

Sustainable energy trip report

On 5th and 6th, December, 2011, professors from different countries and FOLENS students participated to the sustainable energy trip in Iida and Ina cities. Due to the Fukushima Daiichi nuclear disaster in Japan, following the Tohoku Earthquake and Tsunami on 11 March, 2011, we have further enhanced awareness of the international community on the urgent necessity of sustainable energy strategies. This trip providing for us the good opportunity to familiar and understand the concepts and strategies of local communities that actively promote local energy generation for local consumption. I have learned lots of knowledge from that, such as solar energy for generation electricity, hydro power energy for electricity, use of biomass energy and so on. Further, I also got some chance to communicate with professors and students from different countries; we spent an interesting two-day trip together.

I will mainly talk about how to utilize of overflowed hot spring water for a heat pump in Sangitei Hotel where we lived for one night. Overflowed hot spring water from saunas or public spring in hotel is relatively adequate in quantity and temperature and thus can be used as an efficient heat source for a heat pump. In Sangitei Hotel, a heat pump system using waste water as a heat source allows to use low-cost off-peak electricity, has no outdoor unit to make noise or spoil the appearance of the building where it is installed, and combines cooling/heating and hot water heating in single unit. A heat pump system is a water heating system designed to heat low-temperature hot spring water during night time hours and use, as a heat source, its overflowed hot spring water stored in a special storage tank. Heated spring water is stored in a hot spring water storage tank and supplied when needed. It has outstanding energy saving effect. In addition, wood wastes were also utilization for heat generation. These not only eliminate the burden for environment, but also make the wastes well used. Besides these, we also visited Ohisama Shinpo Energy Corporation, Sakura Farm for learning the use of mushroom bed wastes for heat generation for the farm, Kanae Mitsuba Nursery for understanding solar panels installed at a public facility, Nanshin Biomass Cooperative for knowing cooperation of local business promoting wood pellets utilizing thinned woods as an alternative energy source, and Micro Hydro Power Station.

From this trip, we know that develop and apply of the sustainable energy sources are our urgent task due to the modern society faces serious situation with resource depletion and climate change. And not only in Japan, I should think a lot for how to utilize the sustainable energy in China in future.