



**Wholesale Electricity
Spot Market**

**Updates on the Preparations
for the Integration of Retail Competition
in the WESM**

16 August 2012

Objectives of the Presentation

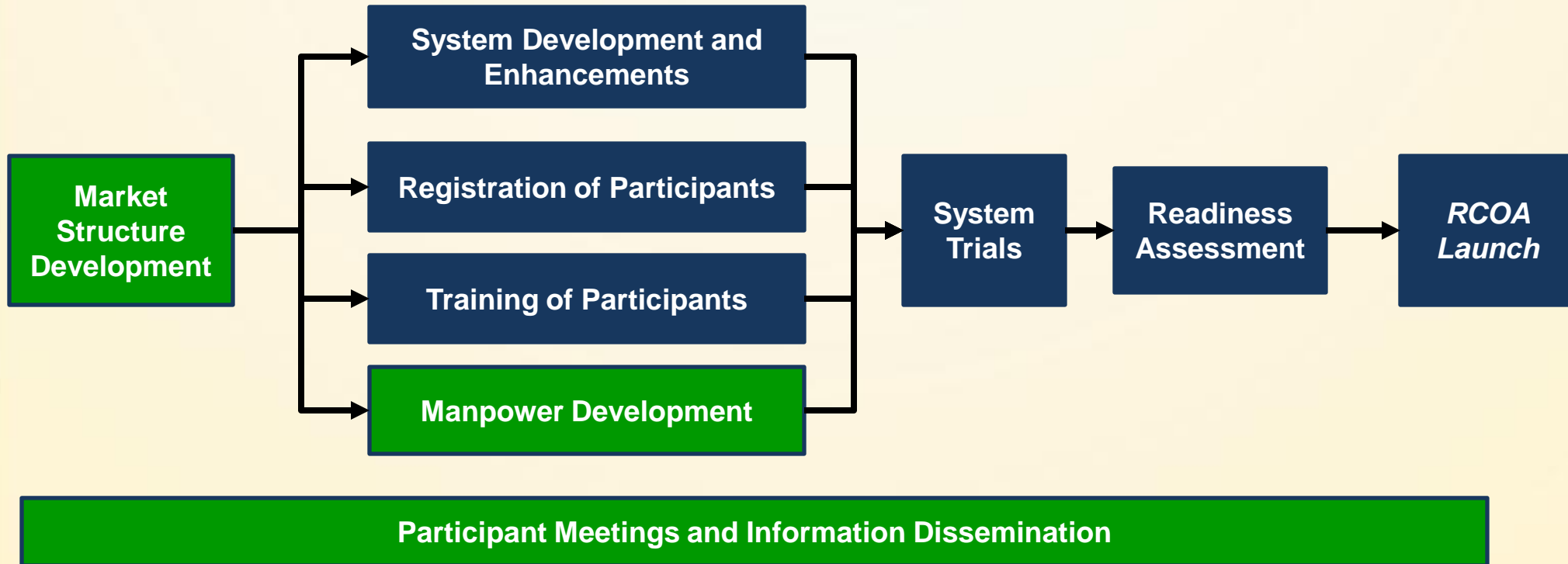
- ❖ Update on the preparations of the Philippine Electricity Market Corporation for the integration of retail competition in the WESM.
- ❖ Illustration of the proposed processes for registration of suppliers and customers and settlement of their transactions in the WESM.

Presentation Outline

- ❖ Update on PEMC Preparations
- ❖ Integration Framework
 - Basic Principles
 - Processes
- ❖ Proposed Registration and Customer Switching Framework
- ❖ Proposed Settlement Framework
 - WESM Settlement
 - Settlement Outside WESM

UPDATE ON PEMC PREPARATIONS

Project Integration Highlights



Market Structure Development

- ❖ Market rules and implementing procedures or market manuals that will govern the integration of retail competition in the WESM and the operations of the Central Registration Body.

- ❖ Bases for rules development –
 - Policies prescribed by the DOE
 - Rules and resolutions issued by the ERC
 - Results of public consultations

Market Structure Development

❖ Structure

- The retail rules and market manuals will form part of the rules that will govern the operations of the WESM, and as such will be read and used in connection with the prevailing WESM Rules.
- WESM Rules will cover market governance, registration of WESM members, pricing and scheduling, and metering, billing and settlements of wholesale transactions.
- Retail rules will cover registration of contestable customers and suppliers, and metering, billing and settlements of supplier transactions.

Market Structure Development

❖ Proposed Coverage

- Functions and obligations of the Central Registration Body
- Registration of contestable customers and suppliers
- Customer switching
- Metering standards and procedures for contestable customer meters
- Billing and settlement of customer and supplier transactions in the WESM
- Information/data exchange protocols

Market Structure Development

❖ Process

- PEMC, assisted by third party consultant, was assigned to draft market rules and manuals, and submit to the DOE.
- Draft rules will be subject to public consultations following DOE's usual processes.
- Final rules to be promulgated by the DOE.

INTEGRATION FRAMEWORK

Basic Principles

❖ **Single market**

- Market to have wholesale and retail components, but retail component will cover only the transactions of the suppliers and their contestable customers in the WESM.

❖ **Customer choice**

- Contestable customers are permitted to transact in the WESM directly or indirectly.

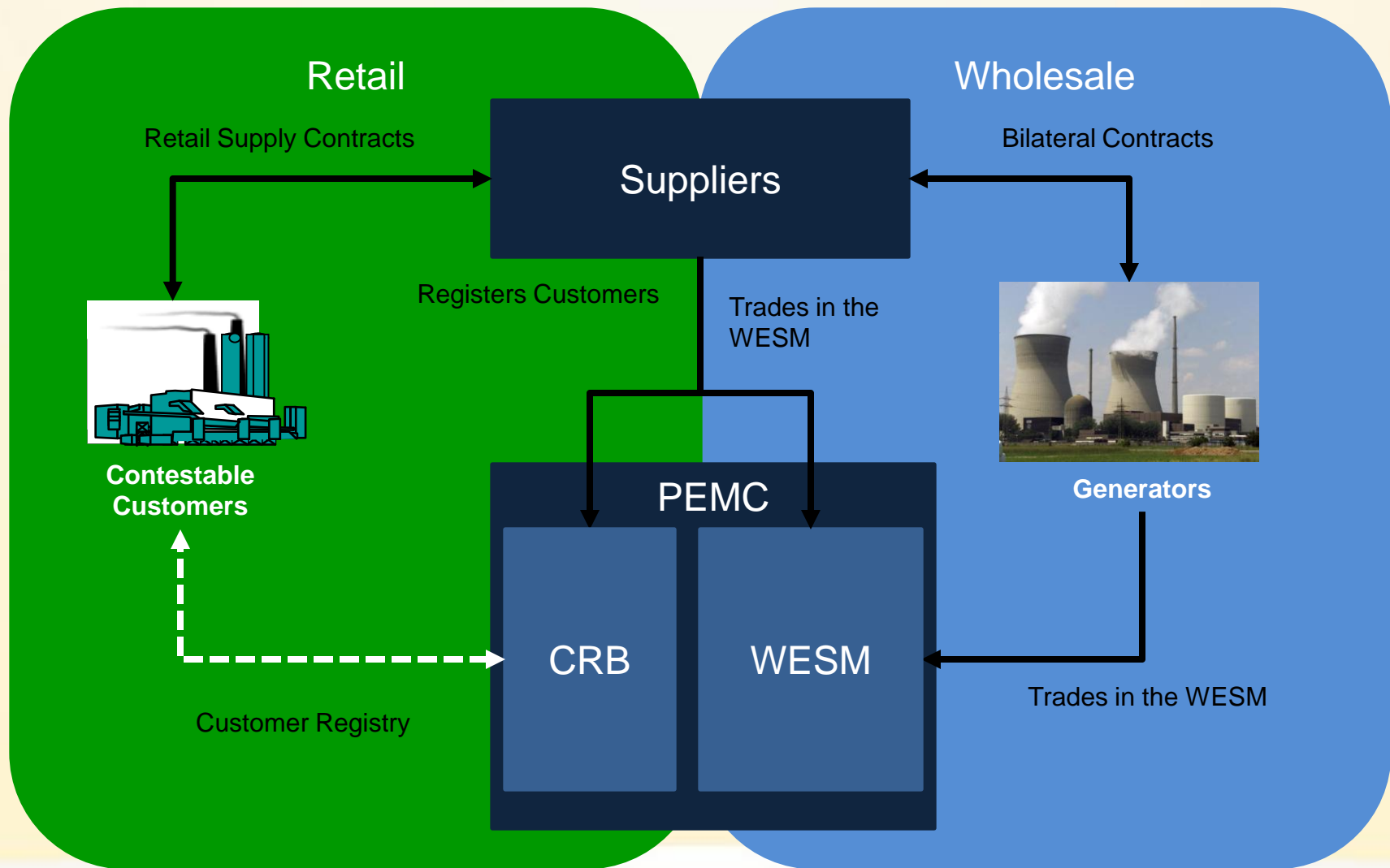
❖ **Single spot market settlement**

- Customers may have multiple suppliers, but only one entity will transact in the WESM in its behalf (either the customer itself if registered as Direct Member or its supplier, if an Indirect Member)

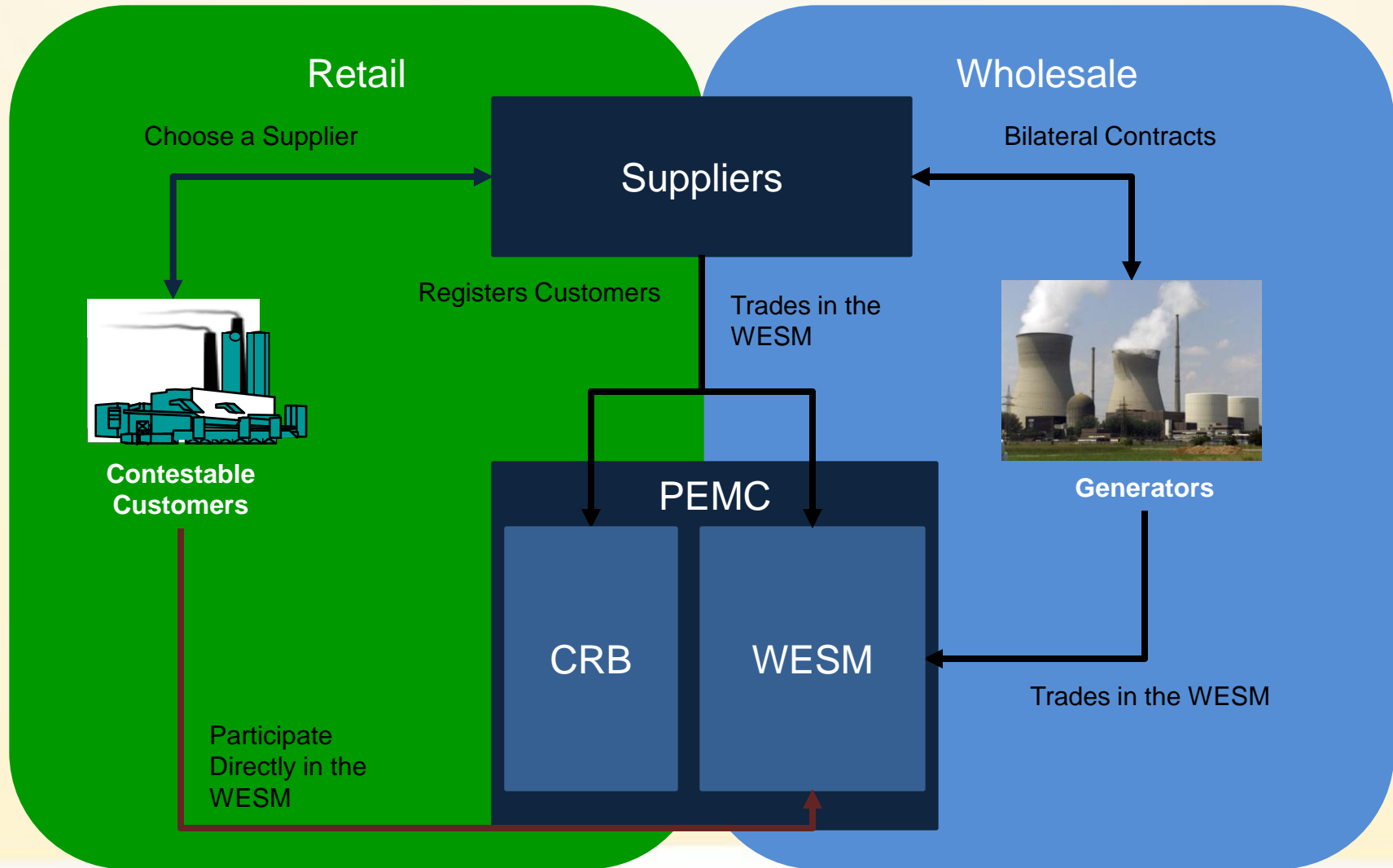
❖ **ERC licenses and authorizations**

- Customers must have certification of contestability and may only transact with suppliers that have been licensed as RES or authorized by the ERC.

Market Integration: Retail and Wholesale



Customer Choice



Processes

Contracting

- Supply
- DWS (Wheeling, Metering, Transmission)
- Connection
- Bilateral Supply w/ Generators

Customer Switching

- Contestable Customer switches Supplier

WESM Processes

- Registration
- Pricing and Scheduling
- Metering and Settlement
- Billing

RCOA Settlement outside WESM

- Payment of Contestable Customer to Supplier
- Payment of Supplier to DU, NGCP, Generator
- Payment of DU to NGCP, Generator

PROPOSED REGISTRATION & CUSTOMER SWITCHING

WESM Registration & Participation

❖ Supplier

- Must be licensed or authorized by the ERC
 - Holders of retail electricity supplier licenses
 - DUs authorized by the ERC to serve as local RES for contestable customers within their franchise area
- Must register as Direct WESM Member
 - Comply with membership criteria – business registration in the Philippines, not under external administration
 - Comply with prudential requirements (to cover transactions of its customers in the WESM)

WESM Registration & Participation

❖ **Contestable Customer**

- Certified as contestable by the ERC

- Registered with the CRB and in the WESM as Direct or Indirect WESM Member. Customers have a choice on the type of membership.

WESM Registration & Participation

❖ Indirect member –

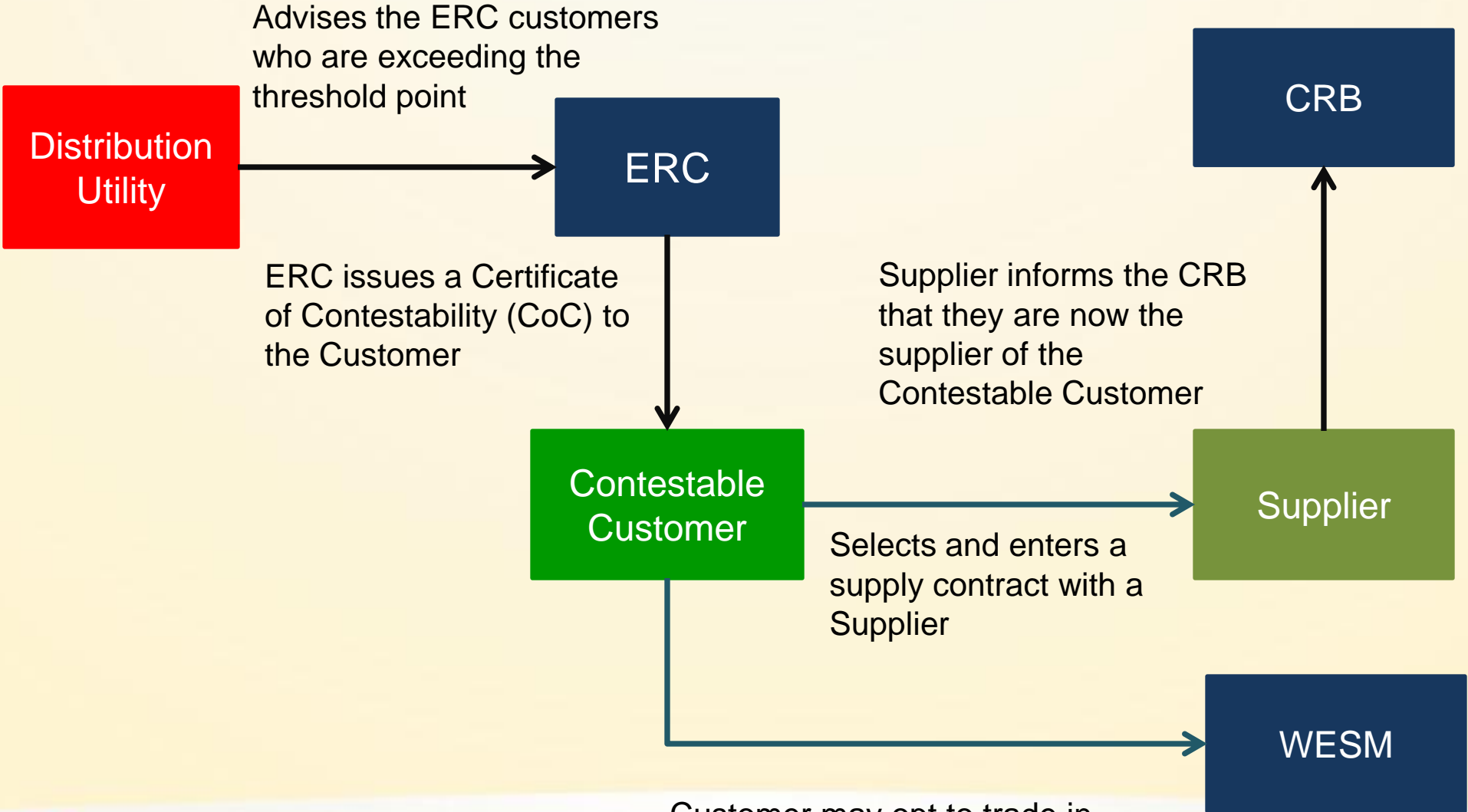
- **Does not need to register personally in the WESM. Automatic registration by the supplier.**
- Must elect a licensed and registered Supplier to be its WESM counterparty, and must be fully contracted with its Supplier counterparty.
- Registration and transactions in the WESM will be covered by their Direct Member counterparty.
- Can have access to market information and other participant services (e.g., training) if they so choose.

WESM Registration & Participation

❖ Direct member –

- May purchase electricity through the WESM and/or through contracts with licensed Suppliers.
- All spot transactions will be settled by the contestable customer directly in the WESM.
- However, transactions with licensed suppliers will not be accounted for in the WESM settlement processes but should be settled by the parties between themselves.
- Must comply with usual registration requirements.

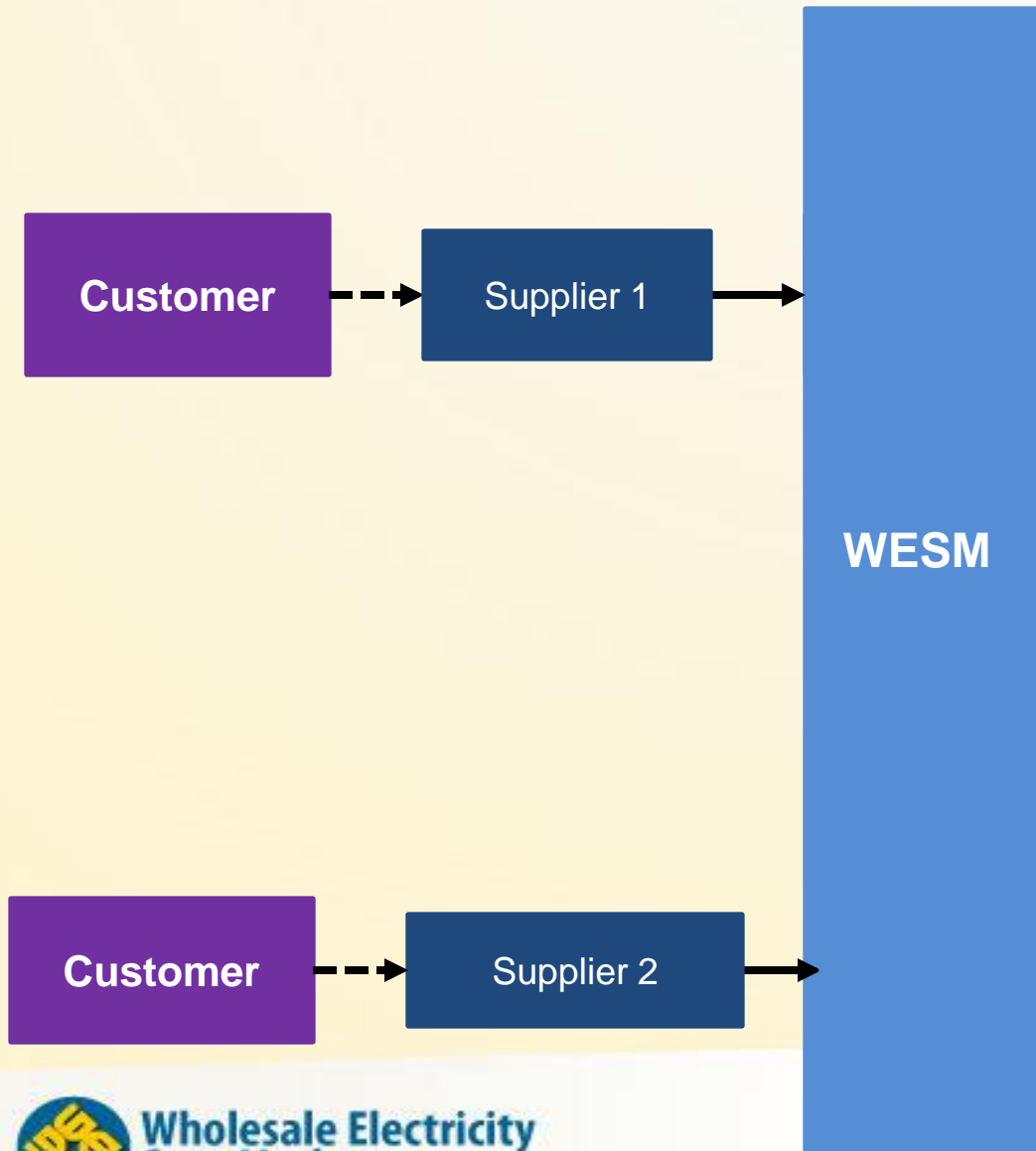
Contestability



Customer Switching

- ❖ Commercial transfer of a contestable customer from one supplier to another.
 - Changes in counterparty (of indirect members)
 - Termination/expiration of supply contracts by the customer or the supplier
 - Relocation of service address (within the same franchise area or in another DU franchise area)
- ❖ Switching shall be effective by the end of a billing period.
- ❖ Initially, switching is allowed after 6 months.

Customer Switching

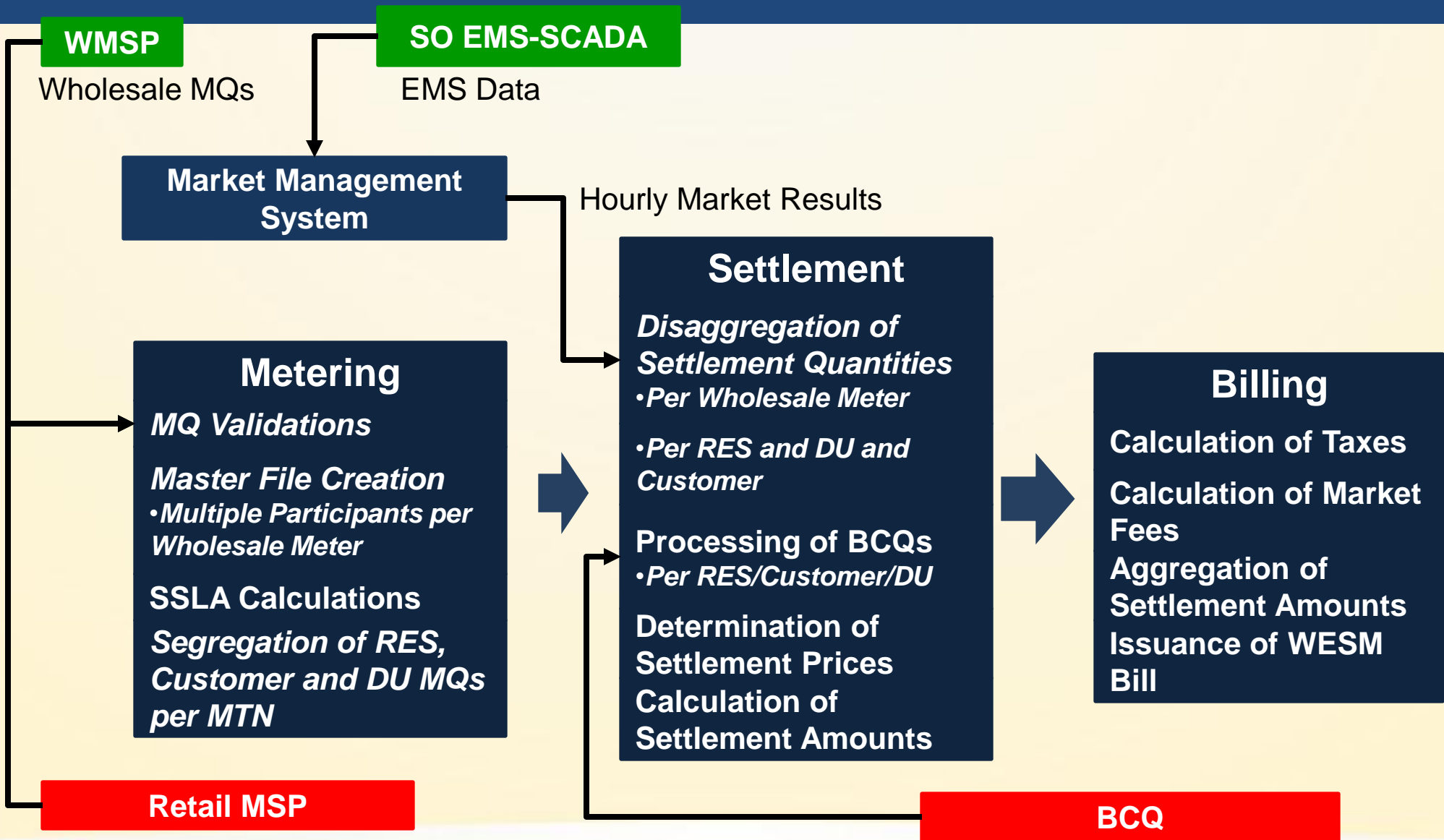


PROPOSED SETTLEMENT FRAMEWORK

RCOA Settlement Framework

- ❖ Settlement Process Overview
- ❖ Simulation Exercise

Settlement Process Overview

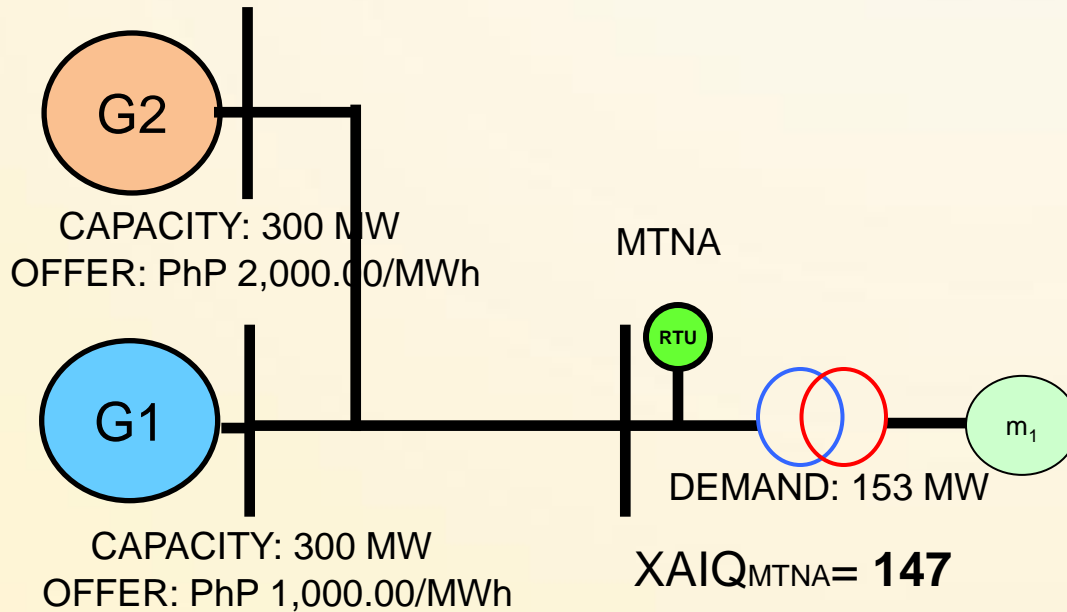


SIMULATION EXERCISE

Registration of Contestable Customer

Registration Details	CC1	CC2
Customer Name	CC1	CC2
Billing and Service Address	Pasig City	Pasig City
Customer's Account Number	2-0001	2-0002
Site Equipment Identification Number (SEIN)	MF3MTPCCCCZ02	MF3MTPCCCCZ03
Meter Type		
MSP	DU2	DU2
Adjacent Wholesale Metering Point	MTNA	MTNA
WESM Direct Participant	Supplier 1	Supplier2
Customer Contact information		
Customer Classification	Industrial	Commercial

Simulation Scenario

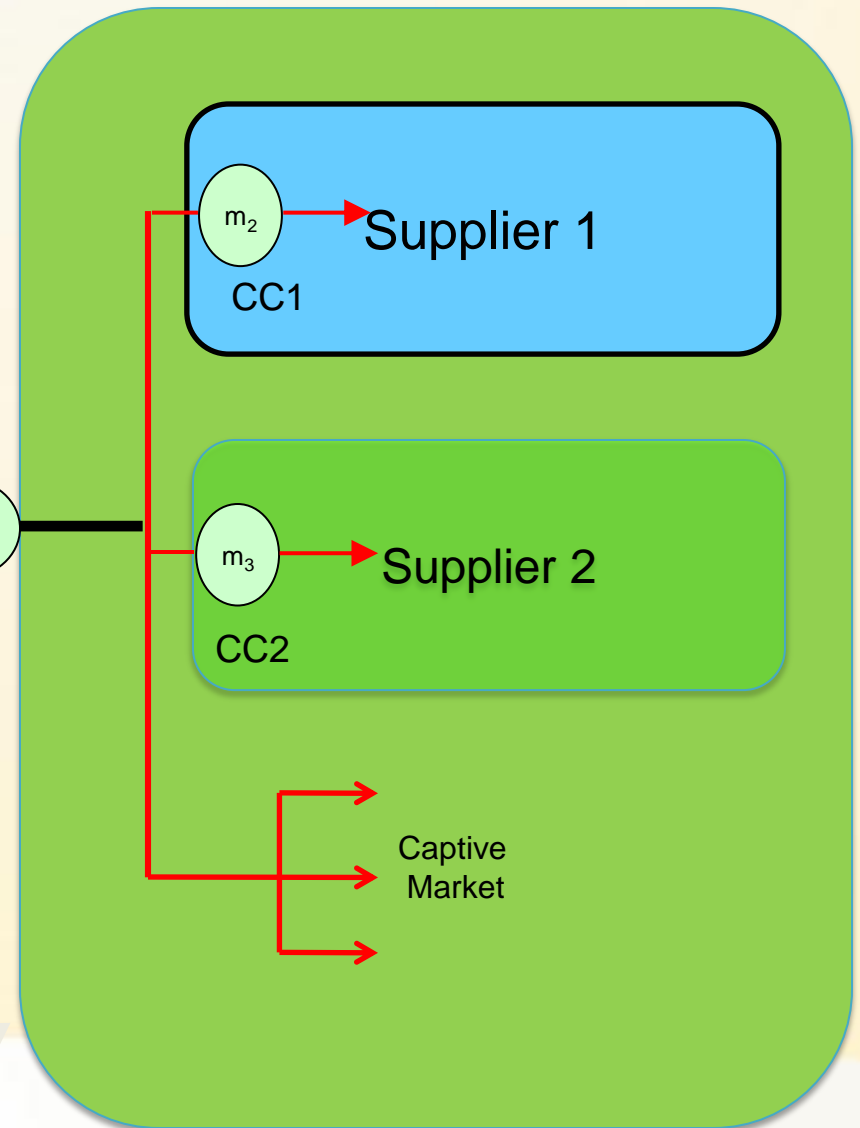


$$XAIQ_{G1} = 151.41$$

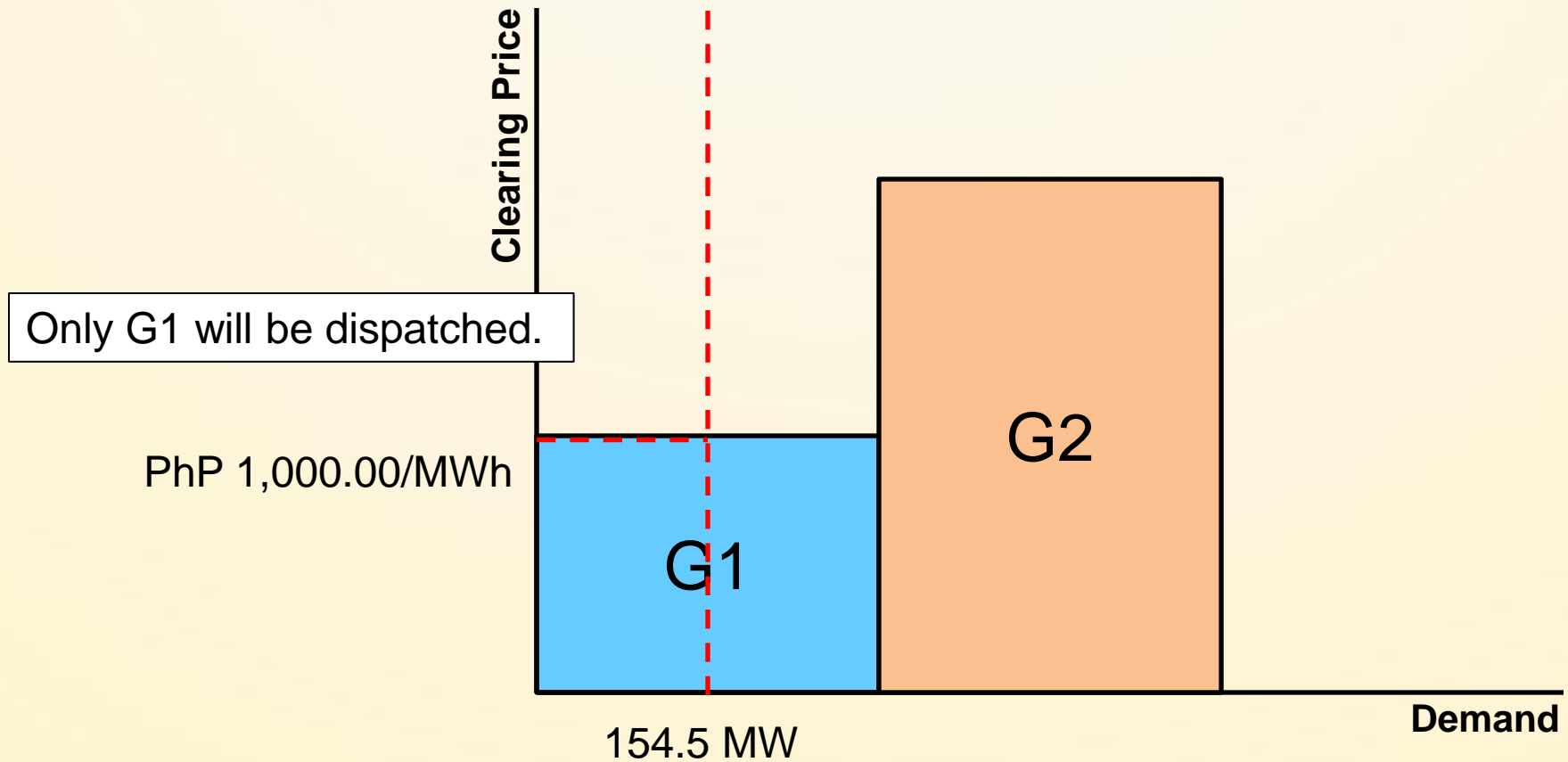
$$BCQ_{G1-S1} = 45$$

$$BCQ_{G1-S2} = 22$$

$$BCQ_{G1-DU2} = 70$$

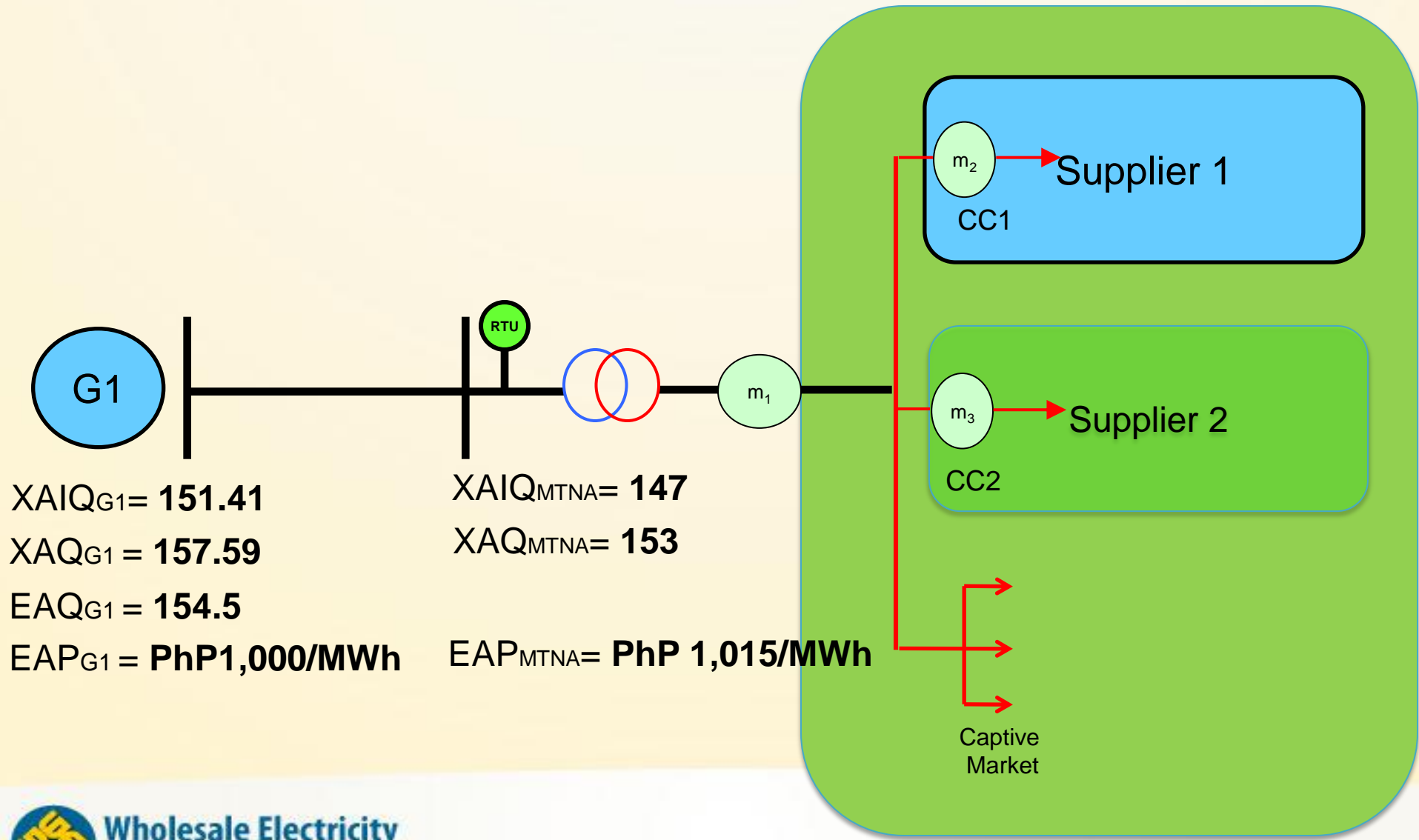


Pricing and Scheduling



WESM SETTLEMENT PROCESS

Pricing and Scheduling



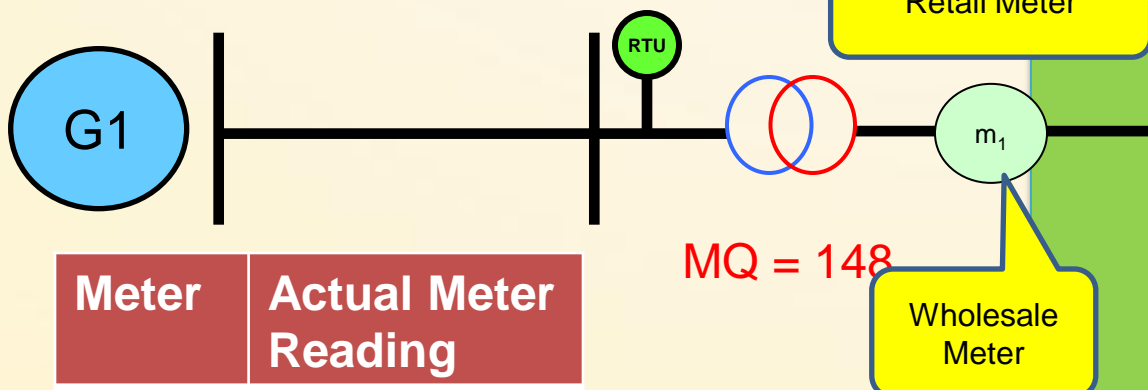
Segregation of MQ

Calculation of EAQ

Determining Nodal Prices

Derive MQ of Captive Customers

$$MQ_{rmcaptive} = MQ_{wmj} - \sum MQ_{rmcci}$$



Meter	Actual Meter Reading
M1	148
M2	47.5
M3	23.75

m₂ → Supplier 1
CC1 MQ_{cc1} = 47.5

m₃ → Supplier 2
CC2 MQ_{cc2} = 23.75

Captive Market

MQ_{cap} + DUSL = 148 - 23.75 - 47.5

= 76.75

$MQ_{DU} = Losses_{DU} + \sum MQ_{captive}$

Segregation of MQ

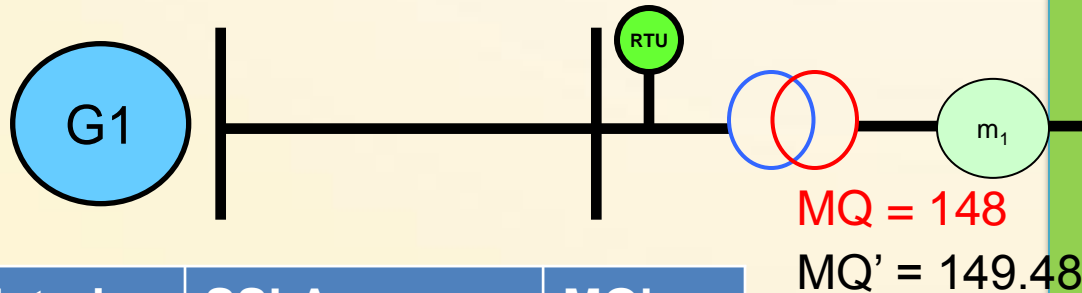
Calculation of EAQ

Determining Nodal Prices

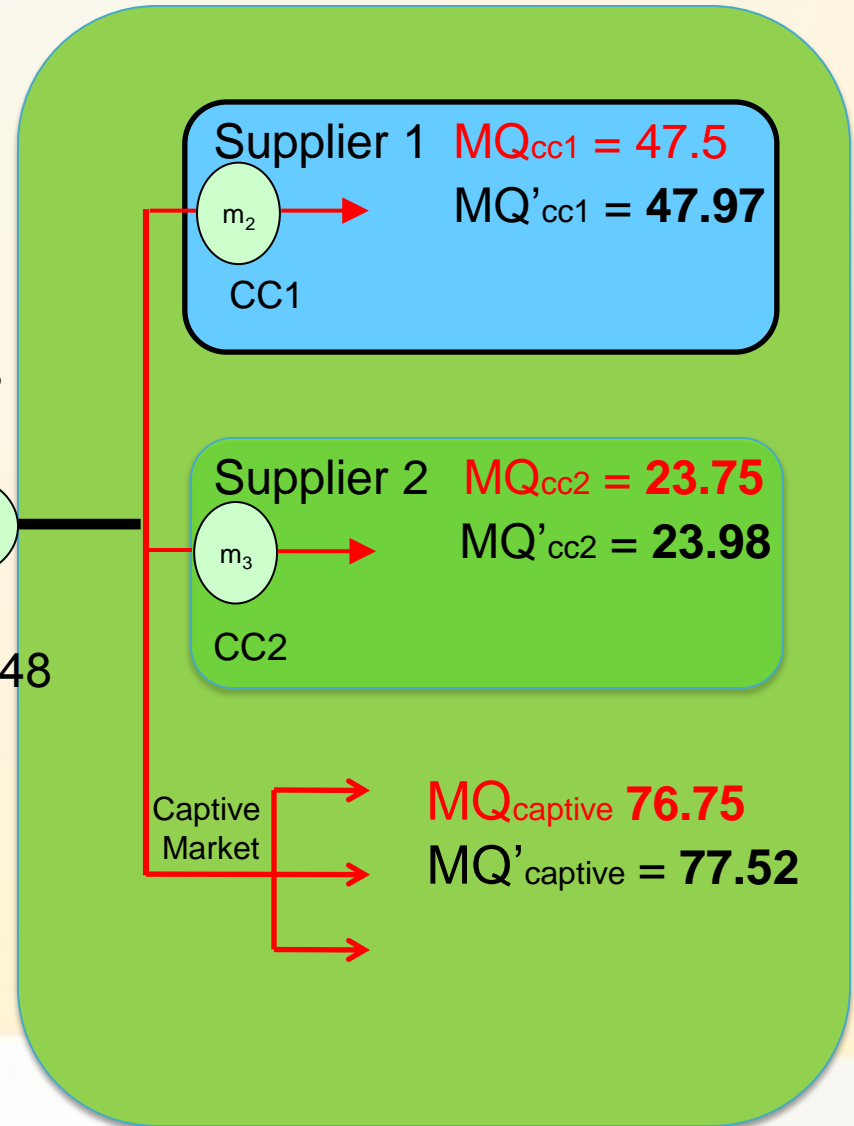
$$MQ'_{rmcci} = \left(\frac{MQ'_{wmj}}{MQ_{wmj}} \right) \cdot MQ_{rmcci}$$

$$MQ'_{rmcaptive} = \left(\frac{MQ'_{wmj}}{MQ_{wmj}} \right) \cdot MQ_{rmcaptive}$$

Calculated Losses T1 : 1.48



Metering Point	SSLA Calculation	MQ'
MTNA	148 + 1.48	149.48
CC1	$(149.48/148) \cdot 47.5$	47.98
CC2	$(149.48/148) \cdot 23.75$	23.98
DU2	$(149.48/148) \cdot 76.75$	77.52

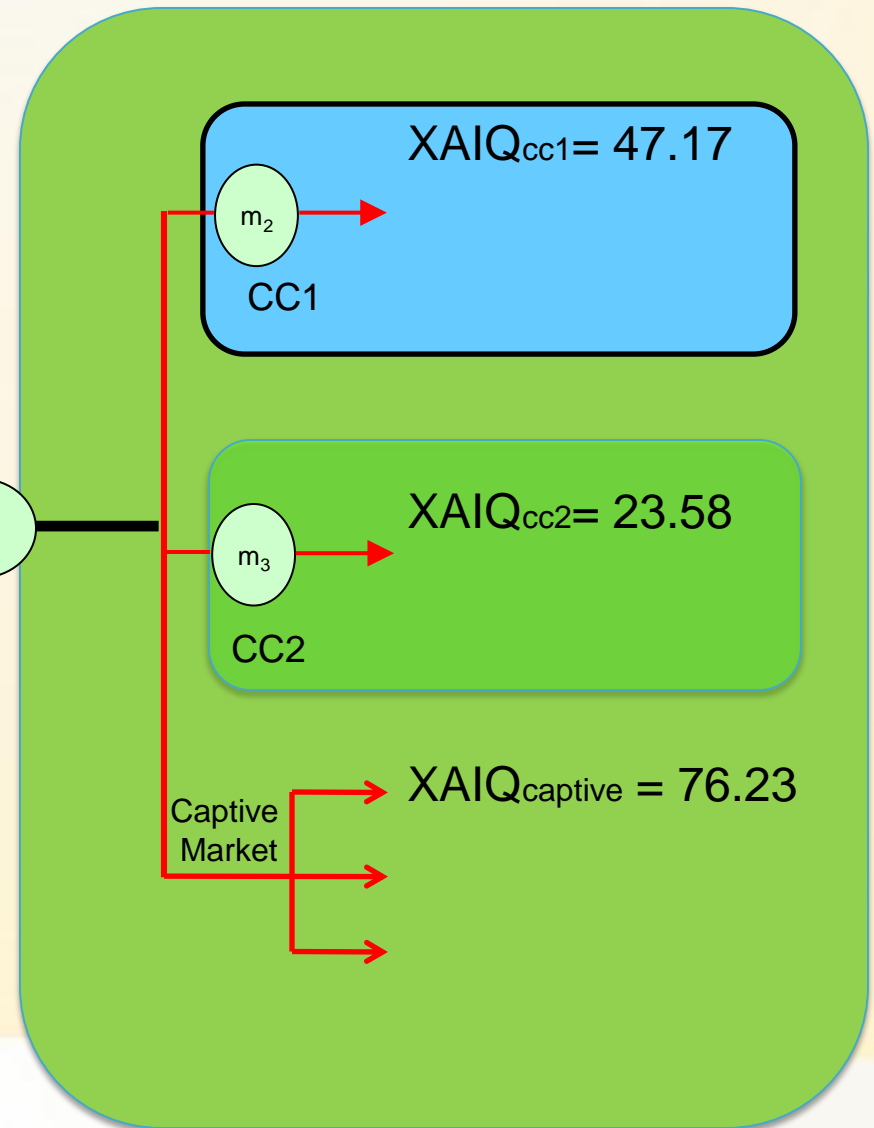
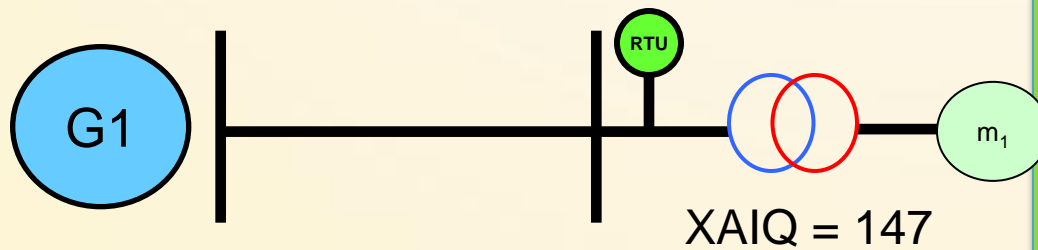


Segregation of MQ

Calculation of EAQ

Determining Nodal Prices

$$XAIQ_{rmi} = \left(\frac{MQ'_{rmi}}{MQ'_{wmj}} \right) \cdot XAIQ_{wmj}$$



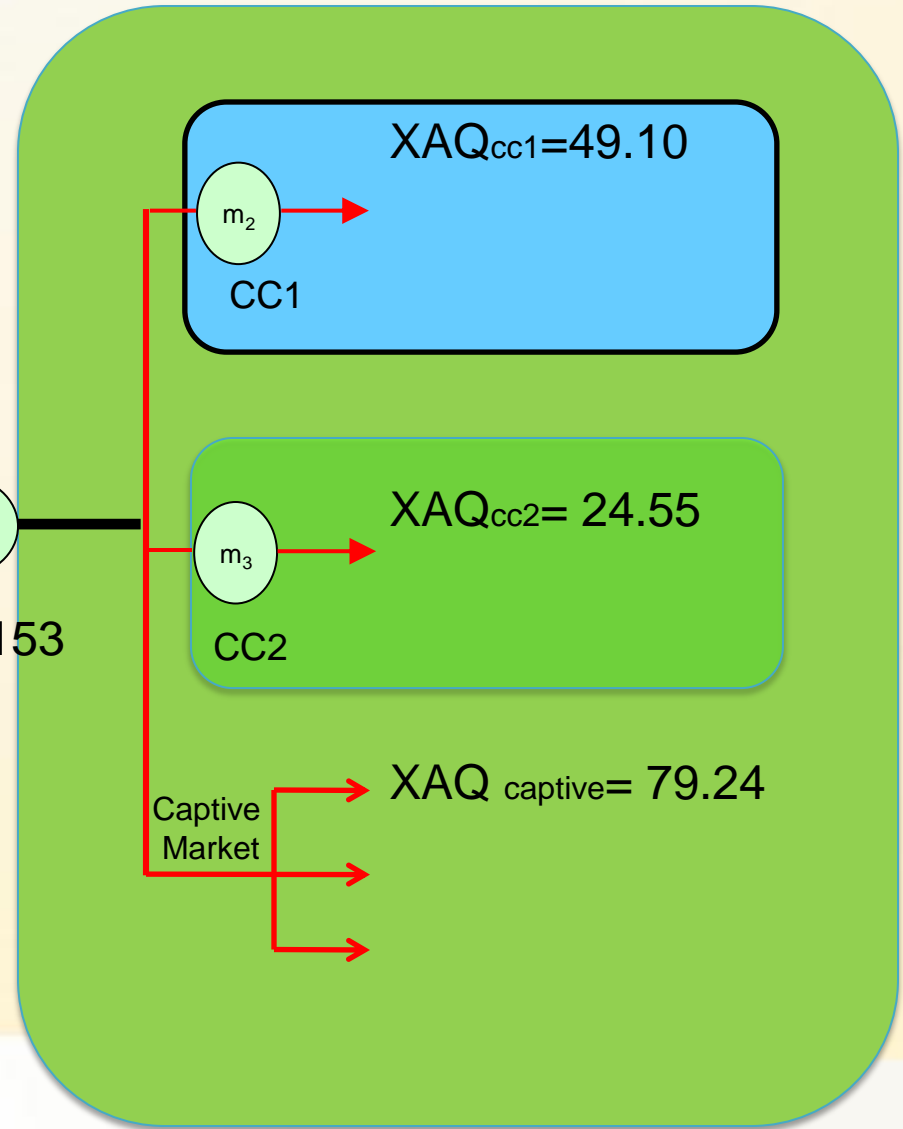
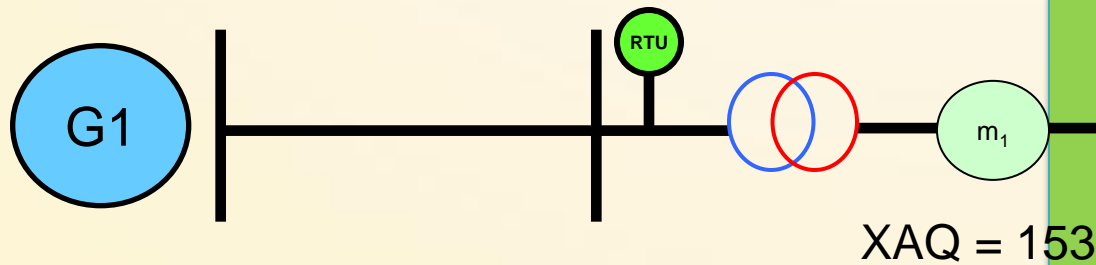
Met. Point	XAIQ Formula	XAIQ
MTNA		147
CC1	$(47.97/149.48) \cdot 147$	47.17
CC2	$(23.98/149.48) \cdot 147$	23.58
DU2	$(77.52/149.48) \cdot 147$	76.23

Segregation of MQ

Calculation of EAQ

Determining Nodal Prices

$$XAQ_{rmi} = \left(\frac{MQ'_{rmi}}{MQ'_{wmj}} \right) \cdot XAQ_{wmj}$$



Met. Point	XAQ Formula	XAQ
MTNA		153
CC1	$(47.97/149.48) \cdot 153$	49.10
CC2	$(23.98/149.48) \cdot 153$	24.55
DU2	$(77.52/149.48) \cdot 153$	79.24

Segregation of MQ

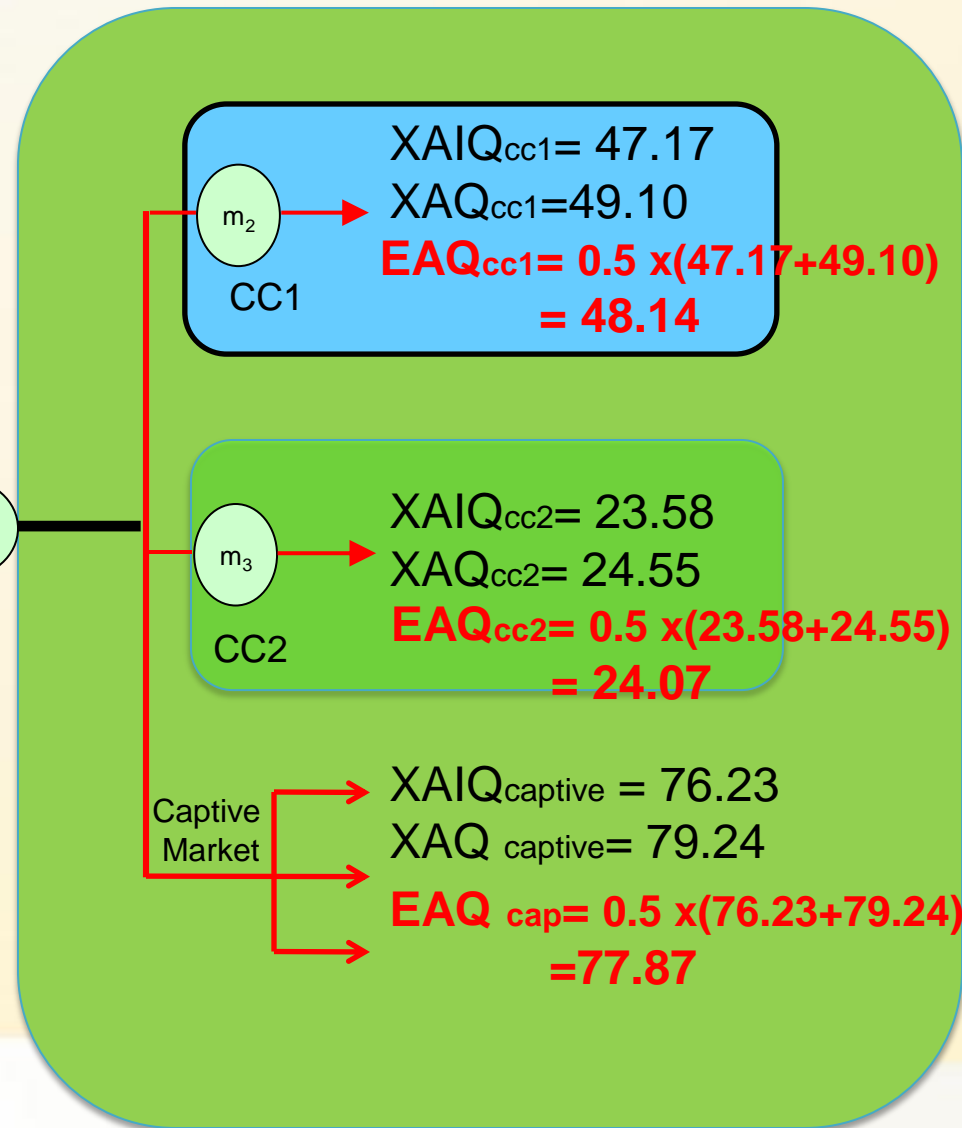
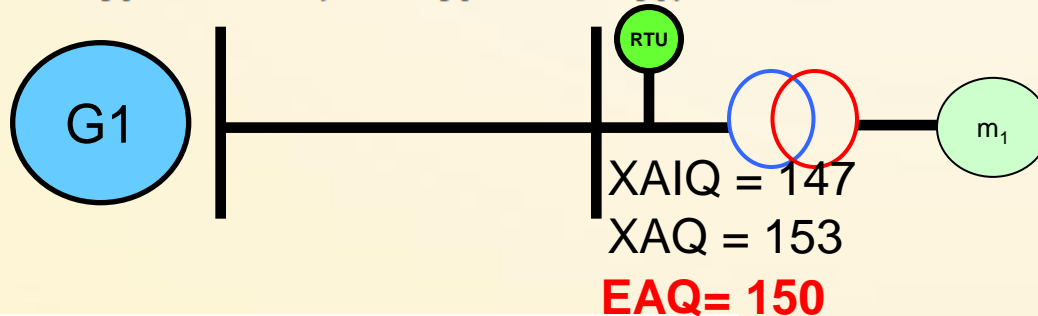
Calculation of EAQ

Determining Nodal Prices

$$XAIQ_{rmi} = \left(\frac{MQ'_{rmi}}{MQ'_{wmj}} \right) \cdot XAIQ_{wmj}$$

$$XAQ_{rmi} = \left(\frac{MQ'_{rmi}}{MQ'_{wmj}} \right) \cdot XAQ_{wmj}$$

$$EAQ_i = 0.5 (XAIQ_i + XAQ_i)$$



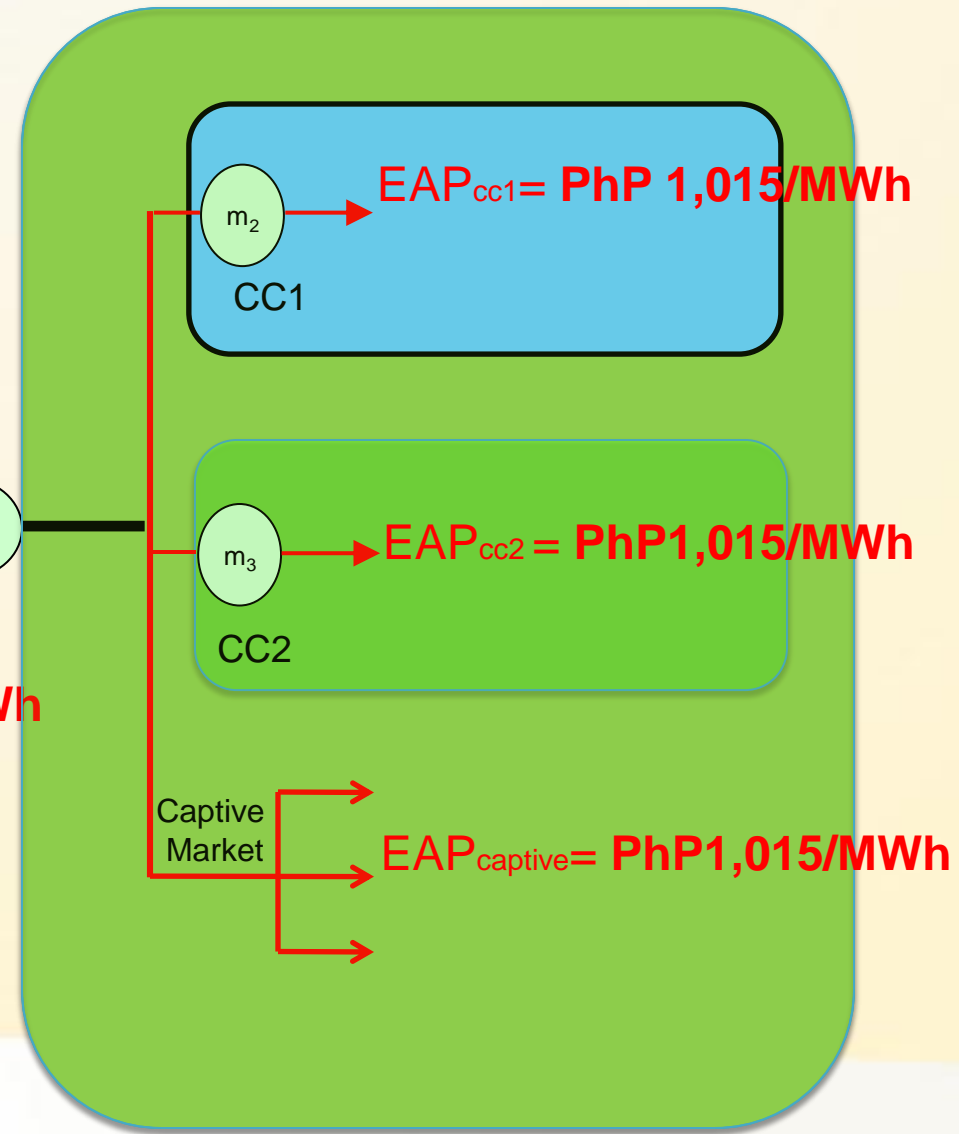
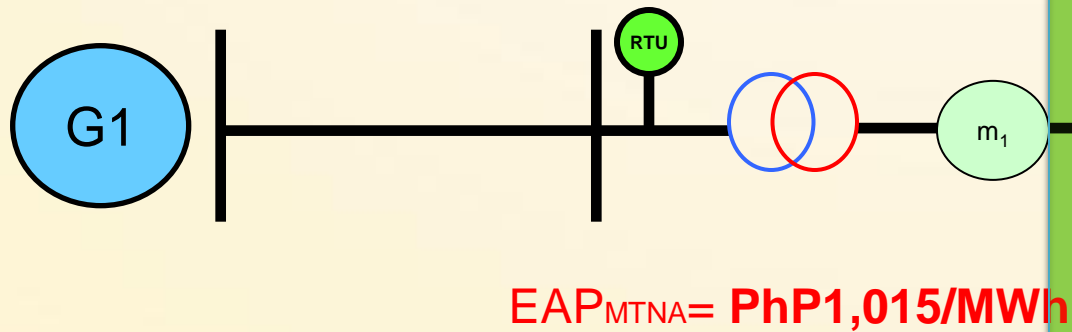
Met. Point	EAQ Formula	EAQ
MTNA	0.5(147+153)	150
CC1	(0.5(47.17+49.10))	48.14
CC2	(0.5(23.58+24.55))	24.07
DU2	(0.5(76.23+79.24))	77.87

Segregation of MQ

Calculation of EAQ

Determining Nodal Prices

$EAP_{G1} = \text{PhP}1,000/\text{MWh}$



Summary of Settlement Quantities

	EAQ	BCQ	EAP	MQ'	EPP
G1	155	137	1,000	151	1,001
CC1	48	45	1,015	48	1,017
CC2	24	22	1,015	24	1,017
Captive	78	70	1,015	78	1,017

Calculation of Trading Amounts

■ Generator:

$$TTA_{G1} = EAP_{G1} \times (EAQ_{G1} - BCQ_{G1-S1}) + EPP_{G1} \times (MQ_{G1} - EAQ_{G1})$$

$$TTA = 1000 \times (154.5 - 137) + 1001 \times (151 - 154.5)$$

$$TTA = 13,996.5$$

■ Load:

$$TTA_{cc1} (\text{PhP}) = EAP_{MTNA} \times (EAQ_{cc1} - BCQ_{S1-G1}) + EPP_{MTNA} \times (MQ_{cc1} - EAQ_{cc1})$$

+ Line Rental

$$TTA_{cc1} = 1015 \times (48.14 - 45) + 1017 \times (47.97 - 48.14) + (1015 - 1000) \times 45$$

$$TTA_{cc1} = -3,694.29$$

❖ Same for CC2 and Captive Market

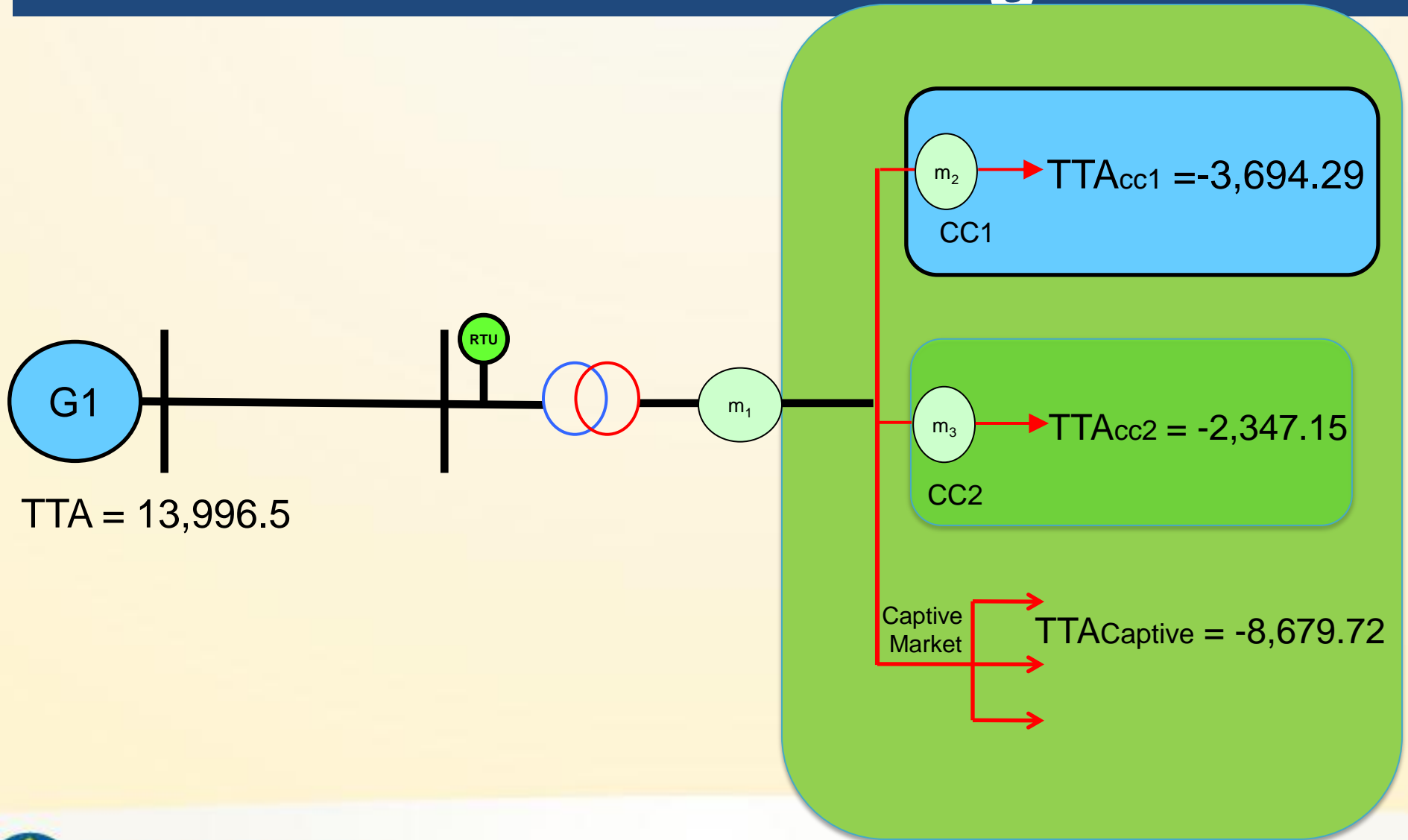
❖ $TTA_{cc2} = -2,347.15$

❖ $TTA_{captive} = -8,679.72$

Total Trading Amount


	EAQ	BCQ	EAP	EAETA	MQ'	EPP	EPETA	TA	Line Rental	TTA
G1	155	137	1,000	17,500	151	1,001	(3,504)	13,997		13,997
CC1	48	45	1,015	3,189	48	1,017	(170)	3,019	675	(3,694)
CC2	24	22	1,015	2,102	24	1,017	(85)	2,017	330	(2,347)
Captive	78	70	1,015	7,904	78	1,017	(274)	7,630	1,050	(8,680)

Total Trading Amount



Sample Bills

WESM Bill



**Wholesale Electricity
Spot Market**

Billed to
 Participant Name = Supplier 1
 Address: Pasig

Statement Date:
 Billing Period

Description	Quantity	Amount
EAETA	48.14	(3189.02)
EPETA	-0.1668	169.729
Line Rental		(675)
Total Amount		(3694.29)

Signatories

Contestable Customer Bill

Suppliers Corp

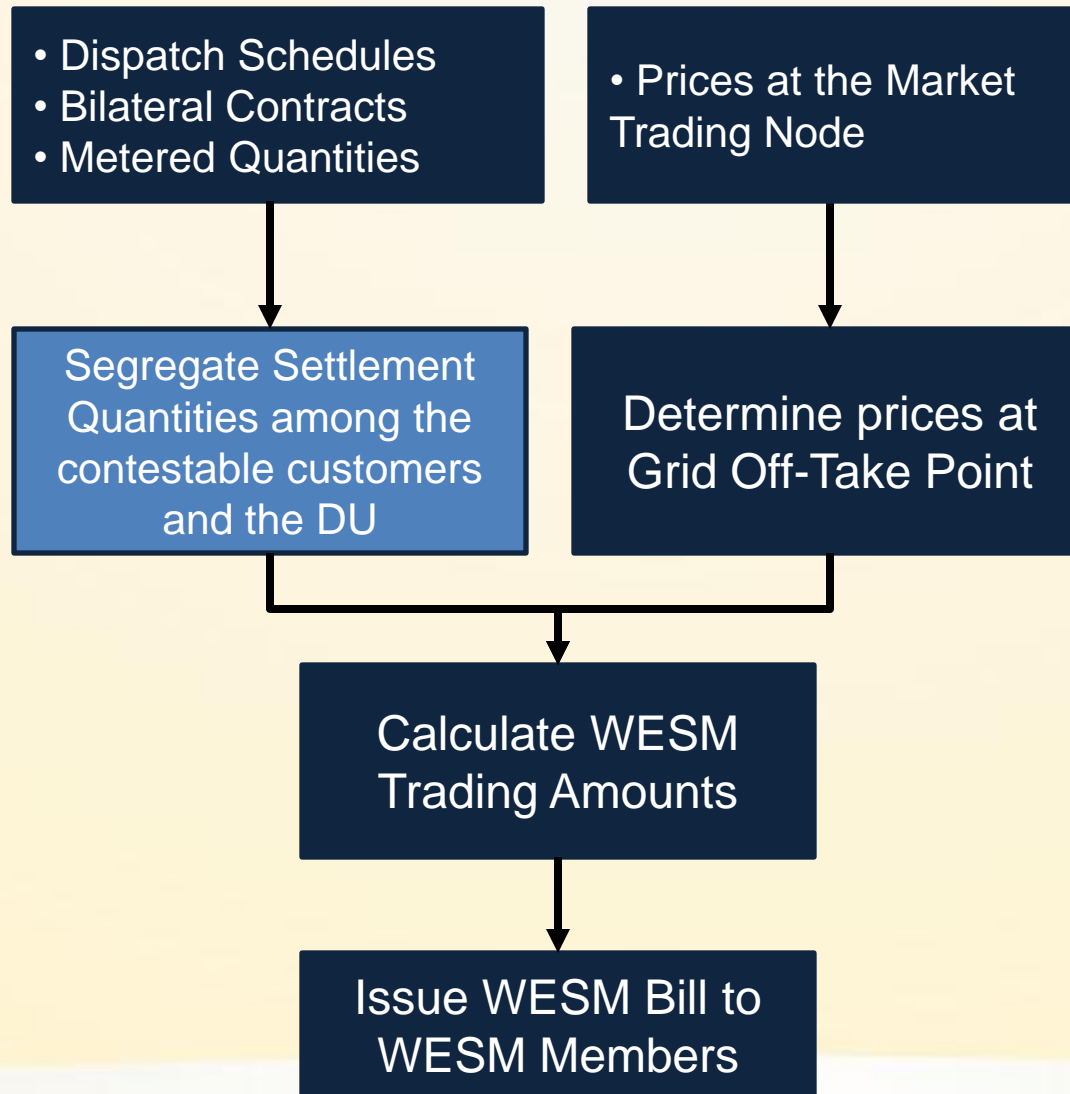
Billed to
 Participant Name = CC 1
 Address: Pasig

Statement Date:
 Billing Period

Component	Qty	Rate	Amount
Generation	48.14	3.57	161,194
Transmission	48.14	0.99	47,520
Distribution	48.14	1.17	56,419
Metering	48.14	0.17	8,315
Admin	48.14	0.27	12,977
Other Chg			28,463
Total			315,068

Signatories

In Summary





**Wholesale Electricity
Spot Market**

Thank You