Interim Mindanao Electricity Market

Philippine Electricity Market Corporation

April 2013

Outline

- Introduction
- Governance and Regulatory Framework
- Registration and Membership
- Market Operations
- Settlement and Metering
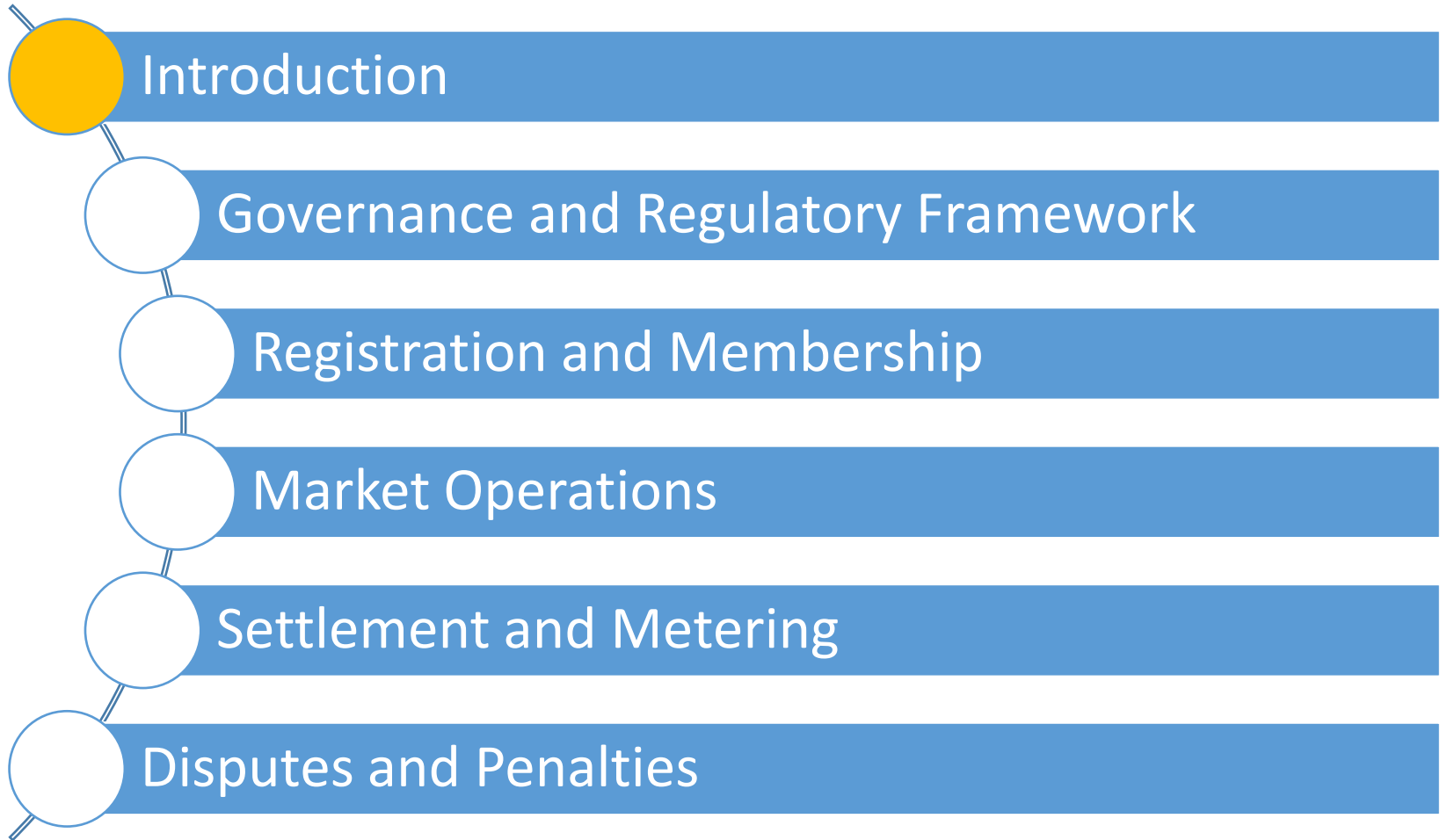- Disputes and Penalties

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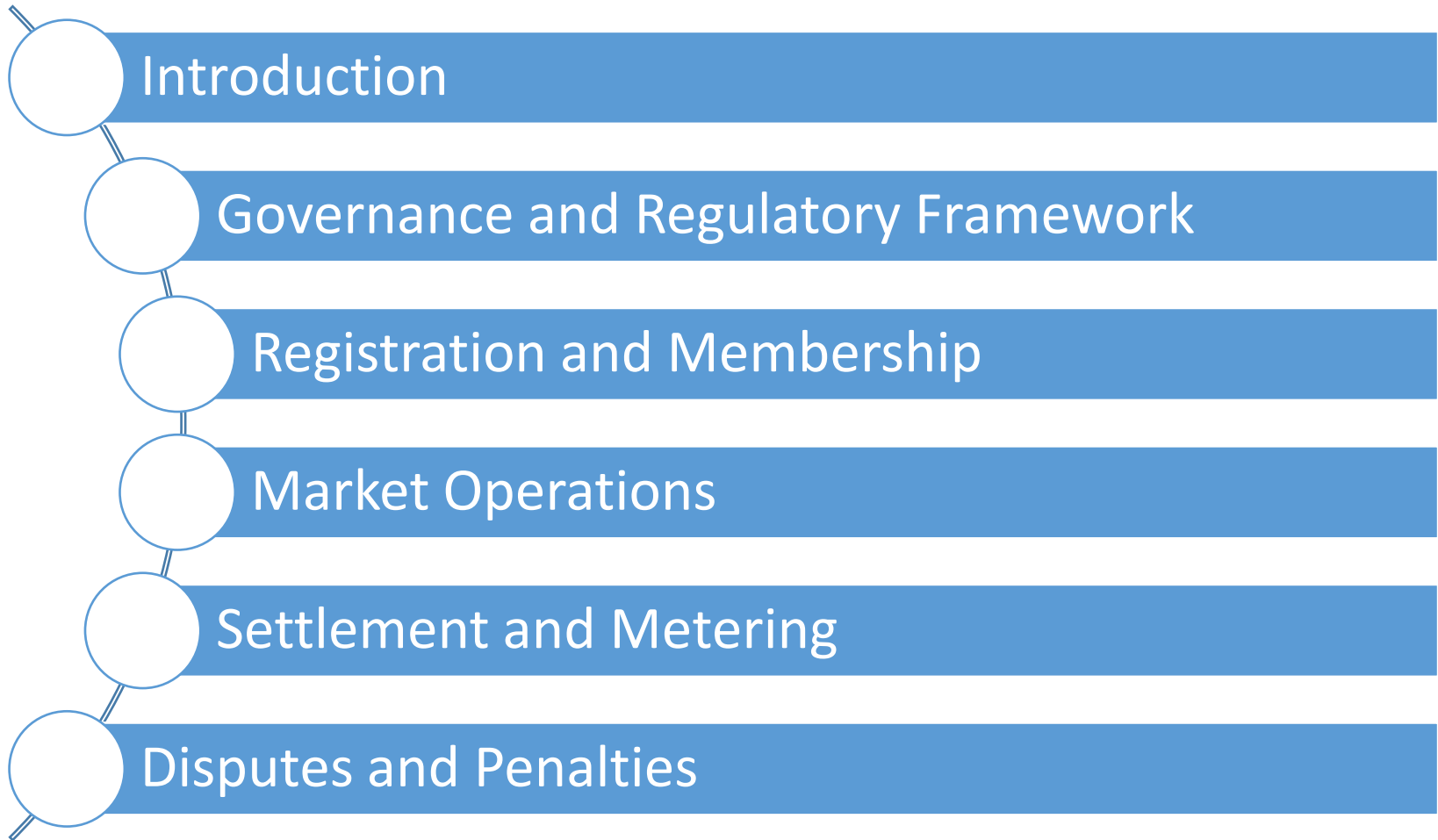
Background

DOE Roadmap for Mindanao

- In line with its roadmap to address the power supply shortage in Mindanao, DOE directed PEMC to study the kind of electricity market that can be established in Mindanao.
- A Mindanao Power Summit was held last April 2012 where Mindanao supply issues were discussed.

Public Consultations

- DOE presented its Roadmap for Mindanao in Cagayan De Oro on 22 October 2012 and in Davao City on 14 November 2012

Background

Department Circular No. DC2013-01-001

- On 9 January 2013 DOE issued DC2013-01-001 entitled "Directing the Philippine Electricity Market Corporation to Develop and Implement an Interim Mindanao Electricity Market (IMEM) as a Measure to Immediately Address the Power Supply Situation in Mindanao".
- DC2013-01-001 provided for the salient features of the IMEM

Inter-agency Coordination Meetings

- Meetings were held with NPC, PSALM, NEA, GMC, Transco, NGCP and other stakeholders
- Based on the inputs from various agencies, PEMC submitted the draft IMEM rules to the DOE on 25 March 2013

Features of Electricity

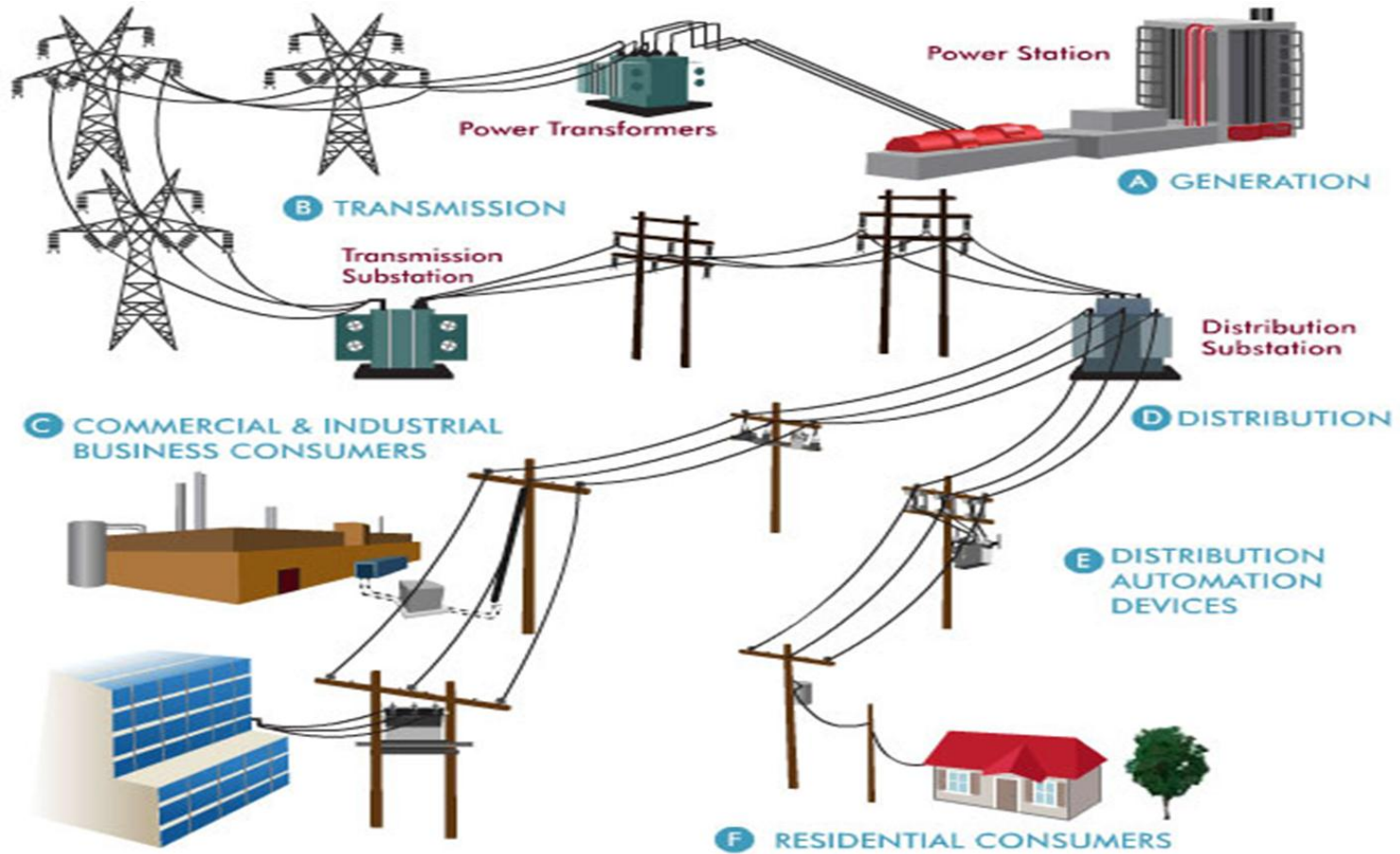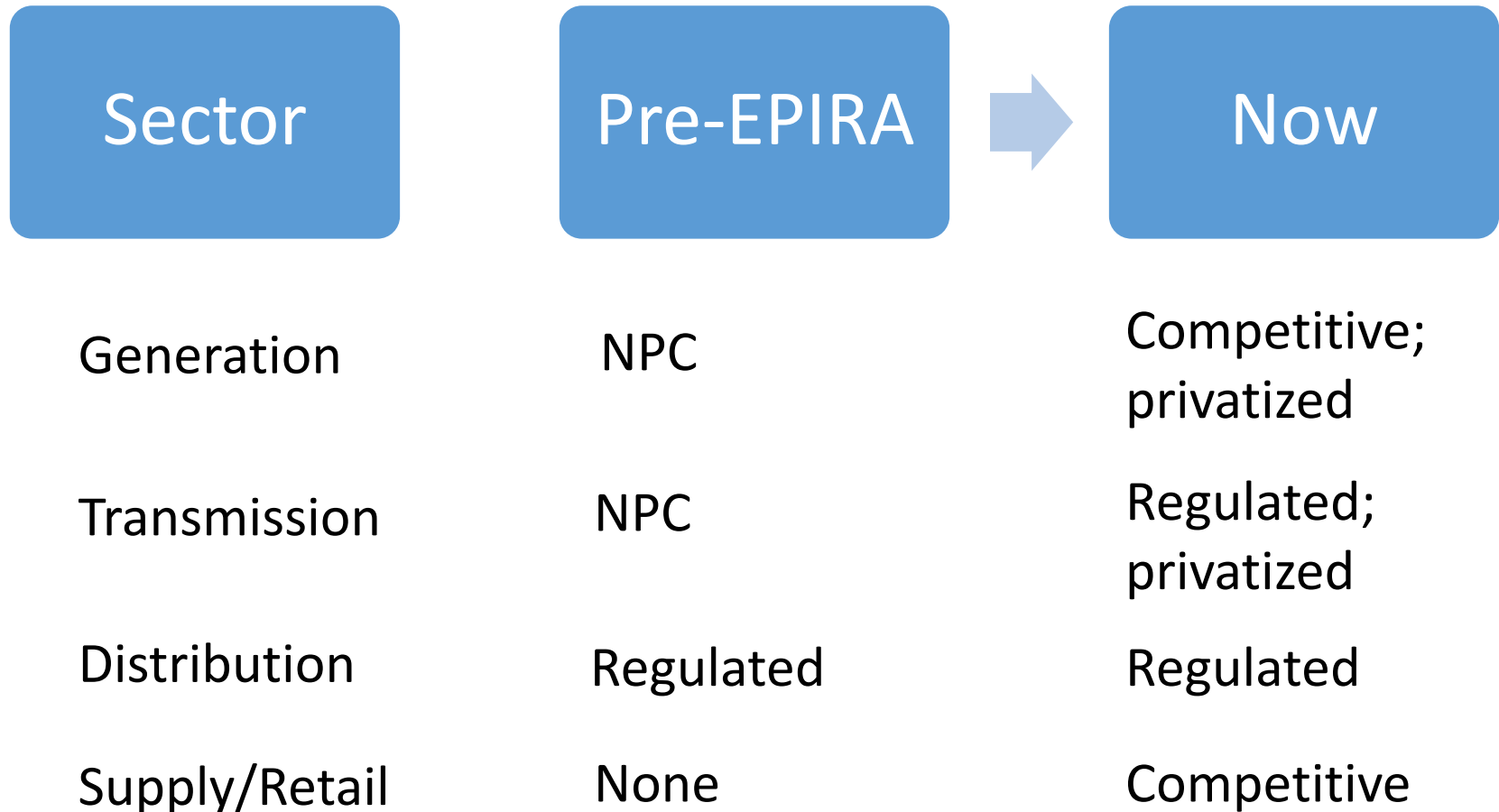|	
Electricity cannot be economically stored in large quantities.	• All electricity has to be generated when needed. • Demand for electricity over the day is highly variable.
Physical flow of electricity cannot be traced.	• It is not physically possible to determine or even direct where the electricity generated by one power plant goes.
Transmission of power over the network is subject to a complex series of physical interactions.	• What happens in one part of the system affects conditions elsewhere in the system. Ancillary services are necessary to ensure system reliability and security.
Electricity travels at the speed of light.	• Each second, output has to be precisely matched to use. Electricity being generated at any given time equals actual demand and transmission losses.

Sally Hunt: Making Competition Work in Electricity (2002)

Power System

Industry Structure

| Sector	Pre-EPIRA	Now
Generation	NPC	Competitive; privatized
Transmission	NPC	Regulated; privatized
Distribution	Regulated	Regulated
Supply/Retail	None	Competitive

Mindanao Problem

Generation Capacity

- Insufficient generation and reserve capacity during peak demand periods
- Aging and unreliable power plants
- No incentive for embedded generation facilities and voluntary load participants
- Government is not allowed to enter into new power supply obligation under EPIRA
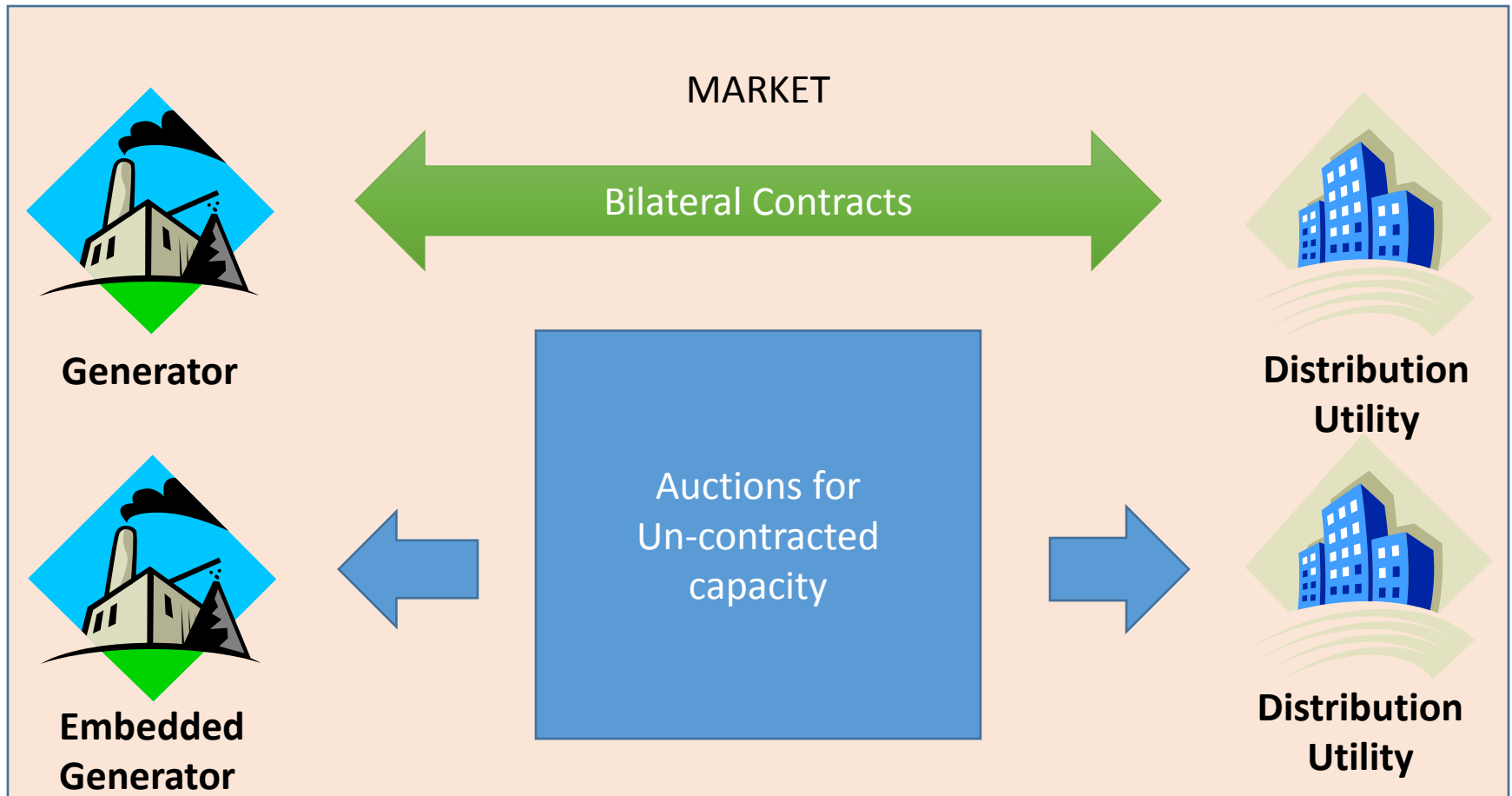
Objective

Transparent and efficient utilization of available resources

Deficiency
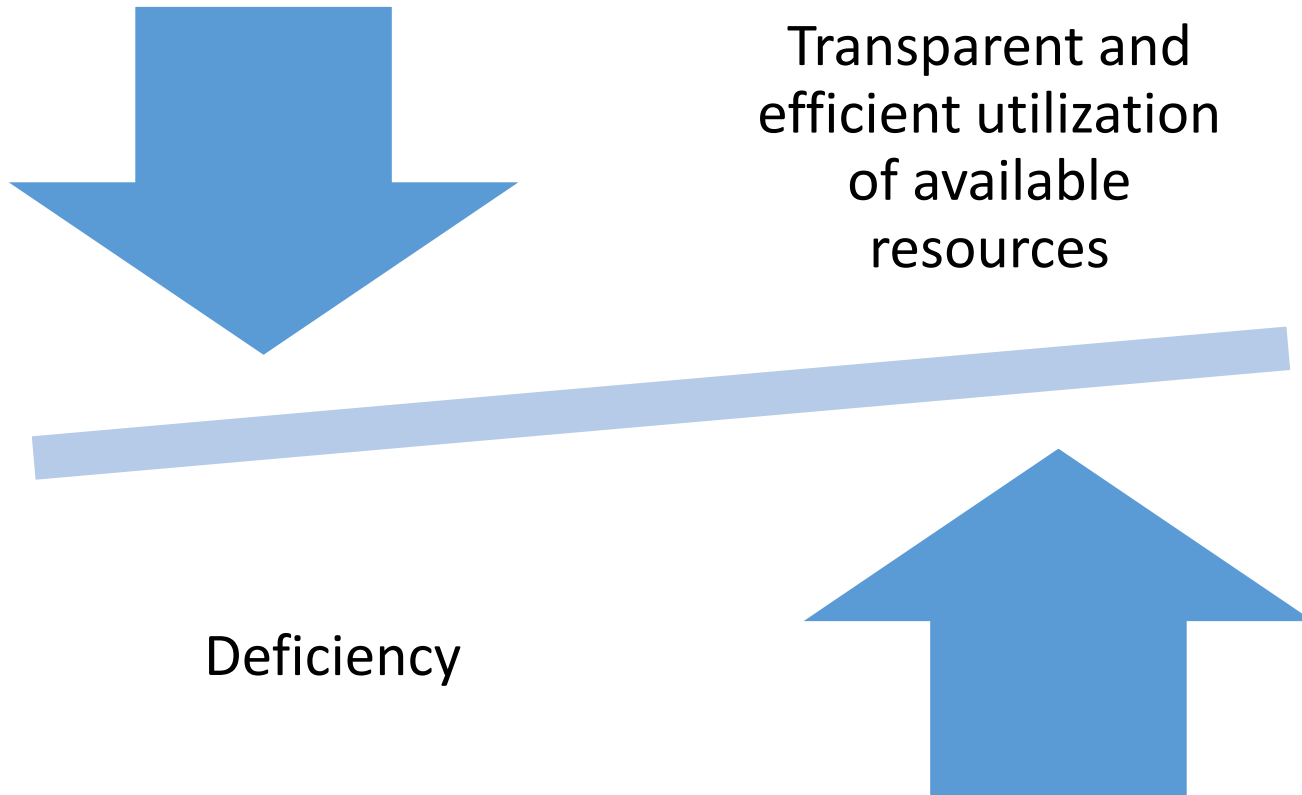
Potential Additional Supply

Distribution Utility	Facility	2012 Dependable Capacity (MW)	Fuel Type
CEPALCO	MINERGY 1 &2	45	Diesel
	FGBPC	1.6	Hydro
	BUBUNAWAN	0 (4.9)	Hydro
	SOLAR PV	1	Solar
	CABULIG	8	Hydro
DLPC	SIBULAN	36	Hydro
	TALOMO	4.5	Hydro
	BAJADA DPP	48	Diesel
CLPC	COTABATO LIGHT	9.9	Diesel
FIBECO	Crystal Sugar	7	Biomass
	Total Embedded	161	
Various	Self-Gen. within DU (> 1 MW)	103.42	ILD
	TOTAL	264.42	

It is projected that about 150 MW of the above capacities will be traded in the IMEM.

How do we tap these potential resources?

MARKET

Bilateral Contracts

Generator

Auctions for Un-contracted capacity

Distribution Utility

Embedded Generator

Distribution Utility

Interim Mindanao Electricity Market

Principles

Day-Ahead Market

- Trade quantities in excess of Contracts
- Energy only, no ancillary services

Real time adjustment

- Dispatch variations are based on a merit order table

Market Price with Offer Cap

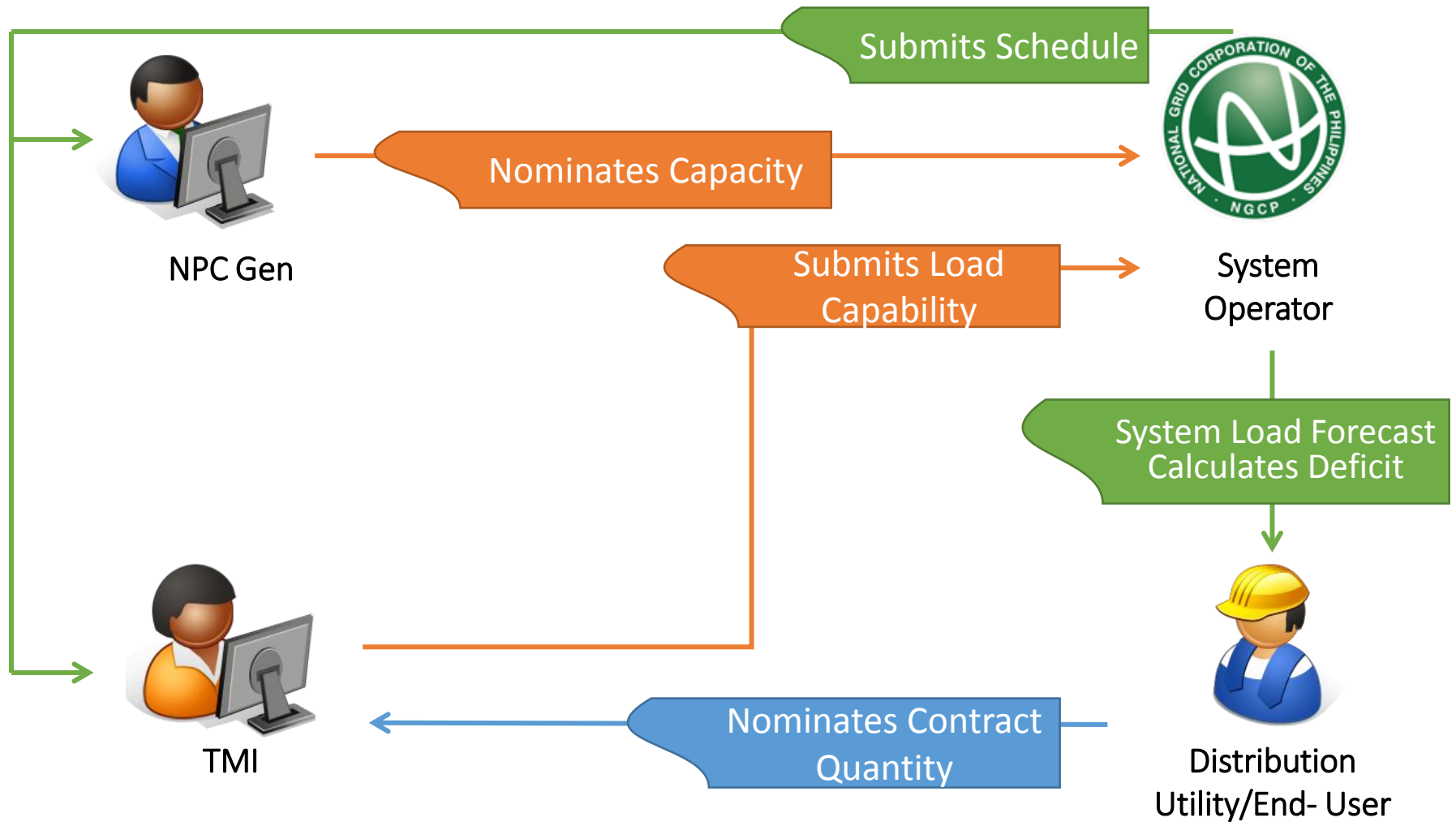- Single price market
- Offer cap

Principles

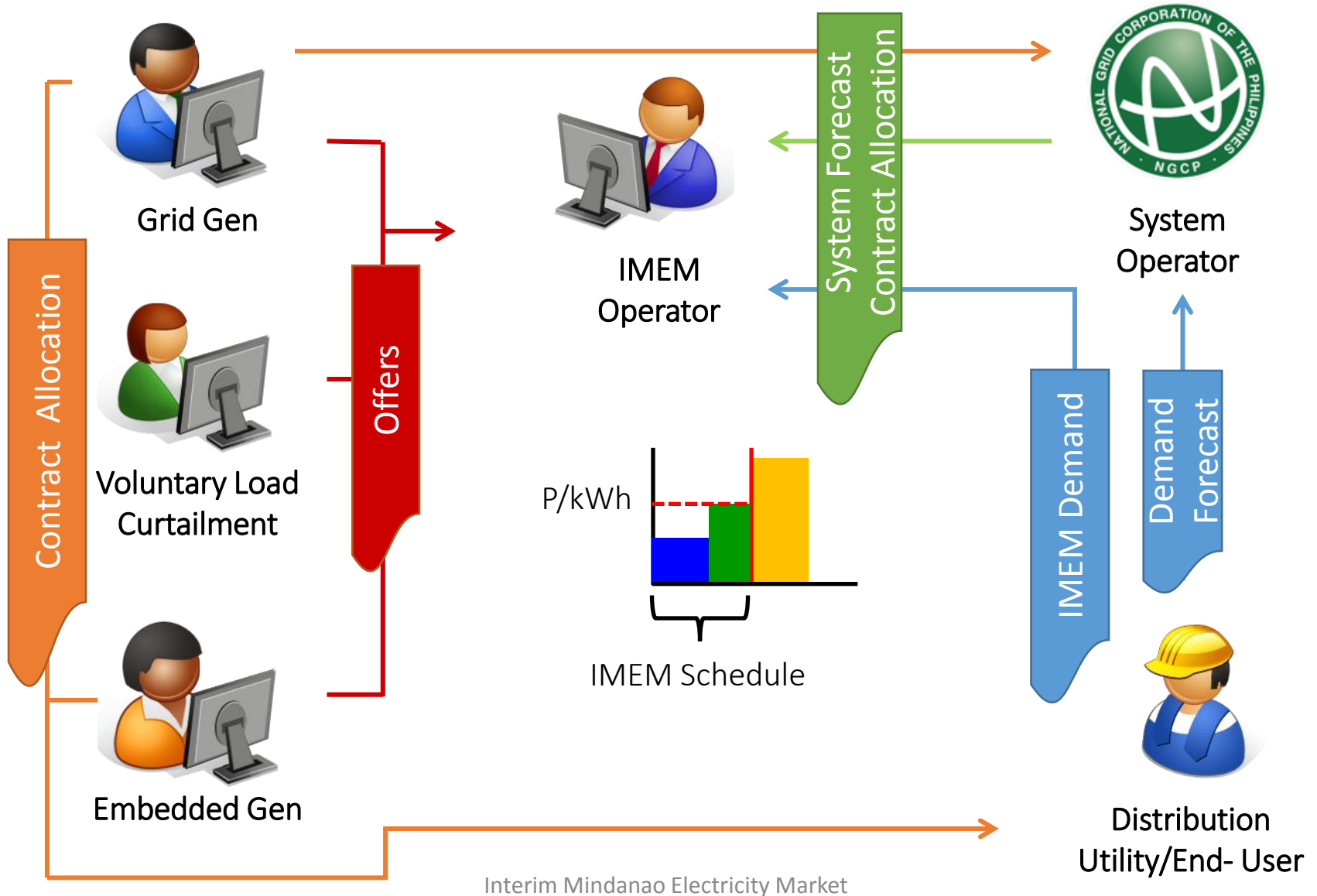## Additional Participants

- Voluntary Load Curtailment
- Embedded Generation

Centralized Scheduling

- Contract Quantities
- Market Quantities

Current Process

Submits Schedule

NPC Gen

Nominates Capacity

System Operator

Submits Load Capability

System Load Forecast Calculates Deficit

TMI

Nominates Contract Quantity

Distribution Utility/End- User

Market Design Overview

Grid Gen

Voluntary Load Curtailment

Embedded Gen

Contract Allocation

Offers

IMEM Operator

System Forecast Contract Allocation

P/kWh

IMEM Schedule

IMEM Demand

Demand Forecast

System Operator

Distribution Utility/End-User

Interim Mindanao Electricity Market

Market

Transparent and efficient utilization of available resources

Deficiency

Outline

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- Governance and Regulatory Framework
- Registration and Membership
- Market Operations
- Settlement and Metering
- Disputes and Penalties

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- **Governance and Regulatory Framework**
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Governance and Regulatory Framework

IMEM

Policy
- DOE promulgates IMEM rules and manuals

Regulation
- ERC approves the price determination methodology and cost recovery mechanism
- ERC monitors market and penalizes anti-competitive behavior

Self Governance
- IMEM Governance Committee monitors market
- Enforcement and Compliance Officer investigates breaches

Interim Mindanao Electricity Market

Governance and Regulatory Framework

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Interim Mindanao Electricity Market
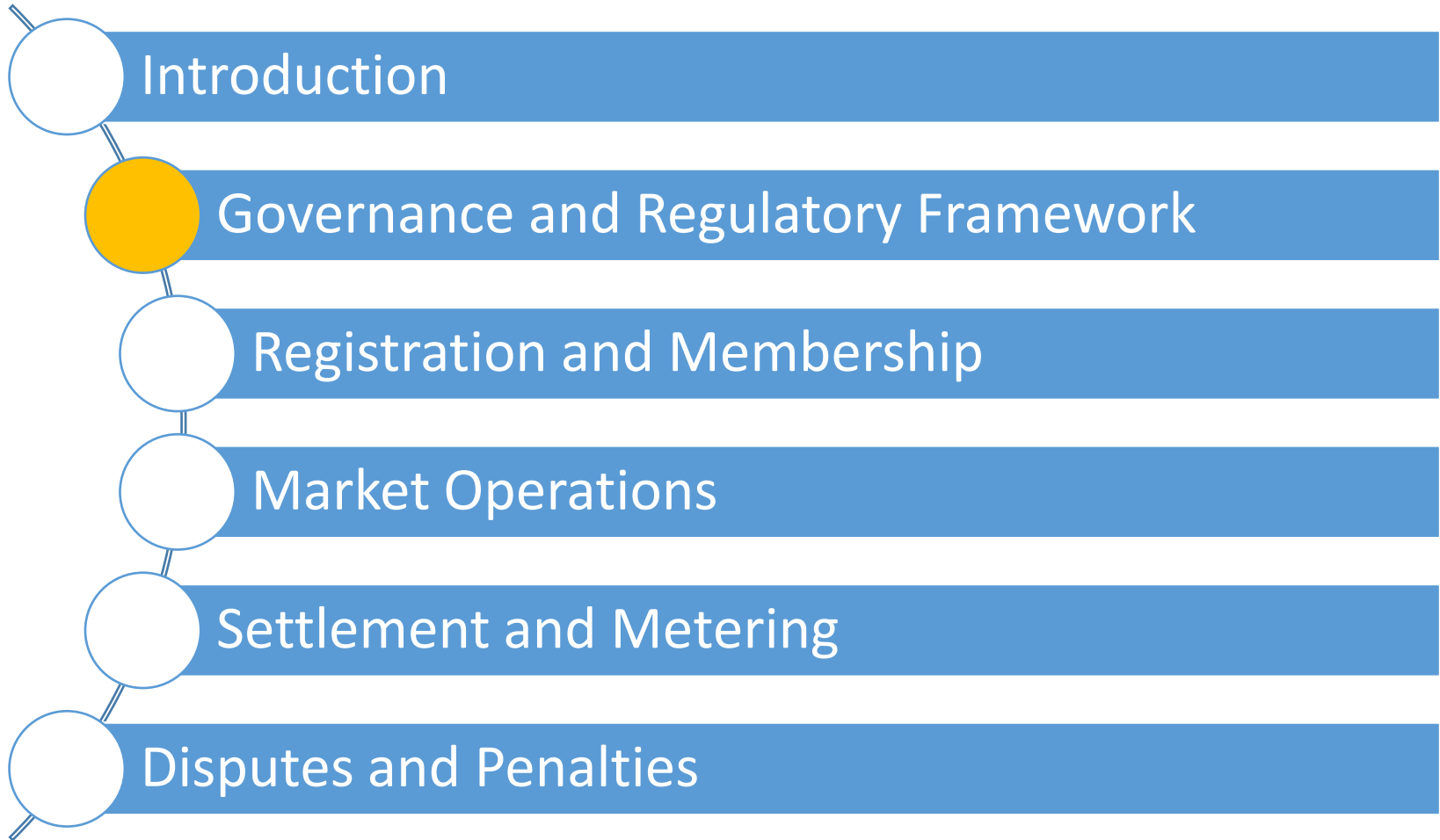
Market Governance

IMEM Governance Committee

- Composed of independent members of the Philippine Electric Industry, the IMEM Operator and the DOE
- Members are appointed by the DOE
- Responsible for monitoring the activities of the IMEM
- Refers suspected incidences of breaches of the IMEM Rules to the Enforcement and Compliance Officer
- Imposes financial and/or non-financial penalties for breaches of the IMEM Rules
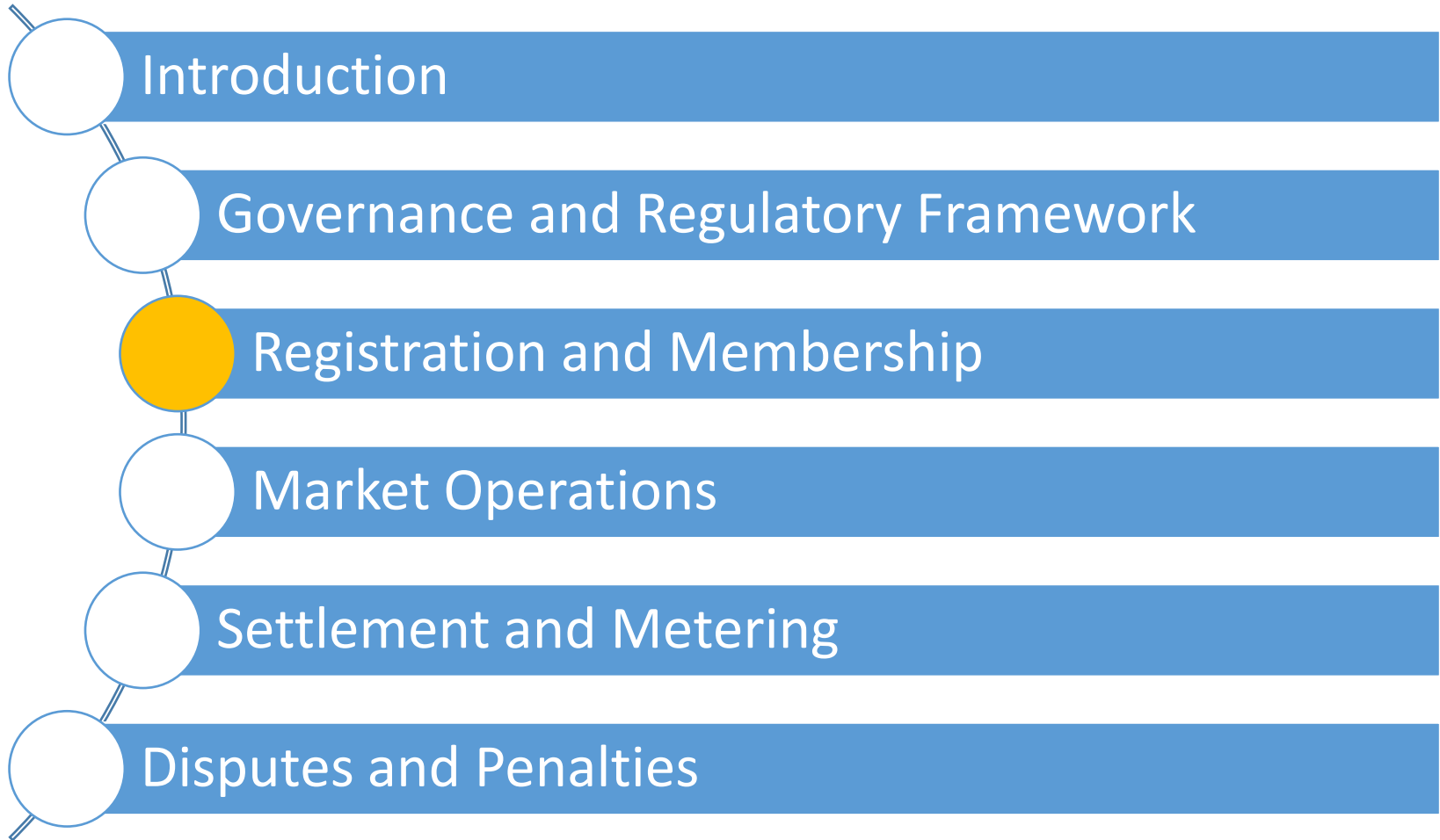
Enforcement and Compliance Officer

- Investigates breaches of the IMEM Rules

Outline

Introduction

Governance and Regulatory Framework

Registration and Membership

Market Operations

Settlement and Metering

Disputes and Penalties

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Governance and Regulatory Framework

Registration and Membership

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Disputes and Penalties

Registration and Membership Overview

Who will be the participants in the IMEM?

What roles will entities perform in the IMEM?

Categories of Membership

IMEM Resources
- Grid and Embedded Generators
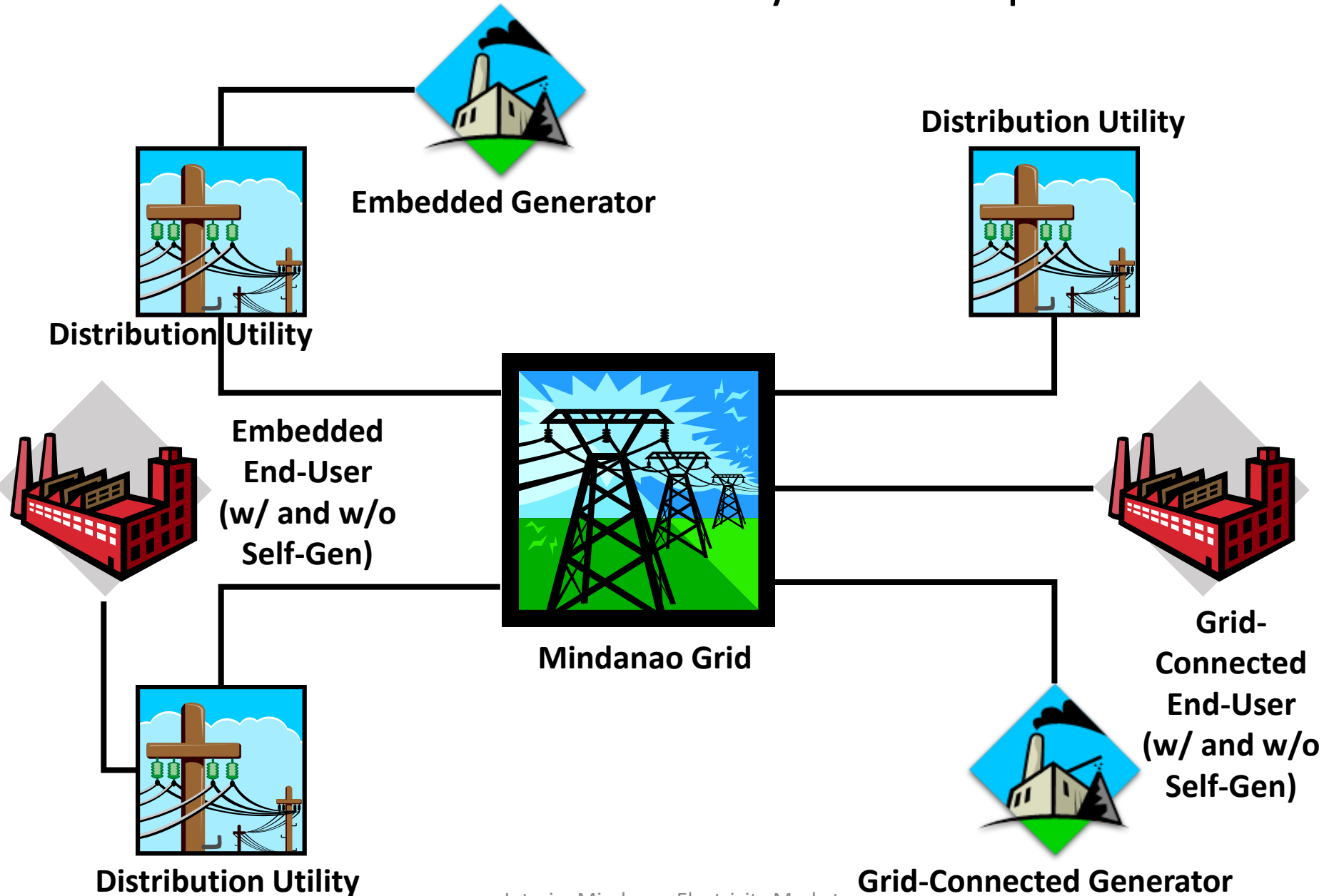- Grid and Embedded Load Curtailment Resources

IMEM Customers
- Distribution Utilities
- Grid-Connected End Users

IMEM Service Providers
- Mindanao System Operator
- Network Service Providers
- Metering Services Providers

Electric Power Industry Participants

Embedded Generator

Distribution Utility

Distribution Utility

Distribution Utility

Embedded End-User (w/ and w/o Self-Gen)

Mindanao Grid

Grid-Connected End-User (w/ and w/o Self-Gen)

Grid-Connected Generator

Registration

Entity	IMEM Resource	IMEM Customer	IMEM MSP	IMEM NSP
Generator (Grid-Connected)	M	--	--	--
Generator (Embedded)	M	--	--	--
End-User (Grid-Connected)	V	M	--	--
End-User (Embedded)	V	--	--	--
Distribution Utility	--	M	E	E
Grid MSP	--	--	M	--
Grid NSP	--	--	--	M

Legend: M – Mandatory   V – Voluntary
E – Mandatory if entity has an embedded facility registered in the IMEM
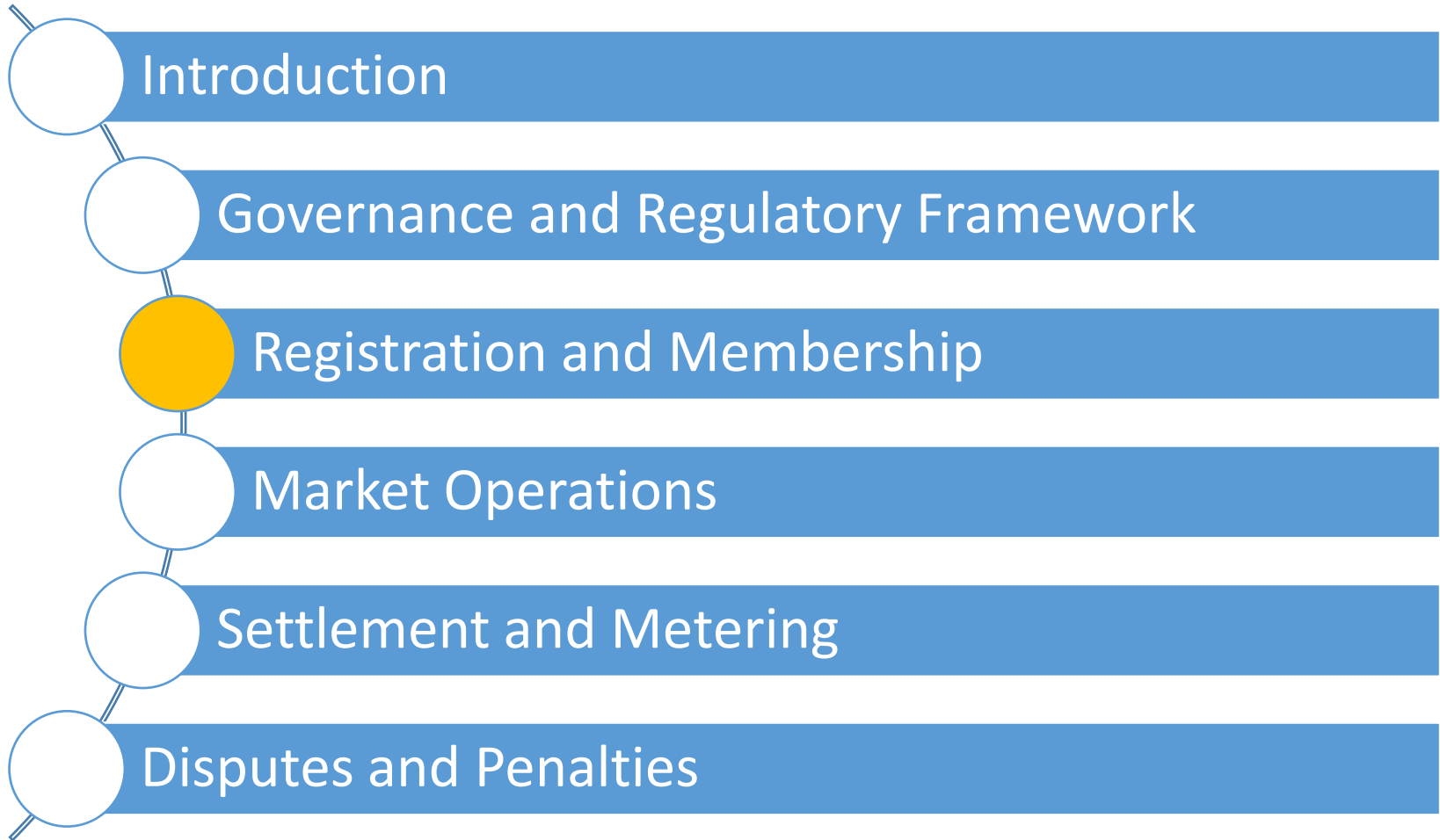
Qualifications

Grid and Embedded Generators

- Rated capacity of at least 1MW
- Capable of synchronous operation
- Can be classified as either dispatchable or non-dispatchable
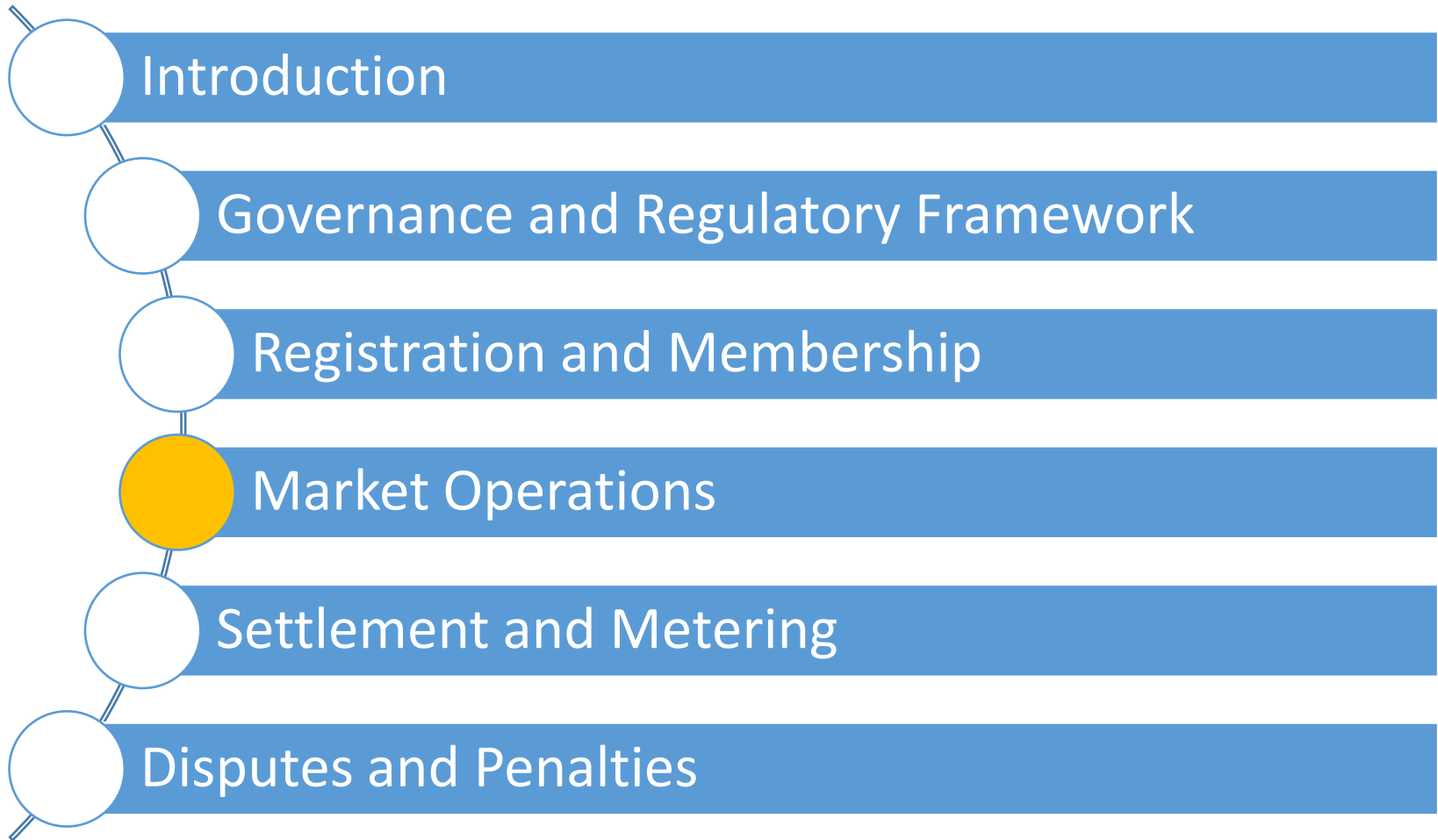
Voluntary Load Curtailment

- Daily average peak demand for the last 12 months of at least 1 MW
- Capable of curtailing its demand within 30 minutes from receipt of dispatch instructions

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Settlement and Metering

Disputes and Penalties

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Governance and Regulatory Framework

Registration and Membership

Market Operations

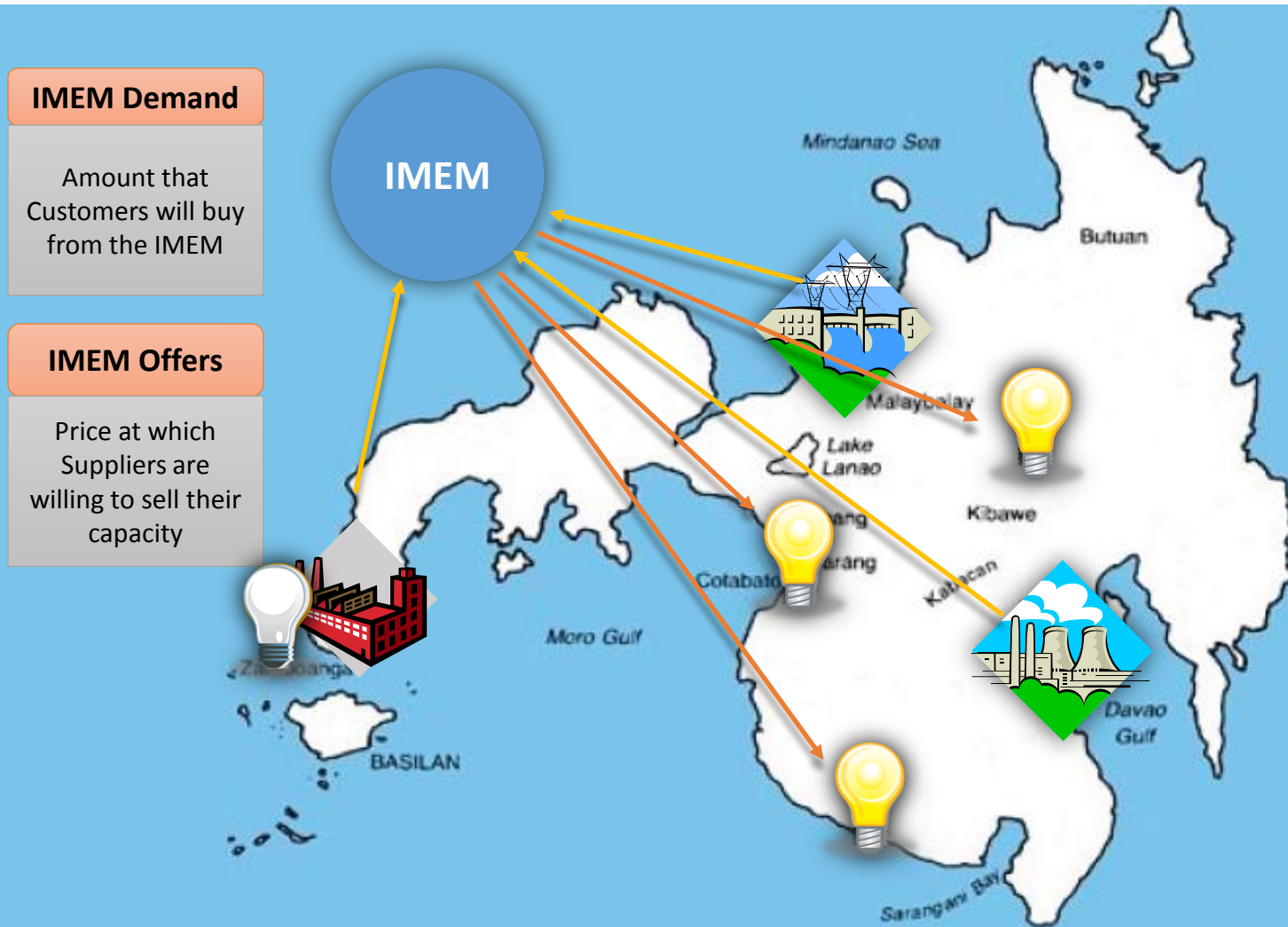Settlement and Metering

Disputes and Penalties

Market Operations Overview

How will the IMEM allow the utilization of all capacities during hours with deficiency?
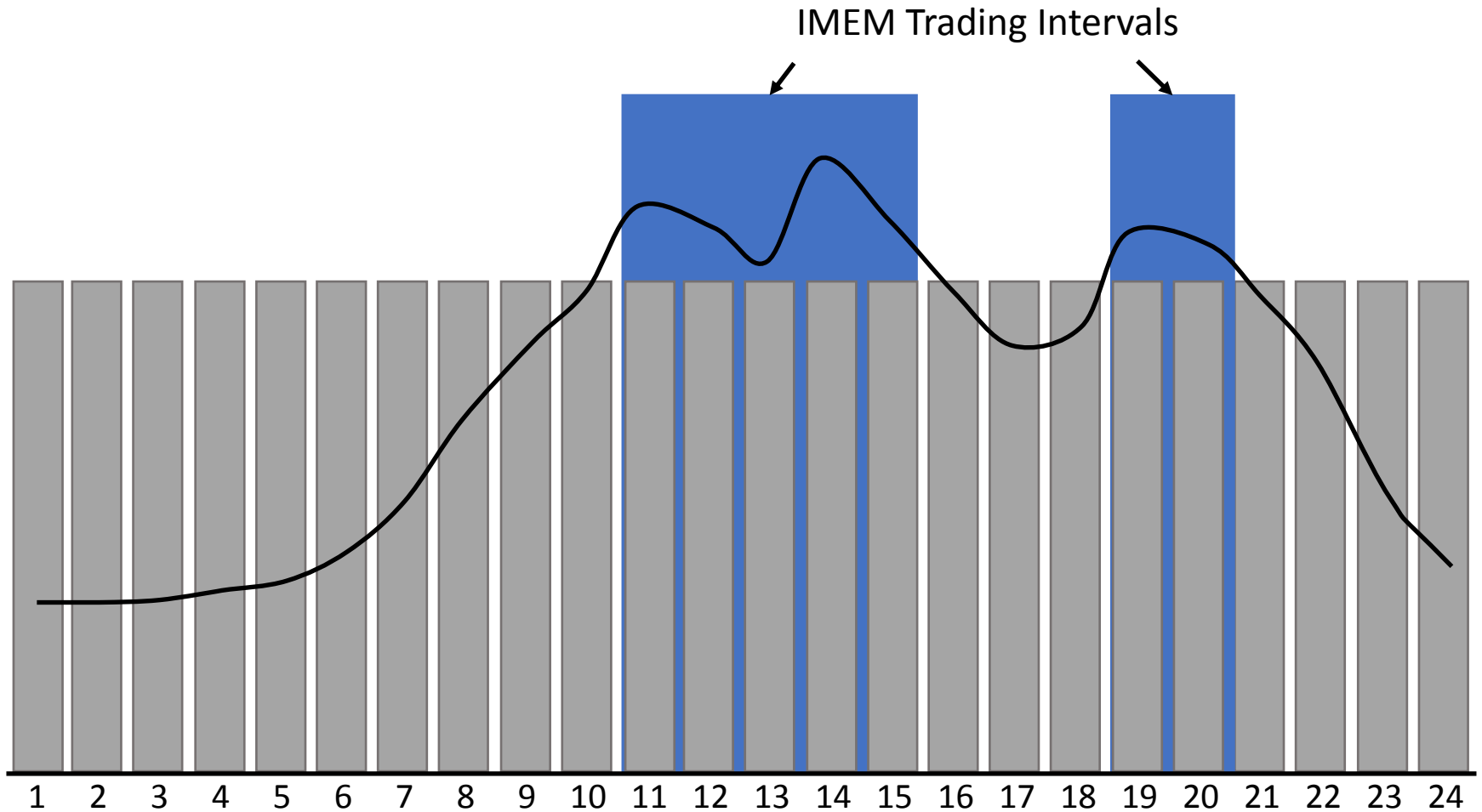
How will the price be determined in the IMEM?

How will Generators and Load Curtailment Resources be dispatched with the IMEM?

How will the IMEM allow the utilization of all capacities during hours with deficiency?

IMEM Demand

Amount that Customers will buy from the IMEM

IMEM Offers

Price at which Suppliers are willing to sell their capacity

If there is no deficiency in the Grid then the IMEM will not perform transactions.

IMEM Trading Intervals

IMEM Trading Intervals

Legend: Contracted Capacity

— System Load Demand

Interim Mindanao Electricity Market

How will the price be determined in the IMEM?

Load Curtailment Resource
10 MW @ Php 10,000/MWh

Embedded ROR Hydro
5 MW @ Php 3,000/MWh

Embedded Diesel Plant
15 MW @ Php 8,000/MWh

Economic Dispatch

Scheduled for tomorrow

IMEM Day-Ahead Price

PhP/MWh

5 MW

15 MW

10 MW

MW   IMEM Demand

Total IMEM Demand:10 MW

EC 1
Expected Demand: 40 MW
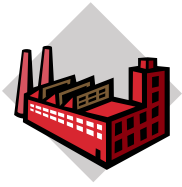Contracted Capacity: 40 MW
Buying from the IMEM: 0 MW

EC 2
Expected Demand: 20 MW
Contracted Capacity: 10 MW
Buying from the IMEM: 10 MW

EC 3
Expected Demand: 10 MW
Contracted Capacity: 8 MW
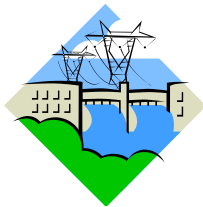Buying from the IMEM: 0 MW

Centralized Schedule for the Mindanao Grid

Contracted Capacities

IMEM-Scheduled Targets

Day-Ahead Schedule

IMEM Process

Offers

Demand

IMEM

Price

Schedule

Merit Order
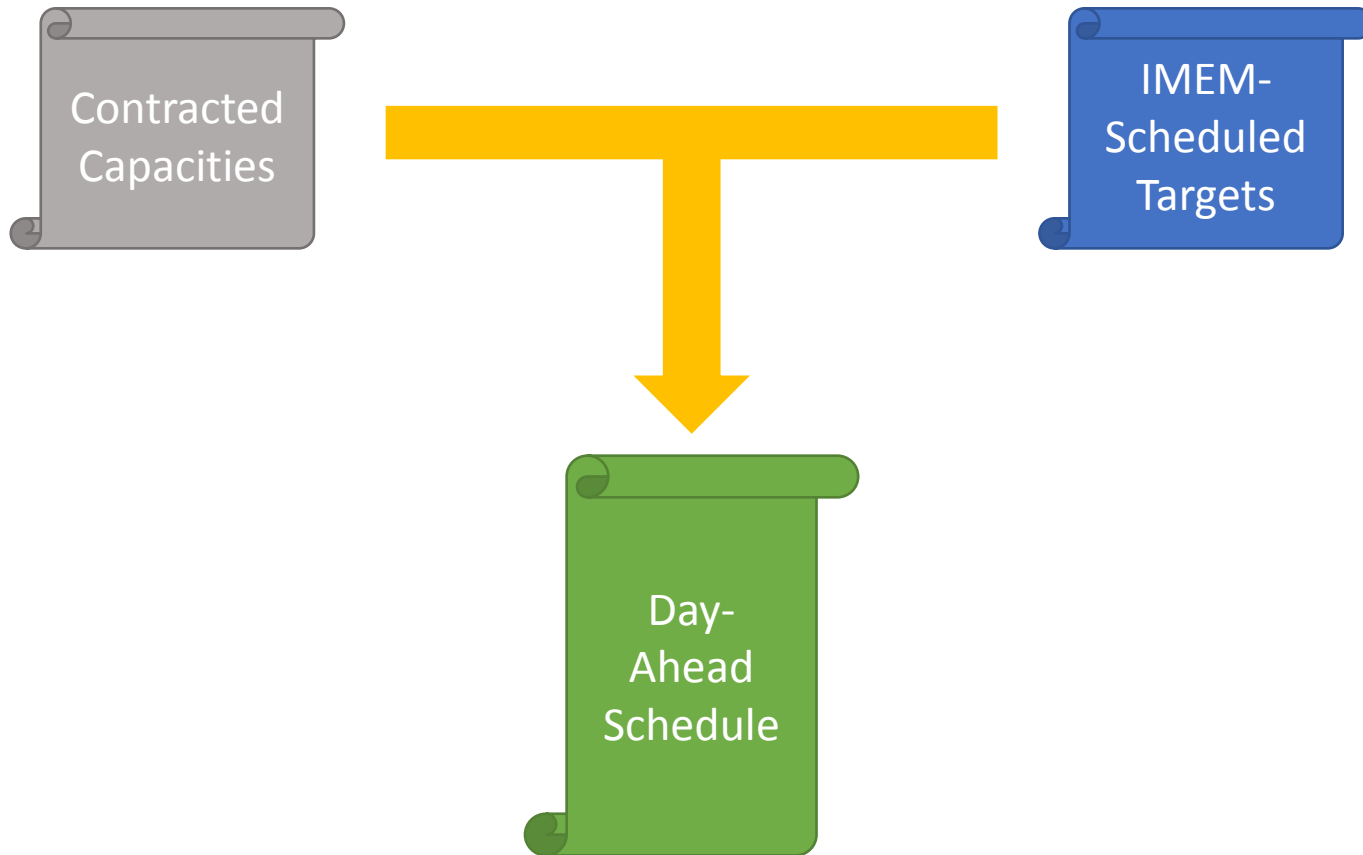
What is the current day-ahead scheduling process for Mindanao?

NPC Resources

1200H: Submit Day-Ahead Plant Available Capacity Nomination (DAPCN)

1600H: Prepare the Mindanao Power Outlook inc. APC TMI nomination

1700H: Prepare the Mindanao Hourly Day-Ahead Generator Schedule

APC-TMI

1500H: Submit the Day-Ahead Load capability and consolidated Day-Ahead Bilateral Contract Quantities

System Operator

1100H: Prepare the hourly Day-Ahead Load Projection (DASLP)

1400H: Nominate needed Day-Ahead Bilateral Quantity

1300H: Submit NPC resources capacity allocation with excess or shortfall

1300H: Allocate the DAPACN of NPC Resources to the DASLP

Distribution Utilities

How is the current scheduling process different from the IMEM?

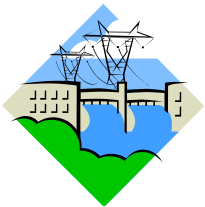| Sub-Process	Current Protocol	IMEM Protocol
Demand Forecasting	MSO prepares the day-ahead demand forecast based on historical data	DUs submit the day ahead demand forecast to MSO to determine the Mindanao day-ahead demand forecast
NPC Capacity Nomination and Allocation	Resources submit to MSO their contract allocations for finalization through SCD	Resources submit to MSO their contract allocations for finalization through SCD
Deficiency/ surplus Determination	MSO determines deficiency/ surplus of DUs	SO determines deficiency/ surplus of DUs
Nominations for additional supply	DUs nominate to APC-TMI for additional supply if contract exists	DUs submit their day-ahead additional supply need to the IMEM Operator
Price Determination for additional supply	Based on PSA	Based on day-ahead deficiency and supply offers

Interim Mindanao Electricity Market

How will the IMEM obtain the information required to prepare the Day-Ahead Schedule?

1100H: Submit Hourly Contract Allocations per Customer

1500H: Gate closure for Day-Ahead IMEM Offers

IMEM Resources

1000H: Submit the ff:
1. Hourly System Demand Forecast
2. Power System Info Report

1200H: Submit Hourly Security-Constrained Contract Allocations

System Operator

1130H: Perform Hourly SCD using the ff:
1. Contract Allocations
2. System Demand Forecast
3. Power System Info Report

IMEM Operator

1000H: Publish Hourly System Demand Forecast and System Info Reports

1330H: Publish Hourly IMEM Demand

1600H: Publish Hourly IMEM Price and Schedule

1600H: Transmit Hourly Day-Ahead Schedule

1600H: Transmit Hourly DA Schedule of Embedded Facilities

1600H: Transmit Overall Hourly DA Schedule and Merit Order Table

Distribution Utilities

1300H: Submit Hourly Customer IMEM Demand

0900H: Submit Hourly Demand Forecast and Distribution Network Information Report

1200H: Submit Hourly Security-Constrained Contract Allocations
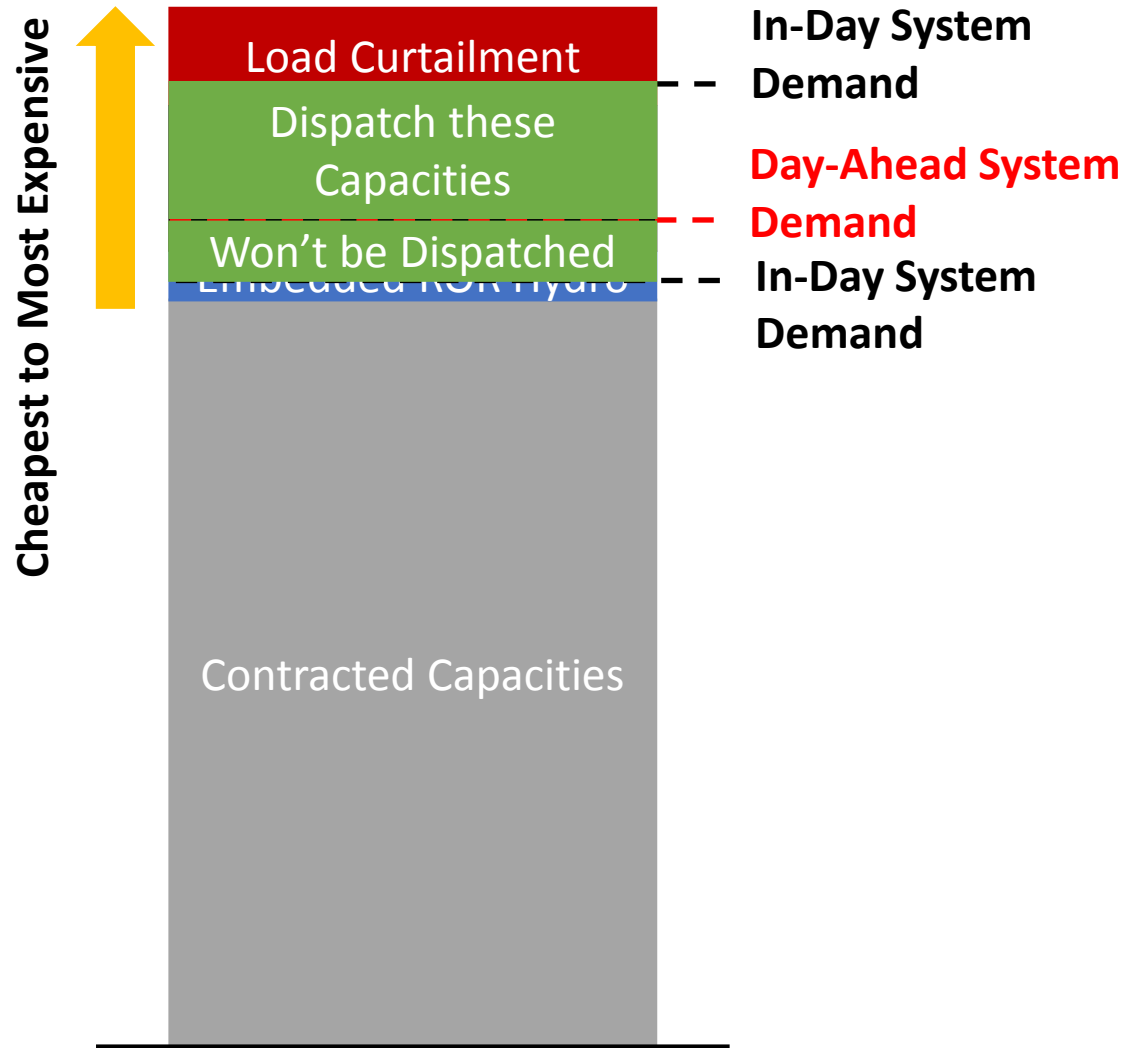
Merit Order Table for Real-Time Balancing

Load Curtailment Resource
10 MW @ Php 10,000/MWh

Embedded ROR Hydro
5 MW @ Php 3,000/MWh

Embedded Diesel Plant
15 MW @ Php 8,000/MWh

Cheapest to Most Expensive

Load Curtailment

Dispatch these Capacities

Won't be Dispatched

Embedded ROR Hydro

Contracted Capacities

In-Day System Demand

Day-Ahead System Demand

In-Day System Demand
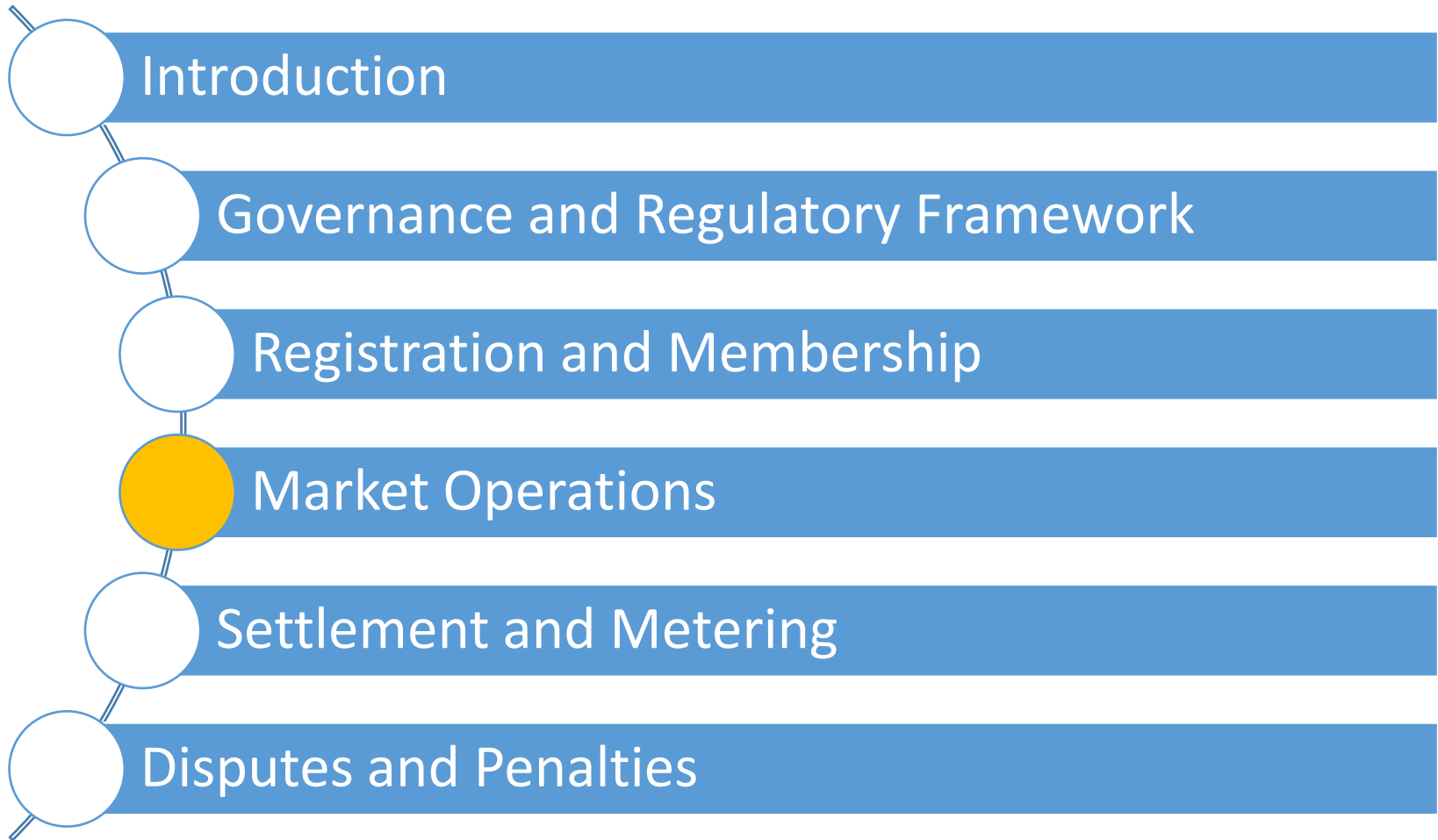
Interim Mindanao Electricity Market

Market Operations Recap

In the IMEM, untapped available resources will be centrally scheduled to meet the supply shortfall providing market-driven compensation for the scheduled capacities.
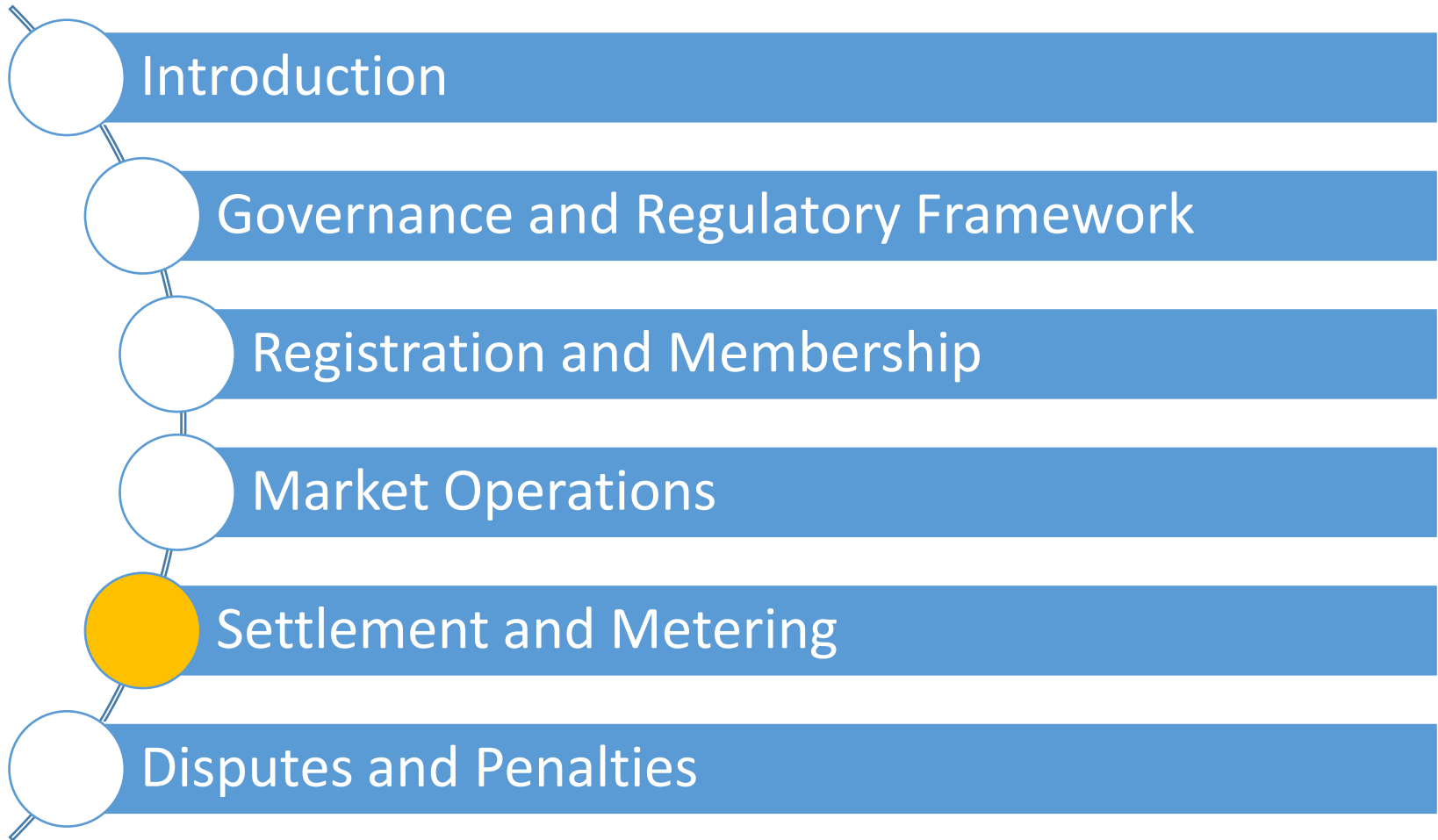
Pricing in the IMEM will be governed by market forces based on the available supply and submitted demand of DUs that is net of contracts.

The Generators and Load Curtailment Resources will be dispatched based on the merit order table determined day-ahead with premium provisions for In-Day Dispatch Service and dispatch variations.

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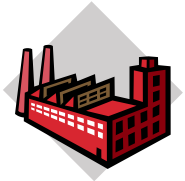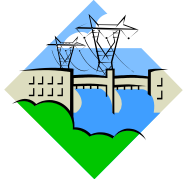Disputes and Penalties

Settlement Overview

How will IMEM Resources be paid?

How will payments to IMEM Resources be recovered from the IMEM Customers?

What are the relevant dates in the billing and settlement process?

Settlement Overview

IMEM Resources

IMEM Customers

Determine All Payables for Billing Period

Transmit Payables for Billing Period

Interim Mindanao Electricity Market

Determine Payment for Billing Period
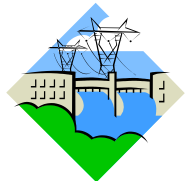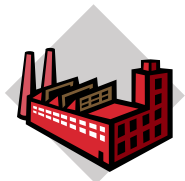
Collect Payment for Billing Period

Interim Mindanao Electricity Market

Settlement Overview
Example

IMEM Resources

IMEM Customer Price = Total Payment/Total Purchase
IMEM Customer Price = 170,000/170
IMEM Customer Price = PhP 1,000 / MWh

IMEM Customers

100 MWh
PhP 100,000

80 MWh
Payment to IMEM = 80 x 1,000
Payment to IMEM = 80,000

Interim Mindanao Electricity Market

50 MWh
PhP 50,000

10 MWh
Payment to IMEM = 10 x 1,000
Payment to IMEM = 10,000

20 MWh
PhP 20,000

80 MWh
Payment to IMEM = 80 x 1,000
Payment to IMEM = 80,000

Total Payment to IMEM Resources = 100,000 + 50,000 + 20,000
Total Payment to IMEM Resources = PhP 170,000

Total Purchase from IMEM = 80 + 10 + 80
Total Purchase from IMEM = 170 MWh

Total Payment to IMEM = 80,000 + 10,000 + 80,000
Total Payment to IMEM = PhP 170,000

Interim Mindanao Electricity Market

IMEM Resource Settlement

IMEM Resource Settlement Areas

Energy	Variation Adjustment	In-Day Dispatch Service
Refers to the settlement of **actual energy delivered or curtailed** in MWh	Refers to the settlement of **non-compliance** to the Day-Ahead Schedule	Refers to the settlement for **In-Day Dispatch Adjustments** of IMEM Resources

Customer Settlement

Resources

Hourly Energy Payments

Hourly Variation Adjustment Payments

Hourly In-Day Dispatch Service Payments

Hourly IMEM Customer Price

Total In-Day Dispatch Service Payments

Customers

Hourly Customer Settlement Amount

Premium Payment Allocation*

All Participants**

*Allocation of In-Day Dispatch Service Payments to IMEM Trading Participants is yet to be finalized

Interim Mindanao Electricity Market
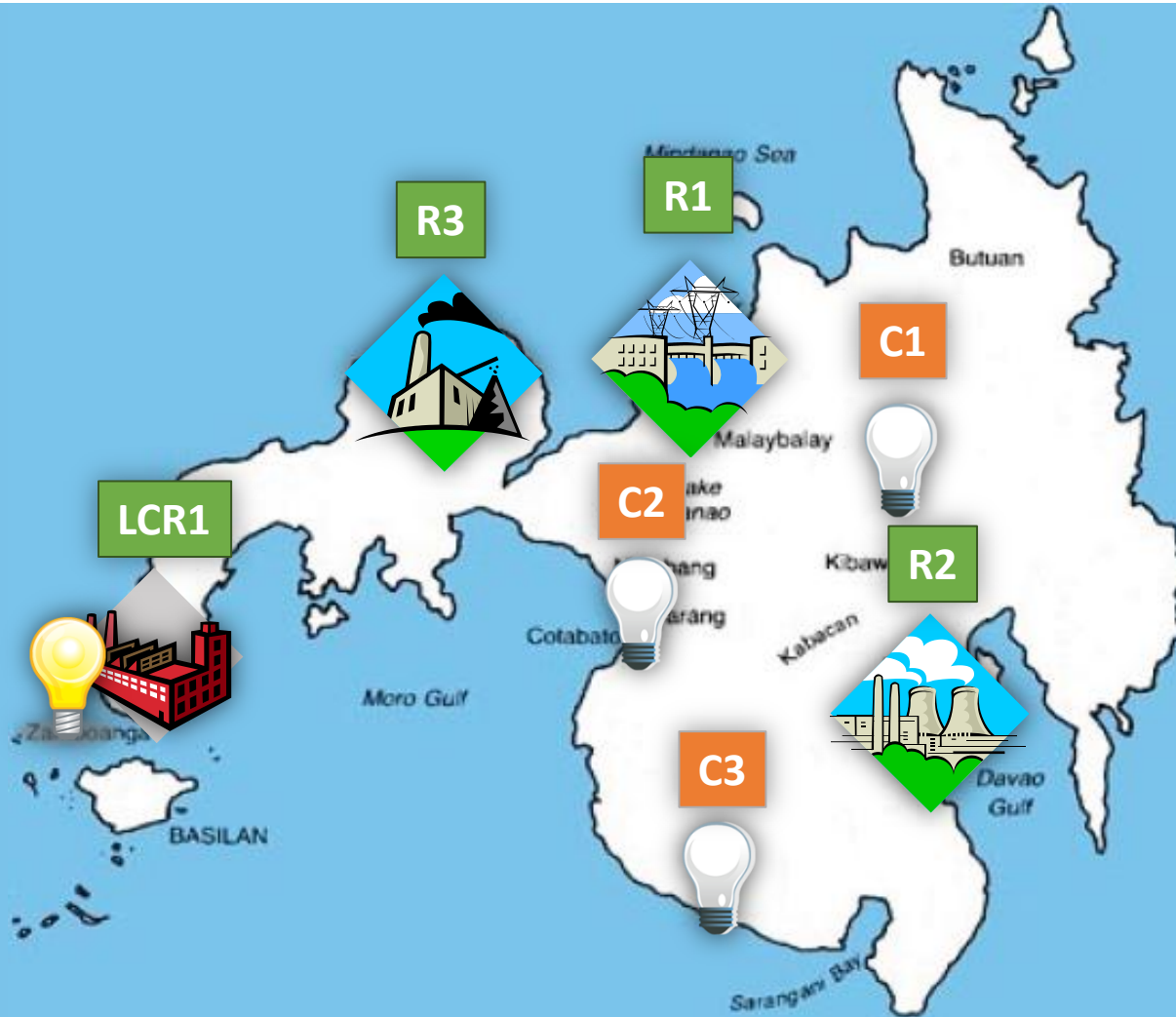
Example:

Example:
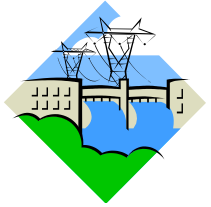
R1
20 MW @ Php 1,000/MWh

R2
20 MW @ Php 5,000/MWh

R3
20 MW @ Php 10,000/MWh

LCR1
10 MW @ Php 20,000/MWh

IMEM Day-Ahead Price = PhP 10,000 / MWh

PhP/MWh

Scheduled for tomorrow

PhP 10,000/MWh

20 MW

20 MW

20 MW

IMEM Demand

MW
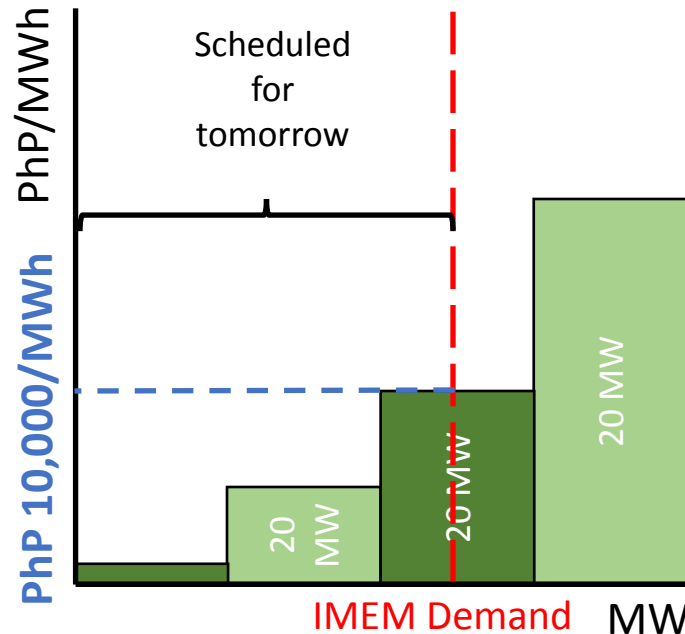
Total IMEM Demand = 10 + 15 + 25
Total IMEM Demand = 50 MW

DU 1
Expected Demand: 30 MW
Contracted Capacity: 20 MW
Buying from the IMEM: 10 MW

DU 2
Expected Demand: 50 MW
Contracted Capacity: 35 MW
Buying from the IMEM: 15 MW

DU 3
Expected Demand: 40 MW
Contracted Capacity: 15 MW
Buying from the IMEM: 25 MW

Scenario: Ideal Case

IMEM Offers

IMEM Demand

R4
20 MW @
20

R3
20 MW @
10

C3
25 MW

R2
20 MW @
5

C2
15 MW

R1
20 MW @
1

C1
10 MW

Actual

R3
10 MW

R2
20 MW

R1
20 MW
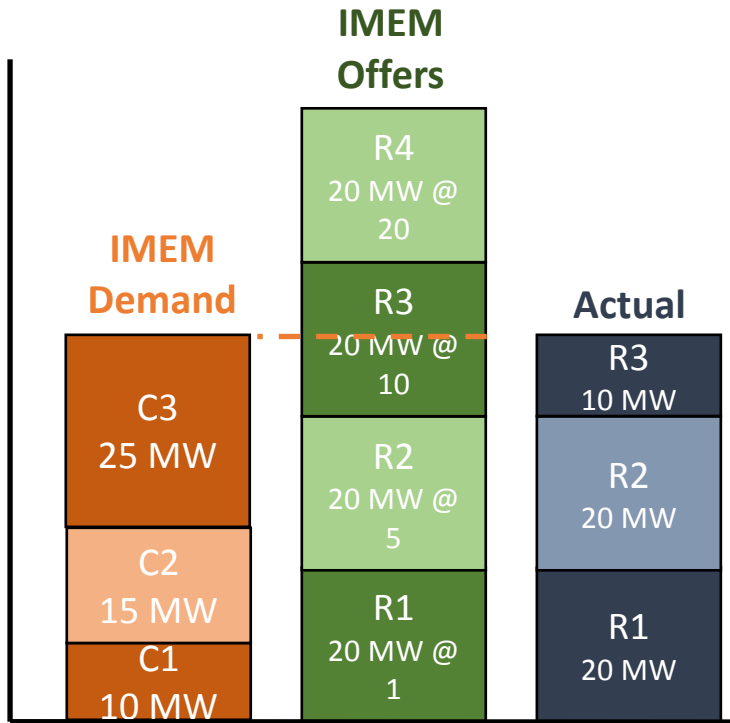
IMEM Demand = 50 MW

IMEM Day-Ahead Price = PhP 10,000 / MWh

Actual IMEM Demand = 50 MW

Resource	Energy	Variation Adjustment	In-Day Dispatch
R1	200,000	0	0
R2	200,000	0	0
R3	100,000	0	0
LCR1	0	0	0
Total	**500,000**	**0**	**0**

IMEM Customer Price = 500,000 / 50

IMEM Customer Price = PhP 10,000 / MWh

Customer	Energy	Variation Adjustment	In-Day Dispatch
C1	10 x 10,000	0	0
C2	15 x 10,000	0	0
C3	25 x 10,000	0	0
Total	**500,000**	**0**	**0**

Interim Mindanao Electricity Market

Scenario: C3 Consumes More

Pays for premium of IMEM Resource

Paid at bid price for incremental energy plus premium

IMEM Offers

IMEM Demand

IMEM

Actual

IMEM Demand (stacked): C3 35 MW, C2 15 MW, C1 10 MW

IMEM Offers (stacked): R4 20 MW @ 20, R3 20 MW @ 10, R2 20 MW @ 5, R1 20 MW @ 1

Actual (stacked): R3 10 MW, R3 10 MW, R2 20 MW, R1 20 MW

IMEM Demand = 50 MW

IMEM Day-Ahead Price = PhP 10,000 / MWh

Actual IMEM Demand = 60 MW
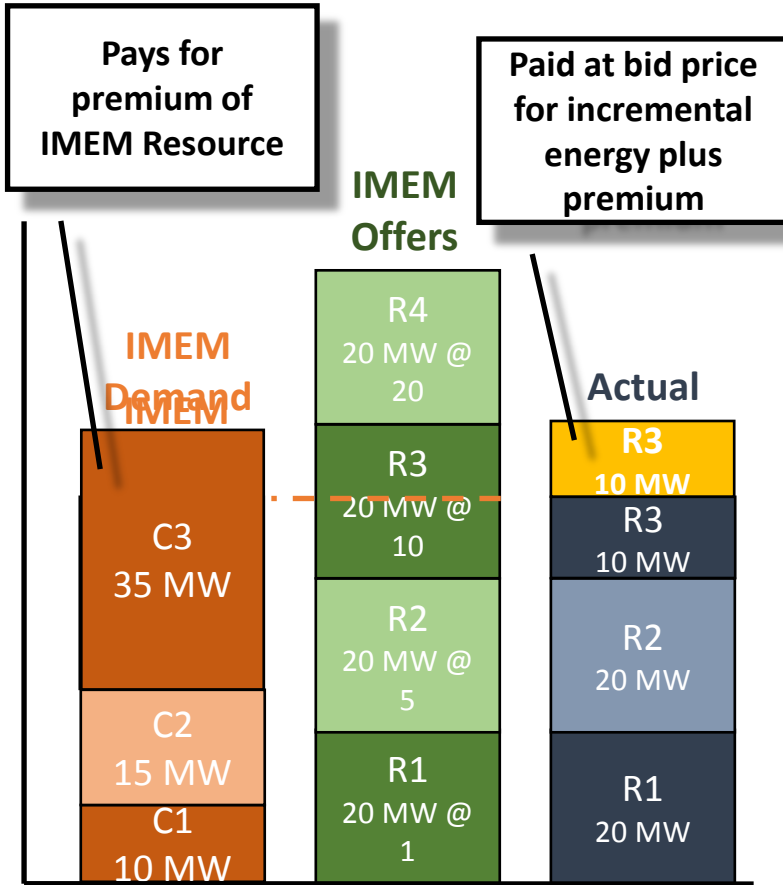
Resource	Energy	Variation Adjustment	In-Day Dispatch
R1	200,000	0	0
R2	200,000	0	0
R3	200,000	0	10,000
LCR1	0	0	0
Total	**600,000**	**0**	**10,000**

IMEM Customer Price = 600,000 / 60

IMEM Customer Price = PhP 10,000 / MWh

Customer	Energy	Variation Adjustment	In-Day Dispatch
C1	10 x 10,000	0	0
C2	15 x 10,000	0	0
C3	35 x 10,000	0	Causer
Total	**600,000**	**0**	**10,000**

Scenario: C3 Consumes Less

Pays for premium of IMEM Resource

IMEM Offers

Receives compensation for availability

IMEM Demand
IMEM Demand

Actual
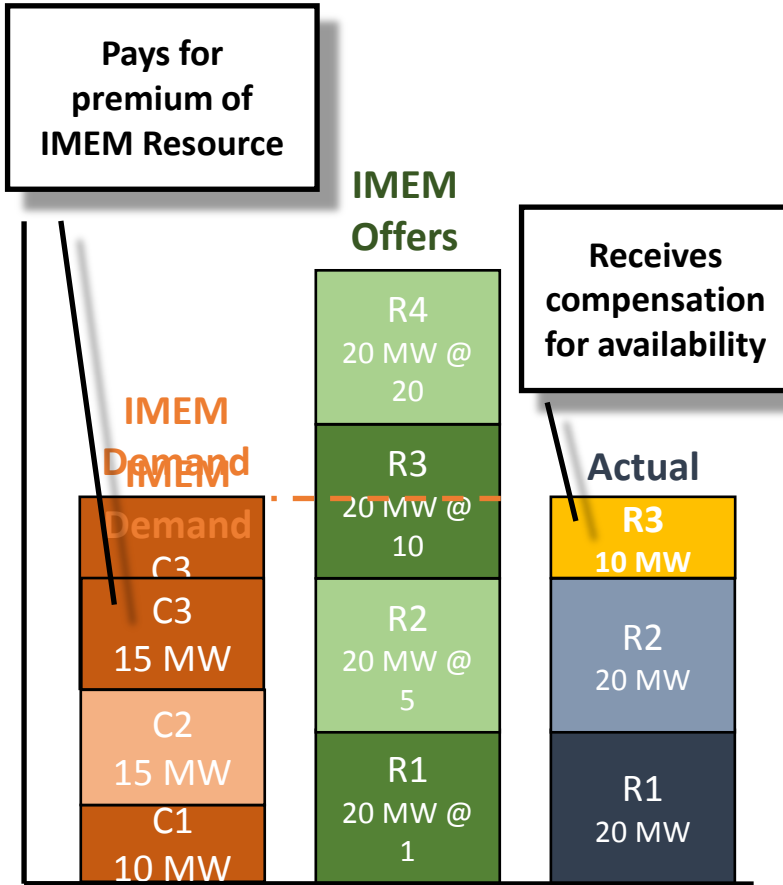
Resource	Energy	Variation Adjustment	In-Day Dispatch
R1	200,000	0	0
R2	200,000	0	0
R3	0	0	10,000
LCR1	0	0	0
Total	**400,000**	**0**	**10,000**

IMEM Customer Price = 400,000 / 40

IMEM Customer Price = PhP 10,000 / MWh

C3
15 MW

C2
15 MW

C1
10 MW

R4
20 MW @ 20

R3
20 MW @ 10

R2
20 MW @ 5

R1
20 MW @ 1

R3
10 MW

R2
20 MW

R1
20 MW

IMEM Demand = 50 MW

IMEM Day-Ahead Price = PhP 10,000 / MWh

Actual IMEM Demand = 40 MW

Customer	Energy	Variation Adjustment	In-Day Dispatch
C1	100,000	0	0
C2	150,000	0	0
C3	150,000	0	10,000
Total	**400,000**	**0**	**10,000**

Interim Mindanao Electricity Market

Other Scenarios

Scenario	Dispatch Adjustment	Settlement Impact
IMEM Demand Forecast is higher than Actual	Increase supply of IMEM Resources	Customer that contributed to the forecast deviation pays for the premium of re-dispatched IMEM Resources
IMEM Demand Forecast is lower than Actual	Reduce supply of IMEM Resources	
Forced Outage	Increase supply of IMEM Resources	Facility on forced outage pays for the premium of re-dispatched IMEM Resources
IMEM Generator produces more than instructed	Reduce supply of IMEM Resources	IMEM Generator that produced more will pay for the premium of re-dispatched IMEM Resources

Example:
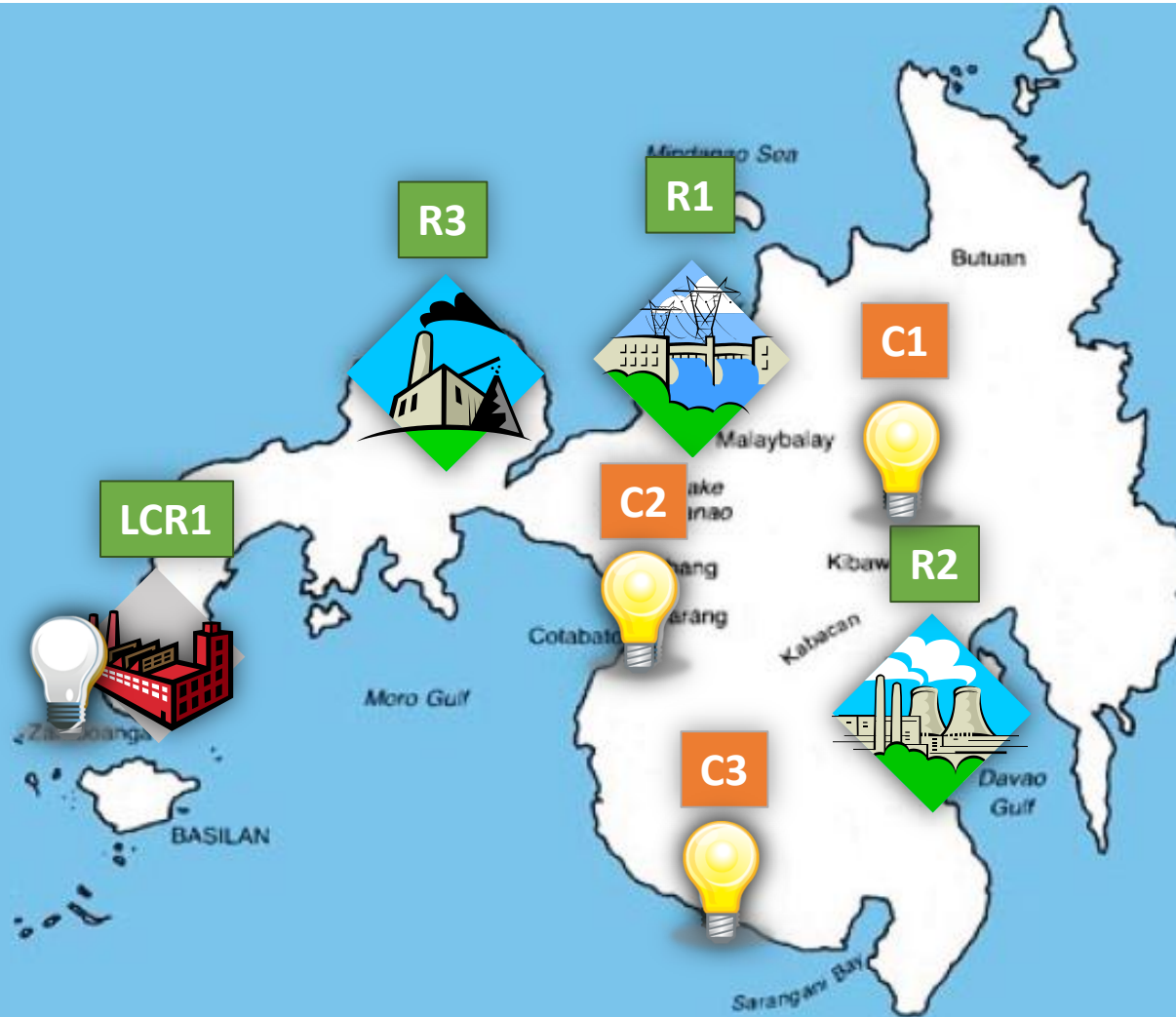
Load Curtailment Resources

Selling (Day-Ahead)
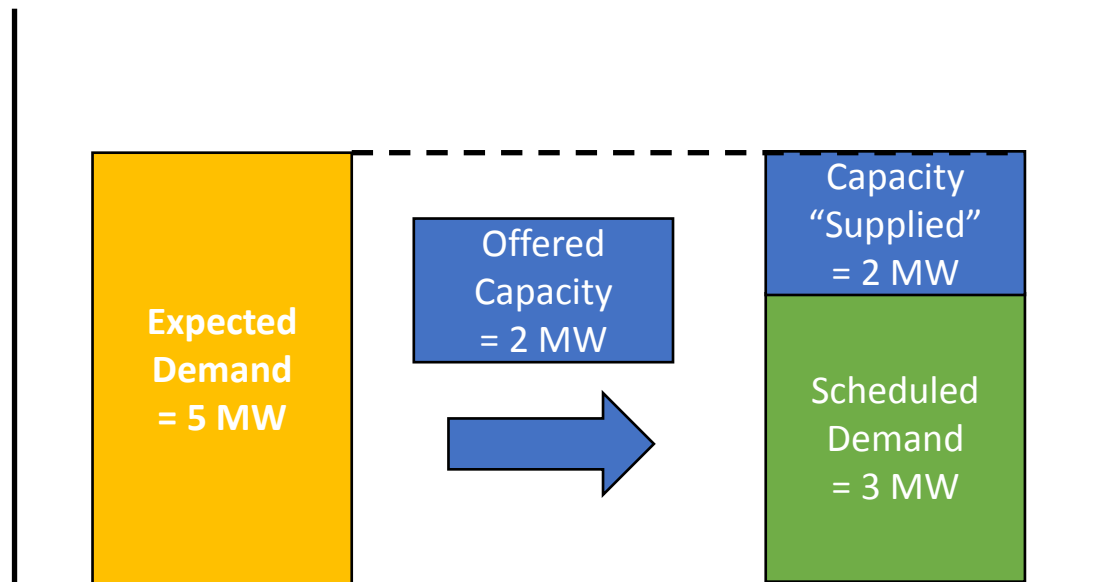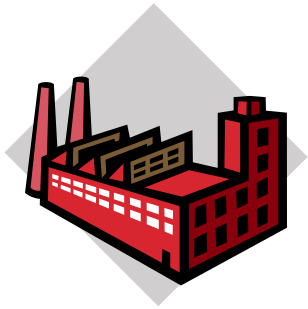
Load Curtailment Resources

Selling (Actual, Grid-Connected)

5 MW

3 MW

5 MW

2 MW

Sold 2 MW through the IMEM
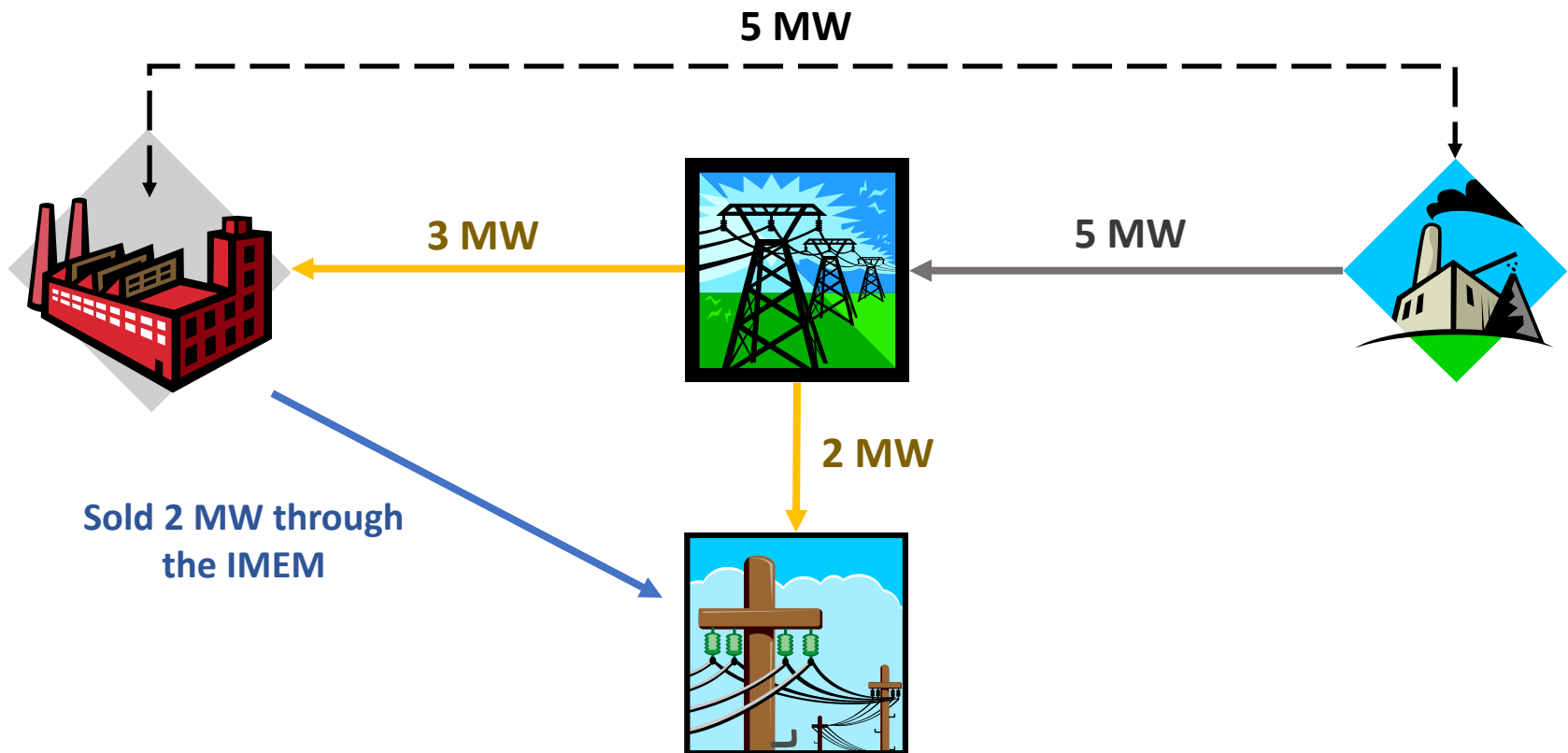
Load Curtailment Resources

Money Flow (Grid-Connected)

Pay for 5 MW

Pay for 2 MW

IMEM

Pay for 2 MW
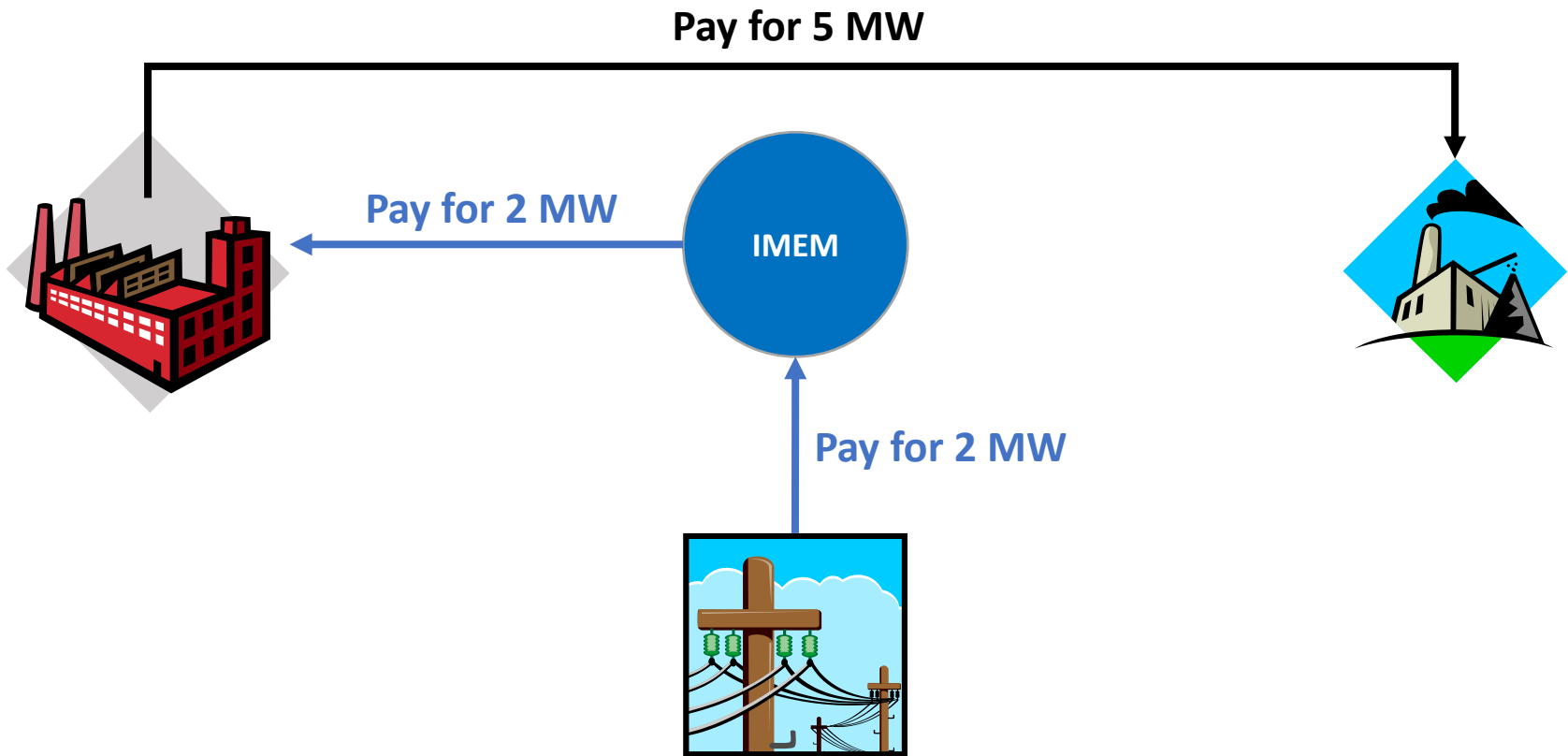
Load Curtailment Resources

Selling (Actual, Embedded)

Agreement to supply all power needs

5 MW

3 MW **3 MW** **5 MW**

2 MW

Sold 2 MW through the IMEM
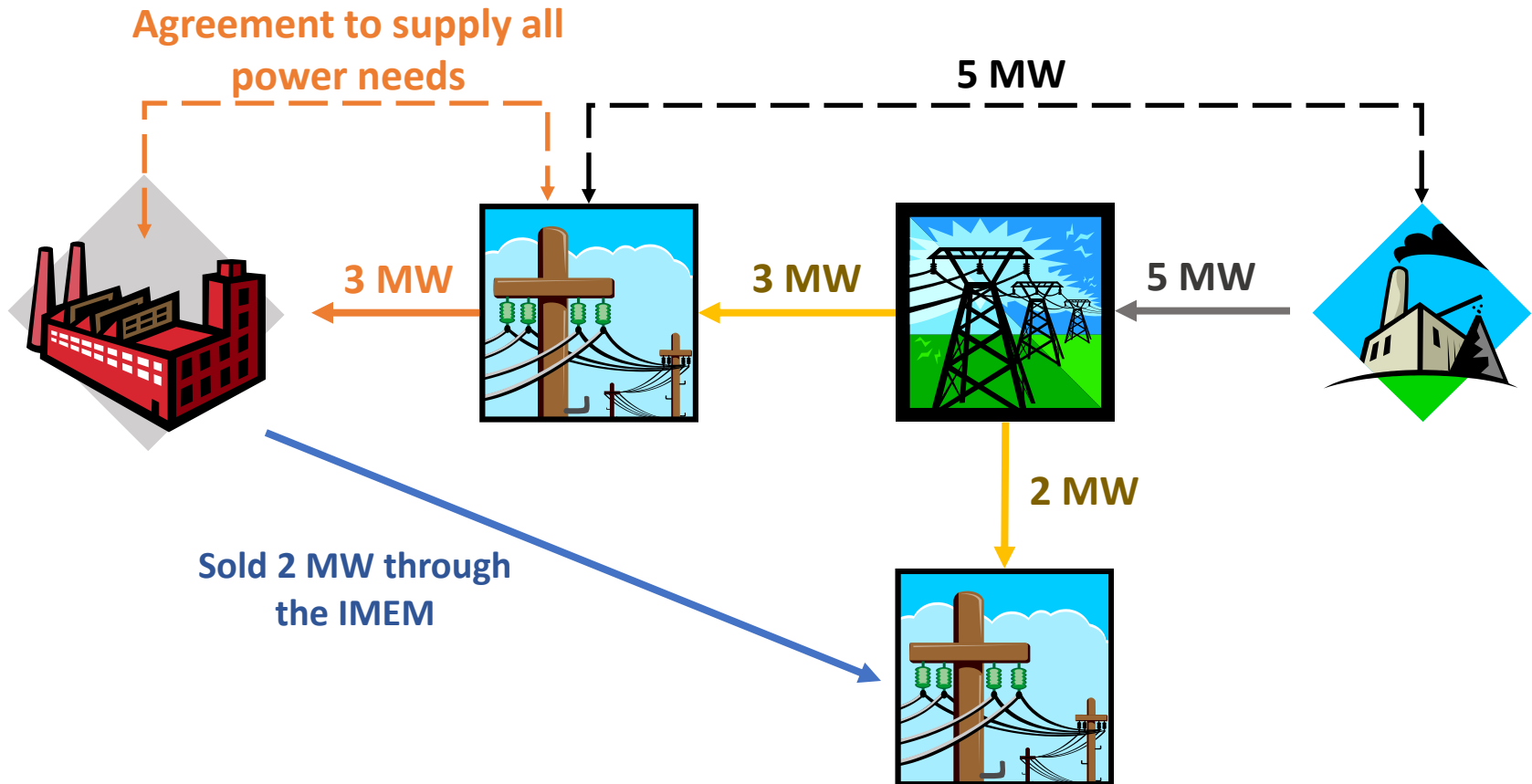
Load Curtailment Resources

Money Flow (Embedded)

Pay for 5MW

Pay for 5 MW

Pay for 2 MW

IMEM

Pay for 2 MW
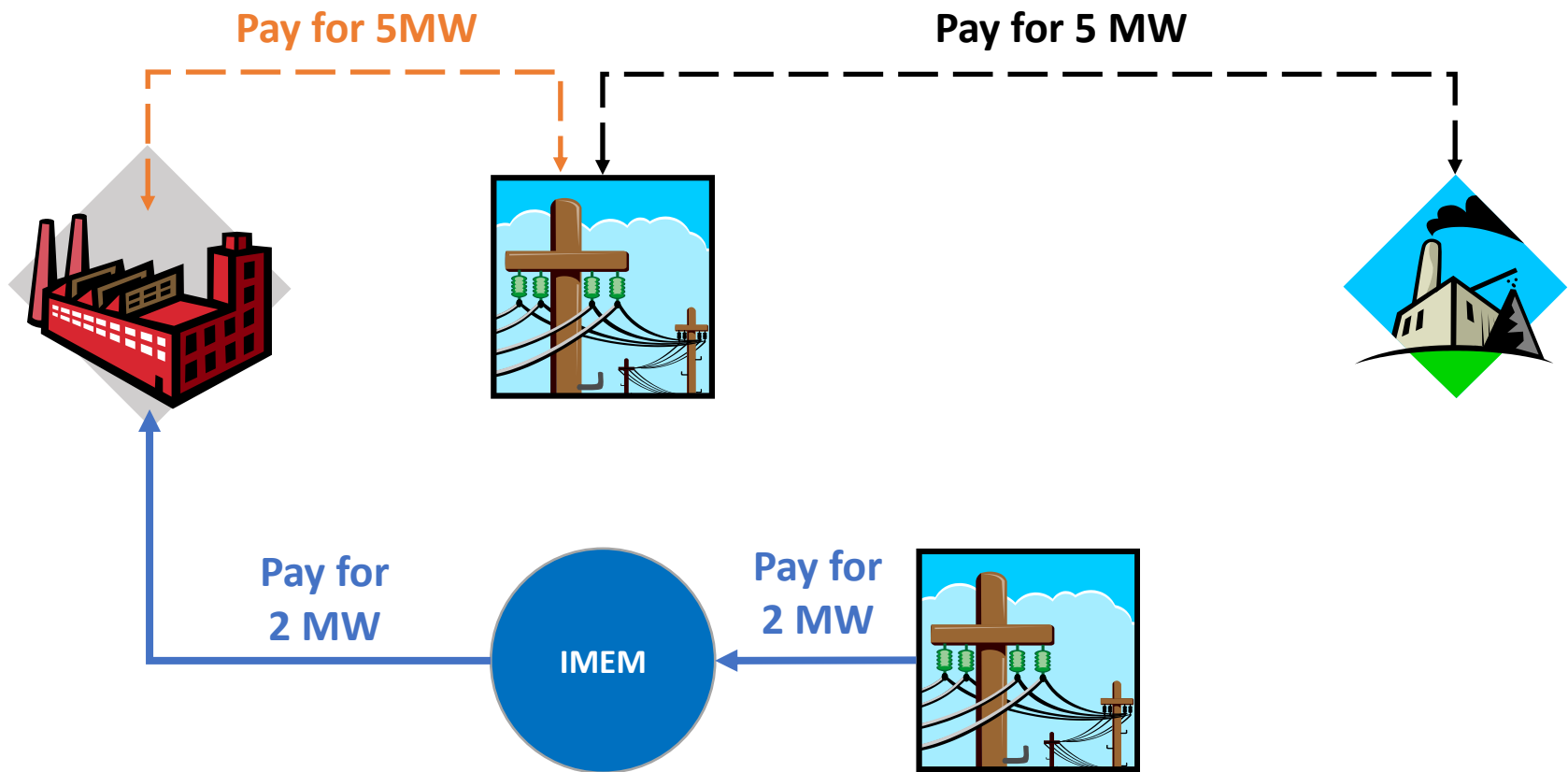
IMEM Load Curtailment Resource vs Interruptible Load Program

Feature	IMEM LCR	ILP
Potential Buyer	Anyone connected to the Mindanao Grid	Host DU Only
Design	End-user submits IMEM Offer to curtail or deload. If price clears in the IMEM, End-user will be dispatched on its offer price.	DU and a Participating Customer agree on either partial or full deloading/disconnection for a period of time as determined by the DU.
Payment	Based on the IMEM Offer of the End-User	Based on the Generation Cost of Fuel, fixed Fuel Consumption Rate and DU Average Rate

Billing and Settlement Process

Billing Period: 26th of the Month to 25th of the Next Month

+3D: Transmit Metered Quantities and Adjusted Metered Quantities

IMEM Trading Participants

+6D: Declare Contract Quantities

IMEM Operator

+10D: Provide Prelim Settlement Statement

IMEM Resources

+18D: Provide Final Settlement Statement

Before +6D: Coordinate Contract Quantities

+1D: Transmit Metered Quantities

25th of Next Month: Pay Bill

IMEM MSPs

25th of Next Month + 3BD: Pay Trading Participants

IMEM Customers

Interim Mindanao Electricity Market

Payment Guidelines

Mode of Payment

- In Cleared Funds
- Through an electronic funds transfer facility provided by the IMEM Operator

Unpaid Amounts

- Will be applied a default interest (IMEM Rules Clause 5.4.6.5)
- Payment default is a ground for suspension

Prudential Security Requirements

Purpose

- To ensure the effective operation of the IMEM by providing a level of comfort that IMEM Trading Participants will meet their obligations to make payments
- The IMEM Operator may immediately draw on the security without need of prior consent

Amount and Form

- Must always be below the Maximum Exposure of the IMEM Trading Participant
- In Cash

Settlement Recap

IMEM Resources will be settled on three (3) areas: Energy, In-Day Dispatch Service, and Variation Adjustment.

Energy and Variation Adjustments will be recovered across all IMEM Customers. Recovery of In-Day Dispatch Service Payments is yet to be finalized.

The billing period is from the 26th of a month to the 25th of the next month with the payment for that billing period on the 25th of the following month after the billing period.

Metering Overview

Basis for Settlement

- Metered Quantities (MSP)
- Contract Quantities (IMEM Resources)
- Scheduled Targets (IMEM Day-Ahead Schedule)
- Dispatch Targets (Mindanao SO)

IMEM Metering Services Providers

IMEM Member

Directly Connected to Mindanao Grid?

Yes

No

Metering Services Provider

Grid MSP

Host DU
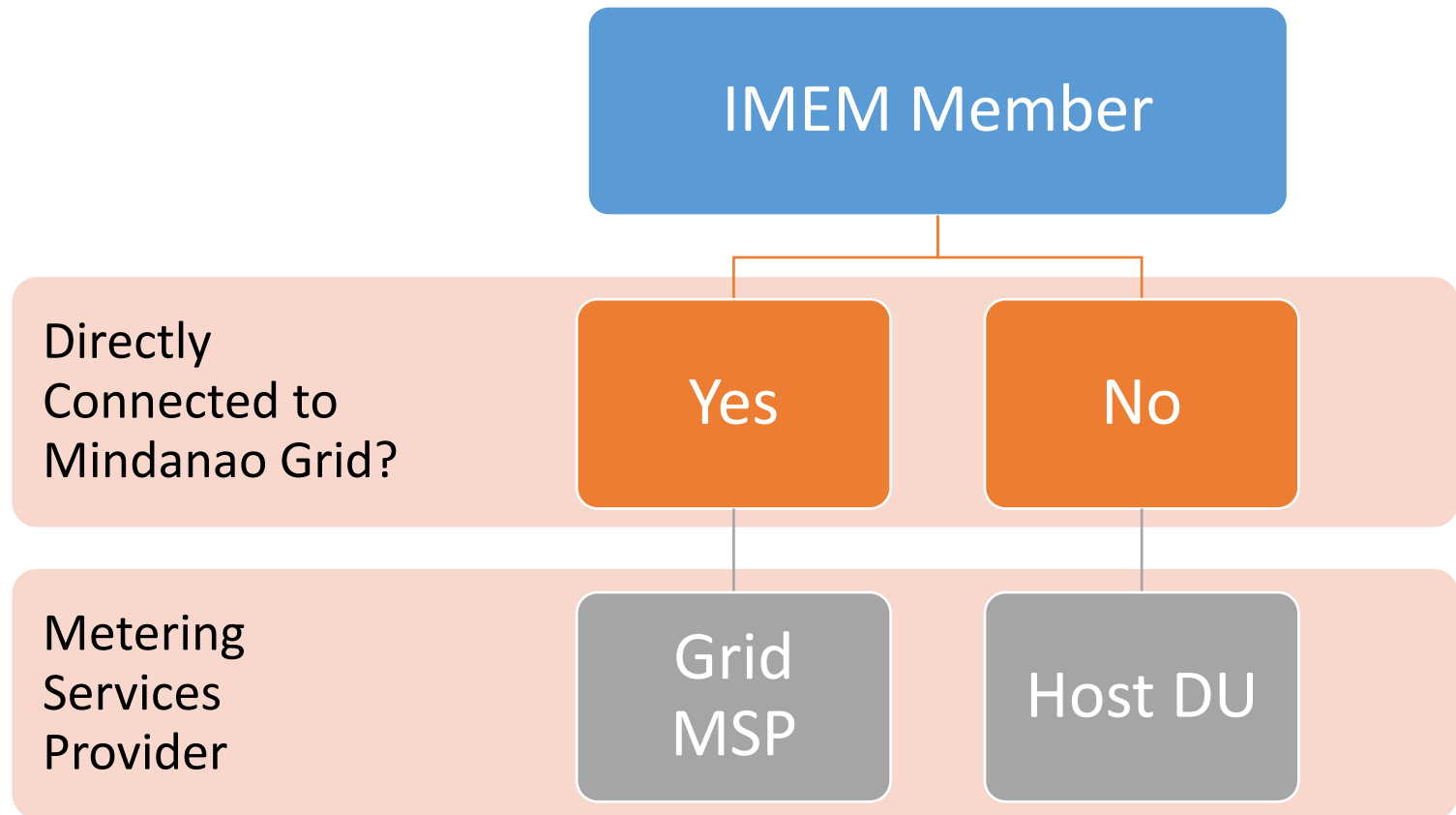
Metered Quantities

Metering Services Provider

- Responsible for collecting and validating Metered Quantity
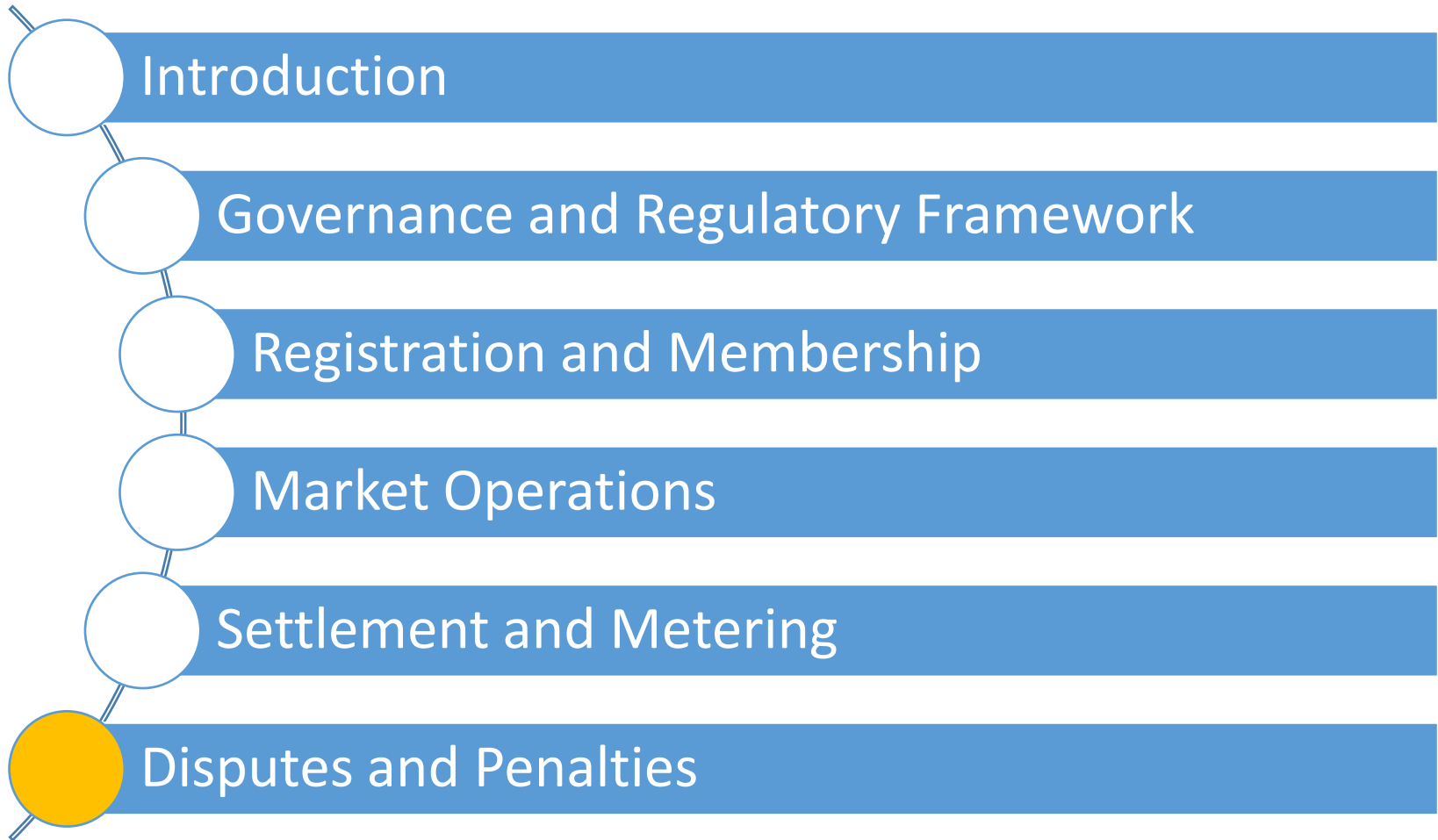
Basic Meter Requirements

- Metered Quantity for each IMEM Interval
- Metering Data can be stored for collection at the end of the billing period

Outline

Introduction

Governance and Regulatory Framework

Registration and Membership

Market Operations

Settlement and Metering

Disputes and Penalties

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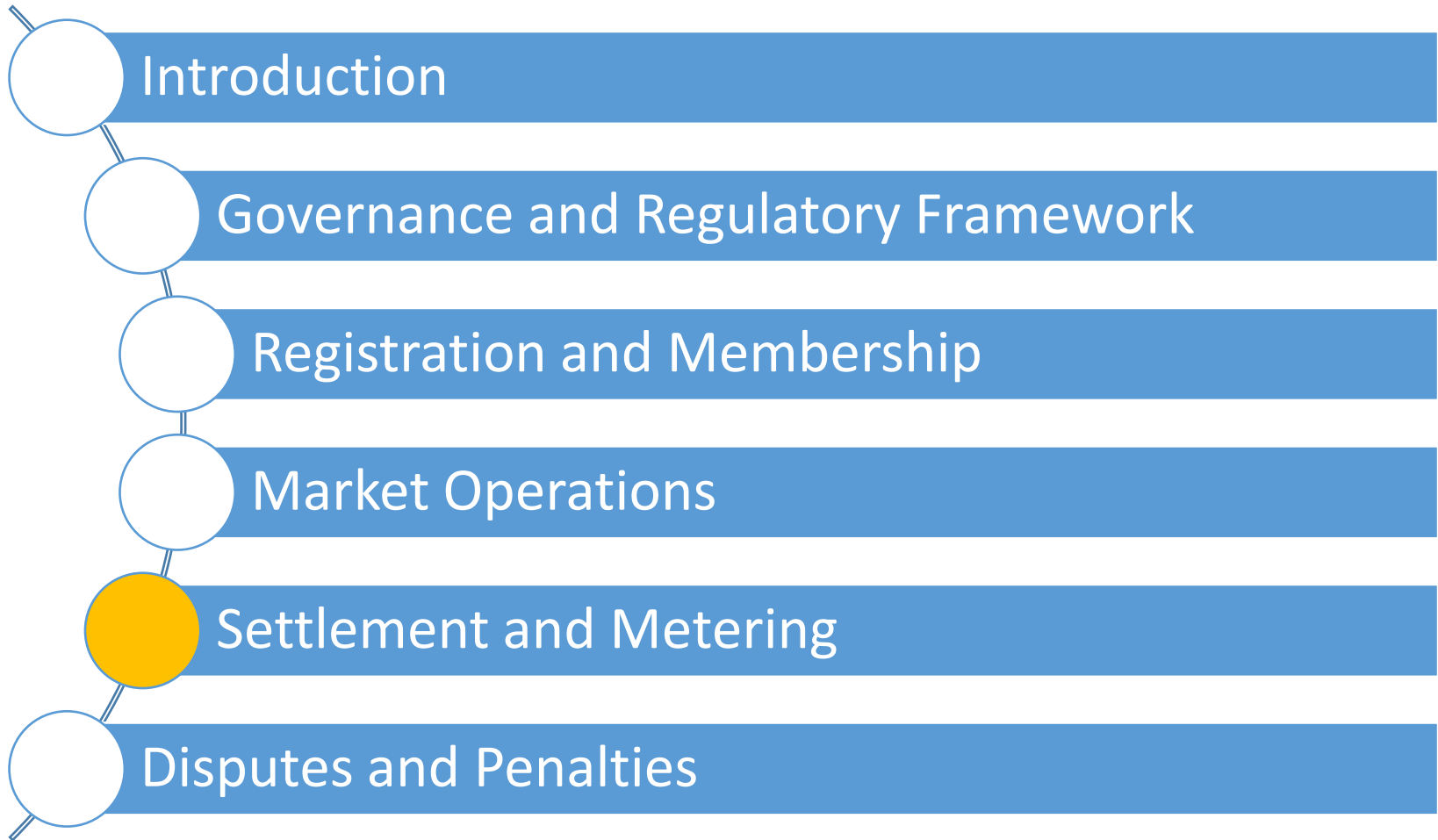
Disputes

Disputes

- Must be lodged within twelve (12) calendar months of the date of issuance of the relevant Final Settlement Statement (IMEM Rules Clause 5.4.3.2)
- Disputed amounts must be paid on the relevant deadline (IMEM Rules Clause 5.4.4.4)

Penalties

Classes

Automatic — Deviation from scheduled dispatch

Payment Default/ Failure to Satisfy Requirements

Imposed for Breach — Investigation Process

Penalties

```
                                    ┌─────────────────┐
                          ┌─────────┤   Automatic     ├──────── Deviation from
                          │         └─────────────────┘          scheduled
                          │                                       dispatch
            ┌─────────┐   │         ┌─────────────────┐
            │ Classes ├───┼─────────┤ Payment Default/│
            └─────────┘   │         │ Failure to      │
                          │         │ Satisfy         │
                          │         │ Requirements    │
                          │         └─────────────────┘
                          │         ┌─────────────────┐
                          └─────────┤   Imposed for   ├──────── Investigation
                                    │     Breach      │          Process
                                    └─────────────────┘
```
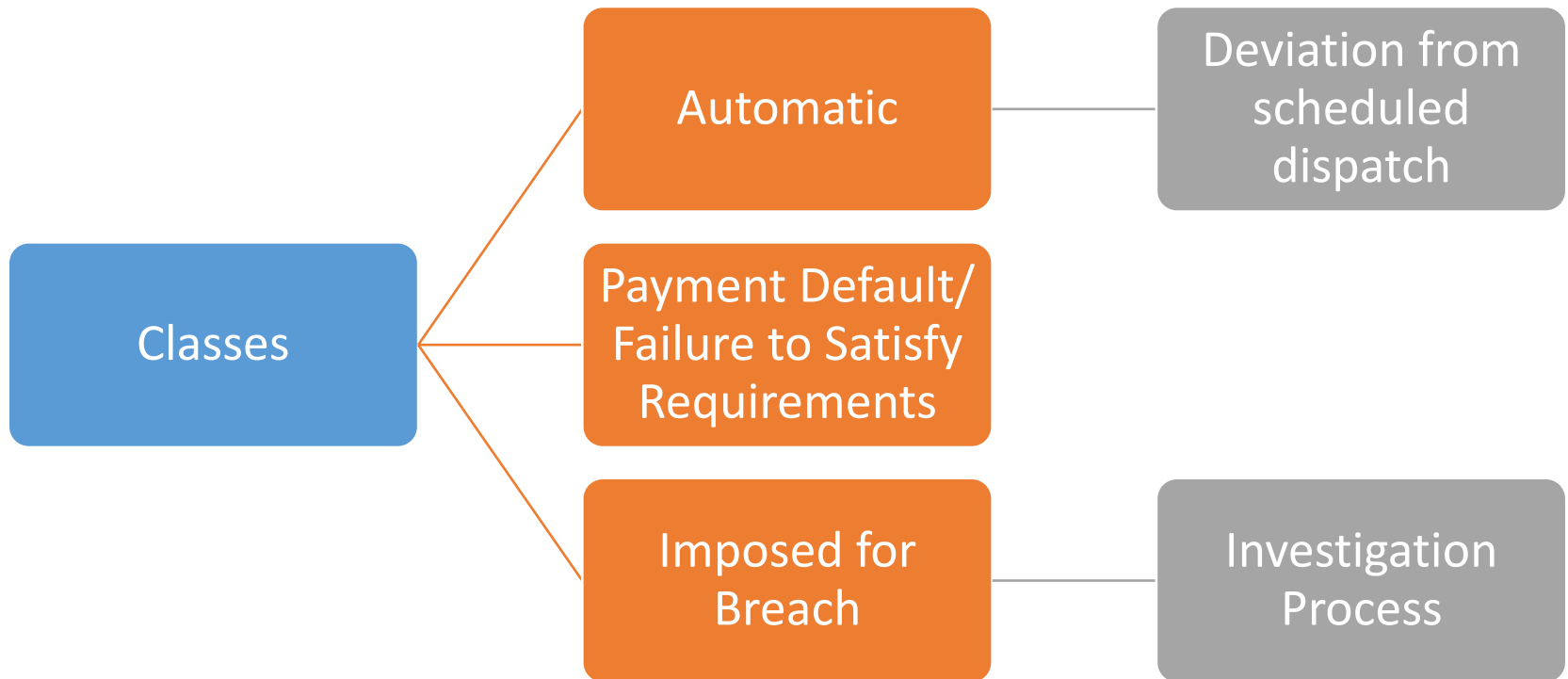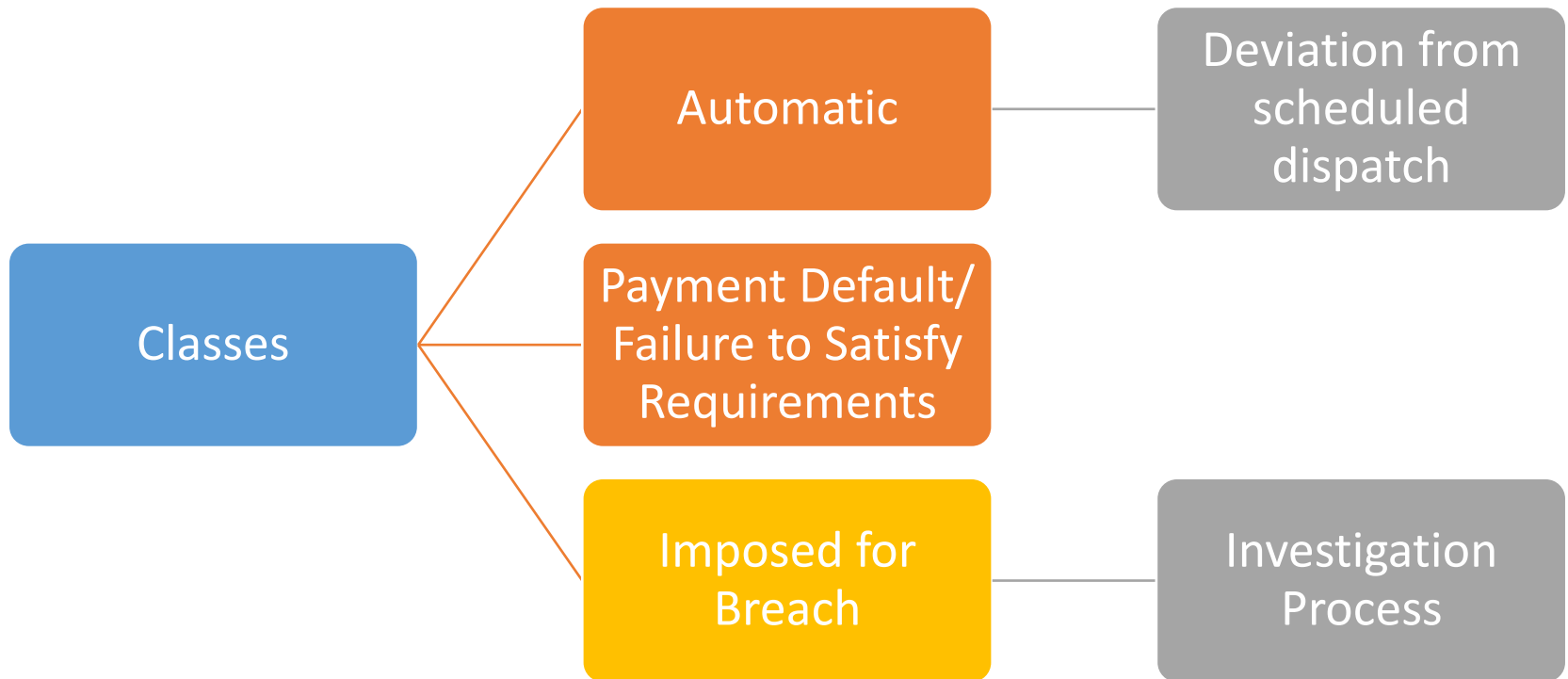
Breaches

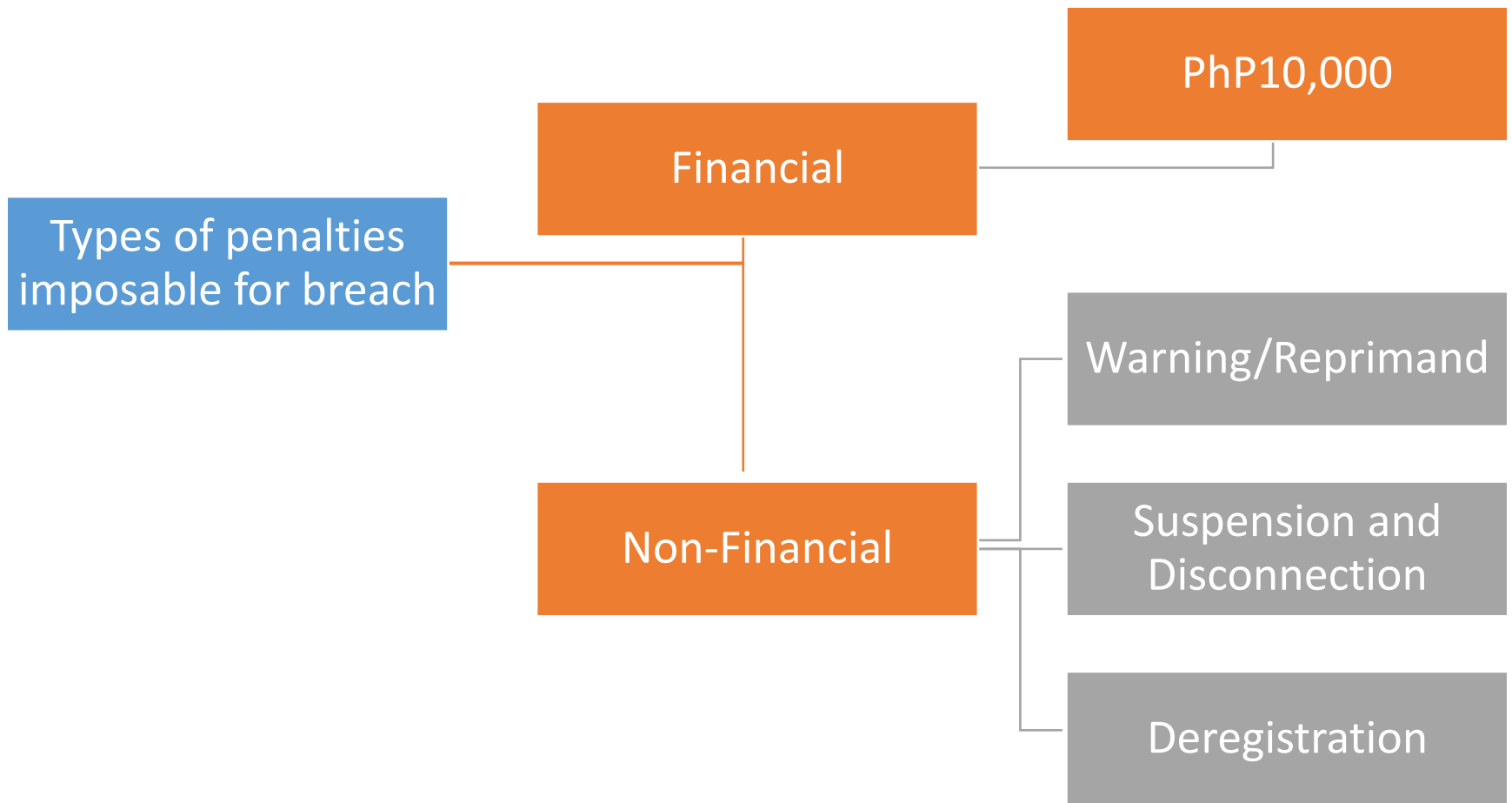Failure of a generator to offer all available capacity

Failure to comply with obligations under the IMEM Rules or Manuals

Should not be due to payment default or failure to follow dispatch schedule

Penalties

Types of penalties imposable for breach

Financial
- PhP10,000

Non-Financial
- Warning/Reprimand
- Suspension and Disconnection
- Deregistration

Penalties

Types of penalties imposable for breach

Financial
- PhP10,000 / breach/ facility

Non-Financial
- Warning/Reprimand
- Suspension and Disconnection
- Deregistration
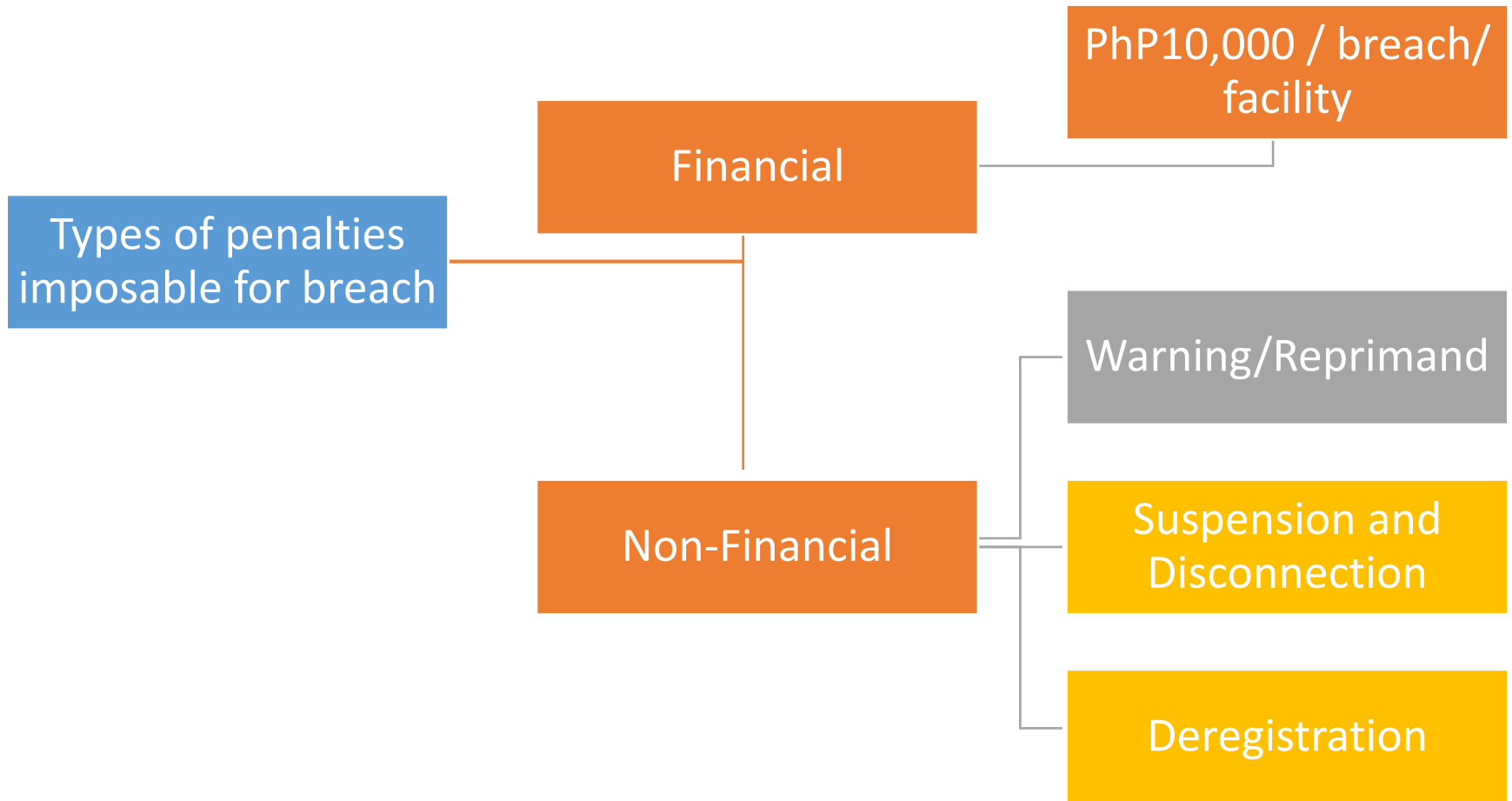
Suspension and Deregistration

Grounds for Suspension

Breaches of the IMEM Rules	Failure to maintain to satisfy any requirement under the IMEM Rules	Default in Payment

⬇

Notice of Suspension

IMEM Operator sends written notice	Notice is published in market information website

⬇

Disconnection

IMEM Operator sends written request to Mindanao System Operator to disconnect	Mindanao System Operator implements disconnection within 5 business days

⬇

Deregistration

Failure to reconnect to the grid within 60 days from disconnection

Interim Mindanao Electricity Market

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Important Dates

Public Consultations (04, 10 & 12 Apr)

Posting of Registration Requirements (15 May)

Start of Registration (03 Jun)

Start of Training (15 Jul)

Start of Trial Operations (26 Aug)

Start of Commercial Operations (26 Sep)

Apr 2013 · May 2013 · Jun 2013 · Jul 2013 · Aug 2013 · Sep 2013 · Oct 2013 · Nov 2013

Interim Mindanao Electricity Market

End of Presentation