Advocacy
8	Businesses should support inclusive growth and equitable development	Business growth
9	Businesses should engage with and provide value to their customers and consumers in a responsible manner	Customers; Suppliers



Linkages to API/IPIECA, UNGC, ISO 26000 Principles

Section	AVI/IPIECA Guidelines	UNGC Principles	ISO 26000:2010 Clause
Governance	SE 11, SE 12	Principle 10	
Principle 7	4.3, 4.4, 6.2, 6.3.5, 6.3.6, 6.6.1-6.6.3, 6.6.5, 6.6.6, 7.4.3, 7.7.5	Customers; Suppliers	
Risk management	SE11, SE12	Principle 10	
Principle 7	4.3, 6.2.3, 6.3.5, 6.3.4,	Our Corporate Social Responsibility	
Stakeholder engagement and materiality	SE1, SE2, SE4, SE14, SE16, HS1, HS2, HS4, HS14	Principle 1	
Principle 6	Business should respect, protect, and make efforts to restore the environment	Operational excellence; Energy and Environment	
Principle 7	4.5, 5.2, 5.3, 6.3.6-6.3.7, 6.3.10, 6.7.1-6.7.6, 6.8.1-6.8.3, 7.3.2-7.3.4, 7.5.3, 7.8	Public Policy and Advocacy	
Business growth	SE4, SE5, SE7, SE13	Principle 9	6.6.1-6.6.2, 6.6.4, 6.6.6, 6.8.1-6.8.3, 6.8.7-6.8.9
Operational excellence	E1, E2, E3, E4, E5, E6, E7, E8	Principle 8	
Principle 9	4.6, 6.5.3-6.5.6, 6.6.6,		
Health and safety	HS1, HS2, HS3, HS5	Principle 6	6.4.5, 6.4.6, 6.5.3, 6.8.8
Public policy and advocacy	SE14	Principle 10	4.2, 4.3, 4.4, 6.6.1-6.6.2, 6.6.5
Social performance	SE6, SE8, SE10, SE15, SE16, SE17, SE18	Principle 1	
Principle 2			
Principle 3			
Principle 4			
Principle 5			
Principle 6	4.5, 4.8, 5.2, 5.3, 6.3.1-6.3.8, 6.3.10, 6.4.1-6.4.7, 6.5.1-6.5.2, 6.7.8-6.7.9, 6.8.1-6.8.5, 6.8.7-6.8.9		
Our value chains	SE8, SE9, SE10	Principle 1	
Principle 2			
Principle 7			
Principle 10	4.4, 4.5, 4.6, 4.7, 6.3.1-6.3.8, 6.3.10, 6.6.6, 6.7.3, 6.7.4, 6.7.6, 6.7.9, 6.7.1-6.7.2, 7.3.1		
Performance snapshot	E1, E2, E3, E4, E6, E7, E8, E10, HS3	Principle 7	
Principle 8			
Principle 9	4.6, 6.4.3, 6.4.4, 6.4.6, 6.5.3-6.5.5, 6.5.8		



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