

Clean Energy Access Program Phase - II

Project Completion Report

Prepared for

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BY

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1. THE CASE OF ACCESS TO CLEAN ENERGY

Background

In a time when the world is working towards universal access to clean energy and sustainable development, it is crucial to demonstrate not only the role of energy access but what access to energy can do to enhance the quality of life and development in underserved areas of the country.

Today, 1.1 billion people globally lack access to electricity and based on the current trends, it will take until 2080 to achieve universal access to electricity. According to the Government of India's 2011 Census, an estimated 75 million rural households i.e. 45 per cent of total rural households do not have access to electricity. An estimated 142 million rural households, almost 85 per cent of total rural households, are still dependent on traditional biomass fuel for cooking.

Despite an increase in installed capacity by more than 110 times in 70 years, India still has a long way to go in meeting peak electricity demand as well as its energy requirement. To this end, it is clear that clean and modern renewable energy services address energy poverty given that renewable energy technology costs are falling and new business models with decentralized solutions are emerging as possible solutions. In India, renewable energy has emerged as a significant player in the grid connected power generation capacity supporting the national focus on energy efficient economic growth. While access to energy is used for lighting, access to information and entertainment, it is not an end. There is an established correlation between energy access and economic and development growth. For that purpose, it is essential that the usage of energy should be aligned in a way to trigger the socio-economic development of the local population.

With this background, the **International Institute for Energy Conservation – India (IIEC - India)** and its grassroot level not for profit partner, **Shree Shakti Consciousness Foundation (SSCF)** have joined hands to implement a program for improving the access to clean energy in the villages of India.

IIEC and SSCF have selected **Uttarakhand** as the state to identify the problems being faced by the village communities due to the lack of electricity access and associated consequences.

In Uttarakhand, most of the Primary Health Clinics (PHCs) are not even equipped to treat basic illnesses. The limited or no access to electricity is one of the major reasons for this. Thus, providing even the basic treatment and vaccination is a problem.

Considering the seriousness of the problem, the **Sharon H. Limaye Foundation** is providing the support to IIEC and SSCF **from the last 3-years** for the implementation of **Clean Energy Access Program** in the villages of Uttarakhand. During the Phase-I, the Sharon H. Limaye Foundation funded

Goal 7:

Ensure access to affordable, reliable, sustainable and modern energy for all.



13 CLIMATE ACTION





the electrification (with solar power) and supplied refrigerators and LED bulbs to 5 Primary Health Clinics. During the Phase-II (current Phase), 3 Primary Health Clinics (PHCs) and 2 Schools have been electrified (with solar power). The PHCs were provided with refrigerators for the storage of vaccines and LED bulbs were provided to both PHCs and Schools for efficient use of solar electricity.

This report provides the details about the milestones achieved during the Phase-II (until October 2020).

2. ACTIVITY WISE SUMMARY OF ACTIVITIES COMPLETED

The activity wise completion details for Phase-II funding is presented in table-1 below.

Table-1: Activity Completion Details

S. N.	Details	Unit	Remarks
A. Installation of 5 Solar Power Systems in Primary Health Clinics (PHCs) and Schools			
1.	Primary Health Clinics (PHCs) selected and the installation of Solar Systems completed	3	Completed
2.	Schools selected and the installation of Solar Systems completed	2	Completed
3.	Training, Capacity Building & Documentation	1	Completed
4.	Installation of display boards	5	Completed
B. Preparation of strategy and Plan for Marketing and Leveraging of Funds			
5.	Hiring of Geneva Global as an agency to equip IIEC in preparation of a strategy and plan for scale-up and to approach other Foundations and international agencies for funding.	1	Completed IIEC website has been updated with the outcomes of Phase-II funding
C. Preparation of a High-Level Marketing Brochure including the Printing			
6.	Preparation of Brochure & Printing	1	Completed
D. Preparation of a Professional Documentary			
7.	Hiring of a Professional Group and preparation of High-Resolution documentary	1	Completed The Link of the Video is here: https://youtu.be/inWSIY-QvMQ

3. DETAILS ABOUT THE PHCs & SCHOOLS WHERE SOLAR SYSTEMS ARE INSTALLED

The Solar Systems have been installed in 5 Villages of Yamkeshwar and Pauri Blocks of Pauri Garhwal District in Uttarakhand. The names of the villages are – **Simlana, Mohanchatti, Bharpur, Bhanchuri and Pokhri Ajmeri**. The customised Solar Plants are now functional at all the 3 PHCs and 2 Schools. The installed solar systems include 1000 W solar panels, 200 AH batteries, 1.5 KVA Solar Inverters, Charge Controllers, LED bulbs, 165 liter refrigerators for PHCs, and electricity points for usage and charging of mobile phones and computers for schools, etc.

Below are the details of each village where solar systems have been installed.

Table 1: Village Simlana – PHC

i	Name of the Village	Simlana
ii	Name of Block	Dugadda Block
iii	Average Footfalls in PHC	Daily: 20-25 Patients; Monthly: 300-400 Patients approximately
iv	Number of villages the PHC caters	8

Simlana PHC is in Dugadda Block and caters to eight villages. The closest city to this PHC is Rishikesh which has the City Hospital, to reach the city hospital it takes approximately four hours as it is around 94 kms from Simlana. Thus, the PHC is the lifeline for all the patients of the eight villages it caters to. The PHC has 3 rooms but no source of electricity. Thus, after installing a 1KW system the PHC was able to light up and the doctor is able to treat emergency cases even during the nighttime.



Figure 1: Solar Panel installed at PHC Simlana (Left) & Picture of Doctor- in- charge at the PHC along with the board (Right)

Table 2: Village Mohanchatti – PHC

i	Name of the Village	Mohanchatti
ii	Name of Block	Yamkeshwar Block
iii	Average Footfalls in PHC	Daily: 20-25 Patients; Monthly: 400-450 Patients approximately
iv	Number of villages the PHC caters	10

Mohanchhatti PHC is in Yamkeshwar block and caters to ten villages. The closest city to this PHC is Rishikesh which has the city hospital, it takes approximately two hours to reach as it is around 45 km from Mohanchatti. The PHC has 4 rooms and we have installed a 1 KW system which has helped electrified the PHC.



Figure 2: Solar Panel Installed at PHC Mohanchatti (Left) & Picture of Doctor-in-charge (Right)

Table 3: Village Bharpur – PHC

i	Name of the Village	Bharpur
ii	Name of Block	Yamkeshwar Block
iii	Average Footfalls in PHC	Daily: 20-30 Patients; Monthly: 500 Patients approximately
iv	Number of villages the PHC caters	7

Bharpur PHC is in Yamkeshwar Block and caters to seven villages. The closest city to this PHC is Rishikesh which has the city hospital, it takes approximately 4 hours to reach as it is around 60 Kms from Bharpur PHC. A limited number of patients can reach the city hospital especially during the COVID pandemic. Thus, making this PHC extremely important. The PHC has seven rooms and is bigger than the above two PHCs. We have installed a 1 KW system which has helped electrify the entire PHC.



Figure 4: Solar Panels Installed at Bharpur PHC (Left) & A patient consulting the Doctor-in-charge (Right)

Table 4: Village Banchuri – School

i	Name of the Village	Banchuri
ii	Name of Block	Yamkeshwar Block
iii	Total Students in the school	200
iv	Total Teachers in the school	15
v	Total computers in the school	10
vi	Number of villages the school caters	13

The school is in Yamkeshwar Block and has 200 students. The school caters to 13 villages. Computer classes are generally hampered as there are long power cuts. We have installed a 1.67 KW system which has electrified the computer lab and the school office. The school also has a smart classroom and thus with uninterrupted supply of electricity the students can use the room.



Figure 5: Solar Panels installed at Banchuri School (Left) & Picture of the project board in front of the main school entrance (Right)

Table 5: Village Pokhri Ajmer – School

i	Name of the Village	Pokhri Ajmer
ii	Name of Block	Dugadda Block
iii	Total Students in the school	176
iv	Total Teachers in the school	16
v	Total computers in the school	8
vi	Number of villages the school caters	10

The school is in Dugadda block. The school caters to 13 villages and it has 176 students. Computer classes are generally hampered as there are long power cuts. We have installed a 2KW system which has electrified the computer lab and the school office. To reach the school a small path is made and there is an unmotorable road thus one needs to trek for about 2 kms to reach the school.



Figure 6: Solar Panels installed at Pokhri Ajmer School (Left) & Picture of the school during installation (Right)

4. DOCUMENTATION AND HANDING OVER OF THE ASSETS

IIEC team ensured that the required documentation is completed before and after installation of solar systems in PHCs and Schools. Before the installation of solar home lighting systems, IIEC obtained '**No Objection Letters**' from the Doctor-in-charges and Principals of the PHCs and schools. This ensured the commitment of the doctors, school principal and teacher to install and maintain the solar systems. This letters also authorized IIEC for the installation of solar lighting systems in their PHCs and schools. The doctors and principals have assured that the staff of the PHC and school will take care and maintain the solar lighting systems from the day of installation.

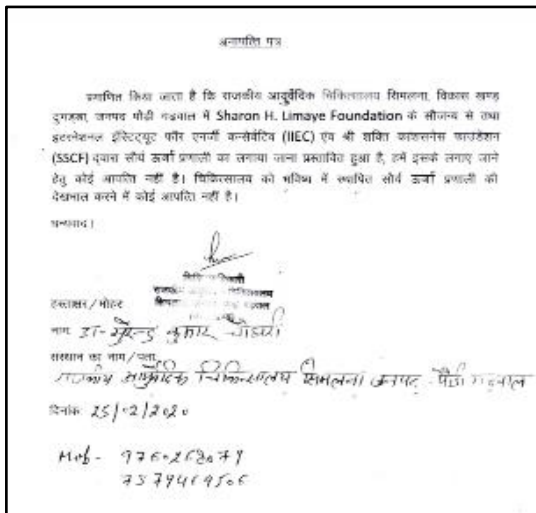


Figure 7: NOC from PHC, Simalna

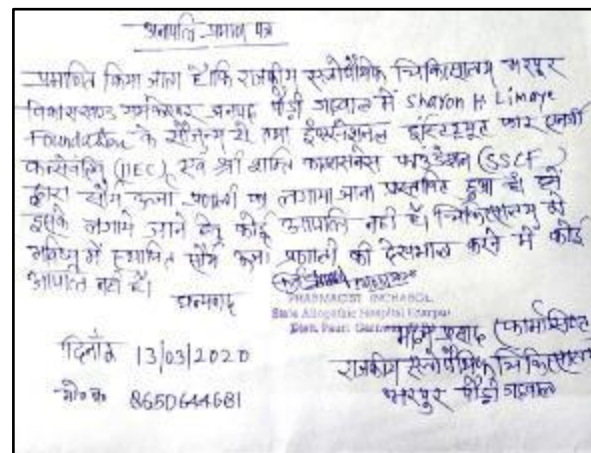


Figure 8 NOV from PHC, Bharpur

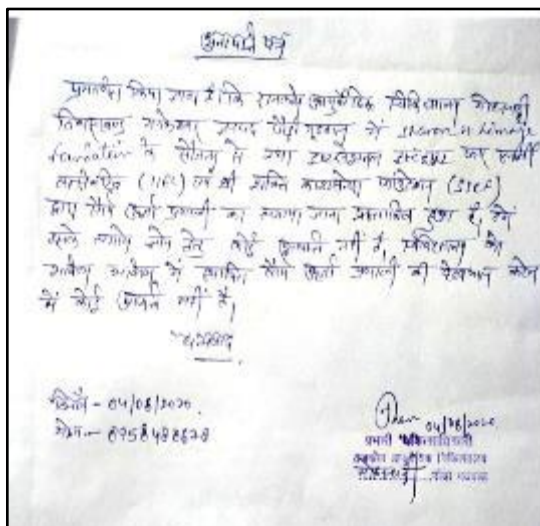


Figure 9 NOC from PHC, Mohanchatti



Figure 10 NOC from Govt. Inter College, Pokhri Ajmeer

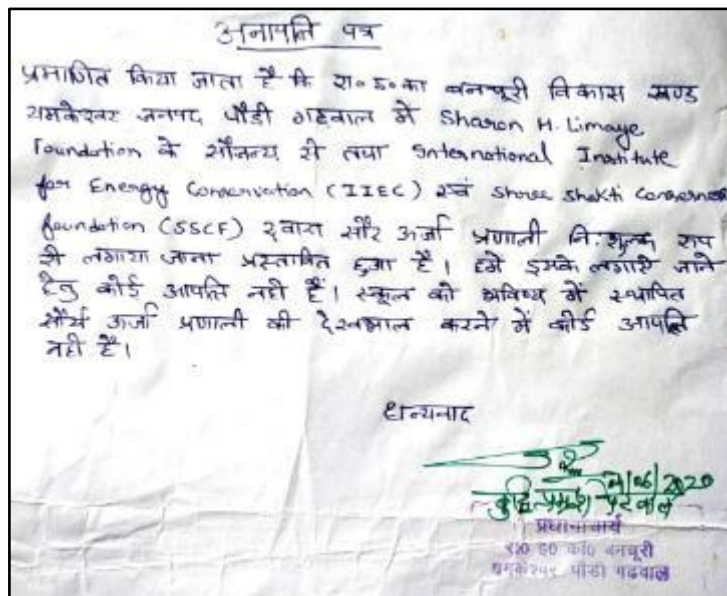


Figure 11 NOC from Govt. Inter College, Banchuri

After the systems were installed and training imparted, a **Letter of Transfer of Ownership** was signed with the **Doctor-in-charge/Principal** of the school and the **Local Village Governing Body Representative** namely the "**Gram Pradhan**". The letter was also signed by IIEC and SSCF representatives. The main objective of the Transfer of Ownership Letter is that the village and the PHC/school will take care of the day to day maintenance and the home lighting system is now their own asset. This brings a sense of ownership amongst the stakeholders. Below are the snapshots of the last page of the letters for each PHC and school in which the system was installed.

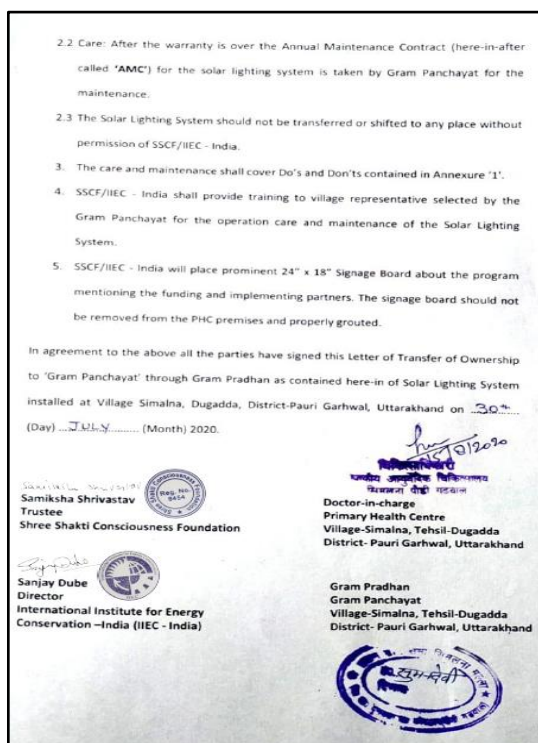


Figure 12: Letter of Ownership for Simlana PHC

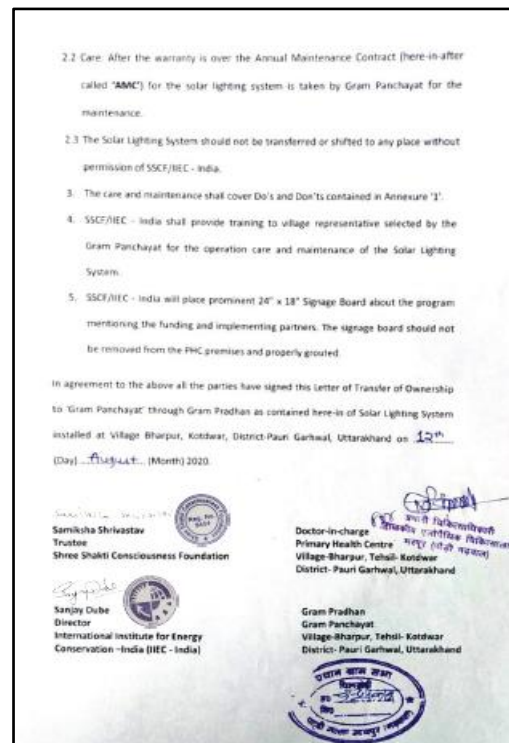


Figure 13: Letter of Ownership for Bharpur PHC

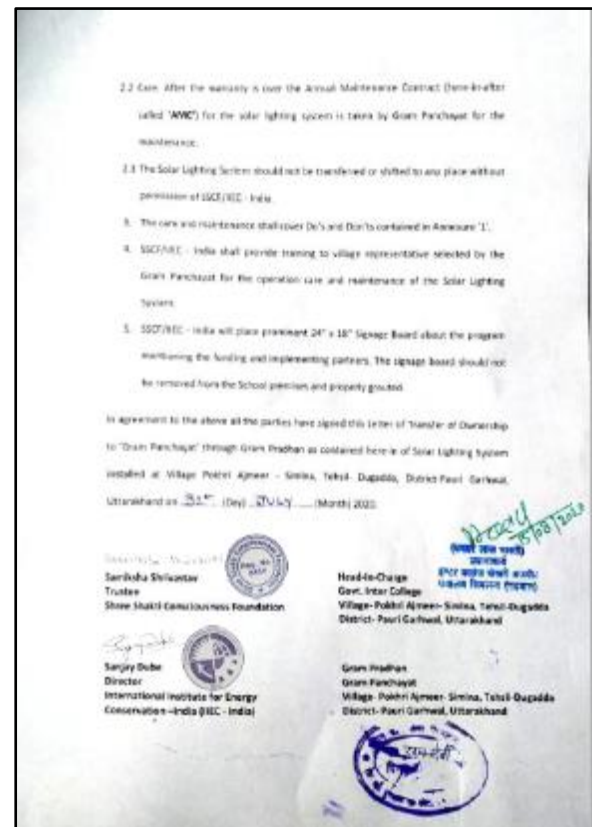
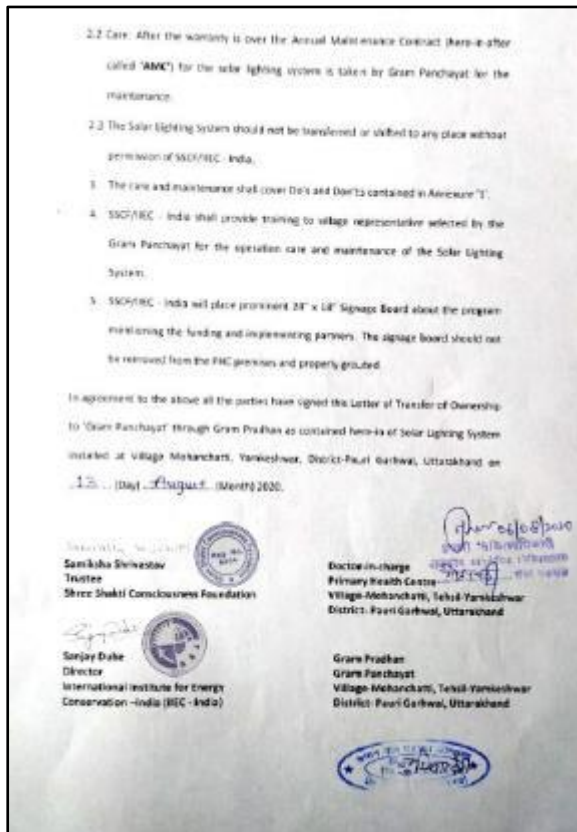


Figure 14: Letter of Ownership for Mohanchatti PHC Figure 15: Letter of Ownership signed for Pokhri Ajmer School

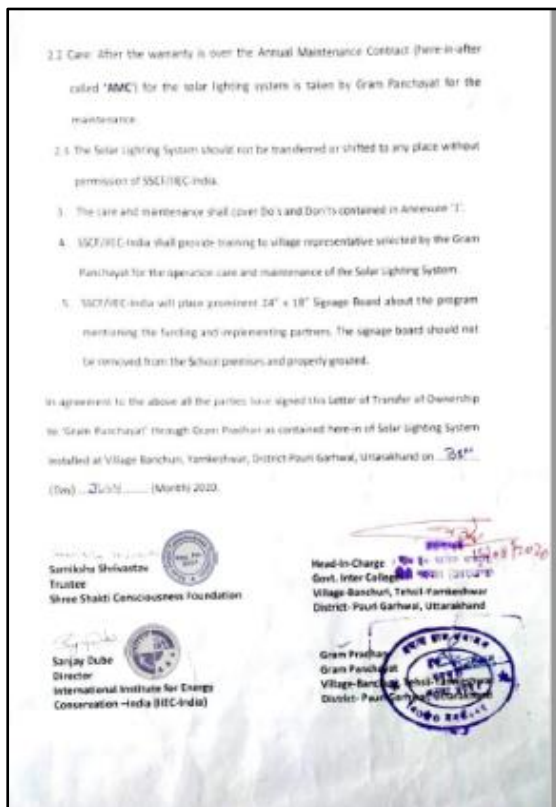


Figure 16: Letter of Ownership for Banchuri School

5. ADDITIONAL BENEFITS OF THE PROGRAM FROM COVID-19 POINT OF VIEW

As the COVID-19 being spread across the world, the most required prevention measure is not the luxury, but the ways to meet the basic needs of the poor to protect them from the pandemic before it penetrates down at the community level. The kind of prevention measures like lockdown, curfew and stay at home being adopted in India, can only bring successful results when the **communities in rural areas have access to reliable, affordable electricity to stay connected and continue to communicate with public services and with one another remotely.**

A good number of communities living in rural areas and the infrastructure provided to serve their needs about health, education and livelihood generation are still surviving without access to affordable and reliable electricity and millions more have access to very limited or unreliable supply of electricity. Living under lockdown for long periods may not be possible in remotely located villages without the availability of energy to cook and store food, or for entertainment (use of TV or radio) and communication using mobile phones.

The ability of health workers to treat infected people is also based on the assumption that remotely located Primary Health Clinics (PHCs) and their equipment and refrigeration systems can only function with available access to uninterrupted supply of electricity.

As the spread of the pandemic is growing, the situation is becoming challenging for health workers and PHCs as they are the first line medical service providers for the poor living in remote villages as they try to treat patients with facilities that rely on electricity. And even when treatments become available, the restricted cold chains (due to lockdown) and the refrigeration facilities make the poor more vulnerable due to interrupted supplies of vaccines for dog bites, snake bites or tetanus injections to provide protection against possible infections from wounds and bruises.

The solar systems provided under Clean Energy Access Program to the PHCs are answering this challenge for effectively delivering health services.

The entire eco-system created under the Clean Energy Access Program has ensured the delivery of improved quality health services to the poor and supported the supply chain (cold chain) for transport and storage of lifesaving vaccines and medicines. The established ecosystem is also ready to facilitate the administration of COVID-19 vaccines (once available) to the communities living in remote villages.