

PUBLIC UTILITIES COMMISSION OF SRI LANKA

Guidelines for Expressions of Interest

Techno-economic Feasibility Study on Demand Response Opportunities

Electricity demand varies significantly by time of day as well as by season. Historically, the balancing of electricity supply and demand was performed only by increasing or decreasing the electrical output of power plants, but this often requires large investments in capital-intensive facilities that are infrequently used, or the dispatch of increasingly inefficient (and therefore expensive) generators.

Demand response (DR) was originally developed by electric utilities in order to increase flexibility on the demand side by temporarily shifting or reducing peak energy demand, thereby avoiding costly energy procurements and capacity investments for a small number of hours of need. Although DR resources can provide numerous benefits to power systems, particularly those seeking to integrate a large fraction of renewable generation, DR is a challenging new area for most utilities and grid managers.

The objectives of the study include, but not limited to:

1. Use DR resources as equivalents to traditional generation resources to ensure sufficient capacity during peak-load hours.
2. Formulate DR programs that act as spinning and non-spinning reserves to provide resources during system emergencies.
3. DR to provide energy services that primarily enhance efficient price formation, but also enhance reliable operation of the system.
4. To attain environmental benefits, result from DR's ability to facilitate the integration of renewable resources. The flexibility of DR to allow the power system to accommodate higher penetrations of variable resources such as wind and solar.

In this context, PUCSL intends to appoint suitable consultants to conduct a Techno-economic feasibility study on DR Opportunities in Sri Lanka covering the following.

- a. Resources that can act as spinning and non-spinning reserves to provide support during system emergencies.
 - b. Resources provide ancillary services that include various reserve services, dynamic system regulation, and load-following capabilities that can deliver value to the grid during any hour of the year.
 - c. Storage-type resources that can ramp in both directions to both reduce load and also absorb excess generation that has proven reliable for balancing services (regulation and load-following) at a small scale.
 - d. DR to allow the power system to accommodate higher penetrations of variable resources such as wind and solar.
1. Interested consultancy firms must provide information indicating that they have the required qualifications and relevant experience to perform the Services. Consultancy firms

may associate with other firms or individuals in the form of a joint venture or a sub-consultancy to enhance their qualifications. Expressions of interest should include the following information:

- a. Status of the firm and availability of appropriate skills (technical and managerial), indicating the business registration as well as names and qualifications of the key staff etc. (Please use the format given in **Annex 1**);
 - b. Description of similar assignments carried out within the last five years indicating knowledge and experience in demand side management including DR programs, along with names of the clients with references, nature of the assignment, location, contract value, date and duration of the assignment etc. (Please use the format given in **Annex 2**);
 - c. Any intention to associate with another firm(s)/ individual(s), including the information identified in item a) and b) above relating to other firm(s)/ individual(s)(Please use the formats given in **Annex 1, Annex 2 or Annex 3** as applicable); and
 - d. Brochure(s) and any other information.
2. The Expressions of Interest received will be evaluated and only the shortlisted firms will be invited to submit detailed technical and financial proposals to provide the Services. The shortlisting criteria shall include:
- a. Qualifications in the field of assignment;
 - b. Extensive experiences with similar assignments conducted
 - c. Technical and managerial capabilities of the organization;
 - d. Core business and years of business;
 - e. Qualifications of key staff;
 - f. Client references; and
 - g. Administrative and financial strength
3. Interested consultancy firms may obtain clarifications vide the contact details indicated below, from 9.00 am to 4.30 pm (Sri Lanka standard time) during weekdays excluding public holidays, and are requested to notify their contact details to receive any updates to the guidance herewith.
4. Expressions of Interest must be delivered in a written form to the address below (in person, by post, facsimile or e-mail) by 4.30 pm (Sri Lanka standard time) on **March 31, 2020**.

Chairman
Consultants Procurement Committee
Public Utilities Commission of Sri Lanka
Level 6, Bank of Ceylon Merchant Tower,
No. 28, St. Michael's Road, Colombo 3,
Sri Lanka.
Telephone: (+94 11)2392607/8
Facsimile: (+94 11)2392641
E-mail: info@puosl.gov.lk

Annex 1

Status of the Firm

[Using the format given below, please provide all the requisite information in respect of the status of your firm and each associate for this assignment; Any associated Individuals are required to complete only item 1, 2 and 7 below.]

- 1) Name and address of the firm/ individual:
- 2) Nature of association (joint venture, sub- consultancy etc.):
- 3) Business registration no:
- 4) Core business:
- 5) Years of business:
- 6) Annual turnover (US\$), in 2017: , in 2018:, in 2019:
- 7) Qualifications of key staff/ individual:

	Name	Area of expertise	Education	Technical & managerial experiences with the firm indicated under item 1 above (refer the assignments mentioned in Annex 1, if any)	Technical & managerial experiences outside the firm indicated under item 1 above
1					
2					
3					

Annex 2

Similar assignments carried out within the last 5 years

[Using the format given below, please provide all the requisite information in respect of each assignment for which your firm, and each associate for this assignment, was legally contracted, either individually as a corporate entity or as one of the major companies within an association, for carrying out consulting services similar to the ones requested under this assignment.]

Name of the Firm ¹			
Name and address of client with references:			
Name of assignment:			
Approximate value of contract (USD):		Duration of assignment (months):	
Location:		Total No of staff-months of the assignment	
No of professional staff-months provided by you:		Approx. value of the services provided by firm (USD):	
Start date (month/year):		Completion date (month/year):	
Name of associated consultants, if any:			
Name of senior professional staff of your firm involved and functions performed (indicate most significant Director/ Coordinator, Team Leader):			
Narrative description of assignment (including international experiences and experience in similar conditions, knowledge in DR, DR applications in enhancing power system flexibility and related research experience etc.):			
Description of actual services provided by your staff within the assignment:			

¹ Indicate the firms' name or associate firms'/ individuals' name

Annex 3

Details of Associations

Associates name	Nature of association	Role	Responsibility