ANNEX "B"

DISCUSSION ON THE TRANSACTION FEE RATE FOR THE RENEWABLE ENERGY MARKET

The REM Transaction Fee Rate is the rate that will be will charged to the REM Trading Participants for every Renewable Energy Certificate (REC) issued to them.

I. Manner and Basis of Assessment

The REM Transaction Fees will be assessed on the REM Trading Participant for each of the REC to be created/issued to them as the default owner or first recipient of the RECs.

II. Method for Allocation

The total REM Transaction Fees will be allocated to the REM Trading Participants as follows:

1. The REM Transaction Fee is proposed to be allocated to all REM Trading Participants;

2. Allocations to each relevant REM Trading Participant will be based on the proportionate number of RECs to be created/issued below:

RE Generation Transaction	Collection Period
WESM/ Grid and Feed-in tariff	Monthly
Non-WESM/ Off-grid (i. e. Net-metered and embedded)	Quarterly

3. The REM Transaction Fee Rate can be determined by dividing the Total Budgetary Requirement with the Total Estimated Number of RECs for Eligible RE Generation, following the formula below:

$$\text{REM Transaction Fee Rate} = \frac{\text{Total Budgetary Requirement}}{\text{Total Estimated Number of RECS for Eligible RE Generation}}$$

4. The total Estimated Number of RECs serves as the basis to compute the REM Transaction Fee Rate and is estimated using the capacity data provided in the list of Eligible RE Power Plants for RPS Compliance published by the DOE in its website and is included in this document in Section VI. For succeeding applications, the total estimated number of RECs will be based on the eligible RE capacities registered with the RE Registrar.

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5. The resulting value following the formula above is the REM Transaction Fee Rate which will be multiplied by the Total number of RECs for Eligible RE Generation of each REM Trading Participant to arrive at the total REM Transaction Fees due from each REM Trading Participant.

III. Application of the Cost Allocation to REM Trading Participant

The Monthly REM Transaction Fee per REM Trading Participant shall be based on the total number of issued/ created RECs determined using the following formula:

$$\text{REM Market Fee}_{\text{m}} = \text{REM Market Fee Rate x } (REC_{Grid,m} + REC_{FiT,m} + REC_{Non-grid,m})$$

Where,

$\text{REM Market Fee}_{\text{m}}$ = Transaction Fee (PhP) for REM Trading Participant *m*

$REC_{Grid,m}$= Number of RECs issued to REM Trading Participant *m* corresponding to On-grid RE generation, issued monthly

$REC_{FiT,m}$= Number of RECs issued to REM Trading Participant *m* corresponding to Feed-in-Tariff (FiT) RE generation, issued monthly

$REC_{Non-grid,m}$ = Number of RECs issued to REM Trading Participant *m* corresponding to RE generation of Net-metered, embedded and own-use facilities, issued one (1) month after every quarter

IV. Sample Computation

Please see below the sample computation of the REM Transaction Fee to be charged to a Trading Participant applying the rate provided above.

Month	REC_{Grid}	REC_{FiT}	$REC_{Non-Grid}$	Total Number of RECs	REM Market Fee
January	4,110.00	223	0	4,333.00	7626.08
February	4,231.00	206	0	4,437.00	7809.12
March	3,502.00	162	2	3,666.00	6452.16
April	4,817.00	185	0	5,002.00	8803.52

V. Determination of Total Estimated RECs

1. The RPS Rules and the REM Rules mandate the issuance of RECs to RE generation that is eligible for RPS compliance starting 2018. **Section 17 Item (g) of the approved RPS Rules for On-grid Areas**[1] indicates that:

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DISCUSSION ON THE TRANSACTION FEE RATE FOR THE RENEWABLE ENERGY MARKET

"*The issuance of RECs shall commence at Year 0 and correspond to the dispatch of Eligible RE Facilities at Year 0. The issuance of RECs shall continue thereafter;*"

2. Furthermore, DC2019-12-0016 Promulgating the REM Rules, stated in Chapter 9 -Transitory Provisions that Year 0 referred to in Section 17 of the RPS Rules shall be the year 2018, the RPS Compliance Year 1 shall be the year 2020 and the intervening period shall be the Transition Period.

3. Hence, the RE Registrar should issue RECs for the eligible RE generation starting 2018 even if the REM Commercial Operations is yet to happen this coming 26 June 2021.

4. RE Facilities that are eligible for RPS compliance and issuance of RECs are those power plants which have been in commercial operations after the effectivity of the RE Act pursuant to Section 10 of the RPS On-Grid Rules. The Department posted at the DOE Website the List of Eligible RE Power Plants for RPS Compliance as of 31 March 2020.

5. The Annual RE generation of these RE power plants are estimated using the standard formula below:

$$Annual\ RE\ Generation = \sum_{i=1} Total\ Capacity_i \times Capacity\ Factor_i \times 8760$$

Where

i,	Eligible RE Technology
$Total\ Capacity_i$	Sum of the eligible capacities for RE Technology i
$Capacity\ Factor_i$	Capacity Factor for RE Technology i

Table 1. Estimated Annual RE Generation of Eligible RE Facilities, MWh

RE Technology	Eligible Capacity (MW)	Capacity Factor (%)	Energy Generation (MWh)
Biomass	228.37	90.00%	1,800,469
Geothermal	218.50	85.00%	1,626,951
Solar	958.13	16.00%	1,342,915
Hydro	406.26	47.00%	1,672,654
Wind	409.90	27.50%	987,449
Under FIT	1,283.85		4,011,006
Non-FIT	937.31		3,419,432
Total	**2,221**		**7,430,438**

Shown in the table above are the potential energy generation from each RE technology corresponding to respective capacity factors. Provided in the succeeding table is the Estimated Annual RE Generation for the four-year period where the REM Transaction Fee is to be recovered from and is computed by multiplying the estimated annual RE generation by four (4).

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	Estimated Annual RE Generation	Total for 2018 to 2021
Eligible RE Generation	7,430,438.00	29,721,752.00

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PEMC

VI. List of RPS Eligible Power Plants as of 31 March 2020 (Source: DOE)

ELIGIBLE RE POWER PLANTS FOR RENEWABLE PORTFOLIO STANDARDS (RPS) COMPLIANCE FOR ON-GRID AND OFF-GRID AREAS

as of March 31, 2020

START OF COMMERCIAL OPERATION	CONTRACT NO.	PROJECT NAME	COMPANY NAME	LOCATION	ELIGIBLE CAPACITY (MW)	REMARKS
BIOMASS POWER PLANTS					**228.37**	
11-Jun-2009	BREOC No. 2010-01-009	Montalban Landfill Methane Recovery and Power Generation Facility	Montalban Methane Power Corporation	Rodriguez, Rizal	2.175	FIT System
4-Sep-2009	BREOC No. 2010-01-005	Bagasse-Fired Cogeneration Power Plant	First Farmers Holding Corp.	Talisay City, Negros Occidental	8.00	FIT System
6-Dec-2010	BREOC No. 2011-01-019	Biomass Cogeneration Plant	Crystal Sugar Company, Inc.	Maramag, Bukidnon	9.00	Non-FIT (No Power Export since 2016)
26-Feb-2011	BREOC No. 2011-03-021	Bagasse-Fired Cogeneration Power Plant	Central Azucarera de San Antonio	Passi City, Iloilo	8.00	FIT System
22-Nov-2012	BREOC No. 2012-02-025	Bagasse-Fired Cogeneration Power Plant	Green Future Innovations Inc.	San Mariano, Isabela	14.00	FIT System
1-Mar-2013	BREOC No. 2011-08-023	Payatas Landfill Methane Recovery and Power Generation Facility	Pangea Green Energy Philippines, Inc.	Quezon City	0.876	FIT System
2-Nov-2014	BREOC No. 2011-01-013	Rice Husk-Fired Biomass Power Plant (Phase I)	San Jose City I Power Corporation	San Jose City, Nueva Ecija	10.80	FIT System
4-Feb-2015	BREOC No. 2013-02-029	Bagasse Cogeneration Power Plant	Hawaiian Philippine Company	Silay City, Negros Occidental	2.00	FIT System
10-Jul-2015	BREOC No. 2010-01-008	Rice Husk-Fired Biomass Power Plant	Bataan 2020 Power Ventures, Inc.	Samal, Bataan	11.10	FIT System
6-Oct-2015	BREOC No. 2013-03-030	Rice Husk-Fired Biomass Power Plant	Isabela Biomass Energy Corporation	Alicia, Isabela	18.00	FIT System
21-Oct-2015	BREOC No. 2013-11-040	Bagasse-Fired Biomass Cogeneration Power Plant	Universal Robina Corporation	Kabankalan City, Negros Occidental	20.00	FIT System
23-Oct-2015	BREOC No. 2011-02-018	Bagasse-Fired Cogeneration Power Plant	Victorias Milling Company Inc.	Victorias City, Negros Occidental	2.50	FIT System
27-Feb-2016	BREOC No. 2013-09-037	Rice Husk-Fired Biomass Power Plant	Green Innovations for Tomorrow Corporation	Talavera, Nueva Ecija	10.80	FIT System

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START OF COMMERCIAL OPERATION	CONTRACT NO.	PROJECT NAME	COMPANY NAME	LOCATION	ELIGIBLE CAPACITY (MW)	REMARKS
GEOTHERMAL POWER PLANTS					**218.50**	
8-Feb-2014	GRESC No. 2010-02-012	Maibarara 1 Geothermal Power Plant	Maibarara Geothermal Inc.	Santo Tomas, Batangas	20.00	Non-Fit (with Bilateral Contract)
21-Jul-2014	GRESC No. 2009-10-002	Southern Negros Geothermal Production Field -Nasulo Geothermal Power Plant	Energy Development Corporation	Valencia, Negros Oriental	30.00	Non-Fit (under Bilateral Agreement with Bohol Light Company Inc.)
5-Feb-2015	GOC No. 2012-04-027	Bacon Manito Geothermal Power Plant	Bac-man Geothermal Inc.	Sorsogon	140.00	Non-Fit (under Bilateral Agreement with CASURECO II, INEC, KAELCO, MOPRECO, PELCO II)
26-Jul-2016	GREOC No. 2009-10-007	Makban Geothermal Power Plant - Binary Geothermal Power Plant	AP Renewables Inc.	Bitin, Bay, Laguna	6.00	Non-Fit (with Bilateral Contract)
30-Apr-2018	GRESC No. 2010-02-012	Maibarara 2 Geothermal Power Plant	Maibarara Geothermal Inc.	Santo Tomas, Batangas	12.00	Non-Fit (with Bilateral Contract)
18-May-2019	GOC No. 2012-04-026	Tongonan 1 Power Plant	Green Core Geothermal Inc.	Kananga, Leyte	10.50	Non-FIT (Under WESM)

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START OF COMMERCIAL OPERATION	CONTRACT NO.	PROJECT NAME	COMPANY NAME	LOCATION	ELIGIBLE CAPACITY (MW)	REMARKS
SOLAR POWER PLANTS					**958.13**	
23-Sep-2018	SESC 2016-06-312	Kalibo Solar Power Plant	Solar Pacific Citysun Corporation	Kalibo, Aklan	0.22	Non-FIT (Under Bilateral Agreement with End-User)
25-Sep-2018	SESC 2016-06-317	Kabankalan Solar Power Plant	Solar Pacific Citysun Corporation	Kabankalan City, Negros Occidental	0.605	Non-FIT (Under Bilateral Agreement with End-User)
25-Sep-2018	SESC 2016-06-318	Victorias Solar Power Plant	Solar Pacific Citysun Corporation	Victorias City, Negros Occidental	0.635	Non-FIT (Under Bilateral Agreement with End-User)
25-Sep-2018	SESC 2016-06-314	Dumaguete Solar Power Plant	Solar Pacific Citysun Corporation	Dumaguete City, Negros Oriental	0.265	Non-FIT (Under Bilateral Agreement with End-User)
25-Sep-2018	SESC 2016-06-316	Tagum Solar Power Plant	Solar Pacific Citysun Corporation	Tagum City, Davao del Norte	1.11	Non-FIT (Under Bilateral Agreement with End-User)
30-Sep-2018	SESC 2016-08-325	Boracay Solar Power Plant	Solar Pacific Citysun Corporation	Malay, Aklan	0.36	Non-FIT (Under Bilateral Agreement with End-User)
28-Jun-2019	SESC No. 2015-02-111	SM Mall of Asia Solar Power Project	Solar Philippines Commercial Rooftop Projects, Inc.	Pasay City, Metro Manila	2.686	Non-FIT (Under Bilateral Agreement with End-User)
17-Oct-2019	SESC No. 2016-11-352	Gaisano Iloilo Solar Rooftop Project	EDC Siklab Power Corporation	Iloilo City, Iloilo	1.03	Non-FIT (Under Bilateral Agreement with End-User)
31-Oct-2019	SESC No. 2018-05-481	CityMall Mandalangan Solar Power Plant	Solar Pacific Citysun Corporation	Bacolod City, Negros Occidental	0.634	Non-FIT (Under Bilateral Agreement with End-User)
23-Oct-2019	SESC No. 2018-05-484	Dau Solar Power Plant	Solar Pacific Citysun Corporation	Mabalacat, Pampanga	0.238	Non-FIT (Under Bilateral Agreement with End-User)
3-Dec-2019	SESC No. 2014-12-096	Santos Solar Power Plant	Astronergy Development GenSan Inc.	General Santos City, South Cotabato	24.96	Non-FIT (Under Bilateral Agreement with SOCOTECO 2)

ELIGIBLE RE POWER PLANTS FOR RENEWABLE PORTFOLIO STANDARDS (RPS) COMPLIANCE FOR ON-GRID AND OFF-GRID AREAS

as of March 31, 2020

START OF COMMERCIAL OPERATION	CONTRACT NO.	PROJECT NAME	COMPANY NAME	LOCATION	ELIGIBLE CAPACITY (MW)	REMARKS
HYDRO POWER PLANTS					**406.26**	
February 2010 (Units I & II) January 2016 (Unit III)	HSC No. 2012-08-220	Cantingas Hydroelectric Power Plant (Units I, II & III)	Cantingas Mini-Hydro Power Corporation	San Fernando, Sibuyan Island, Romblon	1.35	Non-Fit (Under Bilateral Agreement with ROMELCO)
24-Dec-2009 (Unit I) 08-Dec-2010 (Unit II)	HSC No. 2016-06-665	Pantabangan Hydroelectric Power Plant	First Gen Hydro Power Corporation	Pantabangan, Nueva Ecija	20.80	Non-Fit (under WESM)
January 2010	HSC No. 2010-03-131	Ambangal Hydroelectric Power Plant	Provincial Government of Ifugao	Kiangan, Ifugao	0.20	Non-FIT (Under Bilateral Agreement with IFELCO)
24-May-2010	HOC No. 2016-04-628	Sibulan B Hydroelectric Power Plant	Hedcor, Inc.	Sta. Cruz, Davao del Sur	26.00	Non-FIT
9-Aug-2010	HOC No. 2016-04-627	Sibulan A Hydroelectric Power Plant	Hedcor, Inc.	Sta. Cruz, Davao del Sur	16.50	Non-FIT
2-Nov-2010	HSC No. 2010-02-084	Hitoma 1 Hydroelectric Power Plant	Sunwest Water & Electric Company, Inc.	Caramoran, Catanduanes	1.50	Non-FIT (Under Bilateral Agreement with FICELCO)
26-Dec-2010	HSC No. 2010-02-060	Commonal-Uddiawan Hydroelectric Power Plant	Smith Bell Mini-Hydro Corp.	Solano, Nueva Vizcaya	1.80	FIT System
1-Feb-2011	HSC No. 2010-02-085	Solong Hydroelectric Power Plant	Sunwest Water & Electric Company, Inc.	San Miguel, Catanduanes	2.10	Non-FIT (Under Bilateral Agreement with FICELCO)
Unit 1 – 15 June 2011 Unit 2 – 08 June	HSC No. 2016-04-619	Ambuklao Hydroelectric Power Plant	SN Aboitiz Power - Benguet, Inc.	Ambuklao, Benguet	104.55	Non-FIT
Unit 1 – 17 July 2012 Unit 2 – 06 July 2013 Unit 3 – 21 January 2013	HSC No. 2016-05-620	Binga Hydroelectric Power Plant	SN Aboitiz Power - Benguet, Inc.	Itogon, Benguet	40.08	Non-FIT
29-Dec-2011	HSC No. 2010-02-078	Linao-Cawayan (Lower Cascade) Hydroelectric Power Plant	Oriental Mindoro Electric Cooperative, Inc.	Baco, Oriental Mindoro	2.10	Non-FIT (Under Bilateral Agreement with ORMECO)
30-Apr-2012	HOC No. 2012-09-224	Irisan 1 Hydroelectric Power Plant	HEDCOR, Inc.	Tuba, Benguet	3.80	FIT System
13-Nov-2012	HSC No. 2009-10-002	Cabulig Hydroelectric Power Plant	Mindanao Energy Systems, Inc.	Clarveria, Misamis Oriental	8.00	Non-FIT (Under Bilateral Agreement with CEPALCO)
1-Mar-2014	HSC No. 2012-08-219	Tudaya 1 Hydroelectric Power Plant	Hedcor Sibulan, Inc .	Sta. Cruz, Davao del Sur	6.60	Non-FIT (Under Bilateral Agreement with DLPC)
11-Apr-2014	HSC No. 2012-04-204	Tudaya 2 Hydroelectric Power Plant	Hedcor Tudaya, Inc.	Sta. Cruz, Davao del Sur	7.00	FIT System
November 2014	HSC No. 2015-04-566	Lateral B Hydroelectric Power Plant	National Irrigation Administration	San Mateo, Isabela	0.045	Non-FIT (Under Bilateral Agreement with ISELCO)

ELIGIBLE RE POWER PLANTS FOR RENEWABLE PORTFOLIO STANDARDS (RPS) COMPLIANCE FOR ON-GRID AND OFF-GRID AREAS

as of March 31, 2020

START OF COMMERCIAL OPERATION	CONTRACT NO.	PROJECT NAME	COMPANY NAME	LOCATION	ELIGIBLE CAPACITY (MW)	REMARKS
HYDRO POWER PLANTS					**406.26**	
2-Feb-2015	HSC No. 2010-02-079	Linao-Cawayan (Upper Cascade) Hydroelectric Power Plant	Oriental Mindoro Electric Cooperative, Inc.	Baco, Oriental Mindoro	3.00	Non-FIT (Under Bilateral Agreement with ORMECO)
2-Jun-2015	HSC No. 2012-04-201	Sabangan Hydroelectric Power Plant	Hedcor Sabangan, Inc.	Sabangan, Mountain Province	14.00	FIT System
9-Jul-2015	HSC No. 2016-07-670	Likud Hydroelectric Power Plant	Provincial Government of Ifugao	Asipulo & Kiangan, Ifugao	0.82	Non-FIT (Under Bilateral Agreement with IFELCO)
28-Feb-2016	HSC No. 2013-08-267	Bulanao Hydroelectric Power Project	DPJ Engineers and Consultants	Tabuk, Kalinga	1.00	Non-FIT (Under Bilateral Agreement)
17-Apr-2016	HSC No. 2010-02-086	Villasiga Hydroelectric Power Project	Sunwest Water and Electric Company 2, Inc.	Bugasong, Antique	8.00	FIT System
1-Jul-2016	HSC No. 2013-12-346	Prismc Hydroelectric Power Plant	PNOC-Renewables Corporation	Rizal, Nueva Ecija	1.00	Non-FIT (Under Bilateral Agreement with NEECO 2 Area 2)
20-Nov-2017	HSC No. 2013-11-329	Maris Main Canal 1 Hydroelectric Power Plant	SN Aboitiz Power - Magat, Inc.	Ramon, Isabela	8.50	FIT System
6-Mar-2018	HSC No. 2011-12-170	New Bataan Hydroelectric Power Plant	Euro Hydro Power (Asia) Holdings, Inc.	New Bataan, Compostela Valley	3.00	FIT System
2-Jul-2018	HSC No. 2013-11-326	Manolo Fortich 1 Hydroelectric Power Plant	Hedcor Bukidnon, Inc.	Santiago, Bukidnon	45.936	FIT System
23-Jul-2018	HSC No. 2016-011-694	Balugbog Hydroelectric Power Plant	PHILPODECO	Nagcarlan, Laguna	1.10	FIT System
19-Oct-2018	HSC No. 2016-11-693	Palakpakin Hydroelectric Power Plant	PHILPODECO	San Pablo City, Laguna	1.50	FIT System
23-Nov-2018	HSC No. 2013-11-327	Manolo Fortich 2 Hydroelectric Power Plant	Hedcor Bukidnon, Inc.	Santiago, Bukidnon	27.387	FIT System
14-Jan-2019	HSC No. 2010-03-132	Inabasan Hydroelectric Power Plant	Ormin Power, Inc.	San Teodoro, Oriental Mindoro	10.00	Non-FIT (under Bilateral Agreement with ORMECO)
15-Apr-2019	HSC No. 2010-03-136	Catuiran Hydroelectric Power Plant	Catuiran Hydropower Corporation	Naujan, Oriental Mindoro	8.00	Non-FIT (under Bilateral Agreement with ORMECO)
17-May-2019	HSC No. 2014-04-437	Majayjay Hydroelectric Power Plant	Majayjay Hydropower Corporation	Majayjay, Laguna	2.19	FIT System
17-May-2019	HSC No. 2011-12-172	Asiga Hydroelectric Power Plant	Asiga Green Energy Corporation	Santiago, Agusan del Norte	8.00	Non-FIT (under Bilateral Agreement with ANECO)
1-Jul-2019	HSC No. 2015-05-568	La Trinidad Hydroelectric Power Plant	Hedcor, Inc.	La Trinidad, Benguet	20.40	FIT System

ELIGIBLE RE POWER PLANTS FOR RENEWABLE PORTFOLIO STANDARDS (RPS) COMPLIANCE FOR ON-GRID AND OFF-GRID AREAS

as of March 31, 2020

START OF COMMERCIAL OPERATION	CONTRACT NO.	PROJECT NAME	COMPANY NAME	LOCATION	ELIGIBLE CAPACITY (MW)	REMARKS
WIND POWER PLANTS					**409.90**	
10-Oct-2014	WESC No. 2012-07-058	Bangui Bay Wind Power Project Phase 3	NorthWind Power Development Corporation	Bangui, Ilocos Norte	18.90	FIT System
11-Nov-2014	WESC No. 2009-09-004	Burgos Wind Power Project	EDC Burgos Wind Power Corporation	Burgos, Ilocos Norte	150.00	FIT System
11-Nov-2014	WESC No. 2009-09-005	Caparispisan Wind Power Project	North Luzon Renewable Energy Corporation	Pagudpud, Ilocos Norte	81.00	FIT System
27-Dec-2014	WESC No. 2009-10-009	San Lorenzo Wind Power Project	Trans-Asia Renewable Energy Corporation	San Lorenzo, Guimaras	54.00	FIT System
9-Jun-2015	WESC NO. 2009-09-018-AF1	Pililla Wind Power Project	Alternergy Wind One Corporation	Pililia, Rizal	54.00	FIT System
10-Jun-2015	WESC No. 2009-09-002	Nabas Wind Power Project	PetroWind Energy Inc.	Nabas, Aklan	36.00	FIT System
5-Dec-2019	WESC No. 2011-03-045	Puerto Galera Wind Power Plant	Philippine Hybrid Energy Systems, Inc.	Puerto Galera, Mindoro	16.00	Non-FIT (Under Bilateral Agreement with ORMECO)
TOTAL ELIGIBLE CAPACTIY					**2,221.15**	

Eligibility of RE Facilities are based on the criteria provided in Sections 10 and 11 of Department Circular No. DC2017-12-0015 and Sections 9 and 10 of Department Circular No. DC2018-08-0024.