



## **SOCIAL IMPACT ASSESSMENT OF CSR INITIATIVES OF GUJARAT GAS LIMITED**

**SUPPLY, INSTALLATION AND COMMISSIONING OF PSA OXYGEN PLANTS IN GOVERNMENT HOSPITALS AT VARIOUS LOCATIONS IN GUJARAT**



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## **PREFACE**

This report of Social Impact Assessment (SIA) is prepared by Gujarat Energy Research & Management Institute (GERMI) for Gujarat Gas Limited (GGL). In the wake of second wave of COVID19 pandemic, GGL provided financial support for installation of PSA plants to 8 Government Hospitals as a part of the larger initiative of Government of Gujarat. The report has been prepared considering the activities and details of the financial year 2021-2022.

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## Executive Summary

During COVID-19 crisis, shortage of oxygen in the second wave brought out the need for improved management of oxygen generation and supply. In that context, Pressure Swing Adsorption (PSA) oxygen plants have emerged as a viable option and widely used as a primary source of medical oxygen across hospitals in India. Moreover, to limit the dependency on refilling oxygen cylinders and procuring liquid oxygen from vendors, the Government of India had recommended that PSA plants should be used as an alternative and sustainable source of oxygen.

In Gujarat, the government explored and identified Gujarat Gas Limited (GGL) as one of the agencies to address the scarcity of medical oxygen. GGL supported in setting up of 9 PSA oxygen plants at various districts (6 in Rajkot, 2 in Morbi and 1 in Aravalli) in the Gujarat Medical and Education Research Society (GMERS) operated Government Hospitals of Gujarat. The initiative was critical as it aimed to meet the increasing demand of oxygen and for future preparedness wherein GGL contributed Rs. 300 lakhs. GGL has supported to the project 'Supply, Installation and Commissioning of PSA Oxygen Plants in Government Hospitals at various locations in Gujarat' through the implementation partner Gujarat Corporate Social Responsibility Agency (GCSRA). The main outcomes of the intervention were as follows:

- Supplied, installed and commissioned nine PSA oxygen plants during COVID 19
- Provided oxygen for patients at bed level in each location
- Strengthened healthcare services of the GMERS managed Government hospitals of the State especially for Oxygen requirement
- Ensured that each of these hospitals has a captive oxygen generation facility

Gujarat Energy Research and Management Institute (GERMI) was awarded work order by GGL as an independent consultant for the Social Impact Assessment Study to understand the impact of 'Supply, Installation and Commissioning of PSA Plants for GMERS Operated Government Hospitals'. The study included; secondary research, preparation of research tools, training of GERMI field staff, pre-testing of research tools, data entry, analysis and development of report.

Some of the key findings from the study include:

- All together, the eight hospitals visited have 2390 beds. And out of this 2295 (96.02%) are connected with oxygen supply.
- As far as the cost is concerned, all of them agreed that the plant was installed free of cost after the hospital authorities had constructed the concrete platform through its civil works department as per the specification from the respective vendor.
- Apart from their original capacity, 5 Sub District Hospitals were able to manage and accommodate beds for COVID patients.
- When probed about the benefits of the PSA plant, only 4 Hospitals mentioned that it can be life-saving, 1 (one) agreed that it can be time saving and the other said it can be cost effective.

- At the same time, all the hospitals responded that the installation of PSA oxygen plants have incurred no expenses for them and all the expenses to set up the system has been borne by GGL.
- The study also has shown that in all the hospitals visited, the PSA plants were installed/or it became functional after the second wave subsided. However, the hospitals have the plants now in place, which are functional and could address any emergencies in the future.
- The hospital's technical staff has received training for the operations and maintenance of the PSA plant. About 40 people have received training on operation and maintenance – and as a part of this they perform basic works like switching the plant on/off or check the purity of oxygen. All of them responded that the 'Do's and Don'ts Guidelines' shared with them during the training has been helpful.
- 3 Sub District Hospitals have proper designated space for oxygen cylinders in their respective hospitals. They have centralised system in place. While others reported that they keep the oxygen cylinders in either open lobby, or in emergency ward or in female ward.

GGL has been in the forefront along with the government and other entities during the COVID battle when the nation witnessed unprecedented flow of COVID patients to hospitals. The timely support of GGL has helped the state to have social assets, which will always be at the service of people.

## CHAPTER I - Background

### COVID-19: An Era of Emergency and Scarcity

Oxygen is the most critical gas used in healthcare centres and hospitals. Getting pure oxygen on time and within a budget is a challenge. In the normal scenario, hospitals buy oxygen from Gas Generator manufactures. The bulk oxygen is bought in both liquid and gaseous form. Buying oxygen from manufacturers is an expensive affair and hospitals end-up spending more money year after year.

During COVID-19 crisis, shortage of oxygen in the second wave brought out the need for improved management of oxygen generation and supply. In that context, Pressure Swing Adsorption (PSA) oxygen plants have emerged as a viable option and widely used as a primary source of medical oxygen across hospitals in India. Moreover, to limit the dependency on refilling oxygen cylinders and procuring liquid oxygen from vendors, the Government of India had recommended that PSA plants should be used as an alternative and sustainable source of oxygen.

Hospitals and medical applications require oxygen purity to be between 95 – 99%, and the PSA process can produce oxygen at this purity level. Ambient air contains 21% oxygen, 78% nitrogen, 0.9% argon and 0.1% rare gases. The PSA process is a static separation of air gases via a specific molecular sieve designed to adsorb nitrogen under pressure, to produce oxygen-enriched air composed of 93% oxygen and above. Thus, it is a process that separates single gases from a gas mixture. PSA is a non-cryogenic air separation process that is commonly used in commercial practices as it is an economically viable option.

The key advantages of PSA plant include, it produces oxygen (@ purity between 92-95%) i.e., fit for medical usage, having an on-site PSA oxygen plant, one is guaranteed an uninterrupted supply of oxygen at a place and time of choice, and in the quantity and quality that you need. At the same time the hospitals do not have to wait for external suppliers or pay excess prices for oxygen. *Annexure 1* provides details on how a PSA system works.

## B. Gujarat Gas Limited and Corporate Social Responsibility

Gujarat Gas Limited (GGL) is India's largest City Gas Distribution (CGD) Company in terms of sales volume operating in 44 districts in 6 states of the Country. The Company has a strong commitment to Corporate Social Responsibility (CSR). GGL makes significant contributions towards development of social infrastructure, economic, environmental and social upliftment of communities in and around the areas of operation. The CSR initiatives of GGL enhances its reputation, create a positive brand image, and build strong relationships with its stakeholders, including customers, employees, government, non-government organisation and local communities. This can help to improve communication, create partnerships, and foster collaboration, which can be beneficial for the long-term improved stakeholder relationships. It has established several objectives for its CSR activities such as



education, health and safety, environment and community development. Brief about these interventions is given in *Annexure 2*.

### C. GGL CSR Initiative: PSA Plants for Gujarat Medical and Education Research Society (GMERS) Operated Government Hospitals in Gujarat

In May 2021, India found itself at the global epicentre of the COVID-19 pandemic. As the second wave struck, the demand for medical oxygen soared ten-fold and tragic scenes unfolded as people struggled to access the life-saving commodity named Oxygen. Only a few hospitals had in-house facilities to produce this precious gas; most depended on oxygen cylinders or Liquid Medical Oxygen (LMO) that was delivered from elsewhere. What's more, the existing number of cryogenic tankers needed to transport LMO was too few to cope with the sudden spike in demand.

In Gujarat, the government explored and identified Gujarat Gas Limited (GGL) to address the scarcity of medical oxygen. GGL, as the largest City Gas Distribution (CGD) company in India in terms of sales volume and operating in 44 districts of six states, such as; Gujarat, Maharashtra, Rajasthan, Haryana, Punjab and Madhya Pradesh and one Union territory - Dadra & Nagar Haveli, swung into action.

GGL supported in setting up of 9 PSA oxygen plants at various districts (6 in Rajkot, 2 in Morbi and 1 in Aravalli) in the GMERS operated Government Hospitals of Gujarat. The initiative was critical as it aimed to meet the increasing demand of oxygen and for future preparedness wherein GGL contributed Rs. 300 lakhs. See Table No. 3 and 5 for details about capacity of PSA plants, date of installation and location as per Gujarat CSR Authority (GCSRA) who acted as the main implementing agency for the implementation of the project. GCSRA published tender for the same on May 5<sup>th</sup> 2021 with deadline of technical bid opening on May 12<sup>th</sup> 2021.

Through the initiative of GGL, GCSRA undertook several activities, which are listed as below:

- Supply of the PSA plants
- Installation of the PSA plants
- Training of the technical/non-technical personnel's
- Commissioning and monitoring of PSA plants

### D. CSR Initiative: Outcomes

GGL has contributed to the project 'Supply, Installation and Commissioning of PSA Oxygen Plants in Government Hospitals at various locations in Gujarat' through the implementation partner (GCSRA). The main outcomes of the intervention were as follows:

- Supplied, installed and commissioned nine PSA oxygen plants during COVID 19

- Provided oxygen for patients at bed level in each location
- Strengthened healthcare services of the GMERS managed Government hospitals of the State especially for Oxygen requirement
- Ensured that each of these hospitals has a captive oxygen generation facility

## E. CSR Initiative: Role of Stakeholders Involved

To implement this project, various stakeholders had come together and each one had their separate roles. A gist about their roles is as listed below:

### Commissionerate of Health (CoH), Government of Gujarat:

- Designated Nodal Officer for the intervention
- Provided locations for the PSA plants
- Facilitation for the ground level execution, like direction to PIU for the civil & electrical work
- Ensured the preparatory activities
- Verification of goods delivery, quality check and ensured installation & commissioning
- Reporting & certification of plant supply, installation & Commission to GCSRA within 24 hours of receipt of report, etc.

### Gujarat CSR Authority (GCSRA):

- Issued tender & bid process
- Coordination with CoH for the effective implementation
- Overall monitoring of the project and developed monitoring system
- Payment process post receiving the recommendation for payment and certification of the work completion from CoH
- Coordination with hospitals covered under the project for the monitoring and reporting purpose, etc.

### Vendor:

- Timely supply, installation & commissioning of the PSA plants at the locations as per the work order
- Collected the certification of the installation & commissioning from the Nodal Officer of the respective hospitals
- Provided basic operational training to the Nodal Officer & the person designated by the hospital (Hospital Staff), etc.

### Various Govt. Hospitals across the State:

- Verified purity level and send the Installation & Commissioning certificates to the CoH office
- Ensured safety and proper utilization of the plant
- Conducted mock drills as and whenever directed by the Central & State Health Departments
- Submitted monthly utilization reports to GCSRA, Health Department etc.

## F. Gujarat: Policy, Legal and Administrative Framework during COVID-19

High demand of oxygen, especially during the second wave of COVID 19 in India, prompted the Union Ministry of Health & Family Welfare to install PSA oxygen plants in five states including Gujarat<sup>1</sup>. The oxygen demand in Gujarat had risen to 1,190 metric tonnes (MT), of which almost 1,000 MT is being provided by the Centre, stated the Chief Minister Gujarat and also mentioned that the number of oxygen beds that stood at 16,045, has raised to 54,579 in 1,269 hospitals in the state<sup>2</sup>. At the same time, several private companies, individuals, associations and NGOs had also chipped in and have worked with government to amplify the supply of oxygen. As per media reports, PM care funds have also been utilized for installing PSA oxygen plants across India<sup>3</sup>.

A meeting was conducted in May 2021 under the Chairmanship of Honourable Chief Secretary during which Additional Chief Secretary, Finance Department, Managing Director Gujarat State Petroleum Corporation, Secretary Finance Department (EA) and Vice Chairman and Managing Director GIDC (Chairman and CEO, GCSRA) remained present. During the meeting it was discussed that COVID-19 second wave created enormous pressure on health infrastructure specially oxygen supply system in the Hospital for the needy patients. Sudden increase in number of patients admitted in oxygen beds and consequently, moving to bi-pap and ventilator has necessitated the huge oxygen demand in Gujarat as well.

Considering the limited source of production, Government of Gujarat has planned to augment in house oxygen generations plants, PSA Medical Oxygen Generation Plants in major hospitals all over Gujarat. During the aforesaid meeting, it has been further decided that considering the requirement of PSA Oxygen Plants in the State, the PSA Oxygen plants to be procured with the CSR funding support of various State PSUs. It was then further advised by the Honourable Chief Secretary that for the procurement of PSA Plants, the procurement procedures to be undertaken by the Gujarat CSR Authority and the CSR funds from the State PSUs may be transferred to GCSRA by all the identified PSUs. Gujarat CSR Authority based on the requirements submitted by Commissionerate of Health for PSA Oxygen plants in various Government Hospitals in the State, with the purpose to obtain the competitive price bids for the PSA Oxygen plant issued a tender notice and finalized the vendor for supply and commissioning of 250 LPM and 500 LPM PSA Oxygen plants. This clearly indicates commitment and pro-activeness of the government during an emergency.

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<sup>1</sup>[https://www.business-standard.com/article/current-affairs/covid-19-162-psa-oxygen-plants-sanctioned-by-centre-33-installed-121041800252\\_1.html](https://www.business-standard.com/article/current-affairs/covid-19-162-psa-oxygen-plants-sanctioned-by-centre-33-installed-121041800252_1.html)

<sup>2</sup><https://indianexpress.com/article/cities/ahmedabad/vijay-rupani-36-psa-oxygen-plants-will-be-set-up-in-22-govt-hospitals-in-gujarat-7295915/>

<sup>3</sup><https://www.thehindubusinessline.com/news/500-pm-cares-funded-psa-plants-1-lakh-concentrators/article34433422.ece>

## CHAPTER II - Social Impact Assessment Study

### II.A) Study details

#### 1. Scope of the Study

Gujarat Energy Research and Management Institute (GERMI) was hired by Gujarat Gas Limited (GGL) as an independent consultant for the Social Impact Assessment study to understand the impact of 'Supply, Installation and Commissioning of PSA Plants for GMERS Operated Government Hospitals'. The study included; secondary research, preparation of research tools, training of GERMI field staff, pre-testing of research tools, data entry, analysis and development of report.

The study intended to understand the following aspects:

1. Impact of the intervention
2. Relevance during pandemic
3. Possibilities to enhance services

#### 2. Research Methodology

As the study involved multiple stakeholders spread over the state of Gujarat and was to be done within a stipulated time, it was decided to use 'qualitative research methodology' to understand impact of the intervention. It has helped in understanding concepts, strategies, plans, mechanisms, implementation process and experiences.

#### 3. Sample for Study (Stakeholders)

GGL has supported in installation of PSA oxygen plants at eight locations i.e., government hospitals, such as six in Rajkot, two in Morbi and one in Aravalli. All of these, i.e., 8 hospitals (100%) were selected for the study. Apart from this, three officials (other stakeholders) were also interviewed. All the hospitals supported by GGL have been selected for the study. The details of the hospitals visited and stakeholders consulted are listed below:

Table No. 1: Sample selection for the study

Government Hospitals		
District	Location	Hospitals visited
Rajkot	Rajkot	Rajkot District Civil Hospital
	Upleta	Sub-District Hospital
	Dhoraji	Sub-District Hospital
	Gondal	Sub-District Hospital
	Jasdan	Sub-District Hospital
Morbi	Wankaner	Sub-District Hospital
	Halvad	Sub-District Hospital
Aravalli*	Bhiloda*	Sub-District Hospital

\*The plant for Bhiloda was jointly funded by CSR funds of GGL & another PSUs.

Other stakeholders	
Department	Name of official
Commissionerate of Health (CoH)	Dr. Parth Jani (Nodal Officer for Oxygen, GoG)
Gujarat Medical Services Corporation Limited (GMSCL)	Mr. Manish Maheyal Ms. Riddhi Shah

#### 4. Tools Development

GERMI has developed in-depth questionnaires for the research study considering involvement of hospitals and other stakeholders in this intervention. Thus, the questionnaires were developed to ensure the comprehensiveness of the study.

Preliminary meeting was conducted with GGL team to understand the study and its scope. Secondary study of documents provided by GGL, GCSRA and online resources helped in understanding the intervention further. Based on this research tools were developed. One-day training was organized at GERMI's office in Gandhinagar on March 6, 2023 to train the team to conduct the interviews/survey. A team of 7 data collectors were trained through in-depth explanation about social impact assessment process and the tools developed (questionnaires). The training also helped data collectors in getting acquainted with the study, its objectives and the set of questions. Apart from these measures, Sub District Hospital – Bhiloda was visited on March 7, 2023 to pre-test the tools and to see the PSA plant and understand its functioning, meet the operators and listen to their COVID experience. This method helped to great extent in finalising key research questions.

Two in-depth questionnaires were then developed for all stakeholders and upon its approval from GGL the questionnaires were finalized. Refer to *Annexure 3* for final questionnaires.

#### 5. Methodology of Data Collection

The data collection was done by GERMI team during March 20 to 24, 2023. The data collection team included social scientists, administrative officials and project management executives. Therefore, this was a unique experience and the team has experienced field realities first-hand. In their own words, the visits have been an eye-opener to the difficult times everyone has gone through.

After the data collection, the duly filled questionnaires were analysed by the team. Refer to the following table for details of data collection visits:

**Table No. 2: Data collection visits**

Date of Visit	Name of hospital	Location
07-03-2023	Sub-district government hospital	Bhiloda* All Team Members. <i>'Pilot study to field test the tools'</i>
<b>Team : Ms. Krupali Mehta &amp; Mr. Vikram Barot</b>		
20-03-2023	Sub-district government hospital	Dhoraji
20-03-2023	Sub-district government hospital	Upleta

21-03-2023	Sub-district government hospital	Gondal
22-03-2023	Sub-district government hospital	Jasdan
23-03-2023	Government Civil Hospital	Rajkot
23-03-2023	Sub-district government hospital	Wakaner
24-03-2023	Sub-district government hospital	Halvad

\*The plant for Bhiloda was jointly funded by CSR funds of GGL & another PSUs.

## 6. Limitations of the Study

GERMI undertook the social impact assessment study of ‘Installation and Commissioning of PSA Plants for GMERS Operated Government Hospitals’ vide work order GGL/GERMI/CSR/IA/2023/02 dated 16-January 2023. GERMI has taken utmost care in conducting the social impact assessment study in its true sense i.e., “Social impact can be defined as the effect on people and communities that happens as a result of an action or inaction, an activity, project, programme or policy”<sup>4</sup>.

We have faced certain limitations of the study, which are as follows:

1. **No Baseline Data:** As the situation of COVID was not a pre-assumed event, possibility of baseline survey was slim. Therefore, it lacked a baseline document to compare results and achievements in the assessment phase. Without baseline data, it is difficult to estimate and compare any changes – particularly what happens before and after the program has been implemented.
2. **Time Constraint:** Due to paucity of time, all stakeholders are not met to understand the impact in a holistic way.
3. **Lack of standardization:** There is no standard methodology for conducting SIAs, and different practitioners may use different methods and criteria for assessment, which can affect the consistency and comparability of results.

## II.B) Data analysis

### 1. Relevance of the Intervention

Gujarat CSR Authority has been established under the administrative control of the Industries and Mines Department (IMD) Government of Gujarat, for the purpose of supporting & facilitating CSR initiatives of various companies. For this intervention, GCSRA issued a tender for supply, installation and commissioning of PSA Oxygen plants at various District and Sub District hospitals in Gujarat. GCSRA engaged technically competent agency for supply, installation and commissioning of PSA Oxygen Plants. For this purpose, Bids were invited and Bosco India was finalised on June 1, 2021. GCSRA also requested multiple PSUs to support the project in critical time of COVID. GGL was one of them to come forward to support the process of installation and commissioning of PSA plants in various hospitals.

According to GCSRA, the following table depicts basic details about hospitals where PSA oxygen plant were installed using GGL CSR fund:

<sup>4</sup><https://www.goodfinance.org.uk/latest/post/what-social-impact-and-how-do-i-measure-it#:~:text=Social%20impact%20can%20be%20defined,work%20with%20and%20buy%20from>

Table No.3: PSA oxygen plants installed using GGL CSR fund

S.N.	Type of Hospital	Location	No. of plants	PSA plant capacity (LPM- Litre Per Minute)
1	District Hospital	Rajkot	2	500
2	Sub District Hospital	Upleta	1	250
3	Sub District Hospital	Dhoraji	1	250
4	Sub District Hospital	Gondal	1	250
5	Sub District Hospital	Jasdan	1	250
6	Sub District Hospital	Wankaner	1	250
7	District Hospital	Halvad	1	250
8	Sub District Hospital	Bhiloda*	1	250

\*The plant for Bhiloda was jointly funded by CSR funds of GGL & another PSU.

All together, the eight hospitals visited have 2390 beds. And out of this 2295 (96.02%) are connected with oxygen supply.

Table No. 4: Status of hospitals w.r.t oxygen supply at bed level

S.N.	Name of Hospital	Total Beds Capacity	Total Beds connected with Oxygen Outlets
1	Rajkot, District Civil Hospital	1800	1800
2	Upleta, Sub District Hospital	83	83
3	Dhoraji, Sub District Hospital	56	56
4	Gondal, Sub District Hospital	150	150
5	Jasdan, Sub District Hospital	50	30
6	Wankaner, Sub District Hospital	106	106
7	Halvad, Sub District Hospital	50	20
8	Bhiloda, Sub District Hospital	95	50
	<b>Total</b>	<b>2390</b>	<b>2295</b>

**PSA Installation and Bed Connectivity with PSA Plant:** The following table shows the year of PSA installation and how hospitals managed to accommodate 439 numbers of beds to address the surge of COVID patients. However, out of eight locations, three did not answer. The study also has shown that in all the hospitals visited, the PSA plants were installed/or it became functional after the second wave subsided. However, the hospitals have the plants now in place, which are functional and could address to oxygen supply demand in any emergencies in the future.

Table No. 5: PSA Installation and no. of bed connectivity with PSA plant

S.N.	Place (DCH – District Civil Hospital) (SDH – Sub District Hospital)	Year of PSA Installation	No. of beds accommodated in COVID	No. of beds connected to O <sub>2</sub> from PSA plant
1	DCH - Rajkot	Not mentioned	NA	At all hospitals visited, PSA Plant was installed or started functioning after the second wave subsided.
2	SDH - Upleta	June, 2021	170	
3	SDH - Dhoraji,	August, 2021	90	
4	SDH - Gondal	July, 2021	54	
5	SDH - Jasdan	July, 2021	30	
6	SDH - Wankaner	August, 2021	NA	
7	SDH - Halvad	August, 2021	NA	
8	SDH-Bhiloda	Not mentioned	95	

## 2. Effectiveness & Efficiency of the Intervention

As we can see from Table no.5, with support from GGL all the above DCH and SDHs were able to successfully install the PSA Oxygen generating plants from June to August 2021. The capacity of all these plants installed was 250 LPM (litre per minute) Nm<sup>3</sup>Hr (normal cubic meters per hour) in all the SDH and in DCH it was 500 + 500 LPM (litre per minute) Nm<sup>3</sup>Hr (normal cubic meters per hour).

As far as the cost is concerned, all of them agreed that the plant was installed free of cost after the hospital authorities had constructed the concrete platform as per the specification from the respective vendor. All of them confirmed that they incur considerable electricity expenses for running and maintaining the PSA plant. Apart from their original capacity, 5 SDHs were able to manage and accommodate beds for COVID patients.

All these Hospitals (DCH and SDHs) have their system of oxygen supply which is depicted in the table below:

Table No. 6: Current status of Oxygen

S.N.	Place (DCH – District Civil Hospital) (SDH – Sub District Hospital)	Current Oxygen Supply Facility	
		Wall Mounted	Individual Cylinders
1	DCH - Rajkot	1800	570
2	SDH - Upleta	56	30
3	SDH - Dhoraji,	56	48
4	SDH - Gondal	150	137
5	SDH - Jasdan	30	30
6	SDH - Wankaner	All beds	4
7	SDH - Halvad	20	170



S.N.	Place (DCH – District Civil Hospital) (SDH – Sub District Hospital)	Current Oxygen Supply Facility	
		8	SDH-Bhiloda
	<b>Total</b>	<b>1967</b>	<b>450</b>

For the questions about load of patients who require oxygen at present and during COVID period, the answers received were not conclusive. Following table depicts the varied responses from the hospitals:

Table No. 7: COVID V/S Current Load of Patients with reference to Oxygen

S.N.	DCH & SDHs	Current Load of Patients requiring Oxygen Supply	Patient load requiring oxygen during COVID
1	Rajkot DH	No answer	No answer
2	Upleta SDH	1 to 2 (as no ICU/ ICCU)	70
3	Dhoraji SDH	15 to 20	70
4	Gondal SDH	1	0
5	Jasdan SDH	No answer	All patient (30% on Oxygen & 70 % referred)
6	Wankaner SDH	10 to 15 patients in a month	Max 70 patients. Hospital was able to manage during COVID. In case more patients they were referred to Rajkot for treatment.
7	Halvad SDH	2 to 3	No answer
8	Bhiloda SDH	Very less only Asthma patients	All patients (4 to 5)

As seen in the above table no. 7, currently there are very few patients who require oxygen supply as part of their treatment. However, we believe 'even one patient saved with timely supply of oxygen, matters the most'.

When probed about the benefits of the PSA plant, only 4 Hospitals mentioned that it can be life-saving, 1 (one) agreed that it can be time saving and the other said it can be cost effective. The remaining 3 hospital authorities preferred not to give any response when asked about the quality of oxygen generated through the PSA plant.

At the same time, all the hospitals responded that the installation of PSA oxygen plants have incurred no expenses for them and all the expenses to set up the system has been borne by GGL.

### **3. Quality of the Intervention**

The hospital's technical staff has received training for the operations and maintenance of the PSA plant. About 40 people have received training on operation and maintenance – and as a part of this they perform basic works like switching the plant on/off or check the purity of oxygen. All of them responded that the 'Do's and Don'ts Guidelines' shared with them during the training has been helpful.

3 SDHs have proper designated space for oxygen cylinders in their respective hospitals. They have centralised system in place. While others reported that they keep the oxygen cylinders in either open lobby, or in emergency ward or in female ward.

## CHAPTER III - Impact of The Intervention and Observations

### III. A) Impacts

#### Direct impact

- **Strengthened infrastructure for emergency/ disaster situation at district and sub district level hospitals in Gujarat.** Disaster creates an opportunity for development is an optimistic approach in disaster management. Similarly, COVID -19 pandemic has provided an opportunity to strengthen our public health system and its delivery mechanisms. The installation of PSA plant funded by GGL has made direct impact in term of strengthening hospital level infrastructure support provisioning of oxygen supply. In the words of Dr. Parth Jani, official from CoH “This has been a one kind of life saving activity and it was critical at that point of time”.

The infrastructure was created in anticipation of surge in demand of oxygen during second wave of Covid 19 and at many places the PSA plant was installed and became operational when the 2<sup>nd</sup> wave of Covid had subsided. Even though, the strengthened infrastructure paves way for better prevention in case of similar emergencies in the State of Gujarat and will certainly help save lives of many people.

- **Trained staff for operating PSA plant at district and sub district level hospitals in Gujarat.** PSA plant requires technical expertise at operational and maintenance level. Due to this project, at Sub District and District level, the staff was provided with training on operation of PSA plant. Along with that the staff is provided training for data recording and ensuring best possible quality Oxygen generation using these plants at local level. The strengthened capacity of staff can bring impact on utilisation of newly created/ strengthened system of Oxygen supply. Ms. Riddhi Shah GMSCL, stated that “PSA plant was a new subject. So for training, installation and demonstration, government made a team and accordingly worked on war foot”.
- **Opportunity to raise resources for self-sufficiency in Oxygen supply through refilling provision.** The interesting fact revealed by all respondents that installation of PSA plant has capacity to not only make them self-reliant in term of meeting their oxygen supply needs but can also become a source of making hospital more resourceful for other private hospitals too by establishing refilling system for the Oxygen generated from the established PSA plants. Similarly, it will also ensure filling of cylinders for internal use also.

#### Indirect impact

- Created a positive image of the government hospitals and their services among the people, who were then troubled and were running pillar to post in search of facilities.
- Covid 19 has overall improved the image of public health facilities in the eyes of people due to many reasons including availability and cost of oxygen supply during peak Covid period, especially in the rural areas. During the pandemic, the hospitals were overcrowded and many people have witnessed hard time to access to Oxygen cylinder for their near and dear ones. The efforts of public health facilities have been

widely acknowledged and appreciated by people and relatives affected by Covid 19 during 1<sup>st</sup> and 2<sup>nd</sup> waves. Dr. Parth Jani, official from CoH says that “Government is working on AMC and maintenance of the plants” to make the facilities sustainable.

### **Social impact**

- Easy to operate PSA oxygen plants are installed in rural hospitals, which would certainly help if any emergency occurs in the future and can supply free of cost oxygen supply to anyone visiting government hospitals.
- As the availability of oxygen will increase, it will help in making the services of hospitals better, for people from all sections of the society, without any division.

### **Environmental impact**

- It is considered that PSA is ‘clean technology’ as the raw material that it uses is the ambient air.
- PSA oxygen plants are reliable on-demand production (no vaporization loss). There is no high-risk handling of hazardous high-pressure cylinders. It eliminates potential delivery and transport safety issues.

## **III. B) Key Suggestions to Strengthen CSR initiatives**

- Infrastructure created but further support needed to sustain and for best utilisation of infrastructure:  
The project supported by GGL has no doubt strengthened the infrastructure facility at sub district hospital levels, but the PSA plant itself need support to continue its functionality. It is observed that many of the hospitals are not in position to utilise the PSA plants installed due to lack of proper maintenance, lack of dedicated human resources, generator for uninterrupted power supply and in some cases the normal wear and tear support. It was revealed that to maintain these plants daily running of the plant is must, which essentially require electricity consumption. It was further learnt that after 1.5 hours of running of the plant the desired level of oxygen purity is obtained in case of plant running daily, else it takes 3-4 hours to attain the desired level of oxygen purity. In current situation, these hospitals do not need the amount of Oxygen generated in an hour by running of these plants (except emergency like Covid -19) and running daily also adds to their electricity bill. For optimum functionality of the PSA plants, these hospitals need further support like regular maintenance of plants, dedicated human resources and refilling facility.
- Add on support for key infrastructure support is essential. As stated in impact section, the hospitals needed support and infrastructure to establish system of refilling of Oxygen cylinders and a system for utilisation of the fund raised from supplying Oxygen to other private hospitals.

- Dedicated Human resources for operation and maintenance of PSA plants. Considering the investment made and potential for saving lives in future emergencies as well as making it a revenue generating intervention, in each hospital a regular staff should be given full time responsibility to manage the PSA plant and the gaps are to be addressed as soon as possible.

### Voices from the field

Field visits of GERMI team have captured some of the experiences shared by the respondents. Some are worth documenting here because; these are learnings, which are often not given enough space in the larger narrative.

Now that COVID cases have gone down and a state of normalcy has come, the hospitals have shared that ‘daily need of oxygen has come down, but they are still relieved that, now they have a system in place’.

There are certain prerequisites for keeping the PSA oxygen plant functional, such as dedicated and trained team, generator, annual maintenance contract and cylinder refilling system – to make the efforts sustainable. Unanimously everyone has said that regular maintenance of the PSA plants need sufficient resources.

### III. C) Conclusion

‘Supply, installation and commissioning of PSA oxygen plants’ has been a step towards creating a mechanism for the GMERS run hospitals to have its own oxygen-producing facility. It is evident that there has been focussed efforts to save thousands of lives, who were struggling because of the oxygen shortage that happened during the second wave of COVID.

By the time the PSA Oxygen Plants were installed, fortunately the second wave of COVID-W19 subsided and the demand for Oxygen decreased. The respondents value the PSA system which has been set at their hospitals and is functioning.

GGL has been in the forefront along with the government and other entities during the COVID battle and have witnessed unprecedented flow of COVID patients to hospitals at that time. The timely support of GGL has helped the state to have social assets, which will always be at the service of people.

## Stakeholder's Voice

[https://drive.google.com/file/d/1G5S75IoSs71AnDvFJly87nD8QZtsZo8N/view?usp=share\\_link](https://drive.google.com/file/d/1G5S75IoSs71AnDvFJly87nD8QZtsZo8N/view?usp=share_link)

## ANNEXURE 1 - How PSA Plant Works?

The oxygen and nitrogen generators are based on the PSA technology, also called Pressure Swing Adsorption or Separation by Pressurization Alternated, which consist to separate the air & gas from the ambient air, used as one raw material (air ambient contains 21 % oxygen, 78% nitrogen, 0.9 % argon and 0.1 % rare gases).

1. The gases are separated under the alternating pressurization of two tanks filled with molecular sieve (zeolite for oxygen generator and activated carbon for nitrogen generator).
2. When the tank is pressurized by the compressed air, the nitrogen or the oxygen is gradually retained by the molecular sieve, releasing the produced gas directly at the output of the generator. At high pressure, the molecular sieve adsorbs oxygen ( or nitrogen), carbon dioxide and vapour from the air to water, and allowed to pass nitrogen ( or oxygen ).
3. When the tank is almost full, the process continues to the second tank and the gas adsorbed in the first receiver is released into the atmosphere. While a tank is adsorbing, the other regenerates itself by pressure reduction.
4. The cycle is then repeated under electronic control in order to produce high purity and stable oxygen or nitrogen continuously.

## ANNEXURE 2 – Interventions of GGL

**Education:** GGL aims to promote education and skill development in the communities it serves. The company has established several educational programs, including scholarships and vocational training, to help young people acquire the skills and knowledge they need to succeed in the workforce.

**Health and Safety:** GGL is committed to promoting the health and safety of its employees and the communities. The company has established several health and safety programs, contributed towards creating and improving existing health infrastructure, medical and health awareness campaigns, to improve the health and well-being.

**Environment:** GGL is committed to minimizing its impact on the environment and promoting sustainable development. To promote environmental sustainability, the company has established several programs, including tree planting and waste management initiatives.

**Community Development:** GGL aims to support the social and economic development of the communities. The company has mobilised several community development programs for infrastructure and entrepreneurship development that promotes economic and social growth.

Hence, GGL's CSR activities are an important part of its business strategy, helping to create a more sustainable and socially responsible business model. The company recognizes that its success is closely linked to the well-being of the communities and is committed to making significant positive contribution towards development of social infrastructure, economic, environmental and social upliftment.



## ANNEXURE 3 – Research Tools Developed – Final Questionnaires

### INFORMED CONSENT FORM

Please read this consent agreement carefully before agreeing to participate in this study. We request for your participation in the study on *"Social Impact Assessment of CSR projects of Gujarat Gas Limited"* as a participant with the details as below:

#### What will you do in this study?/Your Role

Upon your agreement to participate, we kindly ask you to participate in survey questionnaire attempting to understand the impact of project **"Supply, Installation and Commissioning of PSA Oxygen Plants in Government Hospitals at various locations in Gujarat"**.

#### Voluntary Withdrawal

Your participation in this study is completely voluntary. You may skip over any questions or you may withdraw from the study at any time without penalty. However, it is important to us that you answer as many questions as possible.

#### Confidentiality

The records of this study (field notes and audio recordings if any) will be kept private and confidential. Research records will be stored securely and only researchers will have access to the records. The results of this reflection process may be published and only upon your request, your name will not be attached in any of the published documents. However, it is preferable to state your name as this would like to emulate the spirit of transparent global practice.

#### Further Information

If you have any questions, please contact GERMI.

**Thank you very much for your time and participation. We highly appreciate your support for this process.**

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#### Statement of Consent:

The purpose and nature of this research have been sufficiently explained and I agree to participate in this study.

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Respondent's Signature/ Date

**Note:** Please verify whether the staff being interviewed served during Covid-19. If the staff has changed/new/appointed after Covid-19, DO NOT INTERVIEW HIM/HER.

આ અભ્યાસમાં સામેલ થવા પહેલાં આ સંમતિ પત્રક ધ્યાનપૂર્વક વાંચો. હું આપશ્રીને “ગુજરાત ગેસ લિમિટેડના સી.એસ.આર. પ્રોજેક્ટની સામાજિક અસરોના મૂલ્યાંકન” માં ભાગ લેવા માટે વિનંતી કરું છું. આ ઇન્ટર્વ્યુ માં લગભગ ૪૫ મિનિટ થી ૧ કલાકનો સમય લાગી શકે છે. આ અભ્યાસની વિગતો નીચે મુજબ છે:

**આ અભ્યાસમાં તમારી ભૂમિકા:**

આ અભ્યાસ માટે તમારી સંમતિ આપ્યા બાદ, અમે તમને “નાણાકીય વર્ષ ૨૦૨૧-૨૨ દરમિયાન સ્મશાન ગૃહો/મુક્તિધામોમાં નિશુલ્ક ગેસ પુરવઠો” વિશેના સર્વે સંબંધિત પ્રશ્નો પૂછીશું.

**સ્વૈચ્છિક ના પાડવી**

આ અભ્યાસમાં આપશ્રીની ભાગીદારી સંપૂર્ણપણે સ્વૈચ્છિક છે. તમે આ અભ્યાસ દરમિયાન પૂછવામાં આવતા અમુક કે તમામ પ્રશ્નોના જવાબ આપવાનું ટાળી શકો છો અથવા તો જ્યારે પણ તમને અનુકૂળ ન લાગે ત્યારે, ઇન્ટરવ્યુ અધવચ્ચેથી પણ બંધ કરવાનું કહી શકો છો. જોકે, તમે શક્યતઃ તમામ પ્રશ્નોના જવાબો આપો તે અમારા માટે ખૂબ મહત્વપૂર્ણ છે.

**ગોપનીયતા**

આ અભ્યાસ દરમિયાન એકત્રિત કરવામાં આવતી તમામ માહિતી (સર્વે દરમિયાનની નોંધો અને ઓડિયો/વિડીયો રેકોર્ડિંગ) ગોપનીય અને અંગત રાખવામાં આવશે. આ અભ્યાસની માહિતી સુરક્ષિત જગ્યાએ સંગ્રહ કરવામાં આવશે અને ફક્ત સંશોધન કર્તાઓને જ તે માહિતી ઉપલબ્ધ કરાવવામાં આવશે. આ અભ્યાસના પરિણામો પ્રકાશિત કરવામાં આવી શકે છે, પરંતુ તમારું નામ કોઈપણ રીતે પ્રકાશિત કરવામાં આવશે નહિ. જોકે, અભ્યાસની પારદર્શિતાના વૈશ્વિક ધોરણો મુજબ, તમારું નામ જણાવવું ઇચ્છનીય છે.

**વધારાની માહિતી**

જો તમને આ અભ્યાસ સદર્ભે અન્ય કોઈ પ્રશ્નો હોય તો તમે GERMA નો સંપર્ક કરી શકો છો.

તમારા સમય અને ભાગીદારી માટે ખૂબ આભાર. આ પ્રક્રિયામાં તમારો સહકાર પ્રસંશનીય છે.

**સંમતિ વાક્ય:**

મને આ અભ્યાસનો હેતુ અને પ્રક્રિયા પર્યાપ્તપણે સમજાવવામાં આવી છે અને હું આ અભ્યાસમાં ભાગ લેવા માટે મારી સંમતિ આપું છું.

ઉત્તરદાતાની સહી: \_\_\_\_\_

તારીખ: \_\_\_\_\_

નોંધ: કૃપા કરીને, ઉત્તરદાતાએ કોવિડ-૧૯માં સેવા આપી હોય તે સુનિશ્ચિત કરો. જો, કર્મચારીની કોવિડ-૧૯ બાદ બદલી થઈ હોય/નવી ભરતી કરવામાં આવી હોય તો તેમનો ઇન્ટરવ્યુ લેવો નહિ.

### Details of Respondent (ઉત્તરદાતાનીવિગતો)

Name:	Age:
Gender:	Education:
Occupation/Designation:	Income:(Optional)
Marital status:	Religion:
Location/Address:	Contact:

### FOR HOSPITALS (હોસ્પિટલ માટે) / Section 1: Hospital Information

1.1 Name of the Hospital (હોસ્પિટલનું નામ): \_\_\_\_\_

1.2 Address(સરનામું): \_\_\_\_\_

1.3 Name of Staff: (responsible for oxygen supply and delivery/ PSA plant) સ્ટાફનું નામ: (ઓક્સિજન સપ્લાય અને ડિલિવરી/PSAપ્લાન્ટ માટે જવાબદાર)

1.4 Total number of beds in hospital(હોસ્પિટલમાં બેડની કુલ સંખ્યા): \_\_\_\_\_

1.5 When this PSA Oxygen plant installed in your hospital? (આ PSA ઓક્સિજન પ્લાન્ટ તમારી હોસ્પિટલમાં ક્યારે લગાવવામાં આવ્યો?) \_\_\_\_\_

1.6 Total number of beds with oxygen outlets (ઓક્સિજન આઉટલેટ્સ સુવિધા સાથે બેડની કુલ સંખ્યા): \_\_\_\_\_

1.7 What type of facilities does the ICU/ICCU have regarding oxygen supply? (ઓક્સિજન સપ્લાય અંગે ICU/ICCUમાં કેવા પ્રકારની સુવિધાઓ છે?) \_\_\_\_\_

**1.8 No. of beds accommodated in existing rooms during COVID-19 and were they connected to oxygen supply from PSA plants commissioned?** (કોવિડ-19 દરમિયાન રૂમમાં બેડની સંખ્યા અને શું તે PSA પ્લાન્ટ્સ ઓક્સિજન સપ્લાય સાથે જોડાયેલા હતા?)

a. No. of beds accommodated (જોડાયેલા બેડની સંખ્યા) \_\_\_\_\_

b. Were connected to oxygen supply from PSA plants  
(PSA પ્લાન્ટ્સમાંથી ઓક્સિજન સપ્લાય સાથે જોડાયેલા હતા)

Yes /હા

No/ ના

**Section 2: PSA Plant Installation and Utilisation (Infrastructure Created)**

**2.1 What is the current facility to supply oxygen to bedside?** (બેડસુધી ઓક્સિજન પહોંચાડવાની વર્તમાન સુવિધા શું છે?)

a. Wall-mounted outlets (વોલ-માઉન્ટેડ આઉટલેટ્સ)

b. Individual cylinders (વ્યક્તિગત સિલિન્ડર)

c. Any other, please specify (અન્ય કોઈપણ, કૃપા કરીને સ્પષ્ટ કરો)

**2.2 What is the capacity of PSA plant installed in your hospital during COVID-19?** (COVID-19 દરમિયાન તમારી હોસ્પિટલમાં લગાવવામાં આવેલા PSA પ્લાન્ટની ક્ષમતા કેટલી છે?)

**2.3 Did it incur any cost for the hospital or was it 100% funded by the supplier (GGL)?** (શું તેમાટે હોસ્પિટલને કોઈ ખર્ચ થયો હતો અથવા સપ્લાયર (GGL) દ્વારા 100% ભંડોળ પૂરું પાડવામાં આવ્યું હતું?) \_\_\_\_\_

**2.4 Can you tell us the advantages of PSA plant being installed in your hospital during COVID-19?** (શું તમે અમને કોવિડ-19 દરમિયાન તમારી હોસ્પિટલમાં PSA પ્લાન્ટ લગાવવાના ફાયદા જણાવી શકો છો?) \_\_\_\_\_

a. Lifesaving (જીવનરક્ષક)

b. Time saving (સમય ની બચત)

c. Cost effective (અસરકારક ખર્ચ)

d. Others, if any please specify (અન્ય કોઈપણ, કૃપા કરીને સ્પષ્ટ કરો)

**2.5 Was the supply of oxygen (generated from PSA plants) sufficient against the requirement during critical phase of COVID-19?** (શું કોવિડ-19 ના નિર્ણાયક તબક્કા દરમિયાન ઓક્સિજનનો પુરવઠો (પીએસએપ્લાન્ટ્સમાંથી ઉત્પન્ન થયેલ) જરૂરિયાત સામે પૂરતો હતો?)

Yes /હા

No/ ના

If no, what was done to meet the demand? (જો ના, તો માંગને પહોંચી વળવા શું કરવામાં આવ્યું?)

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**2.6 Is the PSA plant installed during COVID-19 functional currently?** (કોવિડ-19 દરમિયાન તમારી હોસ્પિટલમાં લગાવવા આવેલ PSA પ્લાન્ટ શું હાલમાં કાર્યરત છે?)

Yes /હા

No/ ના

**2.7 Do you think the hospital still require the PSA plant for oxygen?** (શું તમને લાગે છે કે હોસ્પિટલને હજુ પણ ઓક્સિજન માટે PSA પ્લાન્ટની જરૂર છે?)

a. Yes, required (હા, જરૂર છે)

b. Not required now (હવે જરૂર નથી)

c. Cylinders can suffice the demand, less cases now (સિલિન્ડરમાં ગને પૂરી કરી શકે છે, હવે ઓછા કેસ છે)

**2.8 What is the current patient load who requires oxygen supply on daily basis?** (વર્તમાનમાં દૈનિક ધોરણે ઓક્સિજન સપ્લાયની જરૂર હોય તેવા દર્દીનો ભાર કેટલો છે?)

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**2.9 What was the patient load who required oxygen supply on daily basis during Covid-19?** (કોવિડ-19 દરમિયાન દરરોજ ઓક્સિજન સપ્લાયની જરૂરિયાત ધરાવતા દર્દીનો ભાર કેટલો હતો?)

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**2.10 How many persons were served using PSA plant Oxygen supply in your hospital during Covid 19?** (કોવિડ-19 દરમિયાન તમારી હોસ્પિટલમાં PSA પ્લાન્ટ ઓક્સિજન સપ્લાયનો ઉપયોગ કરીને કેટલા લોકોને સારવાર આપવામાં આવી હતી?)

No. of patients total (કુલ દર્દીઓની સંખ્યા): \_\_\_\_\_

Period (in months) (સમયગાળો(મહિનાઓમાં)): \_\_\_\_\_

**2.11 How much Oxygen was generated using PSA plant during Covid 19?** (કોવિડ19 દરમિયાન PSA પ્લાન્ટનો ઉપયોગ કરીને કેટલો ઓક્સિજન ઉત્પન્ન થયો?)

**Section 3: Maintenance of PSA Plant (Infrastructure Maintained)**

**3.1 Was there regular supply of oxygen through PSA plant during COVID-19?** (શું COVID-19 દરમિયાન PSA પ્લાન્ટ દ્વારા ઓક્સિજનનો નિયમિત પુરવઠો સપ્લાય કરવામાં સક્ષમ હતો?)

Yes /હા	No/ ના
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**3.2 What kind of training does the hospital technical staff in charge have regarding the maintenance of PSA plants?** (PSA પ્લાન્ટની જાળવણી અંગે હોસ્પિટલના ટેકનિકલ સ્ટાફ/ઇન્ચાર્જ ને કેવા પ્રકારની તાલીમ આપવામાં આવી હતી/આવે છે?)

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**3.3 How the PSA plant is maintained on a day-to-day basis?** (દૈનિક ધોરણે PSA પ્લાન્ટની જાળવણી કેવી રીતે થાય છે?)

- By whom: Name (કોના દ્વારા: નામ)

\_\_\_\_\_

Contract based (કરાર આધારિત)  Regular staff (નિયમિત સ્ટાફ)

- How (કેવી રીતે):

\_\_\_\_\_

- When (ક્યારે):

\_\_\_\_\_

- What (શું) : (Do you follow the instructions given on Do's & Don'ts)(શું તમે શું કરો અને શું ન કરો પર આપેલી સૂચનાઓનું પાલન કરો છો)

**3.4 Is there a designated space for storage of cylinders?** (શું સિલિન્ડરોના સંગ્રહ માટે કોઈ નિયુક્ત જગ્યા છે?)

Yes /હા	No/ ના
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If yes, please describe (જો હા, તો કૃપા કરીને વર્ણન કરો)

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**Section 4: Future of PSA Plant (Infrastructure Sustained)**

**4.1 Does the hospital plan to connect the PSA plant to existing services of oxygen outlets?**

(શું હોસ્પિટલ PSA પ્લાન્ટને ઓક્સિજન આઉટલેટ્સની હાલની સેવાઓ સાથે જોડવાની યોજના ધરાવે છે?)

Yes /હા

No/ ના

**4.2 Does the hospital plan to fill cylinders for other health facilities?** (શું હોસ્પિટલ અન્ય

આરોગ્ય સુવિધાઓ માટે સિલિન્ડર ભરવાની યોજના ધરાવે છે?)

Yes /હા

No/ ના

If yes, please specify which other health facilities (જો હા, તો કૃપા કરીને સ્પષ્ટ કરો કે અન્ય કઈ

આરોગ્ય સુવિધાઓ છે):

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**4.3 How many cylinders (including bedside, other health facilities, backup) does the**

**hospital plan to fill per day?** (હોસ્પિટલ દરરોજ કેટલા સિલિન્ડરો (બેડસાઇડ, અન્ય આરોગ્ય સુવિધાઓ,

બેકઅપ સહિત) ભરવાનું આયોજન કરે છે?)

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**4.4 Does the hospital plan to install a new PSA plant?** (શું હોસ્પિટલ નવો PSA પ્લાન્ટ સ્થાપિત

કરવાની યોજના ધરાવે છે?)

Yes /હા

No/ ના

If yes, why જો હા, તો શામાટે?

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**4.5 What is the life cycle of a PSA plant?** (PSA પ્લાન્ટનું જીવન ચક્ર કેટલું છે?)

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**4.6 Can these plants become mobile and used in other situations like natural disaster?** (શું આ PSA પ્લાન્ટ અન્ય જગ્યાએ ટ્રાન્સફર કરી શકાય અને કુદરતી આપત્તિ જેવી અન્ય પરિસ્થિતિઓમાં ઉપયોગમાં લઈ શકાય છે?)

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**4.7 What are your suggestions to strengthen such interventions in future for better service delivery?** (વધુ સારી સેવા વિતરણ માટે ભવિષ્યમાં આવા હસ્તક્ષેપોને મજબૂત કરવા માટે તમારા સૂચનો શું છે?)

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## INFORMED CONSENT FORM

Please read this consent agreement carefully before agreeing to participate in this study. We request for your participation in the study on "*Social Impact Assessment of CSR projects of Gujarat Gas Limited*" as a participant with the details as below:

### What will you do in this study? /Your Role

Upon your agreement to participate, we kindly ask you to participate in survey questionnaire attempting to understand the impact of project "**Supply, Installation and Commissioning of PSA Oxygen Plants in Government Hospitals at various locations in Gujarat**". Please note that this process of interview would take around 45 to 60 minutes to complete.

### Voluntary Withdrawal

Your participation in this study is completely voluntary. You may skip over any questions or you may withdraw from the study at any time without penalty. However, it is important to us that you answer as many questions as possible.

### Confidentiality

The records of this study (field notes, photographs, audio and video recordings, if any) will be kept private and confidential. Research records will be stored securely and only researchers will have access to the records. The results of this reflection process may be published and only upon your request, your name will not be attached in any of the published documents. However, it is preferable to state your name as this would like to emulate the spirit of transparent global practice.

### Further Information

If you have any questions, please contact GERMI.

**Thank you very much for your time and participation. We highly appreciate your support for this process.**

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### Statement of Consent:

The purpose and nature of this research have been sufficiently explained and I agree to participate in this study.

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Respondent's Signature/ Date

**Note:** Please verify whether the staff being interviewed served during Covid-19. If the staff has changed/new/appointed after Covid-19, DO NOT INTERVIEW HIM/HER. **The qualitative responses of the below given questions need to be recorded verbatim to avoid loss or misinterpretation of information.**

### Details of Respondent

Name:	Age:
Gender:	Education:
Occupation/Designation:	Income:(Optional)
Marital status:	Religion:
Location/Address:	Contact:

### FOR OTHER STAKEHOLDERS

[Commissionerate of Health (CoH) Govt. of Gujarat, Gujarat CSR Authority (GCSRA) , Various CSR Companies, Gujarat Medical Service Corporation Limited (GMSCL), Vendors]

1. What is your opinion on decision about installation of PSA plants during Covid 19 in different Hospitals?

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2. Do you think it made a difference in saving life? If yes, please describe

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3. What has been your experience and learnings in supplying, installation and commissioning of PSA oxygen plants during Covid 19?

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4. Were the hospitals selected for PSA plants as per the available infrastructure and need? Or it was done to strengthen the existing facilities?

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5. What were the monitoring mechanisms used to ensure proper and timely implementation?

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6. How was your experience of working in partnership with several agencies/departments at the same time for a common cause in a time bound manner?

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7. Have you developed a SOP to address such emergency issues based on the experiences during Covid 19?

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8. What are your suggestions to scale up such facilities in other hospitals?

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## **Gujarat Energy Research and Management Institute**

**An ISO 9001:2015 certified Institute**

Gujarat Energy Research & Management Institute (GERMI) is a centre of excellence in the energy sector, promoted by Gujarat State Petroleum Corporation Limited (GSPC), a Government of Gujarat Undertaking. GERMI has four mandates:

- Research and Development
- Consultancy
- Training
- Education

**Contact Address:**

**1<sup>st</sup> Floor, Energy Building, PDEU Campus, Raisan Village, Gandhinagar 382426, Gujarat, INDIA**