

PUBLIC CONSULTATION ON ROOFTOP SOLAR PV DEVELOPMENT IN SRI LANKA

Title

Rooftop solar PV development in Sri Lanka

Period of Consultation

From 27th of September 2017 to 24th October 2017

The Objective of Consultation

Public Utilities Commission of Sri Lanka (PUCSL) invites stakeholder's views, suggestions, recommendation and comments related to rooftop solar PV development in Sri Lanka as PUCSL intends to issue guidelines and advise on government policy to support successful implementation of the above and achieve the set policy targets.

Background

Present-day solar PV technology, a low-carbon energy solution, is well suited for much of Asia and the Pacific. With large areas of the region endowed with bountiful solar radiation, many countries in the region have the ideal conditions for utilizing solar energy. The development and scaling of the technology has also resulted in rapid decline in prices making the solution attractive to consumers and utilities.

Most solar PV systems tend to be one of two types. The first type is utility-scale installations with a capacity usually above 1 megawatt (MW). They require large, open land area. The second type is rooftop generation. Residences can be sufficiently supplied with small systems of usually up to 20 kilowatts (kW), while larger public, commercial, and industrial buildings may have systems with a capacity as large as 1 MW or even more.

Written comments and recommendations are invited from public on the following concerned areas.

IMPROVE THE EXISTING FRAMEWORK

Comments are invited for Grid connection (Net-metering, Net-accounting and Net-plus) application process, time taken for the estimates, meter replacement and connection charges, installation standards, testing protocols and time taken for meter installation, adequacy of current growth rate, pre-approval process for systems larger than 50kW and separate connection methodology applied for bulk consumers with HV connections.

Three schemes for rooftop solar PV introduced by the utility providers (CEB & LECO), naming Net-metering, Net-Accounting and Net-Plus are briefly described below.

NET-METERING

The customer generates electricity using Solar panels fixed on their rooftops which are connected to the grid through a net metering system. The consumer has to pay only the net amount of electricity that was consumed. If the solar production exceeds the consumption of the premises, the balance amount can be carried forward to future use up to 10 years. No fee will be paid for the excess electricity produced.

NET-ACCOUNTING

If the electricity generation of solar rooftop system is greater than the consumption, the consumer will be paid for the excess according to the below rates. If the consumption is greater than the generation, the consumer shall pay for the excess under the existing tariff structure.

NET-PLUS

The total electricity generation of rooftop solar system would be purchased by the utility under below rates. The bill for electricity consumption would be paid to the utility as usual.

Rooftop Solar PV feed-in tariffs

	Period	LKR/kWh
1	First 7 Years	22.00
2	Year 8 to 20	15.50

For all the above schemes, installed capacity of the solar rooftop system shall not exceed the contact demand of the producer.

The application processes declared by the utility providers are attached herewith for your consideration and comments.

You are also invited to comment on practical issues faced in following the utility guidelines and suggestions for improvement.

Please refer the annexures for related additional information.

COSTS AND FINANCING FOR SOLAR PV INSTALLATION

Rooftop solar is increasingly cost-effective for home owners, business owners, and their communities. Reductions in technology prices, innovative financing, and growing networks of solar installers and financial partners all helped drive down the prices for systems in the

country more than 40% percent from 2010 to 2016. The costs of Solar PV plant, feed-in tariff, simple payback period, financing options are driving forces for the development of rooftop solar.

You are invited to comment on ways and means to further reduce costs and possible financial incentive schemes to support further system proliferation.

INSTALLATION STANDARDS, WORKMANSHIP AND INSTALLATION BEST PRACTICES

Future of the industry mainly depends on the quality of installation, the material used, workmanship etc. Hence the industry best practices will be important to establish proper standards and the roof top solar program to ensure its sustained success.

You are invited to comment on current installation standards, workmanship, skill level in both design and implementation, and what steps to be taken to improve the same.

TECHNICAL CONSTRAINTS AND OPTIONS FOR GRID CONNECTION

Technical limitations in the grid and possible opportunities to harness best amount of renewable energy maintaining the stability of the grid will be discussed here. Opportunities and mechanisms which can be adhered by the utilities to improve or maintain the existing stability levels are considered here. Technological options that can help to integrate Solar PV into the power system grid may include flexible generation, grid extension, smart grid technologies, demand response and storage technologies.

Comments are sought on ways to integrate such technologies to the grid to extend the renewable deployment according to the government targets or the government to set more realistic targets.

INNOVATIVE POLICIES

Rooftop solar is not limited to home owners with sun-drenched roofs. Renters, condominium owners and people with shaded roofs may not be able to take advantage of solar on their own roofs, but “shared solar” solutions broaden opportunities for all electricity users.

Solutions such as community/cooperative solar solutions, green certificates, tax exemptions for income through solar energy, virtual net-metering, roof rental and/or green energy wheeling may benefit both the grid and specific consumer needs.

Your comments are sought on these and other schemes that can help scale the adoption.

OTHER CONCERNS

You are requested to forward your comments on any other concerns and ideas to ensure the achievement of targets set by the government.

CURRENT STATUS

According to the Bloomberg New Energy Finance outlook, Solar power, once so costly it only made economic sense in spaceships, is becoming cheap enough that it will push coal and even natural-gas plants out of business faster than previously forecast.

India pursuit to reach 100,000MWp solar capacity by 2022 out of which 40,000 MWp from grid connected solar rooftop installations, Taiwan target in 2025 is set to 20,000MW, which includes 17,000MWp for ground mounted and 3,000MWp for rooftop solar power systems, Vietnam planning to have 4,000MWp rooftop solar capacity by 2030 according to the draft regulatory framework.

Many schemes are globally available for connecting solar PV to the grid, of which net-metering and feed-in-tariff are prominent.

Sri Lanka government has targeted one million rooftop solar PV plants within next ten years. “Battle for Solar” program was launched in view of promoting Rooftop Solar PV in the country. This programme offered three types of tariff schemes – net-metering, net-accounting and net-plus for consumers to use to connect to the grid. The program targets to achieve 200MWp capacity by year 2020 and increase up to 1000MWp capacity by 2025. Sri Lanka total installed capacity of the rooftop solar PV up to August 2017 is 74MWp. Out of that only 46MWp capacity is added during the past one year after the “Battle for Solar” program was launched.

It is observed that the day peak demand grows faster than the night peak in Sri Lanka. Aggressive implementation of these schemes will also benefit Sri Lankan utilities and consumers by reducing the reliance of diesel power generation of the national grid and reducing costs.

Table 1. Advantages of Rooftop Solar Power

Construction	
Site Access	Photovoltaic (PV) systems are at the point of consumption, thus do not require additional investment for access during construction or for operation and maintenance.
Modularity	They can be designed for easy expansion
Operation and Maintenance	
Primary energy supply	Solar energy is freely available, and the PV system does not entail environmental costs for conversion to electricity.
Maintenance	PV systems require little maintenance apart from cleaning
Daytime Generation	These systems offset the need for grid electricity generation to meet expensive energy demand during the day
Mature technology	PV systems nowadays are based on proven technology that has operated for over 25 years.

Impact	
Investment	Rooftop PV system costs help offset part of the investment needed for new power generation, transmission, and distribution in the power grid.
Losses	Being closer to the load, PV systems help grid operators reduce both distribution and transmission losses
Cost	Fuel savings from PV systems typically offset their relatively high initial cost.
Energy security	The sun is a near-infinite source of energy and a key component of achieving energy independence and also insulates the country from price fluctuations and other uncertainties in global energy markets.
Economy	Solar industry in Sri Lanka is one of the emerging economic subsectors. The growth is expected to continue. Solar-related jobs tend to be a significant contributor to the Sri Lanka economy.
Environment	PV systems create no pollution or waste products while operating, and production impacts are far outweighed by environmental benefits. PV systems are also a zero-carbon electricity generation technology avoiding carbon emissions helping mitigate climate change

Table 2. Direct benefits of Rooftop Solar Power to the consumers

Drastically reduce or even eliminate electric bills	Electricity costs can make up a large portion of monthly expenses. Solar panel system will generate free power for system's entire 25+ year lifecycle.
Earn a sensible return on investment	Pays off solar panel system in five to six years.
Protect against rising energy costs	Fix your electricity rate and protect against unpredictable increases in electricity costs.
Demonstrate commitment to sustainability	Sustainability and corporate social responsibility are important components of an organization's culture and values. They also produce bottom line results. Increasingly, consumers and communities are recognizing and rewarding businesses that choose to operate responsibly. Businesses are finding that "green" credentials are a powerful driver of consumer purchasing decisions, creating goodwill and improving business results.
Stay competitive	Early adopters pull ahead of the competition realizing the social and economic benefits of adopting solar power.

Ways to Engage

Write to:

Public Consultation on **Rooftop Solar PV Development in Sri Lanka**

Public Utilities Commission of Sri Lanka,

Level 06, BoC Merchant Tower, 28,

St. Michael's Road,

Colombo 3.

Respond online by accessing PUCSL Website

Or Email to: consultation@puosl.gov.lk

Fax: (011) 2392641

A session for oral submissions will be held on November, 2017. The specified date and venue will be notified in the future.

The interested parties will be given the opportunity (subjected to the availability of time) to present their views at the aforesaid session.

Therefore, you may specify your interest along with the written submissions.

Public Utilities Commission of Sri Lanka.

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Date: 23rd October 2017