Report on Visits to Qatar, Sri Lanka & Maldives

By Prof. I M Dharmadasa (Dharme)

(13 – 31 July 2010)

I normally make at least one visit every year to Sri Lanka to continue and monitor my on-going solar energy research activities and renewable energy application projects. This work commenced in the early 1990s through an HE-Link programme and it has successfully sustained to date with the collaboration of Sri Lankan universities, other institutes and also Government Ministries. The research and application programme has extended to many other countries through SAREP network and my visit in July 2010, covered three countries; Qatar, Sri Lanka and Maldives. The main events, which took place during these visits are summarised in this report.

Qatar (13 - 15 July 2010)

My solar energy research group at Sheffield Hallam University is establishing a strong collaboration with the "Education City" in Qatar, through the activities with Qatar University. This city has great interest in solar energy research and applications, and therefore the collaboration with Dr. Saud Ghani at Qatar University is developing rapidly. A joint research proposal has been submitted to Qatar Research Fund (QRF) for the third cycle, but was not successful due to few shortcomings. This first visit to Qatar University was made to discuss and rectify these shortcomings, observe the facilities available in the Qatar University and to arrange a re-submission after improvements to the QRF-fourth cycle call. Planned public awareness activities did not take place due to the summer vacation of the University. This opportunity enabled to discuss the future research activities, application programmes and the development proposal with the main collaborating staff member.

Sri Lanka (16 - 27 July 2010)

One of the main events planned in Sri Lanka was held on 19th July in Colombo. This was a meeting with the Minister for Housing and Common Amenities to up-date him with the latest developments in BIPV (Building Integrated Photovoltaics). This meeting was attended by Prof. Krishan Deheragoda (Ex-Chairman of SLSEA), Dr. Sisira Siribaddana (representing IRD), Rohan de Alwis and my-self. Minister Wimal Weerawansa showed a keen interest in the power point presentation made and the open discussion followed, spending over one and half hours taken from his busy schedule. Energy is a very important issue for sustainable development of any country, and use of renewables is key to this process for rapid development of Sri Lanka. This meeting was a follow-up of a similar meeting with Minister Champika Ranawaka (Then Environment, and now Power & Energy Minister) in July 2008. Integration of solar panels into new buildings and existing roofs through net-metering systems is a very attractive method to produce clean energy during daytime to use in industry. It is encouraging to hear positive steps already taken by the Power & Energy Ministry to promote and develope these applications in Sri Lanka.

Meeting with Minister Wimal Weerawansa (Minister for Housing and Common Amenities) to update and discuss Building Integrated Photovoltaics (BIPV) in Sri Lanka.

During the same period of my visit, two other senior members of APSL were also in Colombo. Dr. Indrajit Coomaraswami (Ex-Co member) and Rohan de Alwis (One of the Vice Presidents of APSL – who also joined me to meet Minister Weerawansa) were also holding various other meetings with senior Government officers to initiate development projects in Sri Lanka.

The second main event was held at the Kelaniya University on 20th July. This was a mini workshop on our on-going solar energy research programme with my collaboration. The items discussed with the main research team at the Kelaniya University were the progress of the current research work funded by NRC, expansion of the research group, future research funding to the group, re-establishment of C/W scholarships in Sri Lanka and the future way forward of solar energy research and applications. Sri Lanka should prepare to manufacture her own solar panels in the future and these research programmes in local universities are essential for capacity building by training personal at MPhil and PhD levels. The research programme led by Dr. Pathiratne and supported by Dr. Sujeewa de Silva and Dr. Ruwan Wijesundera is continuing with gradual expansion.

Two days (21 - 22 July) were spent in the University of Peradeniya holding discussions with senior academics. Prof. Lakshman Dissanayake (Ex-Director of PGIS), Prof. BSB Karunaratne (Present Director of PGIS), Prof. M A Careem, Prof. Oliver Ileperuma (Ex-Dean/Science) and Prof. K Premaratne (Deputy Vice Chancellor) were the main contacts. Re-establishment of C/W scholarships in research active universities, linking APSL activities with the senior academic community in the country and future solar energy research at local universities were discussed. Spreading out the island-wide APSL award scheme via Peradeniya University students was also discussed. These meetings helped me to re-establish the broken links with three universities; Jaffna, Baticoloa and Uva. I was really pleased to hear my contemporaries, Prof. Kandasamy and Prof. Kumarawadiwel holding key positions, Head/Physics and Dean/Science respectively in the

Jaffna University. This would enable us to easily organise our next year APSL event in Jaffna University to publicise APSL projects, in particular replication of "Solar Villages" to avoid slow desertification of Jaffna peninsula. Similar activities could be organised through Baticoloa and Uva campuses through senior academics in these universities.

The next event was close to Anuradhapura, visiting the pilot solar village, monitoring its progress and attending a large meeting to promote renewable energy applications, replicate solar villages and award 20 motivation certificates funded by APSL Ex-Co members to bright school children from 15 surrounding schools. The pilot solar village is progressing well and the village committee members were happy with the developments taking place.

Some of the village committee members with the installed solar water pumping system

When the solar water pumping system was installed in September 2008, only ~100 families were served by the system. However, this number has now risen to ~140 families this year. As the demand for water is rapidly increasing, the village committee has replaced the un-reliable back-up diesel engine with a new one. Although this is necessary at this initial stage to meet the demand, at this years meeting it was decided to add two more solar panels to existing 8-panel system to provide more power for water pumping. Since a healthy back-up diesel engine is now in place, new solar panels will be added as the funding accumulates and water demand increases, until it reaches the solar pump's full capacity. The village committee members were happy to see that they could afford to buy a brand new diesel engine to keep as a reliable stand by and to add 2 more solar panels to the existing system with their own savings within the community. It gave me tremendous satisfaction to walk several miles with the village committee members to see key places enjoying the green and lush environment.

During the past two years, solar village monitoring meetings were held in the primary school in the village cluster. However, due to large numbers involved, the meeting this year was organised in a neighbouring large secondary school, Bandaranayake Navodaya School, Ehetuwewa. The three main organisers were the Head teachers of the two schools and the ex-Sports Minister, Mr Bandula Basnayake who was an old-boy of this school. I was particularly happy since this was the school I had my secondary education up to GCE O/L. I experienced an un-expected celebration for the two successful old-boys from this school, and I feel that this is part of our education system to boost existing pupils to do well in their career.

"Solar Village" publicising and monitoring meeting combined with awards of APSL - motivation certificates to 20 selected pupils in the region.

The main hall was packed with pupils, teachers and parents from 15 neighboring schools. This gave me an excellent opportunity to pass the solar village concept to develop ourselves without damaging the environment, and to convey a strong message on the APSL mission, spread the news on APSL island-wide award scheme and distribute 20 APSL motivation certificates to carefully selected children from 15 schools. It was pleasing to note the efforts taken by the organisers to bring in children from Muslim and Tamil schools situated far away from this school. I hope similar events holding in different parts of the country, will enable APSL to help and support development of our future leaders through education. In addition, the APSL motivation certificates framed and kept in youngsters' study rooms, provide continuous publicity for APSL in addition to motivation of children for their education. Small gifts given to young children in public occasions like this would boost their enthusiasm and interest in education. I therefore recommend to the APSL committee to expand this programme in the future.

On 26th July, I visited Univ. of Colombo and Sri Jayawardhanapura Univ., to meet senior academics, Prof. T R Ariyaratne (Dean/Science), Prof. Sumedha Jayanetti (Head/Physics) and Prof. Tantrigoda (President-elect SLAAS). This was again to discuss re-establishment of the C/W scholarships in Sri Lanka as the follow-up to my formal letter forwarded to every research active universities. The discussion with Professor Tantrigoda was mainly very useful in linking APSL to the whole academic and industrial community in the country through SLAAS. I also became a life-member of SLAAS (Sri Lanka Association for Advancement of Science), since this is a requirement for submitting joint scientific papers with existing research programmes in the country. The President of SLAAS will provide us a unique opportunity to communicate directly with this large body of academic & industrial members.

On 27th July, I had to spend some time at the Ananda College, Colombo. Few students in the media society came to know my presence in Colombo and approached me to deliver a public lecture for all A/L students if possible. Although this was not planned, I accepted the invitation

giving them my last day in Colombo, allocated for relaxing and getting ready for the return journey. I was really impressed by the organising power of our young children; they managed to convince their teachers and the Principal, Mr. LMD Dharmasena, and brought all 28 science A/L classes to their largest Hall, Kularatne Auditorium within a short period of 2 days. I was delighted to receive a warm welcome from the Principal, teachers and pupils of Ananda College - Colombo. I thoroughly enjoyed delivering my lecture to about 800 bright children on the subject "The use of solar energy for social development and reduction of poverty". I also explained to this young audience, the mission of APSL and invited them to become part of it in the future, and to take part in the currently open APSL essay competition. The Principal, Mr Dharmasena made a special request to pass information on our APSL project activities to these school children so that it would help their professional development in addition to the usual study programmes in the college.

The public awareness event for all A/L students at the Ananda College - Colombo.

Maldive Islands (28 - 31 July 2010)

The last leg of this tour was planned to spend 4 days (28 - 31 July) in Maldives, as the follow-up of 2009 July activities. Last year I was able to have a 45 minutes discussion with the Vice President of Maldives and deliver a public lecture organised by the President's office to an important audience. My main aim of the previous visit was to modify "Solar Village" concept to convert few Maldive islands to "Renewable Islands". However, the communications did not work out on time before my travel, however this time I took the opportunity to do activities with a different approach. On arrival in Maldives, I made contacts with teachers in Ghaazee School, one of the main schools in Hulumale Island and organised a public lecture to A/L and O/L students and I had meetings with two groups of science teachers. The main aim was to spread the message through teachers and pupils to the general public and encourage the whole community to develop rapidly. For the development of any country, both the Government and the general public should be actively engaged together in development activities. Perhaps the Government has taken right actions by proper planning of roads and buildings in Hulumale. I walked enough through this

island and I was pleased to see well planned roads, buildings and even solar powered street lighting systems. While observing these positive developments from the Government side, the floating of waste, lack of tree planting and careless driving habits disappointed me as observed in many other developing countries. These improvements must be done by the involvement of general public through education. I was pleased to see that teachers and pupils of Ghaazee School were prepared to engage enthusiastically to work as the nucleus of this programme. The school will be the best place to take this message to parents and then the ideas can be implemented with the support of both the General public and the Government. I will be working with this school in the future to see a cleaner and greener Hulumale, becoming a pleasant eco-tourist centre for everybody visiting these naturally beautiful islands.

Efforts to convert some of the Maldive Islands into "Renewable Energy Islands"

I also took care to wash out all my travel stress by swimming in the warm Indian ocean and relaxed joining a whale submarine tour to enjoy under water beauty in Maldive Islands, before travelling back home on 31st July 2010.

When I joined Sheffield Hallam University in 1990 as a Senior Lecturer, the University and EPSRC encouraged me to be involved in public understanding of science work based on our scientific research. By voluntarily taking part in these programmes, it has now developed into a pleasant situation, where this kind of work can be done anywhere I travel to help development of the society. I am therefore recommending this to anybody, to go out of their defined job functions, and apply the acquired knowledge to improve the standard of living conditions of people. The impact will be un-imaginably high.

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