Republic of the Philippines
DEPARTMENT OF ENERGY
(Kagawaran ng Enerhiya)

BAGONG PILIPINAS

ADVISORY
2024-02-001-SEC

TO : RENEWABLE ENERGY REGISTRAR
ALL RENEWABLE ENERGY MARKET (REM) PARTICIPANTS

SUBJECT : ALLOCATION OF RENEWABLE ENERGY CERTIFICATES (RECs) CREATED UNDER THE GREEN ENERGY OPTION PROGRAM (GEOP)

DATE : FEB 29 2024

Relative to the implementation of Section 15 (c) of DOE DC No. DC2018-07-0019[1] and Chapter 3.1.1.9 of DOE DC No. DC2019-12-0016[2], please be guided that the RECs generated under the GEOP supply contracts shall be issued to the relevant host distribution utilities (DUs) in consideration of the following:

1. RECs shall be based on the Metered Quantity (MQ) supplied by the RPS-eligible facility to the GEOP End-Users' RE Supplier and their bilateral contract quantity (BCQ) declarations:

    a. In cases when the total MQ of GEOP End-User/s per host DU exceeds the total BCQ declared by the RPS-eligible facility to the RE Supplier, RECs shall be issued pro-rata using the MQ of the GEOP End-User/s, capped at the value of BCQ; and

    b. In cases when the total MQ of GEOP End-User/s per host DU is equal or less than the total BCQ declared by the RPS-eligible facility to the RE Supplier, RECs shall be issued based on the total MQ of the GEOP End-User/s for the relevant DU.

2. The MQ of the RPS-eligible facility shall be the cap of the RECs to be issued by the RE Registrar to the account of the host DU/s.

Attached as Annex A is the illustration of the allocation process of RECs created under the GEOP.

We enjoin the support and participation by the REM Participants in the upcoming activities of the RE Registrar to effectively implement these guidelines.

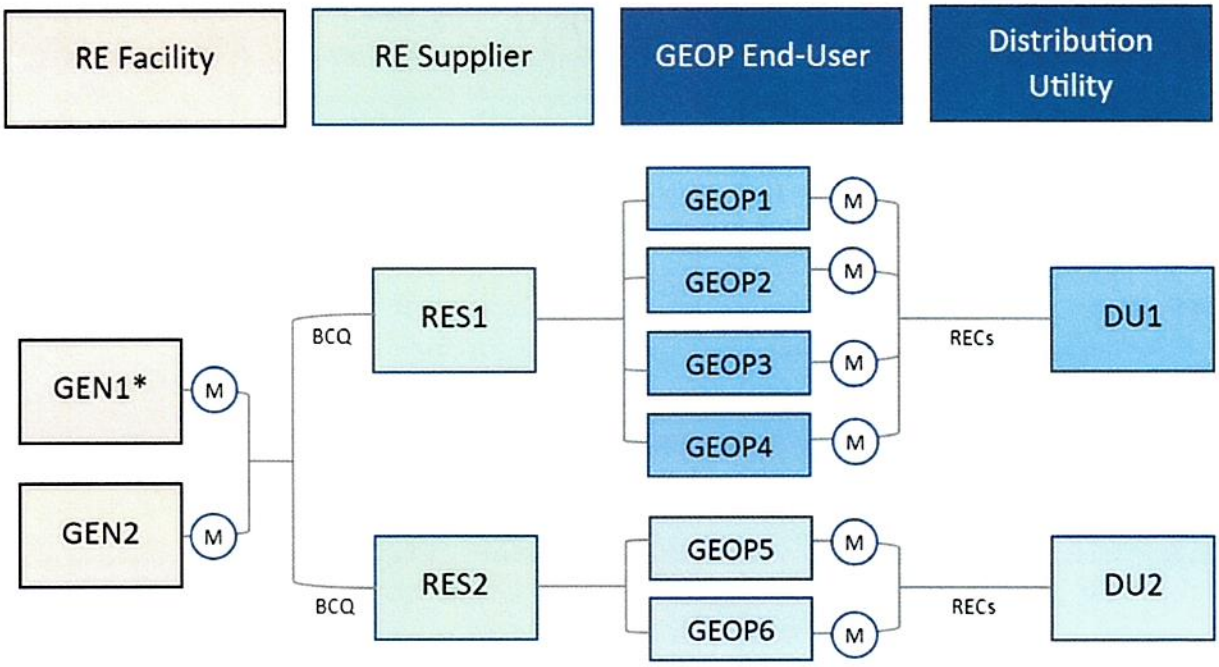
Please be guided accordingly.

RAPHAEL P.M. LOTILLA
Secretary

[1] Titled "Promulgating the Rules and Guidelines Governing the Establishment of the Green Energy Option Program (GEOP) Pursuant to the Renewable Energy Act of 2008"
[2] Titled "Promulgating the Renewable Energy Market Rules"

ALLOCATION OF RENEWABLE ENERGY CERTIFICATES (RECs) CREATED UNDER THE GREEN ENERGY OPTION PROGRAM (GEOP)

Figure 1. WESM Settlement Data



* Eligible for RPS Compliance and attribution of RECs

A. Calculation of RECs Created Under the GEOP

As illustrated in Figure 1, GEN1 and GEN2 are eligible to provide energy to GEOP End-Users through a GEOP Supply contract with the RE Supplier. However, only the generation from GEN1 (RPS-eligible) for the energy delivered to GEOP End-Users shall be issued with corresponding RECs following the provisions under the REM Rules.

Since the actual supply by the RE Supplier to its GEOP End-User/s cannot be determined through the Wholesale Electricity Spot Market (WESM) data due to the current settlement design which only requires BCQ declarations at the level of the market trading node, the RE Registrar shall then issue the RECs pro-rata to the account of DU1 and DU2 based on the total MQs of the GEOP End-Users within their respective franchise areas ($MQ_{GEOP\text{-}DUr}$). This is in consideration of the BCQ data declared to each RE Supplier and the actual generation of the RPS eligible facility (GEN1).

A.1 $MQ_{GEOP\text{-}DUr} > BCQ_{GEN1\text{-}RESm}$

In cases when $MQ_{GEOP\text{-}DUr}$ exceeds GEN1 BCQ with the concerned RES ($BCQ_{GEN1\text{-}RESm}$), the volume of RECs created shall be calculated pro-rata using the individual MQ of the GEOP End-Users (MQ_{GEOPn}) capped at $BCQ_{GEN1\text{-}RESm}$:

$$REC_{GEOPn} = \frac{MQ_{GEOPn}}{MQ_{GEOP\text{-}DUr}} \times BCQ_{GEN1\text{-}RESm}$$

Where:

GEOP	=	Green Energy Option Program (GEOP)
$GEOP_n$	=	Individual GEOP End-User within the franchise area of the host DU
REC_{GEOPn}	=	RE Certificate (REC) created under individual GEOP End-User within the franchise area of the host DU, where 1 REC is equivalent to 1 MWh (rounded down to the nearest MWh)
MQ_{GEOPn}	=	Metered Quantity (MQ) of individual GEOP End-User, expressed in MWh
$MQ_{GEOP\text{-}DUr}$	=	Total MQ of all GEOP End-Users within the franchise area of the host DU, expressed in MWh
GEN1	=	RE Generation Facility that is eligible for RPS compliance and attribution of RECs
RES_m	=	RE Supplier (RES) with GEOP End-User
$BCQ_{GEN1\text{-}RESm}$	=	BCQ declaration between GEN1 and the concerned RES, expressed in MWh

A.2 $MQ_{GEOP\text{-}DUr} \leq BCQ_{GEN1\text{-}RESm}$

In cases when $MQ_{GEOP\text{-}DUr}$ is equal/below $BCQ_{GEN1\text{-}RESm}$, the volume of RECs created shall be calculated based on MQ_{GEOPn}:

$$REC_{GEOPn} = MQ_{GEOPn}$$

A.3 Total Volume of RECs Issued to Host DU

In any case, the total volume of RECs created under the GEOP shall be issued by the RE Registrar to the host DU, calculated as follows:

$$REC_{GEOP\text{-}DUr} = \sum REC_{GEOPn}$$

Where:

$REC_{GEOP\text{-}DUr}$ = Total volume of RECs created under the GEOP that is issued by the RE Registrar to the account of the concerned host DU

B. Scenarios for the Allocation of RECs Created Under the GEOP

B.1 Scenario 1: $MQ_{GEN1} \geq BCQ_{GEN1\text{-}RES}$

Table 1

Allocation of RECs Created Under Scenario 1: $MQ_{GEN1} \geq BCQ_{GEN1\text{-}RES}$

MQ of RE Facility (GEN, MWh)		Bilateral Contracted Quantity (BCQ, MWh)			MQ of GEOP End-User (GEOP, MWh)			RE Certificate Issued (1 REC = 1 MWh)	
GEN	MQ_{GEN}	RE Supplier (RES)		BCQ_{RES}	End-User		MQ_{GEOP}	Allocation	Distribution Utility (DU)
GEN1*	2,600	RES1	GEN1*	1,000	GEOP1	1,000	2,600	384.6154	DU1: 1,000 RECs Case 1: $MQ_{GEOP\text{-}DU1} > BCQ_{GEN1\text{-}RES1}$
					GEOP2	1,400		538.4615	
			GEN2	1,280	GEOP3	160		61.5385	
					GEOP4	40		15.3846	
GEN2	1,400	RES2	GEN1*	1,470	GEOP5	600	1,400	600.0000	DU2: 1,400 RECs Case 2: $MQ_{GEOP\text{-}DU2} \leq BCQ_{GEN1\text{-}RES2}$
			GEN2	50	GEOP6	800		800.0000	
4,000 MWh		3,800 MWh			4,000 MWh			2,400 RECs	2,400 RECs

* Eligible for RPS compliance and attribution of RECs

Table 1 shows the allocation of RECs to the host DU in a scenario wherein MQ_{GEN1} – eligible for RPS compliance and attribution of RECs – is equal/greater than the total GEN1 BCQ declarations with RES1 and RES2.

For this particular Wholesale Electricity Sport Market (WESM) billing period, the MQ_{GEN1} of 2,600 MWh and MQ_{GEN2} of 1,400 MWh supplied the 4,000 MWh energy requirements of the six (6) GEOP End-Users. The total GEN1 BCQ is 2,470 MWh, with 1,000 MWh for RES1 and 1,470 MWh for RES2. On the other hand, the total GEN2 BCQ is 1,330 MWh, with 1,280 MWh for RES1 and 50 MWh for RES2.

Under this scenario, the 2,470 MWh GEN1 BCQ shall be the cap of RECs created under the GEOP and issued by the RE Registrar to the account of the host DUs.

The GEOP End-Users under RES1, namely GEOP1, GEOP2, GEOP3, and GEOP4 are within the franchise area of DU1, hence, all RECs created shall be issued to DU1. Since $MQ_{GEOP\text{-}DU1}$ of 2,600 MWh > 1,000 MWh $BCQ_{GEN1\text{-}RES1}$, the volume of RECs created shall be calculated pro-rata using MQ_{GEOPn} capped at $BCQ_{GEN1\text{-}RES1}$:

$$REC_{GEOPn} = \frac{MQ_{GEOPn}}{MQ_{GEOP\text{-}DUr}} \times BCQ_{GEN1\text{-}RESm}$$

Here:

$$REC_{GEOP1} = \frac{MQ_{GEOP1}}{MQ_{GEOP\text{-}DU1}} \times BCQ_{GEN1\text{-}RES1}$$

$$= \frac{1{,}000}{2{,}600} \times 1{,}000$$

$$= 384.6154 \text{ RECs}$$

The same shall be applied for the REC calculation for GEOP2, GEOP3, and GEOP4:

$REC_{GEOP2} = 538.4615$ RECs
$REC_{GEOP3} = 61.5385$ RECs
$REC_{GEOP4} = 15.3846$ RECs

Hence, the total volume of RECs issued to DU1 is calculated as follows:

$$REC_{GEOP\text{-}DU1} = \sum REC_{GEOPn}$$

$$= REC_{GEOP1} + REC_{GEOP2} + REC_{GEOP3} + REC_{GEOP4}$$

$$= \mathbf{1{,}000\ RECs}$$

On the other hand, the GEOP End-Users under RES2, namely GEOP5 and GEOP6 are within the franchise area of DU2, hence, all RECs created shall be issued to DU2. Since $MQ_{GEOP\text{-}DU2}$ of 1,400 MWh < 1,470 MWh $BCQ_{GEN1\text{-}RES2}$, the volume of RECs created shall be calculated based on MQ_{GEOPn}:

$$REC_{GEOPn} = MQ_{GEOPn}$$

Here:

$REC_{GEOP5} = 600.0000$ RECs
$REC_{GEOP6} = 800.0000$ RECs

Hence, the total volume of RECs issued to DU2 is calculated as follows:

$$REC_{GEOP\text{-}DU2} = \sum REC_{GEOPn}$$

$$= REC_{GEOP5} + REC_{GEOP6}$$

$$= \mathbf{1{,}400\ RECs}$$

For this WESM billing period, the total volume of RECs created under the GEOP is 2,400 RECs in which the RE Registrar issued 1,000 RECs to DU1 and 1,400 REC to DU2. Since the total volume of RECs created is below the MQ_{GEN1} of 2,600 MWh (1 REC = 1 MWh), the residual 200 RECs shall be issued by the RE Registrar to GEN1, based on the assumption (used in this case) that GEN1 has no other counterparty other than RES1 and RES2.

B.2 Scenario 2: $MQ_{GEN1} < BCQ_{GEN1\text{-}RES}$

Table 2

Allocation of RECs Created Under Scenario 2: $MQ_{GEN1} < BCQ_{GEN1\text{-}RES}$

MQ of RE Facility (GEN, MWh)		Bilateral Contracted Quantity (BCQ, MWh)			MQ of GEOP End-User (GEOP, MWh)			RE Certificate Issued (1 REC = 1 MWh)		
GEN	MQ_{GEN}	RE Supplier (RES)		BCQ_{RES}	End-User		MQ_{GEOP}	Allocation	Adjusted	Distribution Utility (DU)
GEN1*	2,470	RES1	GEN1*	2,100	GEOP1	570	2,090	570.0000	543.5907	DU1: 1,993 RECs (0.1660 carry-over RECs)
					GEOP2	1,330		1,330.0000	1,268.3784	
			GEN2	100	GEOP3	152		152.0000	144.9575	Case 2: $MQ_{GEOP\text{-}DU1} \leq BCQ_{GEN1\text{-}RES1}$
					GEOP4	38		38.0000	36.2394	
GEN2	1,330	RES2	GEN1*	500	GEOP5	760	1,710	222.2222	211.9262	DU2: 476 RECs (0.8340 carry-over RECs)
			GEN2	1,300	GEOP6	950		277.7778	264.9078	Case 1: $MQ_{GEOP\text{-}DU2} > BCQ_{GEN1\text{-}RES2}$
3,800 MWh		4,000 MWh			3,800 MWh			2,590 RECs	2,470 RECs	2,470 RECs

* Eligible for RPS compliance and attribution of RECs

Table 2 shows the allocation of RECs to the host DU in a scenario wherein MQ_{GEN1} is below the total GEN1 BCQ declarations with RES1 and RES2.

For this particular WESM billing period, the MQ_{GEN1} of 2,470 MWh and MQ_{GEN2} of 1,330 MWh supplied the 3,800 MWh energy requirements of the six (6) GEOP End-Users. The total GEN1 BCQ is 2,600 MWh, with 2,100 MWh for RES1 and 500 MWh for RES2. On the other hand, the total GEN2 BCQ is 1,400 MWh, with 100 MWh for RES1 and 1,300 MWh for RES2.

Under this scenario, the 2,470 MWh MQ_{GEN1} shall be the cap of RECs created under the GEOP and issued by the RE Registrar to the account of the host DUs.

The GEOP End-Users under RES1, namely GEOP1, GEOP2, GEOP3, and GEOP4 are within the franchise area of DU1, hence, all RECs created shall be issued to DU1. Since $MQ_{GEOP\text{-}DU1}$ of 2,090 MWh < 2,100 MWh $BCQ_{GEN1\text{-}RES1}$, the volume of RECs created shall be calculated based on MQ_{GEOPn}:

$$REC_{GEOPn} = MQ_{GEOPn}$$

Here:

REC_{GEOP1} = 570.0000 RECs
REC_{GEOP2} = 1,330.0000 RECs
REC_{GEOP3} = 152.0000 RECs
REC_{GEOP4} = 38.0000 RECs

Hence, the total volume of RECs issued to DU1 is calculated as follows:

$$REC_{GEOP\text{-}DUr} = \sum REC_{GEOPn}$$

Here:

$$REC_{GEOP\text{-}DU1} = \sum REC_{GEOPn}$$
$$= REC_{GEOP1} + REC_{GEOP2} + REC_{GEOP3} + REC_{GEOP4}$$
$$= \textbf{2,090 RECs}$$

On the other hand, the GEOP End-Users under RES2, namely GEOP5 and GEOP6 are within the franchise area of DU2, hence, all RECs created shall be issued to DU2. Since $MQ_{GEOP\text{-}DU2}$ of 1,710 MWh > 500 MWh $BCQ_{GEN1\text{-}RES2}$, the volume of RECs created shall be calculated pro-rata using MQ_{GEOPn} capped at $BCQ_{GEN1\text{-}RES2}$:

$$REC_{GEOPn} = \frac{MQ_{GEOPn}}{MQ_{GEOP\text{-}DUr}} \times BCQ_{GEN1\text{-}RES2}$$

Here:

$$REC_{GEOP5} = \frac{MQ_{GEOP5}}{MQ_{GEOP\text{-}DU2}} \times BCQ_{GEN1\text{-}RES2}$$
$$= \frac{760}{1{,}710} \times 500$$
$$= 222.2222 \text{ RECs}$$

The same shall be applied for the REC calculation for GEOP6:

$$REC_{GEOP6} = 277.7778 \text{ RECs}$$

Hence, the total volume of RECs issued to DU2 is calculated as follows:

$$REC_{GEOP\text{-}DUr} = \sum REC_{GEOPn}$$

Here:

$$REC_{GEOP\text{-}DU2} = \sum REC_{GEOPn}$$
$$= REC_{GEOP5} + REC_{GEOP6}$$
$$= \textbf{500 RECs}$$

The total volume of RECs issued to DU1 and DU2 is 2,590 RECs. Since this exceeds the MQ_{GEN1} of 2,470 MWh (1 REC = 1 MWh), the calculation for the volume of RECs created shall be adjusted in proportion to the initial REC calculations capped at MQ_{GEN1}:

$$\text{Adjusted } REC_{GEOPn} = \frac{\text{Initial } REC_{GEOPn}}{\text{Total Initial } REC_{GEOP}} \times MQ_{GEN1}$$

Where:

Adjusted REC_{GEOPn}	=	Total volume of RECs created under individual GEOP End-User in a scenario wherein REC allocations is capped at MQ_{GEN1}
Initial REC_{GEOPn}	=	Volume of initial REC created under individual GEOP End-User within the franchise area of the host DU, where 1 REC is equivalent to 1 MWh (rounded down to the nearest MWh)
Total Initial REC_{GEOP}	=	Total volume of initial REC created under all GEOP End-Users, where 1 REC is equivalent to 1 MWh

Here:

$$\text{Adjusted } REC_{GEOP1} = \frac{\text{Initial } REC_{GEOP1}}{\text{Total Initial } REC_{GEOP}} \times MQ_{GEN1}$$

$$= \frac{570.0000}{2{,}590.0000} \times 2{,}470$$

$$= 543.5907 \text{ RECs}$$

The same shall be applied for the Adjusted REC calculation for the other GEOP End-Users:

Adjusted REC_{GEOP2}	=	1,268.3784 RECs
Adjusted REC_{GEOP3}	=	144.9575 RECs
Adjusted REC_{GEOP4}	=	36.2394 RECs
Adjusted REC_{GEOP5}	=	211.9262 RECs
Adjusted REC_{GEOP6}	=	264.9078 RECs

Hence, the total volume of Adjusted RECs issued to DU1 and DU2 is calculated as follows:

$$\text{Adjusted } REC_{GEOP\text{-}DUr} = \sum REC_{GEOPn}$$

For DU1:

$$\text{Adjusted } REC_{GEOP\text{-}DU1} = \sum \text{Adjusted } REC_{GEOPn}$$

$$= \text{Adjusted } REC_{GEOP1} + \text{Adjusted } REC_{GEOP2} + \text{Adjusted } REC_{GEOP3} + \text{Adjusted } REC_{GEOP4}$$

$$= \mathbf{1{,}993 \text{ RECs}}$$

For DU2:

$$\text{Adjusted } REC_{GEOP\text{-}DU2} = \sum \text{Adjusted } REC_{GEOPn}$$

$$= \text{Adjusted } REC_{GEOP5} + \text{Adjusted } REC_{GEOP6}$$

$$= \mathbf{476 \text{ RECs}}$$

For this WESM billing period, the total volume of RECs created under the GEOP is 2,470 RECs in which the RE Registrar issued 1,993 RECs to DU1 and 476 RECs to DU2. During the next WESM billing period, 0.1660 RECs and 0.8340 RECs shall be issued by the RE Registrar to the account of DU1 and DU2, respectively.

C. Implementation

To implement the foregoing allocation process for the volume of RECs created under the GEOP, the RE Registrar shall:

1. Pre-calculate the total MQ for REC allocation under GEOP for each host DU. This data shall consider the following:
    a. RE Supplier's total BCQ for all its GEOP End-Users per host DU;
    b. Total BCQ between RPS eligible Facility;
    c. All Power Supply Agreement (PSA) counterparties; and
    d. The MQ of the RPS-eligible facility.

2. Issue supplemental advisory/ies on this matter, as deemed necessary.