

## **Progress of the Solar Panel Project: Summer 2012**

*Chris Madine: September 2012*

In August 2012 I was fortunate enough to return to the Lower Kolyma region of Sakha Yakutia to interview key members of Obshchina Turvaugin. The interviews focused on the progress of the solar panel project and the member's impressions of it.

### **The final movement of the solar panel equipment, an update**

The shipment of the panels to Yakutsk had not in fact been the end of the logistical nightmare for the partner organisations in this unique project. International air transportation of a vital part of the solar equipment (the accumulators) was not possible. This was due to the acid content of the batteries. Accumulators that matched the specifications of the Barefoot equipment would have to be located and shipped all within Russia.

The solar panels arrived in Cherskii by boat in September 2011. However without the accumulators they were functionally useless. Once again Vladimir took on the brunt of the work, locating equipment within Russia. In March of 2012 accumulators compatible with the Barefoot solar panels were located and shipped to Cherskii. Maria and Obshchina Turvaugin had waited almost three years, after the completion of her training, for all of the necessary equipment to arrive.

Finally, after the arrival of this last piece of kit, members of Obshchina Turvaugin and Maria could meet to finalise plans for the locations of the three separate pieces of solar equipment. The outcome of this was that the mini power plant would go to the permanent fishing station Chaigurginoo, situated on the Bolshaya Chukotskaya River. The 12 V 40 WP would go to a fishing camp on the Kolyma River, and the 12 V 20 WP would go to brigade 4. Brigade 4, headed by Igor Kaurgin, would be the testing brigade for the suitability and durability of the panels for nomadic life.

The three solar panel systems were assembled by Maria over a two day period. She also ran, in parallel to this, a seminar, disseminating relevant information to members of Turvaugin. These members would be taking the panels and working with them in the Tundra. Due to the vast distance and the difficulty and expense of transport, (Chaigurginoo is situated 300km north west of Cherskii) it was decided that Maria would not accompany the panels on their final leg of their journey.

Maria and members of Turvaugin worked together over these days to overcome the problems that they faced in the initial setup of the equipment. With the use of her Barefoot training manual and the help of those attending, all three pieces of equipment were assembled and tested. Vilen Vladimirovich Nognorutov, a key member of the Chaigurginoo camp who is currently servicing and maintaining the fishing camp's solar panels, stated that a more detailed set of component diagrams would have been helpful at this stage. This, he said, would also aid them in the construction of components should they be needed in the future.

### **The current situation**

The panels have been up and running in their final locations since June of 2012. Over my time in the Lower Kolyma region I was able to travel to Chaigurginoo, witnessing the panels in action. I was also able to interview many members of Obshchina Turvaugin, discussing their impressions of the solar

panel project, and the success and durability of the panels in dealing with the harsh environmental conditions of the Arctic Tundra.



*Solar panels located at Chaigurginoo fishing station. Photo by Tero Mustonen, Snowchange 2012.*

Igor Kaurgin, Brigadier Brigade 4, spoke of his experience of the panels in a very positive way. He felt that the transportable system was very useful in charging small electronic items including the portable light. There had also been much interest in this portable system from neighbouring members of Turvaugin. When discussing the practical issues of the solar panels in the context of their nomadic existence, he stated that the panels had withstood movement across the tundra well, saying that much care is taken to avoid damage when packing and unpacking the panels. Brigade 4 use Reindeer and sleds to transport the panels to new camp locations. He also stated that construction of the solar panel system is relatively easy on arrival at a new location. The panels he felt have contributed hugely to a saving in fuel oil. Igor believes that there has been a marked reduction of diesel use since the employment of the solar panels.

The mini power plant, located at the Chaigurginoo fishing camp, also appears to have been a great success. Vilen Vladimirovich Nognorutov had calculated a 40% reduction in diesel consumption since the implementation of the solar panels. He estimated that the panels can generate two days of battery life from one day's solar charge. The fishing camp also uses the solar lamps as a way of illuminating their underground storage facility for fish stocks. Permafrost allows a constant summer temperature of  $-10^{\circ}\text{C}$  to be maintained in the underground storage facility.



*Portable solar light utilised to illuminate the underground fish storage facility at Chaigurginoo. Photo by Tero Mustonen, Snowchange 2012.*

The overall feeling of the people that I interviewed was of goodwill towards the solar panel project. Although they were aware it had taken a long time and a lot of hard work for the panels to arrive after Maria's training, they felt it had been worth it now the solar panels of the pilot project had arrived.

In a later interview in Kolymaskaya, Tero asked Maria if she regretted going to India, Maria replied she absolutely did not. She felt that this was a good project and was a way that she could directly help her community. She also stated that the experience of training at the Barefoot College in both Ladakh and Tilonia, although physically hard, due to environmental conditions, had been worthwhile. She also remembers the training staff of the college with great fondness.

Turvaugin and Maria are currently refining the Barefoot College guidelines to fit more comfortably into nomadic life. They plan for Maria to hold training seminars for the workers of in the nomadic camps of the different brigades of the Obshchina. Because of the vast distances travelled by the brigades, and the expense and difficulty for Maria to travel to them if issues with the solar panels should arise, it is thought to be more logical for her to train members of the brigades in basic maintenance and repair of the solar panels.

It has also been decided that Maria should keep a detailed diary of events that occur with the solar panels over the next months. Information regarding the panels will be relayed to her from the fishing camps and brigade 4 by radio. This will allow the close monitoring of the panels over the coming winter period.

## What now

Although all of the members of Turvaugin that I interviewed were very happy with the outcome of the project thus far, one question appeared prevalent in their minds: what will the next steps be with their Indian partners?

Following the Barefoot model, the pilot stage of this project has proved a success. Maria and the community oversaw the implementation and instillation of the equipment, using her knowledge gained at Ladakh and Tilonia. Information regarding the solar panels has also been successfully disseminated by Maria to members of Turvaugin. This has resulted in the desired reduction of fuel consumption. With reported savings of up to 40% of diesel oil by Chaigurginoo fishing station and Brigade 4.

As stated in the conclusion of the 2011 report, the social impact of the solar panels project to Obshchina Turvaugin and the village of Kolymaskaya has been very significant. Due to the progressive reforms implemented by key members of these communities, several new initiatives have begun. To add to the list of the achievements already gained by Turvaugin - first ever National Assembly of Chukchi Peoples in the Republic of Sakha-Yakutia, the first ever Lower Kolyma Chukchi ABC book, Obshchina Turvaugin receiving land use rights under the Indigenous legislation in early 2011\*- there is the plan to establish a new all-season nomadic school with the 4<sup>th</sup> brigade. This initiative will focus on revitalisation of the Chukchi language and traditional reindeer herding skills.

Maria and Obshchina Turvaugin are currently awaiting news from their Indian partners as to what the next step will be. I believe that it would be a great loss to all partner organisations if further work on this unprecedented project were not to be undertaken. Inactivity would result in a significant loss of this community's knowledge and potential in this unique solar panel project. Also the nomadic school initiative would appear to be a perfect focus for international attention and further partnership with the Barefoot College.

After four hard years for all those involved, and Maria's personal commitment of time and effort, a way forward must be found.

\*See 2011 report titled: Solar panel project for the Lower Kolyma region of the Republic of Sakha-Yakutia, Russia; a four year collaboration, for further details.