



# AUGMENTATION OF CCE INFRASTRUCTURE DURING COVID -19

Location: Kashmir Region, Jammu & Kashmir

IMPACT ASSESSMENT REPORT

2024

## PROJECT SUMMARY

CSR PROJECT NAME	Augmentation of CCE infrastructure during COVID-19
EXECUTED BY	Health Department the Government of the UT of Jammu and Kashmir
SUPPORTED BY	NHPC Limited
TOTAL EXPENDITURE	₹1.60 crores
DURATION	FY 2020-2021 to 2021-2022
LOCATION	Kashmir Region, Jammu and Kashmir
BENEFICIARIES	1,10,000 approximately



## ACKNOWLEDGMENTS

IIT Jammu extends its heartfelt gratitude to NHPC Limited for entrusting it with the responsibility of the Impact Assessment Study on the Augmentation of Cold Chain Infrastructure, a vital initiative aimed at enhancing the immunization programs across Kashmir. IIT Jammu also thanks all the individuals and the organizations, whose unwavering support has been fundamental to the successful completion of the project.

We offer our profound appreciation to the Directorate of Family Welfare Immunization, Kashmir, for their pivotal role in overseeing and coordinating this extensive study. Their leadership and expertise were crucial in ensuring the effective execution of the assessment activities, that enabled the collection of critical data and insights shaping the findings of this report.

Our thanks also extend to the State Immunization Officer J&K, Health Authorities of all the districts of Kashmir region, whose collaboration and support were instrumental in facilitating the smooth progress of our assessment operations. Their local knowledge and logistical assistance were invaluable in understanding the intricacies of the cold chain infrastructure enhancements.

A special note of thanks is extended to NHPC Limited for its support and commitment to corporate social responsibility. Their financial and technical support has been crucial in augmenting the healthcare infrastructure of the region.

Moreover, we recognize the diligent work of the assessment team members, whose commitment and professionalism in conducting thorough research and comprehensive analysis have resulted in a detailed report that highlights the essential role of cold chain infrastructure in community health and immunization efforts.





## PREFACE

This is an Impact Assessment Report of Corporate Social Responsibility Activity related to “Augmentation of CCE infrastructure during COVID-19” supported by NHPC Limited and implemented through Directorate of Family Welfare, MCH and Immunization, Kashmir.

The project aims to provide quality healthcare services in the Kashmir region of the UT of Jammu & Kashmir and was initiated during the onset of COVID ‘19 epidemic.

This report briefly covers NHPC, its CSR policy, and its objectives. Further, the extent to which the aims and objectives of this CSR project have been met, is detailed by giving information about the beneficiaries impacted.

The conclusions are specific to this intervention and encompass learning, that may be value building for the future endeavors of this nature.



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# List of Abbreviations

<b>CCE</b>	Cold Chain Equipment
<b>COVID 19</b>	Corona Virus Disease, 2019
<b>CSR</b>	Corporate Social Responsibility
<b>DBT</b>	Department of Biotechnology
<b>DSIR</b>	Department of Scientific & Industrial Research
<b>DST</b>	Department of Science & Technology
<b>IIT</b>	Indian Institute of Technology
<b>ILR</b>	Ice Lined Refrigerator
<b>MGNF</b>	Mahatama Gandhi National Fellowship
<b>NGO</b>	Non-Governmental Organisation
<b>NIRF</b>	National Institutional Ranking Framework
<b>OECD DAC</b>	The Organisation for Economic Co-operation and Development's Development Assistance Committee
<b>SDG</b>	Sustainable Development Goals
<b>SROI</b>	Social Return on Investment
<b>UIP</b>	Universal Immunization Programme
<b>UT</b>	Union Territory

## EXECUTIVE SUMMARY

One of NHPC's significant Corporate Social Responsibility (CSR) initiatives during the years 2020-21 & 2021-22, undertaken in Kashmir region in the UT of Jammu and Kashmir, was related to Augmentation of Cold Chain Equipment (CCE) for COVID-19. The project contributed significantly to enhancing healthcare infrastructure by providing essential CCE for vaccine storage, crucial for the Universal Immunization Program (UIP) and also meeting emergent requirements due to outbreak of COVID 19. Under the program, Cold Chain Equipment including Walk in Freezer, Ice Lined Refrigerator and Deep Freezers were handed over by NHPC Limited under its CSR & SD (Corporate Social Responsibility and Sustainable Development) Scheme to the State Immunization Officer, Department of Health & Family Welfare, Srinagar, Government of UT of J&K at Srinagar in March 2021 and April 2021.

The work was executed at a cost of INR 160.10 Lakh through the department of Family Welfare, Maternal and Child Health & Immunization, Srinagar, Govt. of UT of J&K. During the COVID-19 pandemic, this equipment served the critical requirement of maintaining the efficacy of vaccines through precise temperature control, addressing the region's limited access to electricity, inadequate infrastructure, and difficult terrain. The project served entire population of Kashmir division of Jammu and Kashmir UT (about 10 million people) and has had over 1,10,000 direct beneficiaries till now. This number is continuously on the increase as the equipment continues to be functional and effective.

The impact of this CSR initiative was assessed through a comprehensive methodology that included secondary data analysis and primary data collection through surveys, semi structured as well as in depth interviews, and focused interactions with the stakeholders. The assessment was done under OECD DAC framework and included both quantitative and qualitative metrics. The quantitative metrics included vaccine storage capacity, vaccine distribution efficiency, vaccination rates etc., whereas qualitative measures included community engagement, public health awareness and such others.

Significant outcomes of this initiative include improved vaccination rates, reduced incidence of vaccine-preventable diseases, and decreased mortality rates. Social return on investment measures indicated better healthcare capacity utilization, reduction in vaccine wastage, and other economic benefits, as an outcome of timely and cost-effective healthcare delivery. Further better vaccination storage capacity and distribution efficiency reduced the number of trips required by vaccine recipients to visit healthcare facilities for complete vaccination under Universal Immunization Program. Among aggregate community satisfaction indices the initiative indicated better equity in health outcomes and public health awareness, as well as trust and collaboration among stakeholders.

Feedback from stakeholders such as healthcare authorities and community



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representatives has been overwhelmingly positive, emphasizing ramped up vaccine storage and distribution infrastructure, increased vaccination rates, and reduced disease burden. Recommendations for the future include continuous maintenance of equipment, potential expansion of this initiative beyond vaccine storage, and further capacity building for healthcare personnel.

The initiative aligns well with several of the United Nations Sustainable Development Goals (SDGs), notably SDG 3 (Good Health and Well-being), on account of reducing the spread and impact of vaccine-preventable diseases and enhancing public health infrastructure. It also touches on SDG 9 (Industry, Innovation, and Infrastructure) through the improvement of public health infrastructure, and SDG 17 (Partnerships for the Goals), exemplified by the collaboration between the NHPC Limited, Health department of JK UT, and the local communities to improve public health outcomes.

# 1. INTRODUCTION

## 1.1 ABOUT IIT JAMMU



IIT Jammu, was established in 2016 and is located in Jammu and Kashmir, India. It is recognized as an Institute of National Importance and offers a variety of programmes at the undergraduate, postgraduate, and doctoral levels. IIT Jammu provides Bachelor of Technology (B.Tech) degrees in several engineering disciplines such as Chemical Engineering, Civil Engineering, Computer Science and Engineering, Electrical Engineering, and Mechanical Engineering. It also offers Master of Technology (M.Tech) and Doctor of Philosophy (Ph.D) programmes across various specializations.

IIT Jammu was ranked 67th in the engineering category by the NIRF in 2023. This places it among the top performers of the third generation IITs. IIT Jammu has undertaken various collaborative projects to enhance research and development in key technological areas. IIT Jammu is actively involved in collaborations with national agencies like the DST, the DBT, and the DSIR, and with the Government of the UT of Jammu and Kashmir. These partnerships focus on advancing research and development across multiple disciplines and leveraging opportunities for funding and expertise from different sectors.

IIT Jammu is engaged in significant collaborative efforts with industrial partners. These collaborations aim to align academic research with industry needs, facilitating practical applications and innovations that can be commercialized for greater good. Through these partnerships, IIT Jammu aims to enhance its research capabilities and provides its students and faculty with direct exposure to industry-specific challenges and solutions.

## 1.2 ABOUT NHPC LIMITED



NHPC Limited is the largest hydropower development organization in India, with capabilities to undertake all the activities from conceptualization to commissioning of hydro projects. NHPC has also diversified in the field of Solar & Wind energy development etc.

NHPC Ltd. (Formerly known as National Hydroelectric Power Corporation Ltd.) was incorporated in 1975 under the Companies Act, 1956. The company is mandated to plan, promote and organize an integrated and efficient development of power in all its aspects through Conventional and Non-Conventional Sources in India and abroad. NHPC is a listed company on NSE and BSE after successfully concluding its IPO in 2009.

NHPC's total installed capacity as on 31 March, 2024 is 7144.20 MW including 1593 MW in Joint Venture, comprising 6971.20 MW from 22 Hydro Power Stations, 123 MW from three Solar Power Project and 50 MW from a Wind Power Project. NHPC's hydro power share of 6971.20 MW comes to about 14.85% of the country's total installed Hydro Power capacity of 46928.17 MW.



NHPC including its JVs/ Subsidiaries is presently engaged in the construction of 15 projects aggregating to a total installed capacity of 10442.70 MW.

In addition, twelve projects aggregating to a total installed capacity of 4707 MW are Under Clearance Stage.

#### Other initiative by NHPC in Renewable Energy :-

> Under MNRE scheme, NHPC has been nominated as Renewable Energy Implementing Agency (REIA)/Intermediary Procurer. Under this 700 MW Solar Project (320MW in Bikaner and 380 MW in Jaisalmer) has been developed and 5360 MW are under development by different agencies.

>NHPC has installed 4.08 MW Roof top Solar (RTS) capacity across 25 locations. Further, addition on Roof top capacity at NHPC locations as available and identified from time to time is also being carried out through respective Projects/Units.

>NHPC has also taken initiatives for development of Green Hydrogen Technology, wherein one 25 KW capacity Pilot Green Hydrogen Project at Leh and 2 Pilot green hydrogen-based e-mobility projects (one at Kargil) and one at Chamba, Himachal Pradesh) are under implementation. These projects are anticipated to be commissioned by F.Y 2024-25.

#### **NHPC's Vision**

- To be a global leading organization for sustainable development of clean power through competent, responsible and innovative values.

#### **NHPC's Mission**

- To achieve excellence in development of clean power at international standards.
- To execute & operate projects through efficient and competent contract management and innovative R&D in environment friendly and socio-economically responsive manner.
- To develop, nurture and empower the human capital to leverage its full potential.
- To practice the best corporate governance and competent value based management for a strong corporate identity and showing concern for employees, customer, environment and society.
- To adopt & innovate state-of-the-art technologies and optimize use of natural resources through effective management.

## 1.3 ABOUT CORPORATE SOCIAL RESPONSIBILITY



As per the Companies (CSR Policy) Rules, CSR means the activities undertaken by a Company in pursuance of its statutory obligations laid down in Section 135 of the Companies Act, 2013 and the provisions contained in these rules. As per sub-section (1) of Section 135 of the Companies Act, 2013, every company having net worth of rupees five hundred crore or more, or turnover of rupees one thousand Crore or more or a net profit of rupees five crore or more during the immediately preceding financial year shall constitute a CSR Committee of the Board consisting of three or more Directors, out of which at least one Director shall be an Independent Director, provided that where a company is not required to appoint an independent director under sub-section (4) of section 149, it shall have in its CSR Committee two or more directors.

The CSR Committee shall:

1. formulate and recommend to the Board, a CSR Policy which shall indicate the activities to be undertaken by the company in areas or subjects, specified in Schedule VII;
2. recommend the amount of expenditure to be incurred on the activities referred to in clause (a); and
3. monitor the CSR Policy of the company from time to time.

The Board of every company referred to in sub-section (1) of Section 135 of the Companies Act, 2013 shall:

- after taking into account the recommendations made by the CSR Committee, approve the Corporate Social Responsibility Policy for the company and disclose contents of such Policy in it's report and also place it on the company's website, if any, in such manner as may be prescribed; and
- ensure that the activities as are included in CSR Policy of the company are undertaken by the company.

The Board of every company referred to in sub-section (1), shall ensure that the company spends, in every financial year, at least two percent of the average net profits of the company made during the three immediately preceding financial years or where the company has not completed the period of three financial years since its incorporation, during such immediately preceding financial years in pursuance of its CSR Policy: provided that the company shall give preference to the local areas where it operates, for spending the amount earmarked for Corporate Social Responsibility activities;

Provided further that if the company fails to spend such amount, the Board shall, in its report made under clause (o) of sub-section (3) of section 134, specify the reasons for not spending the amount and, unless the unspent amount relates to any ongoing project referred to in sub-section (6), transfer such unspent amount to a Fund specified in Schedule VII, within a period of six months of the expiry of the financial year.

Provided also that if the company spends an amount in excess of the requirements provided under this sub-section, such company may set off such excess amount against the requirement to spend under this sub-section for such number of succeeding financial years and in such manner, as may be prescribed.

Thus, CSR provisions outlined in Section 135 of the Companies Act, 2013 and the Companies (CSR Policy) Rules emphasize the significance of not just adhering to regulations, but also promoting transparency and accountability in the ways that the companies contribute to the improvement of society and the environment.

## 1.4 ABOUT NHPC CSR POLICY



CSR has been an integral part of NHPC's business philosophy. NHPC Limited is conducting its business in a socially responsible way by maintaining high level of organizational integrity and ethical behaviour, in conformity with expected standards of transparency in reporting and disclosing the performance in all spheres of its activities, demonstration of concern for social welfare, adoption of best management practices and effective operational methods to win the trust and confidence of all stakeholders. NHPC is committed to making significant contributions to the community, environment, and society through well-planned CSR interventions.



NHPC has strengthened its commitment to CSR in line with Statutory Provisions. The CSR Policy of NHPC has been revised in accordance with Section 135 of the Companies Act, 2013 and the Companies (CSR Policy) Rules. NHPC also adheres to the Department of Public Enterprises (DPE) guidelines on CSR. The CSR activities undertaken by NHPC Limited align with the areas or subjects specified in Schedule VII of the Companies Act, 2013.

NHPC Limited has undertaken a number of CSR initiatives for the communities living in and around its Projects/ Power Stations / Units in the areas of Education, Health, Sanitation, Rural Development, Skill Development, Environment, Women Empowerment, Promotion of sports, etc.

NHPC has been assigned three Aspirational Districts, namely Baramulla in the UT of J&K, Chamba in Himachal Pradesh, and West Sikkim (now renamed as Gyalshing) in Sikkim, for focused development through CSR.

### **NHPC's CSR VISION**

- To contribute to sustainable development and inclusive growth while taking care of People, Planet and organizational goals / growth.

### **NHPC's CSR MISSION**

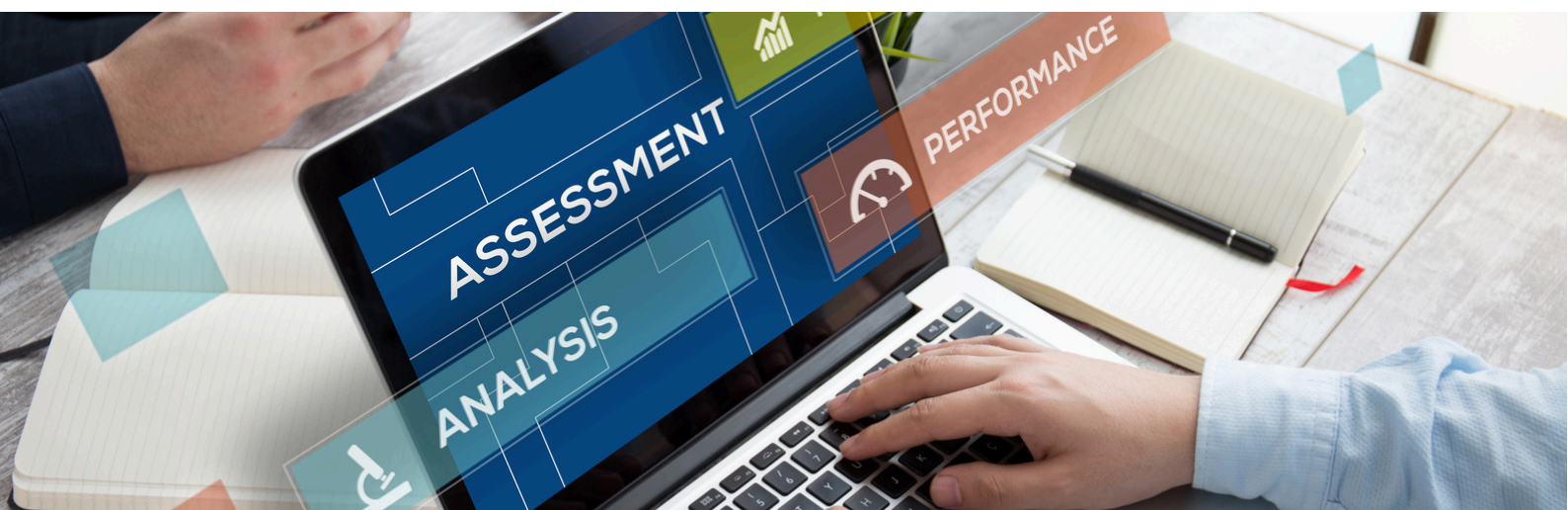
- To become socially responsible corporate entity committed to improving the quality of life of the society at large.
- To create and develop facilities for the communities it engages with.
- To balance social, economic and environmental development objectives through collective and unified efforts of all stakeholders.

The CSR Policy of NHPC is committed to the guideline of localizing its efforts, with the concentration being given to the communities located in and around its power stations and projects. It is this close proximity that enables the company to respond directly to the specific needs of those communities by intervening in ways that are relevant, timely, and directly beneficial to the residents. Accordingly, this approach of holistic community involvement gives priority to education, health care, environmental conservation, and rural development-related projects. NHPC collaborates with the government, local administrations, and NGOs, including community leaders, in such a way that their proposed projects be in line with national priorities and recommendations of the local populations.

The company has strong monitoring and reporting mechanisms of each CSR initiative built into place that would enable checking on the progress of these at regular intervals. These include the preparation of comprehensive reports outlining what is spent, achieved, and the efficiency of initiatives undertaken, put in the public domain. This not only enhances transparency of the exercise but also makes room for adjustments and improvements in strategy based on empirical evidence and stakeholder feedback.

CSR Policy of NHPC Limited exemplifies the company's commitment to being a responsible corporate citizen by its strategic and localized community engagements, it is completing all statutory requirements, where the perceptible result is being seen that it contributes to the welfare of the people at large. The policy exemplifies the commitment of NHPC Limited towards sustainable development and ensures that it's one among the leaders in corporate responsibility among energy companies in India.

## 1.5 ABOUT IMPACT ASSESSMENT



The Ministry of Corporate Affairs in India mandates impact assessments for CSR activities through amended rules. Every company having average CSR obligation of ₹10 crores or more in pursuance of sub-section (5) of Section 135 of the Companies Act, 2013, in the three immediately preceding financial years, shall undertake impact assessment, through an independent agency, of their CSR projects having outlays of Rs. One Crore or more, and which have been completed not less than one year before undertaking the impact study. A company undertaking impact assessment may book the expenditure towards CSR for that financial year, which shall not exceed two percent of the total CSR expenditure for that financial year or fifty lakh rupees, whichever is higher.

An Impact Assessment in CSR is the critical evaluation tool that seeks to measure effectiveness and sustainability of initiatives taken by companies under their CSR obligations. This benchmark reflects not only the work being done but also the strategic alignment as to which CSR projects are aligned along with the long-term vision of the company and, more importantly, the genuine community needs. Therefore, the crux of the impact assessment of the CSR projects lies in its ability to give clear and measurable understanding of how the CSR projects are, in fact, creating value for society and the implementing organization.

Impact assessment is the method applied in systematic evaluation towards finding outcomes and benefits of social responsibility initiatives of a firm in relation to the invested resources. Data collection on the key indicators is done before and after the implementation of a project to capture the direct and indirect effects that the project has on the target community and other stakeholders.

Among the added values that come with a full impact assessment made by an independent third-party agency, there is also that of ensuring objectivity to the evaluation and bringing credibility to the findings. This is something that may be crucial for better corporate transparency and trust among the stakeholders. Furthermore, these recommendations for improvement in future always help companies refine their strategies and practices of CSR for increased impact on the society.

From an operational point of view, impact assessment includes a number of steps viz. the definition of aims and scope of the assessment, methods to be chosen, data collection, and analysis etc. Further, an effective impact assessment should include, in the context of each CSR project, the level of intervention, geographical, and cultural setting of beneficiary community needs.

## 1.6 PROJECT BACKGROUND

NHPC has undertaken a significant CSR initiative in Kashmir division of UT of Jammu & Kashmir to enhance healthcare infrastructure by providing CCE equipment for vaccine storage. This initiative is particularly crucial in the context of the UIP, which aims to protect every child from vaccine-preventable diseases and ensure equitable access to immunization services across India. NHPC's CSR objectives align well with its overarching vision of sustainable development and commitment to societal well-being. By investing in healthcare infrastructure, NHPC demonstrates its dedication to improving public health outcomes in the region.

Healthcare facilities in Kashmir face numerous geographical, infrastructural, and socio-economic challenges. The region's unique terrain, marked by rugged mountains and remote villages, poses significant logistical hurdles in delivering essential healthcare services, including vaccination programs.



Limited access to electricity, inadequate storage infrastructure, and variable climatic conditions further compound the difficulties in maintaining the integrity of vaccines, which is essential for preventing the spread of infectious diseases. The request for support in the augmentation of vaccine storage infrastructure to NHPC came during the challenging times of the COVID-19 pandemic.

Recognizing the urgent need to save lives and effectively distribute vaccines, NHPC Limited stepped forward to contribute to the nation's efforts in combating the pandemic. By providing Cold Chain Equipment designed explicitly for vaccine storage, NHPC Limited seeks to strengthen the capacity of healthcare facilities in Kashmir to store and distribute vaccines effectively, thus supporting the government's vaccination drive under the UIP and mitigating the spread of COVID-19.



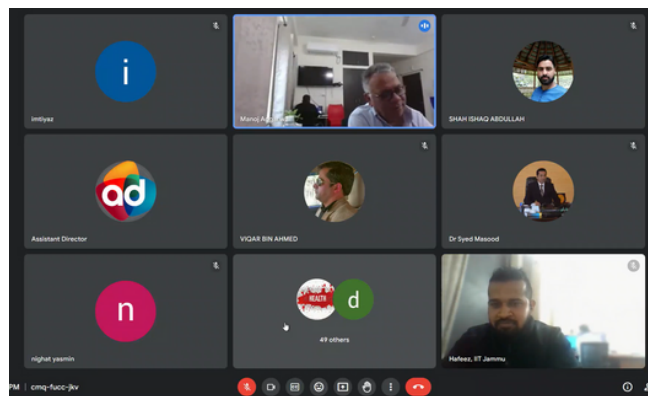
In this Impact Assessment study, we aim to evaluate the effectiveness and outcomes of NHPC's CSR activity in Kashmir region regarding Cold Chain Equipment for Vaccine storage. Through rigorous analysis, we seek to quantify the tangible benefits of this initiative, including improvements in vaccine storage capacity, vaccine distribution efficiency, and, ultimately, enhanced public health outcomes for the communities served.

By assessing the impact of NHPC's CSR initiative, we aim to provide valuable insights into the effectiveness of this intervention in addressing pressing healthcare challenges. This assessment will not only inform NHPC's future CSR strategy but also contribute to the broader discourse on corporate engagement in healthcare and sustainable development.

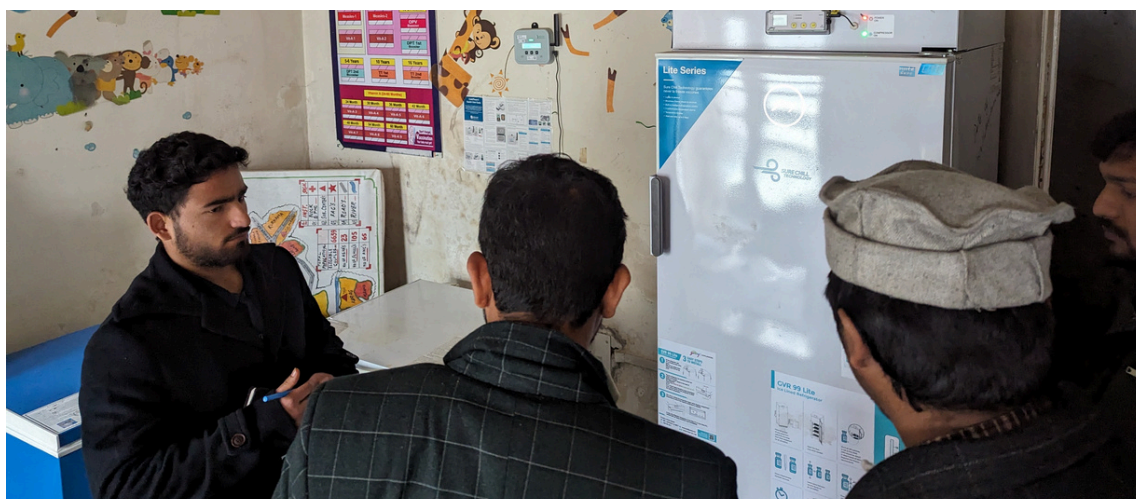


## 2. APPROACH AND METHODOLOGY

The methodology employed for assessing the impact of NHPC's CSR initiative in Kashmir region, which is focused on providing Cold Chain Equipment for Vaccine storage, encompasses a transparent and inclusive approach to data collection and analysis. The research team conducted surveys, in-depth interviews, and focus group discussions with key stakeholders, including the Block Vaccine manager/s, to gather insights from diverse perspectives.



- ✓ A virtual meeting was organized with the Directorate of Family Welfare and Immunization, Kashmir, and district healthcare authorities, facilitated by the Assistant Director of Immunization, Kashmir, where IIT Jammu team comprehensively outlined the qualitative and quantitative parameters of the assessment. This forum provided an opportunity to address any queries or uncertainties raised by district healthcare authorities regarding the evaluation process. Then, the team collected the responses from various stakeholders to gather insights essential for a comprehensive evaluation.
- ✓ The methodology aimed to capture both the quantitative and the qualitative metrics. Quantitative data collection revolved around crucial metrics such as total doses received, types of vaccines available, rate of replenishment, storage capacity, and utilization of created storage capacity. Through secondary data analysis of documentation and its analysis, the initiative's effectiveness in augmenting vaccine storage infrastructure and improving distribution efficiency was evaluated. Additionally, parameters like coverage rate, reach in remote areas, stock levels, stock outs, wastage rate, and compliance with regulatory standards were assessed as it was crucial for understanding the effectiveness of vaccine distribution systems.



- ✓ In parallel, societal parameters such as the increase in vaccination rates, reduction in disease incidence, mortality rate, healthcare capacity utilization, and economic benefits were assessed quantitatively to gauge the broader impact of the initiative on public health and socio-economic indicators. This quantitative analysis provided insights into tangible outcomes of NHPC's intervention in terms of improving healthcare access, reducing disease burden, and enhancing economic productivity.



- ✓ Complementing the quantitative assessment, qualitative methods were used to capture nuanced aspects of the initiative's impact, including community engagement, public health awareness, stakeholder collaboration, policy influence, social cohesion, and behavioral changes. Surveys, interviews, and field observations helped understand community perceptions, stakeholder dynamics, and the initiative's sustainability beyond its immediate outcomes.
- ✓ The synthesis of quantitative and qualitative findings enabled a holistic understanding of the impact of NHPC's CSR activity in Kashmir. Statistical analysis of quantitative data unveiled trends and correlations, while qualitative insights provided depth and context to the assessment. The assessment aims to derive actionable insights from these to inform future CSR strategies of NHPC and contribute to the broader discourse on corporate engagement in healthcare and sustainable development by triangulating data from various sources and employing rigorous analytical techniques.



## 2.1 MEASURE OF SUSTAINABILITY

To measure the sustainability of the CSR Activity, IIT Jammu has used the OECD DAC framework. Each criteria used in the Impact Assessment Project acts as a lens giving a different perspectives on the intervention - both implementation and the results. The union of all these criteria provides a complete picture of the intervention. All criteria carries equal weightage with grading A (90-100), B (75-90), C (50-74), D (40-50) and F (<40). All Score are on a scale of 100.



Fig. 1: OECD DAC Framework

## 3. CSR ACTIVITY DETAILS

In response to the urgent healthcare needs during the COVID-19 pandemic in Kashmir region of the UT of Jammu and Kashmir, NHPC Limited took proactive measures to support the government's vaccination program. NHPC Limited in consultation with Department of Health JK UT procured 176 units of Cold Chain Equipment, including Walk-In Freezers, Ice Lined Refrigerators, and Deep Freezers, amounting to an investment of Rs. 1.60 crore. This equipment was handed over to the Department of Family Welfare, Maternal and Child Health, and Immunization, Government of Jammu & Kashmir, in March and April 2021.

The majority of vaccines require storage temperature of +2° to +8 °C. Temperatures that are too cold can result in an irreversible reaction that reduces vaccine potency and causes a loss of adjuvant effect. Certain vaccines contain adjuvants (aluminum) that will precipitate when exposed to freezing temperatures. Temperature too hot

could also result in active vaccine components losing potency. In a nutshell, these vaccines are vulnerable to temperature fluctuations and require stringent temperature control to maintain effectiveness.

The Cold Chain Equipment was therefore meticulously selected and procured to meet the specific vaccine storage and distribution requirements. This equipment plays a vital role in maintaining the integrity and potency of vaccines by ensuring precise temperature control throughout the storage and transportation process. The Walk-In Freezers, Ice Lined Refrigerators, and Deep Freezers provide the necessary infrastructure for storing various vaccines at the required temperature ranges, safeguarding their efficacy till they are administered to the patients.

NHPC's initiative aligns with the UIP, supporting the storage and distribution of vaccines at the public health center level. This ensures equitable access to immunization services across the region, particularly in remote and under served areas. In preparation for the deployment of the Cold Chain Equipment, comprehensive training programs were conducted for Cold Storage Workers at both the block and the state levels. These training sessions, conducted under the auspices of the National Cold Chain and Immunization Management System (NCCIMS), equipped healthcare personnel with the necessary knowledge and skills to handle and manage the Cold Chain Equipment effectively.





## 4. IMPACT ASSESSMENT

The population across various districts in Kashmir varies significantly, reflecting the diversity and demographic composition of the region. From the bustling streets of Srinagar to the serene landscapes of Anantnag and the remote communities in Kulgam and Kupwara; each district presents unique challenges and opportunities in healthcare delivery. With a focus on enhancing immunization coverage and healthcare access, targeted interventions and vaccination programs aim to address the healthcare needs of the population across these districts.

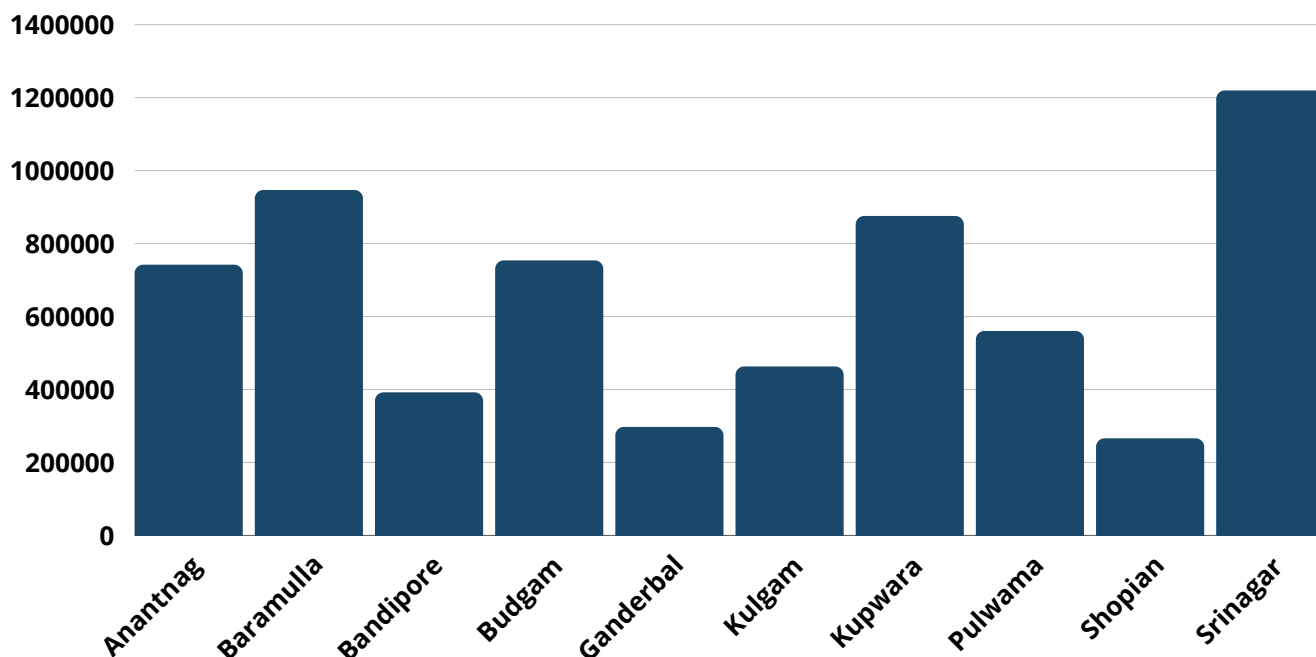


Fig. 2: District Population [Census 2011]

Some districts of Kashmir exhibit a higher proportion of males, whereas others show a more balanced distribution between males and females. Under UIP male and female vaccination requirements could differ, particularly in cases related to maternity and neonatal vaccination. Hence taking cognizance of these patterns is essential for ensuring tailored healthcare interventions and vaccination strategies that cater to the unique demographic characteristics of each district.

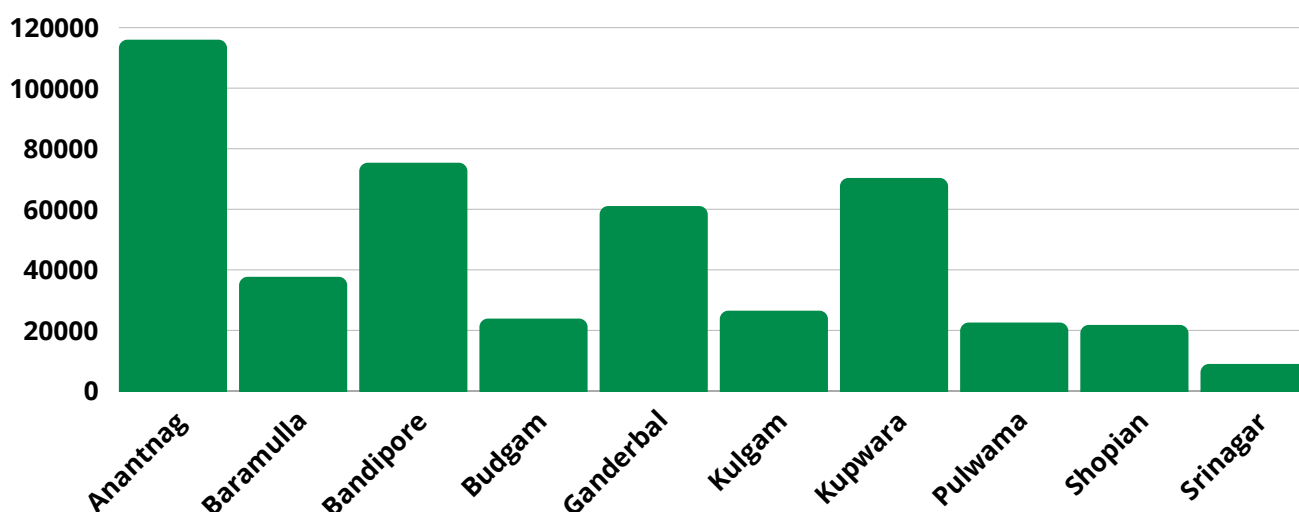
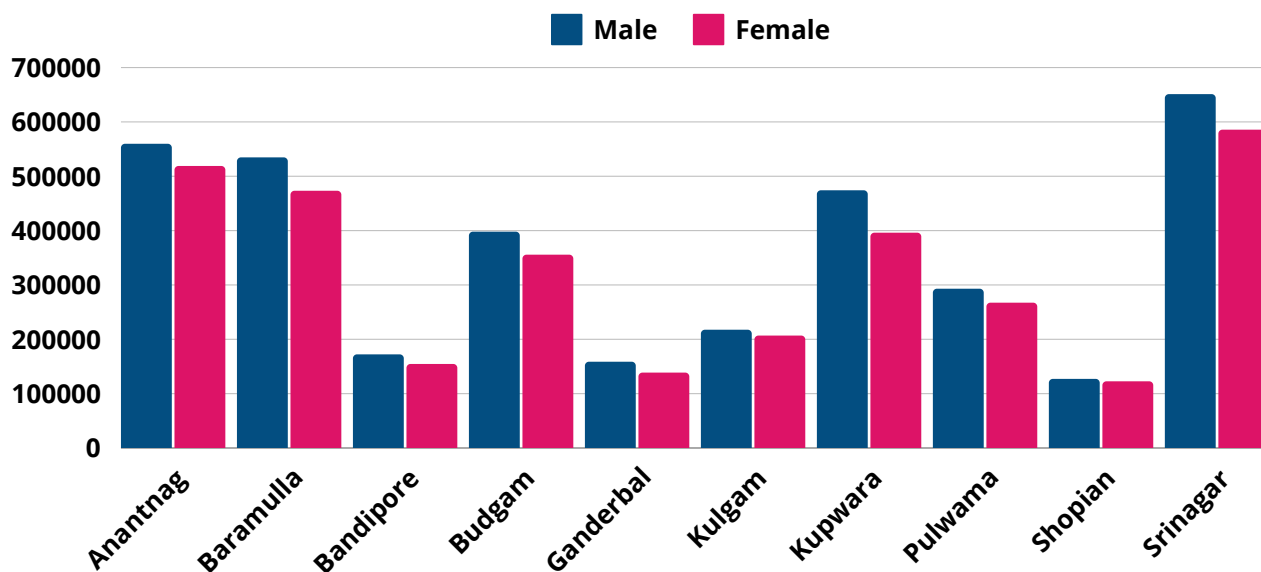


Fig. 3: SC/ST Population [Census 2011]



**Fig. 4: Male Female Population**

There is a significant population of Scheduled Castes (SC) and Scheduled Tribes (ST) across Kashmir's districts, representing diverse socio-economic backgrounds and cultural identities. In Anantnag, Baramulla, Budgam, Ganderbal, Kulgam, Kupwara, Pulwama, and Srinagar, individuals belonging to SC/ST communities contribute to society's rich tapestry. The CSR activity by NHPC Limited addresses the specific healthcare needs and challenges these communities face. These efforts ensure that healthcare services are accessible and responsive to the population's diverse needs.

**Table 1: Storage Capacity**

District	Before CSR	After CSR
Anantnag	Short	Saturated
Baramulla	Short	Saturated
Bandipore	Short	Saturated
Budgam	Short	Saturated
Ganderbal	Short	Saturated
Kulgam	Short	Saturated
Kupwara	Short	Saturated
Pulwama	Short	Saturated
Shopian	Short	Saturated
Srinagar	Short	Saturated

The initiative to provide Cold Chain Infrastructure for vaccine storage in Kashmir has led to a notable increase in vaccination rates across the region. By ensuring the availability of reliable storage facilities, NHPC Limited has facilitated the efficient distribution of vaccines to healthcare facilities, thereby streamlining the vaccination process and enhancing accessibility of vaccines for community members. As a result, vaccination rates have surged, with more individuals receiving timely and adequate immunization against preventable diseases.

The deployment of Cold Chain Infrastructure has thus contributed to a significant reduction in disease incidence rates across Kashmir. With vaccines stored under optimal conditions, the potency and effectiveness of vaccines have improved, leading to a decline in the prevalence of vaccine-preventable diseases. The CSR activity has played a pivotal role in mitigating the spread of infectious diseases and improving overall public health outcomes in the region.

The initiative has had a tangible impact on reducing mortality rates associated with vaccine-preventable diseases. Better quality vaccine availability has saved countless lives and prevented unnecessary deaths due to preventable illnesses. This reduction in mortality rates reflects the effectiveness of NHPC's intervention in safeguarding the health and well-being of Kashmir's population.

It has also enhanced healthcare capacity utilization by optimizing the storage and distribution of vaccines. With Cold Chain Infrastructure in place, healthcare facilities can efficiently manage their vaccine inventory, minimizing wastage and maximizing use of available resources. This increased efficiency has enabled healthcare providers to serve a larger population and meet the growing demand for immunization services.



**District Hospital, Bandipora**

Moreover, the economic benefits of NHPC's initiative are significant, with cost savings realized through improved vaccine storage and distribution. Reduction of vaccine wastage and optimization of resource utilization has resulted in cost-effective healthcare delivery, thereby freeing up financial resources for other essential healthcare initiatives. Additionally, the prevention of vaccine-preventable diseases translates into substantial economic savings by reducing healthcare expenditures associated with the treatment of preventable illnesses.

The activity had a positive impact on education and employment rates in Kashmir. NHPC's initiative has created a conducive environment for educational attainment and economic productivity by enhancing public health outcomes through increased vaccination rates and reduced disease incidence.

It has also contributed significantly to equity in health outcomes by ensuring equitable access to vaccination services across Kashmir. By decentralizing vaccine storage and distribution and strengthening healthcare capacity in under served areas, NHPC's intervention has addressed disparities in healthcare access and promoted equitable health outcomes for all region residents.

NHPC's provision of Cold Chain Infrastructure for vaccine storage in Kashmir has had a transformative impact reshaping the landscape of public health and community engagement in the region. The deployment of Cold Chain Infrastructure has bolstered community trust and engagement by instilling confidence in the healthcare system's ability to deliver safe and effective vaccines. With reliable storage facilities, community members are reassured of the integrity of vaccines, fostering greater acceptance and participation in vaccination programs.

**Table 2: Healthcare Feedback Ratings**

Labels	Out of 10
Anantnag	10
Baramulla	10
Bandipore	10
Budgam	10
Ganderbal	10
Kulgam	10
Kupwara	10
Pulwama	10
Shopian	10
Srinagar	10



NHPC's initiative has significantly enhanced public health awareness by raising awareness about the importance of vaccines and the critical role of Cold Chain Infrastructure in maintaining vaccine potency.

NHPC's collaboration with stakeholders, including government agencies and healthcare providers, has facilitated a coordinated and collaborative approach towards healthcare delivery. Stakeholders have strengthened the healthcare ecosystem by working together with NHPC Limited to ensure the effective deployment and maintenance of Cold Chain Infrastructure, maximizing the reach and impact of vaccination programs.

The initiative has also influenced policy formulation and decision-making processes by advocating for evidence-based approaches to healthcare infrastructure enhancement. Overall, NHPC's provision of Cold Chain Infrastructure has enhanced vaccine storage capabilities and catalyzed positive changes in community trust, public health awareness, stakeholder collaboration, and policy influence. As a result, Kashmir is better equipped to address public health challenges and promote the well-being of its residents, laying the foundation for a healthier and more resilient future.



PHC Lar, Ganderbal

# STAKEHOLDER FEEDBACK

During face-to-face interviews conducted on-site, several key insights were gained from various stakeholders, including the Deputy Chief Medical Officers, District Immunization Officers, Block Vaccine Managers and Cold Chain Operators of the Districts.

According to the Deputy Chief Medical Officers, they had previously received directions from officials to store COVID-19 vaccines separately from other vaccines due to their unique storage requirements. However, they faced challenges due to insufficient equipment to comply with these directives effectively. This shortfall in equipment jeopardized their ability to adhere to the prescribed storage protocols, potentially compromising the integrity and efficacy of the vaccines.

NHPC's CSR initiative emerged as a solution to this pressing need. By providing Cold Chain Equipment specifically tailored for vaccine storage, NHPC Limited enabled healthcare facilities to become self-reliant and adequately prepared for managing biological calamities or outbreaks through meeting storage protocols for different vaccines. The Deputy Chief Medical Officers and the State Immunization Officers expressed profound gratitude for NHPC's support, emphasizing that the equipment has significantly enhanced their capacity to store and manage vaccines effectively. Furthermore, the feedback highlighted the importance of having storage capacity buffer to accommodate unforeseen fluctuations in vaccine demand and mitigate potential stockouts. NHPC's contribution not only addresses the immediate need for adequate storage infrastructure but also strengthens the resilience and preparedness of healthcare facilities to respond to future public health emergencies.

The Block Vaccine Managers told about the significant impact of the equipment during the COVID-19 pandemic, emphasizing its role in minimizing vaccine wastage and enhancing effectiveness. Despite no specific training being required, the manager acknowledged the government's efforts in conducting workshops and training sessions twice a year. Furthermore, the managers expressed satisfaction with the backup capabilities and superior functionality of the machinery compared to similar other equipment. With the current cold storage deemed sufficient post-COVID, the machines now serve as a reliable backup in case of unforeseen exigencies.

Similarly, the CHO from one of the PHCs, highlighted the consistent usage of the equipment. Emphasizing the substantial supply of vaccines to the district, the officer commended the consistent maintenance and good condition of the equipment. The officer also noted the transformative impact of the machines, which eliminated the need for patients to travel long distances under harsh conditions for vaccines, resulting in improved patient outcomes.

The Block Vaccine Managers echoed the sentiments of enhanced efficiency and effectiveness, particularly in storing Rota vaccines. Regular checks ensured that the machinery remains in excellent condition. Additionally, the managers noted that the vaccination rate experienced a noticeable increase under the improved storage conditions provided by the equipment.



# TESTIMONIALS



**Mr. Nazir Ahmed, Block Vaccine Manager, Bandipora**

The support from NHPC Ltd in augmenting our Cold Chain Infrastructure has been invaluable. Before their contribution, we lacked the capacity to store COVID-19 vaccines, which was a significant challenge as we were under strict instructions not to store them alongside routine vaccines. Thanks to NHPC's support, we were provided with the necessary equipment to create a dedicated storage solution for COVID-19 vaccines. This not only eased our operational pressures during the pandemic but also significantly enhanced our vaccine storage capabilities.

Now, with the pandemic phase behind us and no current need to store COVID-19 vaccines, we have seamlessly transitioned to using these facilities for Rabies vaccines and other critical immunizations. The equipment is user-friendly and reliable, which is a huge benefit for our operations. During the height of COVID-19, we faced a great deal of uncertainty and workload; having this infrastructure allowed us to focus more on delivering essential services without the added stress of storage issues.

It was only recently that we learned about NHPC's role in this crucial enhancement. Knowing now where this support came from, we are deeply grateful to NHPC Ltd for their pivotal role in strengthening our healthcare services during a time of global crisis and beyond.





**Dr. Masrat Jabeen,**  
**Assistant Director, Immunisation**  
**Directorate of Health and Family Welfare,**  
**Kashmir**

During the critical times of the COVID-19 pandemic, when uncertainty and panic were widespread, the delivery of Cold Chain Equipment (CCE) from NHPC Ltd came as a significant relief. The challenges we faced with mass vaccination efforts were daunting, primarily due to our limited capacity to store the COVID-19 vaccines separately from other vaccines. This restriction was a major hurdle in our ability to serve the community effectively.

Thanks to the contribution of Ice Lined Refrigerators (ILR), Deep Freezers, and Walk-in Freezers from NHPC Ltd, we overcame these storage issues. This crucial support enabled us to extend our vaccination reach to even the most remote areas in record time, ensuring no one was left behind during those trying times. The efficiency and increased capacity provided by these equipments were instrumental in streamlining our processes and alleviating the logistical challenges we faced daily.

Now, with the pandemic phase behind us, the CCE from NHPC Ltd continues to serve as a vital buffer. These facilities have not only enhanced our current vaccine storage capabilities but have also prepared us for any future emergencies. We are immensely grateful to NHPC Ltd for their timely and impactful support, which has undoubtedly strengthened our healthcare infrastructure and community resilience.





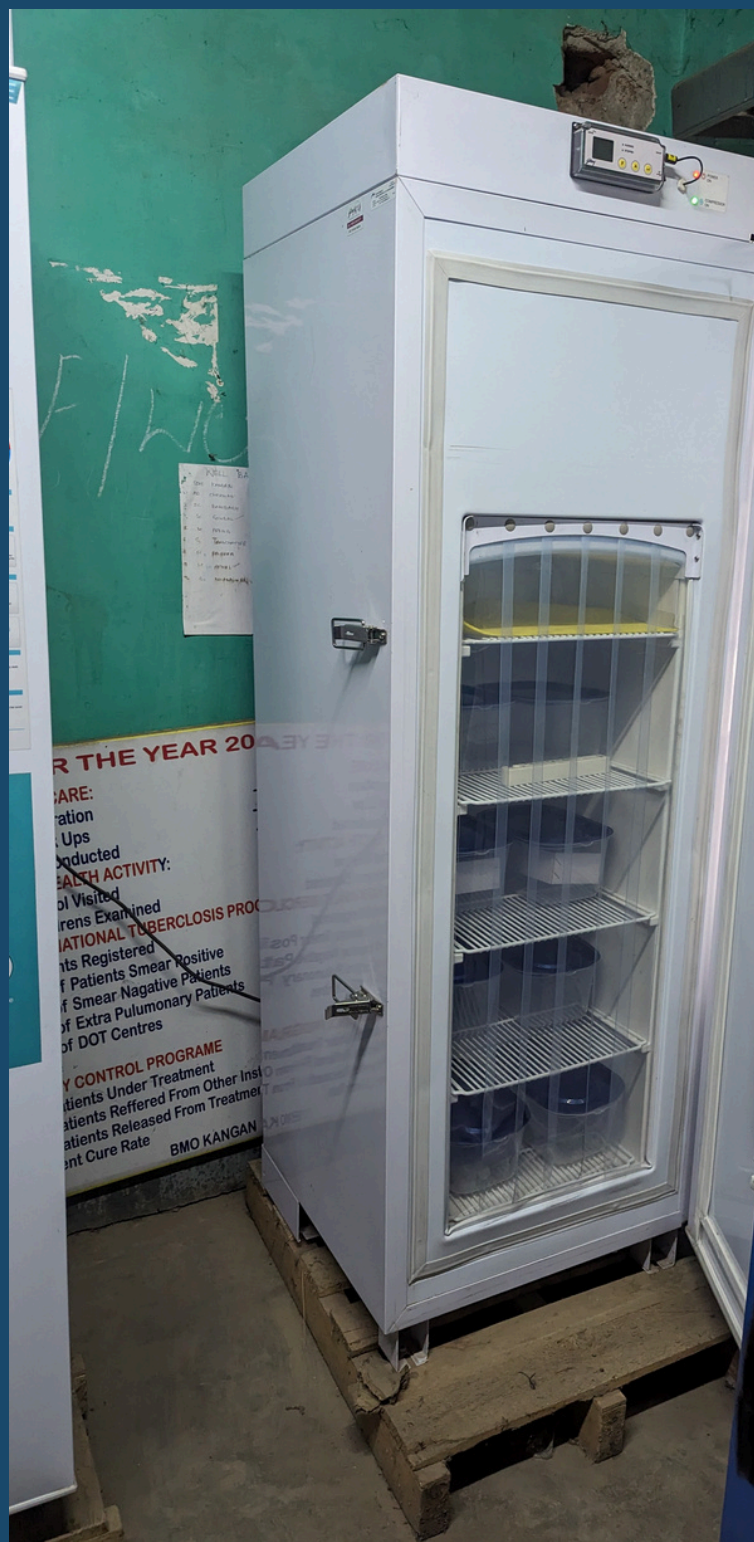


**Community Health Officer,  
Lar, Ganderbal, JK**

CCE infrastructure provided by NHPC Ltd during the COVID-19 pandemic has been a game-changer for us. The ability to handle vaccines in bulk, which was facilitated by this equipment, significantly boosted our vaccination efforts. We have Cold Chain Operators who are regularly trained to manage these CCE, ensuring that the vaccines are stored and handled with utmost care.

Following the implementation of these facilities, we have seen substantial improvements in programs like Pulse Polio, where the availability of reliable cold chain infrastructure is critical. The equipment has proven to be highly efficient, and we have not encountered any issues with their operation so far.

However, in our hilly regions, we still face significant challenges with electricity supply, which is essential not just for the operation of CCE but for all hospital activities. These CCE do have good backup capabilities, which have been crucial.







**Mr. Mustafa Sadiq,  
Block Extension Educator,  
Kangan, Ganderbal**

ILRs we received during the COVID-19 pandemic have been instrumental in enhancing our vaccine distribution capabilities across the entire block. Initially deployed for storing COVID-19 vaccines, these ILRs are now utilized for a broader range of vaccines, primarily for rotavirus vaccines among others. Our trained Cold Chain handlers expertly manage these equipments, ensuring they operate efficiently and maintain the perfect temperature required for vaccine preservation. While these CCE have significantly strengthened our vaccination process, adhering to the highest standards, we have encountered a minor issue with the battery of the temperature sensor. Fortunately, this has not impacted the overall functionality or reliability of the equipment. Despite some ongoing challenges with power supply in our area, the ILRs are equipped with a robust backup system that can sustain up to 8 hours, thereby safeguarding the integrity of the vaccines for an extended period. These pieces of equipment have not only helped us maintain the continuity and efficacy of our vaccination programs but have also been crucial in ensuring that our community receives the best possible healthcare services, especially in times of need.



## 6.OECD DAC FRAMEWORK MEASURE

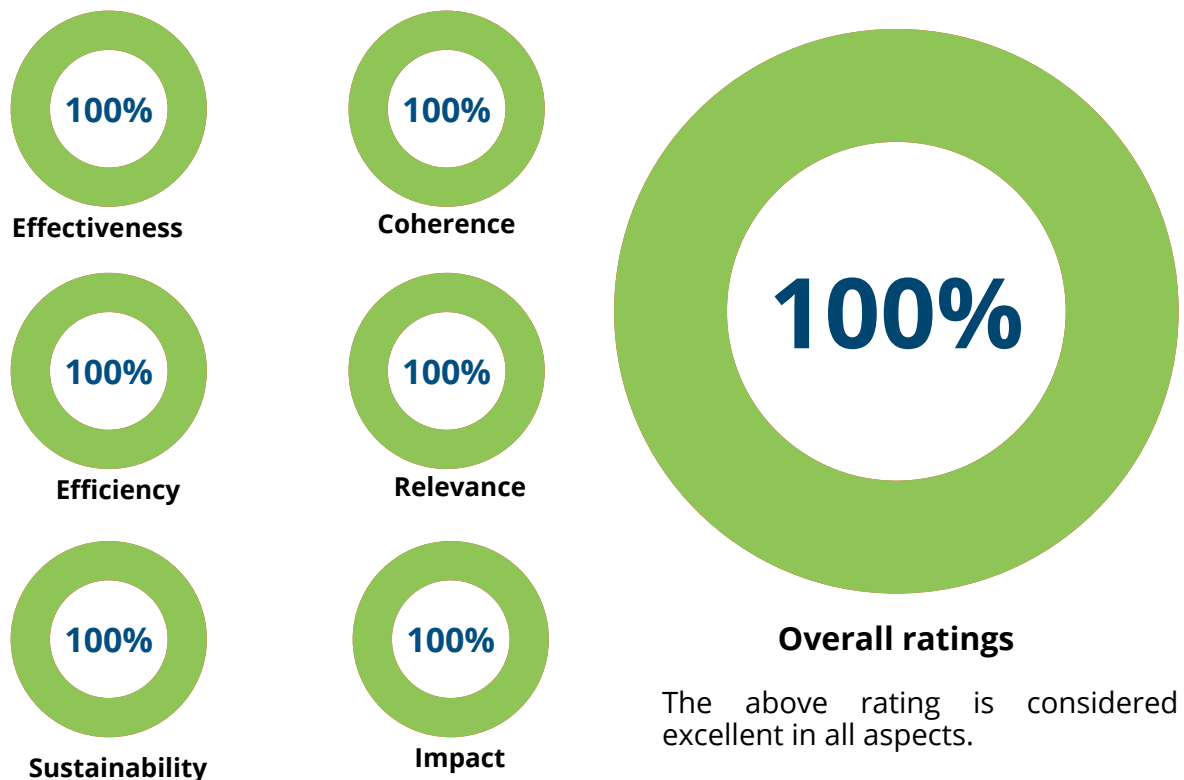


Fig. 5: OECD DAC Measure

### 1. Relevance:

- The project is well aligned with NHPC's CSR Policy and the essential needs of the community, as identified through stakeholder consultations and the assessment carried out as per the guidelines.

### 2. Coherence:

- Strong coherence is observed, with the project adhering to NHPC's CSR policy and integrating effectively with other community development initiatives.

### 3. Effectiveness:

- Effectiveness shows an A grading as observed from stakeholder discussions.

### 4. Efficiency:

- The project's efficiency receives an A rating as the equipment is working at full capacity without any problems.

### 5. Sustainability:

- The project scores high on sustainability as trained Cold Chain Operators can effectively use and maintain the equipment.

### 6. Impact:

- The project has positively impacted the target communities including the people from socially backward classes.

## 7. ALIGNMENT WITH SDGs



This initiative directly contributes to several United Nations Sustainable Development Goals (SDGs):

**SDG 3 (Good Health and Well-Being):** By improving the health and saving lives during COVID 19

**SDG 9 (Industry, Innovation and Infrastructure):** By investing in augmentation of healthcare infrastructure.

**SDG 10 (Reducing Inequalities):** By directly impacting the healthcare of Socially Backward Classes of Kashmir positively.

**SDG 17 (Partnerships for the Goals):** Demonstrating effective collaboration between NHPC Limited and state health authorities.





## 8. RECOMMENDATIONS

Based on our observations and feedback received during the assessment of NHPC's CSR initiative in providing Cold Chain Equipment for Vaccine storage in Kashmir, several recommendations emerge to improve the effectiveness and sustainability of the initiative.

Firstly, it is evident that the deployment of Cold Chain Equipment has significantly augmented the overall storage capacity of healthcare facilities in the region.

To ensure the continued effectiveness of these resources, it is imperative to prioritize their maintenance and optimal utilization. Regular maintenance checks and training sessions for healthcare staff on equipment operation and upkeep would be essential to maximize efficiency and longevity.

Regular assessments of equipment functionality and utilization across healthcare facilities are necessary to identify any emerging challenges or opportunities for improvement. By maintaining a proactive approach, NHPC can ensure that its contributions remain impactful and responsive.

NHPC ought to enhance collaboration with government health authorities, local healthcare providers, and community stakeholders. Through coordinated efforts, NHPC Limited and its partners can combine their expertise and resources to tackle systemic challenges and foster lasting improvements in healthcare delivery. This collaborative strategy is essential for aligning with overarching healthcare priorities and maximizing the effectiveness of NHPC's CSR initiatives in Kashmir region.

# AUGMENTATION OF CCE INFRASTRUCTURE DURING COVID -19

**Location:** Kashmir, Jammu and Kashmir



**CSR IMPACT ASSESSMENT  
REPORT**



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**2024**