

DISCUSSION PAPER

# MAHARASHTRA ELECTRICITY REGULATORY COMMISSION

15 MAY, 2018

**Discussion Paper** in the matter of Petition (Case 84 of 2015) of Jawahar Shetkari Sahakari Sakhar Karkhana Ltd. in compliance with the directions given by the Commission in Order dated 11 November, 2014 in MERC Case No. 127 of 2014.

# 1. Background

Jawahar Shetkari Sahakari Sakhar Karkhana Ltd. (JSSSKL) had filed a Petition (Case No. 127 of 2014) before the Maharashtra Electricity Regulatory Commission for renewal of the Energy Purchase Agreement (EPA) of its 12 MW Bagasse-based Cogeneration Power Plant with the Maharashtra State Electricity Distribution Co. Ltd. (MSEDCL) after the expiry of the original EPA period of 13 years on 27 November, 2014. In its Order dated 11 November, 2014, the Commission concluded as follows:

".... The Commission is not inclined to direct either party to enter into the new EPA. However, the Commission is of the view that both the parties could mutually discuss and agree for terms and conditions including tariff after expiry of the existing EPA."

Subsequently, JSSSKL and MSEDCL have mutually agreed on the following tariff stream (in Rs./unit):

Yr-1	Yr-2	Yr-3	Yr-4	Yr-5	Yr-6	Yr-7
(FY	(FY	(FY	(FY	(FY	(FY	(FY
14-15)	15-16)	16-17)	17-18)	<b>18-19</b> )	19-20)	20-21)
4.48	4.50	4.52	4.54	4.57	4.59	4.62

JSSSKL filed a Petition dated 18 June, 2015 (Case No. 84 of 2015) seeking approval of the Commission for an EPA for 7 years as per the terms and conditions agreed with MSEDCL.

In its Daily Order dated 3 December, 2015, the Commission observed that there may be several other types of Renewable Energy (RE) Generators who may approach the Commission in future after expiry of their EPA Tariff Period for determining the tariff for the remaining life of their Projects (if MSEDCL were willing to purchase the power), and the process followed in the JSSSKL Case would set a precedent. In view of the public consultation process or other modalities required for decision, which may need some time, the Commission gave the following interim dispensation:

"The sale and purchase of power generated from this plant shall be at the rate of Average Power Purchase Cost (APPC) as determined by the Commission in the Tariff Order of MSEDCL, as applicable from time to time."

This Discussion Paper sets out and assesses the different tariff options that might be considered post the EPA expiry period of various types of RE Projects, and the modalities.

## 2. Approach

The Commission has been promoting RE-based generation in Maharashtra, and has issued several Tariff Orders for each type of RE sources. The Commission issued the following Orders prior to the MERC (Terms and Conditions for determination of RE Tariff) Regulations ('RE Tariff Regulations'), 2010:

## 2.1.Non-fossil fuel based cogeneration projects

- Order dated 16 August, 2002 in Case No. 8/9/10/15/17/18/19/20/21 of 2001 for purchase of power from bagasse based co-generation projects, and with regard to aiding the State Government in formulation of Policy ('Bagasse Co-gen Order').
- The approved Tariff Rate and tariff structure were valid till March 31, 2007 or 300 MW of capacity addition, whichever is earlier. Subsequently, through its Renewable Portfolio Standards (RPS Order) (Case 6 of 2006), the Commission extended the validity of the Tariff Rate, tariff structure and other conditions of that said Order for co-generation projects to be commissioned up to March 31, 2010.
- Vide its Clarificatory Order dated November 21, 2003, the Commission specified the qualification criteria for co-generation projects and the measurement and verification protocol for compliance monitoring.
- On 11 January, 2011, the Commission issued an Interim Order for review of the tariff rate and structure for Bagasse based grid connected Cogeneration projects (Case No. 123 of 2008) considering the submissions made by Cogeneration Association of India.
- Following notification of the RE Tariff Regulations, 2010, the Commission had been determining every year the generic tariff for cogeneration projects commissioned in the respective years of the Control Period.
- The following table shows the starting and ending years stipulated for the EPAs of Non-fossil fuel based cogeneration projects. This is considering that the 1<sup>st</sup> Tariff Order for this technology was issued on 16 August, 2002 and assuming that the projects would have entered into EPAs in the years in which the Tariff Orders were issued, and the subsequent RE Tariff Regulations, 2010.

Non-fossil fuel based cogeneration projects	EPA Start Year	EPA End Year
As per 1 <sup>st</sup> Tariff Order dated 16.8.2002	2002	2015
As per RE Tariff Regulations, 2010	2010	2023

## 2.2.Biomass based power generation projects

- Order dated 8 August, 2005 in Case No. 37 of 2003 for determination of tariff and related issues in respect of procurement of power from biomass based power projects ('Biomass Order').
- The Order was applicable to all biomass based power generation projects in Maharashtra using the Rankine cycle technology and commissioned by March 31, 2010, or until installed plant capacity based on biomass reaches 250 MW, whichever is earlier.
- Subsequently, the Commission has issued Orders for revision of the Variable Charge component of Tariff on 25 March, 2009 and on 14 December, 2009 considering details of some operational biomass power projects.
- After notification of the RE Tariff Regulations, 2010, the Commission has been determining every year the generic tariff for Biomass power projects commissioned in the respective years of the Control Period
- The following Table shows the starting and ending years stipulated for the EPAs of Biomass-based Power Projects. This is considering that the 1<sup>st</sup> Tariff Order for this technology was issued on 8August, 2005 and assuming that the projects would have entered into EPAs in the years in which the Tariff Orders were issued, and the subsequent RE Tariff Regulations, 2010.

Biomass based projects	EPA Start Year	EPA End Year
As per 1 <sup>st</sup> Tariff Order issued in August 8, 2005	2005	2018
As per RE Tariff Regulations, 2010	2010	2023

## 2.3.Wind Power

- Order dated November 24, 2003 in Case No. 17(3), 3, 4 & 5 of 2002 for procurement of wind energy and wheeling for third party sale and/or self-use.
- The tariff rate has been determined for various categories of wind energy projects classified as Group-I, Group-II and Group-III.
- The Commission would review the tariff rate and tariff structure after March 31, 2007 or upon the achievement of 750 MW of additional wind capacity after 1 April, 2003, whichever is earlier. Subsequently, through the RPS Order (Case 6 of 2006), the Commission extended the validity period of the Tariff Rate, tariff structure and other conditions for wind energy projects to be commissioned up to March 31, 2010.

- Post notification of the RE Tariff Regulations, 2010, the Commission has been determining every year the generic tariff for wind power projects commissioned in the respective years of the Control Period.
- The following Table shows the starting and ending years stipulated for the EPAs of Wind Power Projects. This is considering that the 1<sup>st</sup> Tariff Order for this technology was issued on 24 November, 2003 and assuming that the projects would have entered into EPAs in the years in which the Tariff Orders were issued, and the subsequent RE Tariff Regulations, 2010.

Wind power projects	EPA Start Year	EPA End Year
As per 1 <sup>st</sup> Tariff Order dated 24.11.2003	2003 (Group-III)	2016
As per RE Tariff Regulations, 2010	2010	2023

Considering these dispensations, a significant number of RE Projects came into operation prior to the notification of the RE Tariff Regulations, 2010.

# 3. Tenure of EPAs for RE projects

As regards the EPA period, the Commission had decided as follows in its Bagasse Co-gen Order of 2002:

"The Commission understands that the tenure of the EPA should be adequate for the developers to service their debt obligations and also to provide for a reasonable return from the project. The Commission further understands that the economic life of the co-generation project under most of the cases is twenty years. Accordingly, GoM/MSEB had set the EPA tenure of twenty years. The Commission, based on its interactions with the funding agencies, understands that for most of the co-generation projects, the debt service obligations would be over within a period of ten years of operation. The Commission has noted that typically, the sugarcane season in the state has followed a three-year cycle. This means that every third year the crop yield and correspondingly bagasse availability are prone to yield results below the average yield as compared to the normal season. The Commission has also considered this aspect into account. Accordingly, the Commission is of the opinion that the EPA tenure extending for a further three years beyond the period of debt service obligations would be sufficient to take care of eventual shortfall in the cash flows, if any, during any year and also provide a reasonable return to the developers."

The Commission has also considered that, one of the basic functions of the Commission is to promote competition, efficiency and economy in the activities of the electricity industry within the State. The Commission is of the opinion that the EPA tenure should not pose limitations in free market operations as and when enabled,

and the benefits of such market operations should be available to the MSEB, the consumers and the developer of the co-generation project." (*Emphasis Added*)

According to the above dispensation in the Order dated 16 August, 2002, the EPA tenure was fixed by the Commission as 13 years for bagasse based co-generation projects. Similarly, in the subsequent tariff Orders issued for other RE technologies viz. wind and Biomass projects, the EPA tenure was fixed as 13 years, except in case of SHP. The EPA tenure for SHP, of capacity 5 MW and below, is 20 years (pre- the RE tariff Regulations regime) to 35 years (post- the RE tariff Regulations regime).

Thus, while the useful life of Biomass, Bagasse Co-generation and Wind Power Projects was 20 years and above, the Commission had determined a shorter Tariff Period of 13 years for such Projects for the purpose of the tenure of their EPAs with the Distribution Licensees. The subsequent RE Tariff Regulations of 2010 and 2016 also specified a Tariff Period for such Projects which was significantly shorter than their useful life. The Tariff Period and EPA tenure of several Projects which were commissioned prior to these Regulations has come to an end or will be ending soon. The Commission's Orders and subsequent Regulations do not require the Distribution Licensees to renew or enter into fresh EPAs with these Projects after the end of their EPA tenure.

However, in its Order dated 15 November, 2017 in Case No. 155 of 2017 in respect of, the Commission had stated that ---.

"3) On the analogy of the Commission's interim dispensation in the JSSSKL matter in Case No. 84 of 2015 and its earlier Order dated 11.11.2014 in Case No. 127 (also concerning JSSSKL), the procurement of power by MSEDCL from Wind Energy Projects through fresh EPAs after their initial Tariff Period is over would count towards the fulfilment of its RPO for the respective periods.

4) Since the other provisions of the fresh EPAs entered or proposed to be entered into by MSEDCL have not been set out in its Petition, the Commission presumes that they are in consonance with the past stipulations of the Commission and the rulings of the Appellate Tribunal for Electricity."

As in the present case of JSSSKL, some of these Projects and the concerned Distribution Licensees may want to extend the period of their EPAs. While the Commission provided the option of the Distribution Licensees and Project holders renewing or entering into fresh EPAs for the remaining useful life of the Projects by mutual agreement, it had not stipulated the modalities or the tariff applicable for the remaining period.

## **3.1. Issues and Options**

In view of the above background and considering the fact that the EPAs of several Biomass, Bagasse-based Co-generation and Wind Energy Projects commissioned prior to the RE Tariff Regulations have expired or will be expiring soon, this Discussion Paper analyses the options available with regard to the tariff and related modalities for a further period for the EPAs for the remaining useful life of the respective Projects. These options are not being considered for Small Hydro Projects (SHPs) as the majority of SHPs in Maharashtra are below 5 MW capacity. These have an EPA and Tariff Period of 20 years (pre- the RE Tariff Regulations regime) to 35 years (post- the RE Tariff Regulations regime), and their EPAs will not be expiring in the near future.

The tariff and related modalities may be considered in this regard:

- 1. Option-1: Tariff based on the APPC rate of the Distribution Licensee
- 2. Option-2: Tariff based on the operating cost recovery principle, considering only recovery of Operation and Maintenance (O&M) expenses, Interest on Working Capital (IoWC) and fuel cost, if any.
- 3. Option-3: Tariff discovered through transparent competitive procurement process, subject to a ceiling.

Salient Features	Merits	De-merits
<ul> <li>Irrespective of the technology, the sale of power from existing Plant (post EPA expiry) to the Distribution Licensee ('Distribution Licensee') will be at the APPC rate.</li> <li>APPC to be annually determined by the Commission.</li> </ul>	separate annual determination of tariff.	<ul> <li>APPC for the ensuing year can be determined only subsequent to issue of the Tariff Order of the Licensee.</li> <li>APPC approach has no linkage to the cost of operation of RE projects. In some cases (particularly where there is no variable cost, e.g. Wind Energy Projects), this would result in significant over recovery vis-à-vis the cost of operation. In other cases (e.g. Biomass and Co-gen), it would result in under recovery of the operation cost.</li> </ul>

## **3.2.Option-1: Tariff based on Average Power Purchase Cost**

The following Table shows the APPC (in Rs./kWh) of the main Distribution Licensees in the State for the period FY 2016-17 to FY 2019-20.

DISTRIBUTION	FY 16-17	FY 17-18	FY 18-19	FY 19-20
LICENSEE				
MSEDCL	3.79	4.01	4.09	4.13
BEST	4.90	5.06	4.98	4.96
TPC-D	4.75	4.89	4.84	4.86
RInfra-D	4.86	4.89	5.19	4.90

#### 3.3.Option-2: Tariff based on operating cost recovery

The following formula reflects the principle of recovery of cost of projects. The tariff parameters proposed to be allowed are the operative costs, which include O&M expenses, IoWC and Variable Costs (fuel cost), if any. Return on Equity (RoE) has not been considered, as elaborated subsequently, since the Projects have already received reasonable returns through the preferential (generic) tariff availed during the original EPA and Tariff Period.

#### Formula

 $C_n = C_{13} x (Index_n/Index_{13})$ 

Where,

 $Cn = Cost of Generation (COG) of n<sup>th</sup> year starting from 14<sup>th</sup> year <math>C_{13} = COG of 13<sup>th</sup>$  year of the project =  $VC_{13}+O\&M_{13}+IWC_{13}$ Index<sub>n</sub> = Inflation factor applicable for the n<sup>th</sup> year Index<sub>13</sub> = Inflation factor of the 13<sup>th</sup> year of the project

Salient Features	Merits	De-merits
• Applicable tariff from 14th	• Implementable	• The tariff determined
year shall be linked to the 13th	uniformly across all	for Bagasse Co-gen
year tariff (Base Year, which	three RE technologies.	and Biomass projects
is the last year of the original	• Variable Cost is given	under the annual
EPA and Tariff Period),	due adjustment	generic RE Tariff
escalated at an appropriate	annually.	Order is higher than
inflation-linked escalation rate.	• One time exercise to	the prevailing APPC
• Mechanism linked to	determine applicable	rate. Thus, the cost
escalation rates notified as part	tariff for the	to Distribution
of generic RE Tariff Orders for	remaining useful life	Licensees will be
the respective financial years.	of the project.	higher in this option.
• O&M Expenses, IoWC and	• All projects (of a	
Variable Cost applicable to the	particular RE	
13th year of operation to be	technology) whose	

Salient Features	Merits	De-merits
escalated at escalation factors	EPAs are expiring in	
applicable for new RE	the same year would	
projects, as determined in the	be treated at par and	
annual generic RE Tariff	be applied the same	
Orders.	tariff	

## 3.3.1. Non-fossil fuel based Co-Generation

- The first EPA of the older, pre-Regulations Co-Generation project expired in November, 2014. Therefore, below table represents the case considering 13<sup>th</sup> year of operation as FY 14-15.
- <u>In</u> the Bagasse Co-generation tariff Order of 2002, project parameters of 3 projects viz. Global Co-Gen Project, Pravara Power and Vaidyanath Co-Gen Project were considered to compute the Fixed, Variable and Total Cost of the Co-generation power projects on generic basis.
- Subsequently, vide Order dated 11 January, 2010 in Case No. 123 of 2008, the Variable Cost applicable to such Co-Generation projects was revised to Rs. 2.53/kWh. In addition, the Variable Cost component has been revised on an annual basis through the generic RE Tariff Orders.
- The operating costs of Projects which have completed their EPA and Tariff Period consist only of the Variable Cost, O&M expenses and IoWC. The Table below sets out the scenario for such projects in the 13<sup>th</sup> year of their operation.

Particulars	Global Co- Gen Project	Pravara Power	Vaidyanath Co-Gen Project	Avg. COG (A=average of a, b,c)#	COG escalated till FY 2016-17	Actual COG for FY 2016- 17
	(a)	(b)	(c)	(A)	(B)	(C)
VC	1.41	2.01	2.43	1.61 <sup>\$</sup>	1.77*	4.27**
O&M Exp.	0.43	0.43	0.31	0.39	0.42	0.42
Int. on WC	0.21	0.18	0.21	0.20	0.22	0.22
Total				2.20	2.41	4.91

# - [representative case of existing project with EPA expiry in FY 14-15]

\$ - VC of Cogeneration projects in FY 2014-15 as per tariff stream

\* -VC projected with base value as per old tariff stream

\*\* - VC as per generic tariff Order

- Considering the O&M and Int. on WC as the fixed cost in the 13<sup>th</sup> year of operation and original variable cost, per unit total cost works out to be Rs. 2.20/kWh.
- The same tariff parameters may be escalated for FY 2016-17 and FY 2017-18 considering an appropriate inflation factor. Similarly, the variable cost for the respective years as determined in the generic RE Tariff Orders of the Commission can be considered for arriving at the total tariff allowable under this Option-2.

The tariff for co-generation projects in FY 2016-17 and FY 2017-18 under **Option-2** would be as follows:

Particulars	Actual COG for FY 2016-17	Actual COG for FY 2017-18	Tariff for future Years
VC	4.27**	3.98**	Annual VC as per yearly TO
O&M Exp.	0.42	0.44	To be linked to yearly
Int. on WC	0.22	0.22	inflation index to be notified in annual Tariff Orders
Total	4.91	4.64	

\*\*- VC as per generic tariff Order for FY 2016-17 and FY 2017-18

# **3.3.2.** Biomass-based Projects

• The first Biomass Project EPA will expire in 2018, considering that the first tariff Biomass Order is of August, 2005. Therefore, the following Table represents the case considering 13<sup>th</sup> year of operation as FY 17-18.

Particulars	CoG in FY 2016- 17 (which is 12 <sup>th</sup> year as per old tariff stream)*	CoG in FY 2017-18 (which is 13 <sup>th</sup> year as per old tariff stream)*	Actual COG for FY 2016-17	Actual COG for FY 2017-18
VC	2.29	2.41	5.41**	5.04**
O&M Exp.	0.44	0.47	0.44	0.47
Int. on WC	0.08	0.08	0.08	0.08
Total	2.82	2.96	5.94	5.59

\*-VC of respective FY as per old tariff stream

\*\*- VC as per generic tariff Order for FY 2016-17 and generic Tariff Order for FY 2017-18

- Details of the Cost of Generation (COG) in the Representative Case are from the Biomass Order of 2005.
- Considering the O&M expenses and IoWC as the fixed cost in the 13<sup>th</sup> year of operation and the original Variable Cost for FY 2017-18, the per unit total cost works out to Rs. 2.96/kWh.
- However, considering the variable cost as per the Generic tariff order of FY 2016-17 and FY 2017-18, the total tariff allowable under the present option, i.e., Option-2 can be arrived at as above.

Tariff for biomass based projects in FY 2016-17 and FY 2017-18 under **Option-2** would be as follows:

Particulars	Actual COG for FY 2016-17	Actual COG for FY 2017-18	Tariff for future Years
VC	5.41*	5.04*	Annual VC as per yearly TO
O&M Exp.	0.44	0.47	To be linked to yearly
Int. on WC	0.08	0.08	inflation index to be notified in yearly TO
Total	5.94	5.59	

\*- VC as per generic Tariff Order for FY 2016-17 and generic Tariff Order for FY 2017-18

# **3.3.3.** Wind Energy Projects

• Only Group-III wind projects as per the Commission's Wind Energy Order of 2003, whose EPAs would have expired in FY 2015-16, have been considered for analysis.

Particulars	FY 15-16 [Case 1 @21% CUF] (Existing Projects in 13 <sup>th</sup> year of operation in FY 15-16)	COG escalated till FY 2016-17	COG escalated till FY 2017-18	Tariff for future Years
O&M Exp. Int. on WC	0.71	0.73	0.75	To be linked to yearly inflation index to be notified in annual RE Tariff Orders
Total	0.71	0.73	0.75	

- The above Table represents a case in which FY 15-16 is the 13<sup>th</sup> year of operation.
- O&M expenses and IoWC are considered for determining the prospective tariff post expiry of the EPA period.
   Details with regard to Group III Wind Turbine Generators (WTGs) (O&M expenses and IoWC) are taken from the Annexure to Wind Energy Order of 2003.
- For Group-II wind projects, a tariff of Rs 2.52 per unit has been specified (in Order 58 of 2008), on ad-interim basis post expiry of their respective EPAs. During the regulatory proceedings of a recent Order in Case No. 155 of 2017 issued on 15 November, 2017, MSEDCL had stated (also referred under para 8 of the said Order) that it has already agreed to short-term procurement of Wind Energy, at Rs. 2.52 per unit from 103 Group-II projects whose EPA with MSEDCL have expired but who have some remaining useful life. Therefore, in comparison with such Group II projects, Group-III projects, post expiry of their EPA if have to be allowed tariff based on the operating cost recovery principle proposed under this option, would be at disadvantage.

# **3.4.** Option **3**: Rate discovered through transparent competitive procurement process, with a ceiling tariff

One of the basic functions of the Commission is to promote competition, efficiency and economy in the electricity industry in the State. Thus, the end of their EPA tenure should not limit the possibility of future market participation by Plants for the remaining part of their useful life. The benefits of such market participation should be available to the Distribution Licensees, the consumers and the project developers. The recent RE bidding processes have shown that the Distribution Licensees may attract lower tariffs discovered in the bidding process.

MSEDCL had recently conducted a competitive bidding process for procurement of power from wind projects on a short term basis (1 year). Commission vide its Order dated 15 November, 2017 (Case No. 155 of 2017) had approved such short term procurement towards fulfilment of non-Solar RPO targets of MSEDCL. Similarly, MSEDCL also approached the Commission to accord approval of future medium term and long term procurement of RE through competitive bidding process. The Commission through its Order dated 6 December, 2017 (in Case No. 157 of 2017) accorded approval for the same. However, it is worthwhile to highlight that the modalities under the present guidelines are mostly relevant for procurement from new RE projects.

The projects being discussed under this note are those projects whose debt service have been fully covered and are left with operating cost and fuel cost, if any. In view of the same, an option wherein, any premiums that the Distribution Licensee is willing to pay as renewable attribute could be discovered through transparent bidding process for such projects. At the same time, considering that only operating cost need to be recovered for such projects whose EPA has expired, situation of any undue advantage to them should be avoided. In this context a separate ceiling tariff should be specified within which such projects can bid for procurement by Distribution Licensees.

Thus, for implementation of this option, suitable framework outlining modalities of procurement process will have to be evolved and principles may be set for enabling competitive procurement of power from such existing projects. Licensees can propose suitable framework outlining conditions such as capacity/quantum, eligible projects, tenure etc.

Salient Feature	Merits	De-merits	
• Distribution Licensees to	• Consistent in line with	• Bidding process may	
select projects (whose EPA	the principles of open	have to be carried out	
has expired) on the basis of	to market options and	every year	
transparent competitive	competitive	• Separate bidding	
process.	environment as	process/modalities	
• Reverse auction with an	outlined earlier by the	may have to be	
appropriate ceiling tariff (say,	Commission in	adopted for RE	
forbearance price of RECs)	previous Orders.	technologies with	
could be considered	• Benefit of lower tariff	two part or single	
• Technology-wise tariff bidding	expected under	part tariff, for	
could be done	competitive route	ensuring level	
• Short term or medium term	• Win-win for both	playing field.	
procurement can be planned	Distribution Licensees		
by Distribution Licensees	and project developers		

## **3.5.Modalities for Implementation:**

- Ensuring non-discrimination or avoiding selective treatment by Distribution Licensee in signing EPA: In the event of specifying applicable tariff for the period post expiry of EPA, and when such projects approaches Distribution Licensees, they should not discriminate or show preference for one project over the other while considering them for extension of the EPA. In order to ensure uniform treatment, conditions can be specified such that, EPA should be signed with such projects on a first come first serve basis. The same can be implemented as depicted below:
  - 1. For projects who have tied up with EPA which is due for expiry: If such projects want to continue with the Distribution Licensee after EPA period, then a request for signing EPA post should be send to Distribution Licensee 1 month prior to date of expiry of EPA. Distribution Licensee should prioritize the request based on 'date of expiry of EPA' of projects such that projects whose PPA expires first and which has made a request in advance, should be considered for signing PPA first and so on.
  - 2. For projects whose EPA have already expired: Projects could submit its request to Distribution Licensee and Distribution Licensee should prioritize

the request based on 'date of request' by projects and should enter into EPAs accordingly.

## 4. Summary of Options:

Following table summarizes the various options deliberated in this discussion note.

Parameters	Descriptions					
Eligible	Renewable energy p	projects commissioned prior to	MERC (terms and			
projects	conditions of RE Tariff) Regulations, 2010 and signed EPA with tenure of 13					
	years					
Eligible	Non-fossil fuel based cogeneration power projects, Biomass power projects,					
Technology	Wind power projects					
Options	Option-1	Option-1 Option-2				
	Average power	Operating cost recover principle	Limited bidding			
	purchase Cost		with ceiling tariff			
	(APPC)					
Principle	Year on year APPC	Operating cost escalated for	Transparent			
	of the host	respective years post EPA expiry	competitive			
	Distribution	considering 13 <sup>th</sup> year cost as	bidding process			
	Licensee	base cost				
Applicable	FY FY	Cogen Biomass Wind	Price to be			
tariff	2016- 2017-	FY         4.91         5.94         0.73	discovered			
(Rs/kWh)	17 18	17	through bidding			
	3.79 4.01	FY 4.64 5.59 0.75	process with			
		18	forbearance price			
			for non-Solar			
			REC as ceiling			
			tariff			
Procedure	In case of Option 1 and 2 Project to be entertained on first come first serve					
	basis. In case of Option-3 of bidding, Distribution Licensee to initiate bidding					
	process					
Tenure	Applicable for the balance useful life beyond date of effectiveness of extended					
	PPA					

# **Comments Invited:**

The Commission has decided to invite comments, suggestions or objections from interested persons / stakeholders in the various options (viz. Option-1, Option-2 and Option-3) as proposed in this Discussion Paper. A public notice in this regard is published on 15 May, 2018.

Comments, suggestions and/or objections on the Petition and on the Discussion Paper may be filed on or before 15 June, 2018.