



### Concept of Religious Institutions as Green Oases

His Excellency the President, who had conceptualized the idea of the religious institutions taking up the role of climate change champions by adopting the concept of each institution becoming a Green Oasis has recognized the fact that providing roof top solar systems to the religious institutions is the best way to launch this revolution with the advantage of resolving the problem of high electricity bills concurrently. The other interventions towards the ultimate goal of Green Oases would be that much facilitated by this initiative.

This concept note describes the feasible way forward for providing such solar systems to the identified religious institutions, firstly to those with high electricity consumption as a precursor to the overall target of becoming the Green Oases. This would have the immediate impact of both reduced carbon emissions as well as removing the burden on electricity consumption costs while relieving the load on the country by the reduction of fossil fuel imports and drain of foreign exchange.

This is project that can be supported by all of us as an element of Aloka Pujaa ආලෝක පූජා , which we traditionally perform at our temples, giving a much more meaningful and deeper lasting impact, both to the temple concerned as well as to the country at this time of grave energy crisis.

This concept was discussed with Mr Ruwan Wijewardana, Presidential Advisor along with representatives of the Buddhasasana Ministry and the Sustainable Development Authority and

the Ceylon Electricity Board on the 30<sup>th</sup> November 2022. Wherein it was conclusively demonstrated by the ACBC that the proposal for providing roof top solar systems for religious institutions is an attractive proposition both on economic and environmental aspects congruent with the primary concept of the “ people centric green religious institutions”

In that this initiative can be practically implanted and the desired outcome is achieved, recognizing the financial, technical and administrative inputs required , it was decided to launch a pilot project covering 1000 religious institutions comprising of the different religious denominations. While the Commissioner of Buddhist Affairs will propose the criteria for the composition and selection of the group of 1000 such institutions, the ACBC undertook to develop the structure and implantation details of the implementation including proposals to finance the project.

This note covers the proposed structure and main elements of the pilot project.

#### The Monthly Electricity Bill of Religious Institutions

Range of Consumption kWh	Monthly consumption kWh	Tariff per unit Rs/kWh	Fixed fee Rs.	Monthly bill	Number of Institutions
0-30	30	8	90	330	
31-90	60	15	120	810	
91-120	120	20	120	2010	32100
121-180	180	30	450	4140	
>180	200	32	1500	5830	
	400	32	1500	12230	7930
	550	32	1500	17030	
	650	32	1500	20230	
	880	32	1500	27590	500
	1100	32	1500	34630	550

Although the vast majority are in the low consumption group below 180 units per month, the recent tariff hike gravely affected the institution with the higher consumption range as seen in the above table. Also the proposed methodology for intervention is highly dependent on substantial bank lending, for success of the scheme, it is proposed that the initial interventions shall be targeting these high consumption group. An alternative methodology is being developed to address those with lower consumption with an eye on the success of this initial intervention. Accordingly the proposed project parameters are

1. The 1000 units shall be those falling under the consumption group over 200 units per month.
2. It is accepted that for the sustainability of each project unit some degree of capital subsidy is required. The subsidy will range from 50 % for the consumption group 180 units to 400 units and 30% for those in the range 500 units to 880 units and those with higher consumption.
3. The debt funding of 50% is expected to be provided by the selected banks at a concessionary rate if interest of 15%
4. The onus of repayment of the loans shall be on the respective religious institutions but will be ensured by the income generated through the proposal to adopt the Net Accounting System of the Surya Bala Sangraamaya as described later on
5. ACBC shall provide the technical and administrative support to prepare the technical specifications, if desired by the respective institution, to match the level of consumption of each selected institution along with the physical parameters such as the area of roof space not subjected to shading. A technical and commercial specification shall be prepared for each such intuition to call for tenders in a transparent manner from service providers registered with the SLSEA, short listed for convenience on predetermined criteria to ensure successful implementation
6. ACBC shall also assist each intuition to secure the debt funding as required and help with the documentation
7. ACBC will provide the technical supervision during installation and commissioning of the systems.
8. A fee based escrow facility and regulation on cost recovery shall be levied to cover the cost of such services by the ACBC.
9. The lessons learned during the implementation of the pilot project will be shared to replicate the system to cover the rest of the identified religious intuitions
10. As the initial step a minimum of 10 Buddhist temples are to be identified to launch the projects as proposed by the Technical Committee as an ACBC initiative. This will create the impetus to encourage all citizens to install roof top Solar PV , which is the only short term solution for the present power crisis which can only exacerbate shortly.

### **Financial Considerations**

As stated above the sustainability of the project depends on the success of sourcing the required funds for the capital subsidy.

Once the list of 1000 institutions are selected, it is proposed that a promotional campaign be launched to seek donors, who would identify the respective institution of their particular choice, including from the respective Dayaka Sabhas or expatriates who might wish to adopt a temple in their own village. While ACBC will undertake this campaign in case of Buddhist temples, it is expected that associations representing the other denominations would adopt similar approaches in respect of their own institutions.

Based on an adhoc assignment of institutions of different capacities, the total capital cost for the 1000 installations is given below. This can be updated once the listing of the institutions is done.

Number of Religious Institutions	1000
Capacity range of installations	5-12 kW
Total Capital Cost	Rs. 3,260 Million
Required Subsidy in total	Rs. 1,200 Million

Although the total monetary value of the project appears large, the commitment as subsidy required for each installation is only about Rs 1,000,000. The balance would come from loan funding, sustainable through the project itself.

It is proposed that the capacity of the system to be installed at each institution shall be enhanced to a level to enable the surplus to be sold to the national grid under the Net Accounting System of the Surya Bala Sangraamaya program. Thereby the income would be adequate to service the loan. In order to give further comfort to the lending bank such funds would be directed to an account at the bank on which the Bank can impose a lien to ensure the recovery of the monthly loan instalments. The institution would have a substantial surplus once the loan is paid up.

The table below illustrates the financial viability of this proposal

Capacity of Solar System kW	Capital Cost RS.	Subsidy required %	Balance on loan Rs.	Monthly generation kWh	Surplus for sale kWh	Income @ Rs 37.00/kWh	Monthly Loan instalment Rs.	Income for the Intuition after loan recovery Rs.
8	2,800,000	50.00%	1,400,000	880	680	25,160	16,755.36	30,990
10	2,750,000	50.00%	1,925,000	1,100	700	25,900	23,038.62	38,130
10	2,750,000	30.00%	1,925,000	1,100	550	20,350	23,038.62	37,380
12	3300000	30.00%	2,310,000	1,320	670	24,790	27,652.33	45,020
16	4400000	30.00%	3,080,000	1,760	880	32,560	36,861.8	60,150
20	5000000	30.00%	3,500,000	2,200	1,100	40,700	41,888.4	75,330

As such without any equity the institution can implement this system only based on the subsidy amount and the income under the Net Accounting System.

In order to allay any fears of excessive consumption with zero monthly bill, thus affecting the surplus for sale and thereby the loan repayment, technical solutions can be provided to limit such consumption. However, it is expected that the institutions would lead the way towards energy

conservation and set an example for the communities to follow suit to help mitigate the severe energy crunch faced by the country.

Perhaps demonstration of this commitment over several months can be used as a pre qualification to be eligible for selection for the program and to receive the required subsidy funding.

#### The Additional Benefits

The basic objective of the exercise is not merely to solve the problem of the monthly electricity bill , but also to support the national need for enhancing the contribution of low cost renewable energy to the national grid by export of the surplus to the grid. Thus while resolving the problem of the monthly electricity bill this would set in motion a valuable initiative the solve the national energy crisis. Further more this would be the first step towards the primary objective of launching the **Concept of Religious Institutions as Green Oases.**

The additional spin off benefits of this scheme are surprisingly high

Consumption at each institution kWh	No. of Institutions in the group	Subsidy %	System Capacity kW	Total Subsidy Mount Rs Million	Total Loan Funds Rs Million	Total Generation kWh	Carbon emission reduction kg	Total installed RE capacity kW
200	200	50	8	280	280	480,000	336,000	1,600
400	200	50	10	275	275	960,000	672,000	2,000
550	200	30	10	165	385	1,320,000	924,000	2,000
650	200	30	12	198	462	1,560,000	1,092,000	2,400
880	100	30	16	132	308	1,056,000	739,000	1,600
1100	100	30	20	150	350	1,320,000	924,000	2,000
Total	1000			1,200	2,060	6,696,000	4,687,200	11,600

The spin off benefits only form these 1000 installations

#### **Reduction of CEB Generation needs by 11 MW**

- 1. Reduction of oil imports annually 1,6674,000 l**
- 2. Saving in foreign exchange annually \$ 1,439,600**
- 3. Savings for the CEB annually Rs. 140,760,000**

#### **Project Implementation and Monitoring Strategies**

The All Ceylon Buddhist Congress which initiated the concept of providing solar systems for temples is willing to take up the leadership in this regard with the collaboration of other such organizations representing the other religions and denominations.

It is proposed that a steering committee consisting of all such representations be formed with identified roles and responsibilities. The ACBC is willing to extend its technical support to all other associations desiring such assistance through its consultancy arm established primarily for the promotion of renewable energy in Sri Lanka.

### **Time duration of the project**

Considering the benefits that would accrue not only to the particular institution but the CDB as well as the country, it is proposed that these 1000 installations be completed within a period of 12 months .

### **The Appeal for Participation**

This invitation is for you to participate in this important national and meritorious endeavor.

A separate methodology is being developed to support institutions with the low consumption with the lessons learned from this initial launch.

It is proposed to commence with a minimum of 10 temples , for which your direct participation is solicited by nominating and supporting temples of your choice.

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