



Petronet LNG Limited

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Commitment Statement by CMD

Petronet LNG, with an aspiration to be a responsible Corporate Citizen, undertakes its responsibility devotedly across all levels within the Company. Our role as part of the key energy provider to the nation, is not only limited to ensuring the energy security of the nation in coming years, but to provide it responsibly and sustainably.

For us, sustainability means building our business for the long term by balancing social, environmental and economic considerations in the decisions we make. This enables us to thrive and contribute to the growth of communities around our work centers.

As a member, we firmly believe in committing to and aligning our business practices with the ten principles of Global Compact. Our board fully supports our actions in working towards sustainability goals – particularly those contained in the UN Global Compact – and endorses the future priorities and specific targets we set out in our report. Through our support of the United Nations Global Compact, we also aim to move the agenda forward on performance related to human rights, labour rights, the environment and the fight against bribery and corruption.

This report underlines our firm belief that for a company to prosper over the long term and create value for shareholders, it must create value for society at the same time. The report for FY 2015-16 highlights the various steps taken to put into practice the ten principles and summarizes the progress here.

We are determined to follow these principles thoroughly and further improve on our processes to achieve excellence. We intend to report the progress made every year pertaining to all the ten principles every year.



Prabhat Singh (MD & CEO) 29/6/16

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Dahej LNG Terminal:

GIDC Industrial Estate, Plot No. 7/A, Dahej
Taluka Vagra, Distt. Bharuch - 392130 (Gujarat)
Tel.: 02641-257249 Fax: 02641-257252

Kochi LNG Terminal:

Survey No. 347, Puthuvypu
P.O. 682508, Kochi
Tel.: 0484-2502268

The Ten Principles

The UN Global Compact's ten principles in the areas of human rights, labour, the environment and anti-corruption enjoy universal consensus and are derived from the following four core issues.

- **HUMAN RIGHTS**

- Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights.
- Principle 2: Business should make sure that they are not complicit in human rights abuses.

- **LABOUR STANDARD**

- Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining.
- Principle 4: The elimination of all forms of forced and compulsory labour.
- Principle 5: The effective abolition of child labour.
- Principle 6: The elimination of discrimination in respect of employment and occupation.

- **ENVIRONMENT**

- Principle 7: Business should support a precautionary approach to environmental challenges
- Principle 8: Undertake initiatives to promote greater environmental responsibility.
- Principle 9: Encourage the development and diffusion of environmentally friendly technologies.

- **ANTI CORRUPTION:**

- Principle 10: Businesses should work against corruption in all its forms, including extortion and bribery

Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights.

Commitment/ Policies: Petronet LNG respects and complies with internationally recognized human rights, at all locations and is committed to making certain that it is not complicit in human rights abuses.

We believe in equality to all human beings, whatever their nationality, place of residence, sex, national or ethnic origin, colour, religion, language, or any other other characteristic protected by applicable law

Action Taken:

Petronet LNG Limited does not involve in forced or compulsory labour. Employment is voluntary and we ensure compliance with local minimum wage laws and non involvement in child labour.

We provide employees with a safe and healthy workplace, with strong HSE teams at plant locations and timely audits to ensure and safeguard the wellbeing of the employees.

Petronet is committed to promoting environmental responsibility and encourages the development and application of environmentally friendly technologies.

Outcomes:

We have not received any litigation from any quarter regarding Human Right violations.

Plans for the Upcoming Year

Petronet LNG Limited is dedicated to maintaining workplaces that are free from discrimination or harassment based on race, color, religion, creed, gender, sexual orientation, marital status, gender identity, national origin and ancestry, genetics, citizenship status when otherwise legally able to work, age, or any other characteristic protected by applicable law.

Principle 2: Business should make sure that they are not complicit in human rights abuses.

Commitment/ Policies: Petronet LNG respects and complies with internationally recognized human rights, at all locations and is committed to making certain that it is not complicit in human rights abuses.

We believe in equality to all human beings, whatever their nationality, place of residence, sex, national or ethnic origin, colour, religion, language, or any other status

Action Taken: To ensure that Human Rights are not violated in any way at Petronet LNG Limited, a well organised and effective Grievance Redressal System is designed to provide prompt and orderly resolution of complaints or disputes arising in the course of employment.

For prevention of woman from sexual harassment at workplace by unwelcome sexually determined behaviour whether directly or by implication such as Physical contact and Advances, Demand and request for sexual favour, Sexually coloured remarks, showing pornography and any other unwelcome physical, verbal or non verbal conduct of sexual nature, an Internal Committee has been created at each location, headed by woman employees including a representative from an NGO, after approval of Competent Authority.

Outcomes:

We have not received any litigation from any quarter regarding complicit in Human Right violation of any kind.

Plans for the Upcoming Year

Petronet LNG Limited is dedicated to maintaining workplaces that are free from discrimination or harassment based on race, colour, religion, creed, gender, sexual orientation, marital status, gender identity, national origin and ancestry, genetics, citizenship status when otherwise legally able to work, age, or any other characteristic protected by applicable law.

Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;

Commitment/ Policies:

Ours is a young organisation. We started operating our 1st LNG terminal at Dahej in the year 2004 and due to the proactive approach of the Management, the HR framework and policies implemented are one among the best in the industry.

Our HR policies have been evolving and have been changed from time to time keeping in mind the employees' aspirations and the company's growth objective.

Due to the effective HR Policies, no trade union has ever formed and to attend to any grievance/ injustice faced by the employee, we have an effective Grievance Redressal System in place.

Action Taken:

A well organised and effective Grievance Redressal System is designed to provide prompt and orderly resolution of complaints or disputes arising in the course of employment.

Any employee has the right to present to his immediate supervisor any personal grievance regarding employment within 30 days of an occurrence and/or within 30 days of the employee having reasonable knowledge of the occurrence and have it considered on its merits.

Outcomes:

1. No strike or demonstration by the employees
2. Zero Man days lost due to agitation/ strike by the employees.

Plans for the Upcoming Year

1. Continuous evolution of policies with changing times.
2. Employees are free to form any kind of social, cultural group in the company. In fact, we encourage such socio-cultural inter mingling of various groups as it promotes a positive working environment.

Principle 4: The elimination of all forms of forced and compulsory labour

Commitment/ Policies: We firmly believe that not only is forced labour a serious violation of a fundamental human right, it also is one of the biggest obstacles to economic development.

Action Taken Being a highly specialized and niche industry, we require skilled personnel at all levels to carry out the processes at our terminals as well as corporate office. Even the unskilled jobs require people who have obtained some minimum level of education. All the unskilled workers employed in the company have at least attended high school.

In case of hiring unskilled labour through contractors such as housekeeping, transportation of goods inside or outside of the plant, etc. we ensure payment of the minimum wages as applicable at the various working locations. As the principal employer we oblige and fulfil the statutory requirements of Social Security deductions and get them deposited.

As far as exit policy is concerned, we have a clearly defined policy and any employee can resign from the company if he wishes to, with no compulsion to continue working or to employ any of his children/relatives to fill the gap.

Outcomes:

Petronet LNG has never been involved in Forced labour and neither does it encourage the same. There have been no incidents of forced labour neither has the company's policies been challenged in the history of the company.

Plans for the Upcoming Year:

We plan to continue with our commitment and belief of not getting involved into compulsory labour

Principle 5: The effective abolition of child labour

Commitment/ Policies: Similar to our stance on forced labour, we very sincerely believe that every child has a right to his childhood and child labour has a negative impact not only on the child involved but also on the society's economic development on a whole.

Action Taken:

To eliminate any instance of child labour, we ensure adherence to minimum age provisions of national labour laws and regulations. Being a part of hydrocarbon industry, we have strict rules for hiring an adult. At no instance have we indulged in the practice of child labour. Being a highly specialized and niche industry, we require employees with a particular set of skills and educational qualifications to carry out the processes at our terminals as well as Corporate Office. For a person to be employable in our company, s/he has to primarily complete her/his high school and then acquire Diploma/ITI along with 2-3 years of experience. In case of hiring of freshers, we hire graduates and post graduates through campus recruitment. Thus, while acquiring the required educational qualifications along with certain years of experience, the person attains minimum 19-20 years of age, ruling out any probability of child labour

Even while hiring unskilled labour through contractors such as housekeeping, transportation of goods inside or outside of the plant, we mandatorily fill up the "Character and Antecedents Verification Format" for each contract personnel before considering for work. Date of Birth/ Age is one of the major criteria in the said format through which we are restricting the Child Labour Entry for Contract Personnel in our Terminal. We also attach the proof for verification for this date viz. voter ID card/ driving license/ passport copy/ pan card/ ration card etc. to ensure there is no falsification or manipulation on the Age declaration front.

To curb the practice we also enable vocational training for children around our work centres and provide scholarships to those who, otherwise, would be unable to continue with their education.

Also, as a part of our CSR activity, to provide better learning facilities to students, we have so far:

- Sponsored and distributed two pairs of Shirt and Pant to school 145 Boys and Two pairs of Skirts, Top & Leggings to 125 school Girls as uniforms in Primary School at Luwara Village.



- Sponsorship of Educational Tour for around 120 students at Luwara Primary School
- Identification and Enrollment of Children of Migrant Labour in Anganwadi and Luwara Primary School



Children identified from Migrant Colony to be enrolled in Anganwadi at the Luwara Primary School

- Rashtriya Madhyamik Siksha Abhijan (RMSA), Assam is a comprehensive and integrated programme of the Government of India (GOI), implemented in the state of Assam for providing quality and meaningful education to all children in the age group 14-16 years of age for Secondary Schools and 16-18 years of age for Higher Secondary Schools in Assam. Petronet LNG Limited has partnered with RMSA for construction and building 100 toilet blocks in 75 Secondary and Higher Secondary Schools.



- Improving School sanitation for cleaner environment at Schools in and around Petronet LNG Ltd. Dahej Terminal



Outcomes

No past records of child labour.

Plans for the Upcoming Year:

Not only are we determined to not get involved in the practice, we also plan to actively collaborate with various NGOs that believe in the cause as passionately and work sincerely towards the abolition of child labour.

Principle 6: The elimination of discrimination in respect of employment and occupation

Commitment/ Policies: We consider protecting our employees from receiving unequal treatment on the basis of race, gender, age, citizenship, national origin, religion, marital status, disability, or labour union activity as one of the important HR practice.

Action Taken:

We have a very transparent recruitment process. We publish the vacancies not only on our website but also in the leading national dailies to ensure that they reach everyone.

Once the applications are received, a documented process is carried out while assessing candidates for any position. Those fulfilling the criteria are called for interview and are selected based in their performance. During any of the above mentioned activities, Petronet LNG limited does not engage in unequal treatment on the basis of race, gender, age, citizenship, national origin, religion, marital status, disability, or labour union etc.

Outcomes

Petronet LNG is an exceptional example of cultural diversity as we have employees from all over the country, belonging to various religions with a balance of gender equality.

Plans for the Upcoming Year

We will continue to carry out recruitments in a transparent manner, following a documented process and commit to not involving into employment discrimination of any kind.

Principle 7: Businesses should support a precautionary approach to environmental challenges;

Commitment/ Policies

- Comply with all applicable legal and other requirements related to Health, Safety, Environment and product quality.

Action Taken

- Petronet started operating the 1st LNG terminal with the highest level of safety standards in the year 2004. SoPs are being reviewed on regular intervals and safety audit conducted to validate the changes made in those manuals with support from our strategic partner GdF Suez.
- Petronet LNG Limited started operating the Cochin LNG terminal with the highest level of safety standards in the Year 2013 (August-13). SOPs are being prepared and reviewed on regular intervals and safety audit conducted to validate the changes made in those manuals.
- In a step forward to further improve the safety practices, we have acquired ISO Certification under the Integrated Management System at Dahejand Kochi, where the following standards are effectively adhered to in each and every process of the company from housekeeping to the operation of the terminal.
 - 9001:2008: Quality Management
 - 18001:2007: OHSAS Management
 - 14001:2004: Environmental Management
- As a precautionary approach towards the various environmental challenges, during our pre project activities for setting up terminals at various locations we carry out studies to validate baseline three season data as recommended by MOEF. Appropriate measures and systems to suppress NOx emissions, dust suppression by watering to restrict dust emission etc. are put in place.
- Green belts have been developed at all the locations to reduce the fugitive emissions and absorption of CO2 and the design of control equipment is carried out to meet the standards stipulated by CREP.

- We have installed and commissioned Sewage Treatment Plant (STP) for canteen and for sewage waste of administration building at Kochi LNG terminal.
- **WATER & WASTE WATER MANAGEMENT:** It is pertinent to mention here that while carrying out the processes, there is no waste water generation and neither is any extraction of ground water required. The water used is brought in through the existing water sources available. The only effluent generated is the domestic effluent of the order of 10 KL/day that is treated in the sewage treatment plant (STP) installed at all the locations. This treated domestic waste water is used internally for toilet flushing, greenbelt development, dust suppression etc.
- **NOISE LEVEL ASSESSMENT:** The equipments are designed to conform to noise levels prescribed by regulatory authorities and provisions are available for acoustic barriers or shelters in noisy workplaces and hoods for noise generating equipments like pumps. Further, implementation of greenbelt, landscaping with horticulture at power block (CPP) areas aids in attenuating the noise levels.
- **SOLID WASTE MANAGEMENT:** There is no hazardous or inert solid waste generated from any of our plant locations. . A small quantity i.e. about 6.7 KL/year of used oil, 94 Nos. of Lead Acid Battery, 4.9 Kg/year of Biomedical waste and 10.13 MT/year of Paint waste was generated during FY 2015-16 . However, this hazardous waste is collected and stored at specific identified area at site and is disposed through authorized agencies.

Outcomes

- No water or chemicals are discharged into the sea - zero discharge concept- and thus there is no impact on the aquatic ecology.
- No impact on ground water tables.
- The cumulative incremental impact of all noise sources at boundary will range in between 45-50 dB (A) against the standard of 50 -55 dB(A)
- Since there is no solid waste that is generated and the small quantity of oily waste generated is disposed off through authorized agencies, no contamination of soil/ surface water/ sea water takes place and has no impact on fisheries.

Plans for the Upcoming Year

The process of continuous change towards betterment would continue in the following major areas at Dahej:

- Environment, Health, Safety & Sustainability (EHSS) systems
- Functional Trainings
- Behaviour Based Safety Training (BBS)

In line with our continuous endeavor towards betterment of our initiatives, we have already installed and commissioned Sewage Treatment Plant (STP) for canteen and for sewage waste of administration

building at Kochi LNG terminal. Additionally, we are in the process of installing Continuous Ambient Air Monitoring station at Kochi LNG terminal

Principle 8: Undertake initiatives to promote greater environmental responsibility;

Commitment/ Policies

- Inculcate Safety, Health, Environment and Quality Awareness among all employees, contractual workers and stakeholders through participative culture for Cleaner, Greener, Safer and better organization.

Action Taken

- Our key energy sources are diesel and natural gas, with natural gas being the major energy source (around 95%). Natural gas being a clean fuel reduces the carbon footprint/ GHG emissions making ours a cleaner process.

➤ **Dahej:**

<u>Consumption Categories And Their Contribution To Total Energy Consumed</u>		
Fuel Types	Energy Consumed (GJ)	Percentage Contribution
Diesel	8520	1.39
Natural Gas	233552	38.31
Electricity imported from grid	367472	60.28
Total Energy consumed	609544	100

➤ **Kochi:**

<u>Consumption Categories And Their Contribution To Total Energy Consumed</u>		
Fuel Types	Energy Consumed (GJ)	Percentage Contribution
Diesel	1312.46	0.72%
Natural Gas	123184.10	67.66%
Electricity imported from grid	57554.35	31.61%
Total Energy consumed	182050.91	100.00%

- The Following Mangrove plantation has been undertaken along the Gujarat Coast in consultation with Gujarat Institute of Desert Ecology, Gujarat Ecology Commission and the Forest Department as a measure towards protecting the marine ecology in the area of our operations.

- 2009 -10 – 50 ha
- 2010-11 – 100 ha
- 2011-12-200 ha
- 2012-13 – 300 ha
- 2013-14 – 200 ha
- 2014-15 – 250 ha

- Monthly Tree plantation Program- Every month Petronet LNG sees an active participation of its employees in the Tree Plantation Program in green belt at Dahej LNG Terminal, planned to facilitate clean Environment & beautify the surroundings.
- The Following Mangrove plantation has been undertaken at different locations in Ernakulam district in consultation with Kerala state forest department (social forestry) as a measure towards protecting the marine ecology in the area of our operations.

Sl. No.	Name of place and status of land	Species planted	No. of seedlings planted
1	Kadaekurishu Canal Bank in Nayarambalam Panchayath land (on 22.06.2015)	<i>Rhizophora mucronata</i>	4000
2	Canal bank at Pachuvekkar (North), Nayarambalam Panchayath land (on 23.06.2015)	<i>Rhizophora mucronata</i>	2500
3	Vijayan Canal Thodu, Chellanam Panchayath land (on 09.07.15)	<i>Rhizophora mucronata</i>	2500
4	Banks of Pvt. Fish Farm at Chellanam, owned by Sri. Thankachan (on 07.10.15)	<i>Rhizophora mucronata</i> <i>Bruguiera gimnorizha</i>	1500 1500
5	Canal bank at Pachuvekkar (south), Nayarambalam Panchayath land (on 04.12.2015)	<i>Bruguiera gimnorizha</i>	2500
6	Along the banks of Anjiliathara bund road, Kumbalangi, Kumbalangi Panchayath land (on 27.01.16)	<i>Bruguiera gimnorizha</i>	2200
Total no. of mangrove seedlings planted			16700

- Awareness programs and several training programs on ecological and socio-economical importance of mangrove ecosystem were conducted in coordination with Kerala State Forest Department (Social Forestry) for indigenous community especially for fishermen. The self-help group of women was given primary importance. In addition, students, citizen conservators, elected members of Panchayaths, were also included in awareness programs.

Sl. No.	Date	Place or where camp/class conducted	Days	Target group	Topic/ subject dealt with	No. of person attended classes
1	25.07.2015	Nayarambalam Panchayath	1	Kudumbasree members Ward-12	Planting, protection, conservation of mangroves and nature awareness	77
2	27.07.2015	Nayarambalam Panchayath	1	Kudumbasree members Ward-5	Planting, protection, conservation of mangroves and nature awareness	68
3	29.07.2015	Chellanam Panchayath	1	Kudumbasree members	Planting, protection, conservation of mangroves and nature awareness	61

4	08.08.2015	Vazhachal	1	Ghadhi Vichara Dhara, Ghandi Padanakendram, Njarakkal	Importance of wet lands and mangroves	57
5	03.09.2015	Mangalavanam	1	Citizen Conservators	Mangrove Conservation & Tree felling in public places	30
6	30.12.2015	Edavanakkad Gramapanchayath	1	Kudumbasree members & students of balasabha	Planting, protection, conservation of mangroves and nature awareness	125
7	04.01.2016	Kumbalangi	1	Kumbalangi Gramapanchayath Kudumbasree members	Planting, protection, conservation of mangroves and nature awareness	67
8	14.01.2016	S.S. Araya U.P. School, Pallipuram	1	Students	Planting, protection, conservation of mangroves and nature awareness	60
9	15.01.2016	Mangalavanam, Ernakulam	1	Hidayathul Islam H.S.S. Students	Planting, protection, conservation of mangroves and nature awareness	65
10	16.01.2016	Mangalavanam, Ernakulam	1	St. Mary's U.P.S., Njarakkal	Planting, protection, conservation of mangroves and nature awareness	52
11	02.02.2016	Malippuram Aquarium Hall	1	High School, Edavanakkad	Importance of wetland & mangroves	40
12	17.03.2016	Chellanam Grama Panchayath	1	Kudumbasree members	Importance of wetland & mangroves	100
13	21.03.2016	Elamkunnappuzha Panchayath Hall	1	Selected members of Panchayaths, Academicians, Govt. Officials	Importance of mangrove forests & water conservation	45
Total No. of persons attended						847

- As the part of Habitat improvement and protection program waste dumped in mangrove areas are removed with the involvement of local people. Removal of plastics and cutting of climbers were done occasionally which helped several mangrove plants to grow up well.

- A environment awareness drive was organised through local radio channel,at Kochi, in which our Vice President (Plant Head) broadcasted environment message.



Landscaped Green Cover at Dahej LNG Terminal





Different Stages of our Mangrove Afforestation project at Kochi

- **Waste and Spill Management:** We at Petronet LNG Limited have in place robust waste management systems. All hazardous waste generated in our facility is responsibly disposed through authorized waste recyclers. The organic waste generated in our canteen is treated in vermin- composting units.



In House Vermi-Culture Unit

- At Dahej LNG Terminal, we have contract with authorized e Waste agency M/s Earth E Waste Management Pvt. Ltd, Surat to collect E waste. For FY 2015 -16 total 1.940 MT E Waste disposed to vendor site.
- For incineration waste we have membership with Bharuch Enviro Infrastructure Limited, (BEIL) Ankleshwar. For FY 2015 -16 total 0.22 MT waste residue containing oil sent for incineration process.
- At Kochi LNG Terminal, we have signed an agreement with a KSPCB approved agency for hazardous waste and E-waste disposal, M/s KERALA ENVIRO INFRASTRUCTURE LIMITED (KEIL) for disposal of hazardous wastes and e-waste as specified in the schedule to Hazardous Waste

(Management, Handling and Transboundary Movement) Rules, 2008 and e-waste (Management & Handling) Rules, 2011 respectively.

- For e-waste, we have a contract with an authorized e-waste recycler. No e-waste has been disposed in the reporting year
- We have well defined procedures to prevent incidences of spillage within our facility. Our strong commitment towards safe environmental practices has borne fruit and we have had no incidents of significant spillages.
- At Dahej LNG Terminal:

<u>Category Of Waste Disposed</u>	<u>Types Of Waste</u>	<u>Method Of Disposal</u>	<u>Disposed Quantity (Kg) in Year 2015-16</u>
Used Oil	Hazardous	Recycling	8190 Ltr
Waste Residue containing Oil	Hazardous	Incineration	211 Kgs
Oil Barrels	Hazardous	Recycling	39 Nos
Lead Acid Batteries	Hazardous	Recycling	82 Nos
Biomedical Waste	Hazardous	Incineration	15.570 Kgs
E waste	Hazardous	Recycling	1940 Kgs
Food Waste	Non- Hazardous	Recycling	5760 Kg
Paper Waste	Non- Hazardous	Recycling	10800 Kg

- At Kochi LNG Terminal:

<u>Category Of Waste Disposed</u>	<u>Types Of Waste</u>	<u>Method Of Disposal</u>	<u>Quantity</u>
Used Oil	Hazardous	Recycling	6.69 KL/Year
Oil Barrels	Hazardous	Recycling	Nil
Lead Acid Batteries	Hazardous	Recycling	94 Nos.
Paint	Hazardous	Recycling	10.13 MT/Year
Biomedical Waste	Hazardous	Incineration	4.9 Kg/Year
OTHERS			
Food Waste	Non- Hazardous	Recycling	Nil
Paper Waste	Non- Hazardous	Recycling	Nil
Insulation waste	Non- Hazardous	Recycling	1.5 MT/Year

Outcomes

- Greenbelt allocation within premises at Dahej- 1, 35,000 sq. mtrs.
- 34.5% of total area covered under Green Belt as against the norm of 25%.
- Lawn covered within premises at Dahej - 44,654 sq. mtrs.
- Preparatory work for Mangrove afforestation project for Ernakulam district started.
- Greenbelt allocation within premises- 30,825 sq. mtrs.
- Lawn covered within premises- 15,000 sq. mtrs.
- No significant spillages within terminals.
- No waste disposed off into the environment
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L I M I T E D



Mangrove Plantation in Gujarat

Mangrove Plantation in Kochi

Plans for the Upcoming Year

- To continue supporting Mangrove afforestation project in Ernakulam district through social forestry; we will be releasing further rupees 15.00 lakhs for the project.
- The Mangrove plantation along the Gujarat Coast is to be further expanded as per the following plan:
 - April 15-March 16 - 50 Ha (Planned)
- To continue with and further upgrade the practices that help us in preserving the environment and maintain a safe working place



Landscaped Green Cover at Kochi LNG Terminal



Waste Bins and HW storage area at Kochi LNG Terminal

Principle 9: Encourage the development and diffusion of environmentally friendly technologies.

Commitment/ Policies

- Upgrade on technology, Skills, processes & knowledge of our coworkers and strive continually for improvement in process effectiveness, customer satisfaction, preventing pollution and providing a safe healthy working environment.

Action Taken

➤ **Air Pollution :**

S.No.	Pollutants	Pollution Control Technology
1	SPM, SOx & NOx generated from Gas Turbine Generator (GTG)	Low NOx Burner
2	Natural Gas Emission from Process	Boil off Gas Recondenser and Flare system
3	Submerged Combustion Vaporizer (SCV)	Water Injection System for NOx suppression

➤ **Water Pollution**

- Domestic Water Consumption at Kochi = 19.35 KL/Day.
- Domestic Effluent Generation at Kochi = 10 KL/Day.
- Domestic Water Consumption at Kochi = 10.87 KL/Day.
- Domestic Effluent Generation at Kochi = 8.82 KL/Day.
- The Domestic Effluent treated in soak pit & utilized for in house greenbelt development.

➤ **Liquid Nitrogen Plant Chiller Replacement**

- Conventional cooling systems demand Freon heat exchanger, thereby enhancing the Ozone Layer Depletion. This not only depletes ozone layer, but also adds to energy demand due to operation of the compressor. At Petronet LNG, we have eliminated most of the refrigerant consumption by using chilled water for cooling purposes. This new system helps to conserve ozone layer as well as conserving electrical energy by eliminating the need for a compressor. This chilled water is obtained during LNG Regasification into Natural Gas, transported through a pipeline inside the plant and is used as cooling medium in heat exchanger connected to Liquid Nitrogen plant thus eliminating Freon heat exchanger from the system.
- Conventional System – Freon Heat Exchanger – Ozone Layer Depletion.
- New System – Chilled Water Heat Exchanger – Ozone Layer Augmentation



Liquid Nitrogen Plant

➤ **Chilled water air conditioning system in the buildings**

- Conventional System – Freon Heat Exchanger – Ozone Layer Depletion.
- New System – Chilled Water Heat Exchanger – Ozone Layer Augmentation

➤ **Ambient Air Heater- Water Consumption Reduction**

- Vaporization of LNG to R-LNG is done through Shell & Tube Vaporizers (STVs). LNG gets vaporized due to exchange of heat between Glycol Water (GW) and LNG in STV. The cold GW at the outlet of STV is sent to Air Heated Heat Exchangers (Air- heaters) where GW is heated by ambient air and circulated back to STV, thereby acting as a heat carrying liquid. When this air transfers its heat to GW in air heaters, its temperature drops resulting in condensation of moisture present in the air. This condensate is collected through drainages into a condensate recovery pond. The process is further aided by humid climatic conditions that generally prevail at Dahej.
- Water Consumption reduced from 0.126 KL/Ton of production capacity to 0.09 KL/Ton of production capacity after Cleaner Production implementation.



Ambient Air Heater at Dahej LNG Terminal

Outcomes:

➤ **Air Pollution**

At Dahej Terminal:

<u>S.No</u>	<u>Pollutants Prescribed</u>	<u>Standards</u>	<u>Year 2013-14</u>	<u>Year 2014-15</u>	<u>Year 2015-16</u>
1	SPM (mg/Nm ³)	Less than 150 mg/Nm ³	12	44	46
2	SO _x (PPM)	Less than 100 PPM	Nil	Nil	Nil
3	NO _x (PPM)	Less than 50 PPM	19.5	17	18

At Kochi Terminal

<u>S.No</u>	<u>Pollutants Prescribed</u>	<u>Standards</u>	<u>Year 2012-13</u>	<u>Year 2013-14</u>	<u>Year 2014-15</u>	<u>Year 2015-16</u>
1	PM ₁₀	Less than 100 µg/Nm ³	80.51	55.57	49.66	55.87
2	PM _{2.5}	Less than 60 µg/Nm ³	31.94	19.14	13.53	15.36
2	SO _x	Less than 80 µg/Nm ³	13.93	8.07	12.45	15.33
3	NO _x	Less than 80 µg/Nm ³	14.23	5.86	14.36	15.37

➤ **Water Pollution**

- There is no use of ground water & Municipal water.
- There is no use of industrial water & industrial effluent generation.

➤ **Liquid Nitrogen Plant Chiller Replacement**

- Elimination of Freon in the current system
- Conservation of Electrical Energy

➤ **Chilled water air conditioning system in the buildings**

- Tonnage of Refrigeration (TR) saving.
- Elimination of Freon in the current system
- Conservation of Electrical Energy.

➤ **Ambient Air Heater- Water Consumption Reduction**

- Water generation 150 KL per hour thus reducing fresh water consumption for greenbelt / horticulture.

Plans for the Upcoming Year

We would continue to work towards the betterment of our processes for further improvement.

Principle 10: Businesses should work against corruption in all its forms, including extortion and bribery.

Commitment/ Policies: Corruption is one of the world's greatest challenges, a major hindrance to sustainable development, and is corrosive on the very fabric of society. Petronet strongly believes in maintaining the integrity and work ethics to protect not just the reputation but also the interests of its shareholders.

Action Taken: To corroborate our commitment to anti corruption practices and principles, we are an active member of GCN. We have committed to the principles and practices of the Global Compact that includes the ten principles pertaining to Human Rights, Labour Standards, Environment and Anti-Corruption. Petronet will soon be submitting a Communication on Progress that displays our willingness to actively support efforts by GCN.

Besides being a member to GCN we also ensure clean operations on the part of contractors and public officials during the execution of a project. Even though we have not officially/formally signed an Integrity Pact with Transparency International, we comprehensively follow the standard formats as recommended by Transparency International in all our tenders & contracts.

The Company believes in the conduct of the affairs of its constituents in a fair and transparent manner by adopting highest standards of professionalism, honesty, integrity and ethical behaviour. Towards this end, the Company has adopted the “PLL Code of Conduct”, and the Standards of Conduct and Performance, which lay down the principles and standards that should govern the actions of the Company and its employees. Any actual or potential violation of these policies, howsoever insignificant or perceived as such, would be a matter of serious concern for the Company. Accordingly, a Vigil Mechanism has been established to provide a mechanism for employees to approach the MD&CEO, or in exceptional circumstances, the Chairman of the Audit Committee of the Company to report their genuine concerns on matters that impact the Company.

Outcomes:

In FY 2015-16, no complaint has been received from vendor, general public, equipment suppliers, contractors, or any other interested parties with respect to any undue favour extended while awarding such contracts.

Plans for the Upcoming Year

In our endeavour towards a transparent and ethical business conduct, we would continue to leverage the online platform and print media for providing wide publicity to tenders, purchase of equipments or any other high-value dealings.