

## **Gunjaman Singh Hospital, Pithuwa Village, Chitwan District, Nepal**

### **GGHH Agenda Goals**

Energy

### **Hospital Goals**

1. Reduce energy costs
2. Reduce carbon dioxide emissions
3. Continue to treat patients during power cuts

### **Progress Achieved**

Our solar panel installation (Photo below) is working perfectly. With careful power management we have enough electric power, for the hospital and doctors' quarters even during load shedding (power outages) of sometimes up to 18 hours per day. This includes power for the x-ray machine and the waste autoclave. We have completely CO<sub>2</sub> free energy and low energy cost for loading batteries sometimes when there isn't enough sunshine. The cost of installation for sixteen panels, the inverter and the sixteen batteries of 100Ah system was around 12,000 CHF (US\$13,000) in 2010; prices have dropped since

### **The Issue**

The hospital is funded by Swiss NGO "Shanti Med Nepal" and private sponsorship. Environmental health and sustainability is an important factor in decisions in the development in the hospital.

### **Sustainability Strategy Implemented**

Solar energy was installed as a priority for the hospital as soon as Shanti Med became involved in its operation.

### **Implementation process**

In such a small facility, the decision making and implementation process is comparatively simple. Dr Gonseth was responsible for selecting the projects to be undertaken, any necessary fundraising, identifying collaboration partners and directing implementation for all elements within GSH.



### **Tracking Progress**

Solar power: success is measured by the ability of the system to produce all the electricity required by the health post and staff quarters. The level of power in the battery system is recorded and allows demand to be managed through the day.

### **Challenges and lessons learned**

Batteries need to be topped up; three have been damaged because this was not done often enough. Modern batteries are sealed and do not need this maintenance, so wherever possible, these should be used.

Staff like to use the fans when the weather is hot, but this quickly exhausts the batteries.

The panels need to be cleaned weekly as there is a lot of dust from the road. If this is not done, not enough power can be saved. In the rainy season, the system still operates as there will be an hour of heavy rain followed by sun. In winter, there may be more of a problem due to fog and cloud.

Training about the solar system and avoiding excessive use of power, especially on non-essential applications like cooling fans, needs to be reinforced regularly.

### **Next Steps**

The system is adequate for the day care center so no upgrades are necessary. It is hoped to expand to a small hospital being built nearby. This will initially have twentyfive beds, but will later be expanded to fifty beds. It is hoped that it will be possible to run the hospital completely independently of the grid. The daycare center is also conducting projects on waste, water and leadership- see related case studies.

### **Demographic information**

Gunjaman Singh Hospital, Pithuwa-3, Chitwan, Nepal, is an independent non-profit day care centre, funded by NGOs and private donation. Gunjaman Singh Hospital has 50 – 70 patients daily and has 10 staff members (including two Nepali doctors). Mostly of the time there is also a volunteer doctor or another specialized person from Switzerland there to give trainings to the staff.

Gunjaman Singh Hospital, Pithuwa-3, Chitwan, Nepal  
Independent non-profit day care centre.

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### **Quotes:**

Ruth Stringer: It is really impressive to see that the whole centre, including the x-ray machine, and the waste autoclave, can be protected from the terrible power cuts here on such small array of solar panels. The leadership provided by Dr Gonseth will have an impact far beyond Gunjaman Singh Hospital, as the partnership with HECAF shows.