

# Regulation of Vertically Integrated vs. Unbundled Utilities

Presented to the

**CAREC Members Electricity Regulators Forum (CMERF)**

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Presented by

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**Energy Regulatory Commission, Philippines**



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# Outline

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**Part 1: Philippine Power Sector Reform**

**Part 2: Power Rates Unbundling**

**Part 3: Lessons Learned**

# Part 1: Power Sector Reform

**Starting point  
in some  
jurisdictions**



**Government**

**Starting point  
in the  
Philippines**



**Private**

# Part 1: Power Sector Reform

## The Statute:

### Universal

**“Within six (6) months from the effectivity of this Act, each distribution utility (139 DUs) shall file its revised rates (Test Year 2000) for the approval by the ERC.”**

(RA 9136, Sec. 36)



# Part 1: Power Sector Reform

## The Statute:

### True Cost

**“For both the distribution retail wheeling and supplier’s charges, inter-class subsidies shall be removed in accordance with this Act.”**

**“...the rates shall reflect the respective costs of providing each service.”**

(RA 9136, Sec. 36)



# Part 1: Power Sector Reform

## Peeling Off The Layers Of Cross Subsidies

### A) Inter-Grid Cross Subsidy



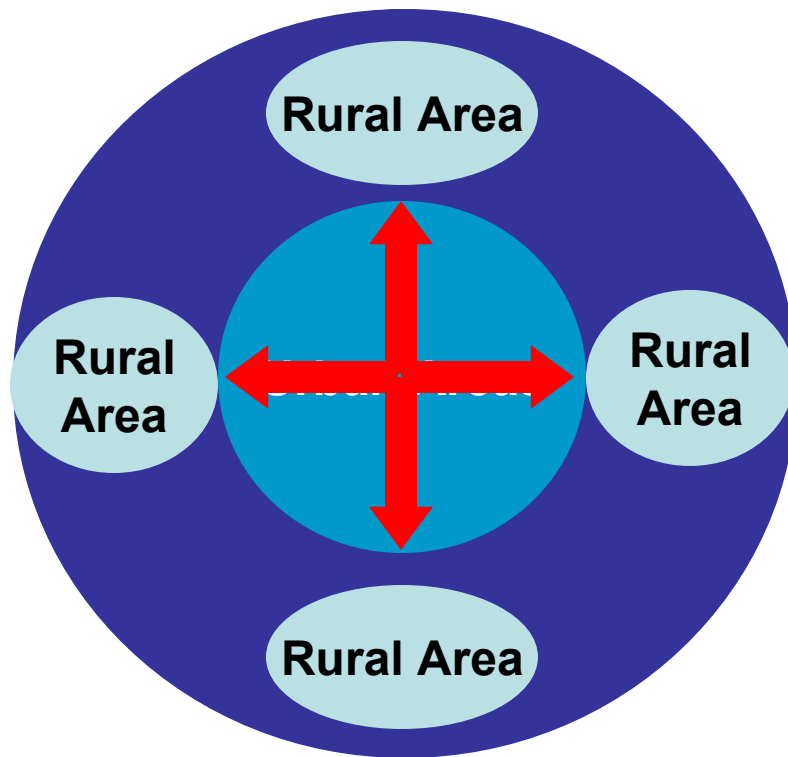
**PHILIPPINES**

**Fully withdrawn by  
the Commission in  
September 2002**

# Part 1: Power Sector Reform

## Peeling Off The Layers Of Cross Subsidies

### B) Intra-Grid Cross Subsidy



### Removal of Cross Subsidies

Oct. 2003 – 1/3 removal

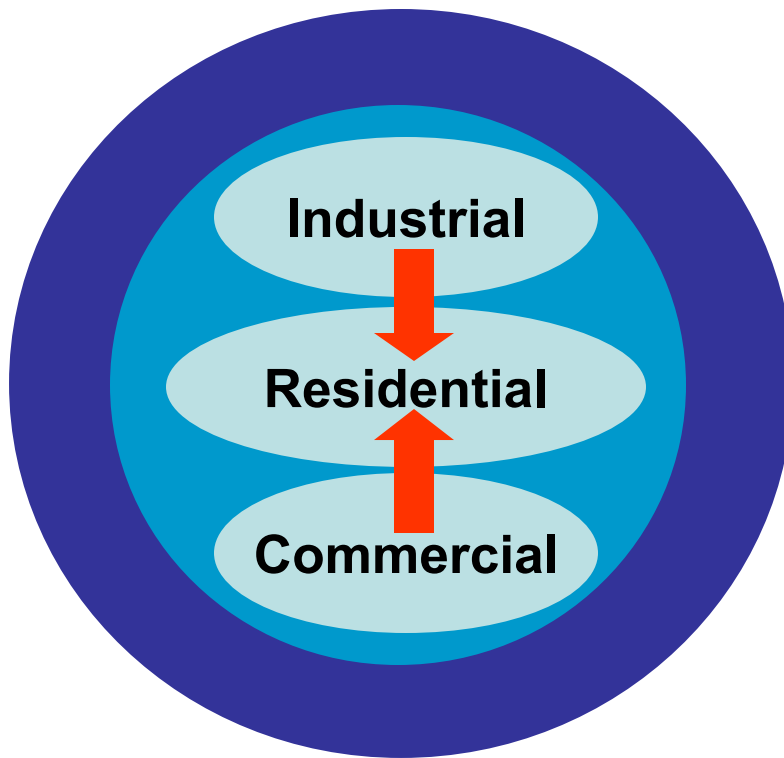
Oct. 2004 – 1/3 removal

Oct. 2005 – 1/3 removal

# Part 1: Power Sector Reform

## Peeling Off The Layers Of Cross Subsidies

### C) Inter-Class Cross Subsidy



**Gradual withdrawal  
of cross subsidies  
in 3 to 4 years**

**Complete removal  
of cross subsidies  
in MERALCO  
by October 2005**



# Part 2: Power Rates Unbundling

- When everyone is on the learning curve, the regulator should take the lead.
- ERC prepared standard Excel worksheet for uniform filing

Microsoft Excel - finalModel\_SURSECOII\_8.15.03\_supply per cust.

Note: Cells appearing in yellow are to be filled in by company. Hypothetical values are included only for modelling purposes. See also the yellow fields in the "Cost of Capital" and "Class FactorsG" tabs. Filling in all yellow cells will produce company-specific default output.

NAME OF COMPANY OR COOPERATIVE:  
YEAR ENDING DECEMBER 31, 2000  
(Thousand of Pesos)

Account Number	Account Name	FACTOR	Total Company (1)	Non Electric (2)	Electric Only (3)	Electric Adjust. (4)	Adjust. Electric (5)	Functionaliz. Generation (6)
20	Systems Loss		0	0	0	7,100,234	7,100,234	
21	Depreciation and Amortization		0	0	0	0	0	
22	Income Taxes		0	0	0	0	0	
23	Other Expenses		0	0	0	0	0	
24	Private Utility: Return on Rate Base		0	0	0	0	0	
26	Elec. Coop: Debt Service plus Cash Working Capital		12,661,914	0	12,661,914	640,062	13,301,976	
28	Revenue Requirement		87,640,757	0	87,640,757	(2,300,902)	85,339,855	25,509,6
30	Less Other Revenue Items		0	0	0	1,426,551	1,426,551	
32	Total Revenue Requirement		87,640,757	0	87,640,757	(3,727,453)	83,913,304	25,509,6
34	Plus percentage for cooperative invest. (private util.=0)	5%	8,764,076	0	8,764,076	(4,347,586)	4,416,490	
36	Total Revenue Requirement (plus for cooperative)		96,404,833	0	96,404,833	(8,075,039)	88,329,794	25,509,6
38	Total Rate Base (for quick reference):		139,168,259	0	139,168,259	0	139,168,259	

TABLE 1: DEVELOPMENT OF RATE BASE

Original Cost of Utility Plant

Organization	TOTREV	PLTSVC-NX	TOTREV
Intangible Plant	0	0	0
111-301-10	0	0	0
111-302-10	0	0	0
111-303-10	0	0	0

Ready Calculate CAPS NUM

# Part 2: Power Rates Unbundling

**Step 1. Determination of Revenue Requirement**

**Step 2. Functionalization based on *causation*:  
understanding what activities drive a  
particular cost**

A. Costs are directly assigned based on  
direct causal relationship

**Generation**



Fuel oil  
power plants

**Transmission**



High voltage  
towers & wires

**Distribution**



Medium & low  
voltage wires

**Retail  
Supply**



Accounting, billing  
customer service

# Part 2: Power Rates Unbundling

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- B. Indirectly attributable costs are part of a common pool of costs but can be attributed to a particular activity
- Costs of office supplies are allocated using payroll as allocation factor
  - Property taxes are allocated using value of plant in service as allocation factor

# Part 2: Power Rates Unbundling

## Step 3. Classification of functionalized costs based on what the costs are sensitive to

- **Demand-related costs vary with kW of instantaneous demand (transmission/distribution)**
- **Energy-related costs vary with kWh of usage (generation)**
- **Customer-related costs vary with the number of customers (supply)**

# Part 2: Power Rates Unbundling

## Step 4. Assignment of Costs Among Customer Classes: Residential, Commercial, Industrial

**Transmission Cost**  **Coincident Peaks**

**Distribution Cost**  **Non-coincident Peaks**

**Supply**  **Number of customers**

**Metering Cost**  **Number of meters**

# Part 2: Power Rates Unbundling

## Sample Bundled Power Bill

<b>RATE: Residential</b>			
<b>BASIC CHARGE</b>			
ENERGY (KWH)	991		
CURRENCY ADJ.	3369.40		
PPA	991		
Power Act Redn	991		
<b>ENERGY TAX</b>			
	311	@	0.1
	101	@	0.2
<b>OTHER CHARGES</b>			
Adj due to May PPA Redn -			

## Sample Unbundled Power Bill

<b>RATE: Residential</b>	
Generation Charge	992 X
Transmission Charge	992 X
System Loss Charge	992 X
Distribution Charge	992 X
Supply Charge	992 X
<b>METERING CHARGE</b>	
Retail Customer Charge	5
Metering System Charge	992 X
Lifeline Rate Subsidy	992 X
Interclass Subsidy	992 X
PowerAct Redn	992 X
CERA	1648.21 X
<b>FRANCHISE TAX</b>	
National	8100.9
<b>ENERGY TAX</b>	
First	342
<b>UNIVERSAL CHARGES</b>	
Missionary	992 X
Environmental Fund	992 X
NPC Stranded Debts	
NPC Stranded Contract Costs	
DUs Stranded Contract Costs	
Equaln Taxes and Royalties	

# Part 2: Power Rates Unbundling

**Bundled Power Bill**

**Unbundled Power Bill**

**Basic**

**Generation**

**PPA**

**Transmission**

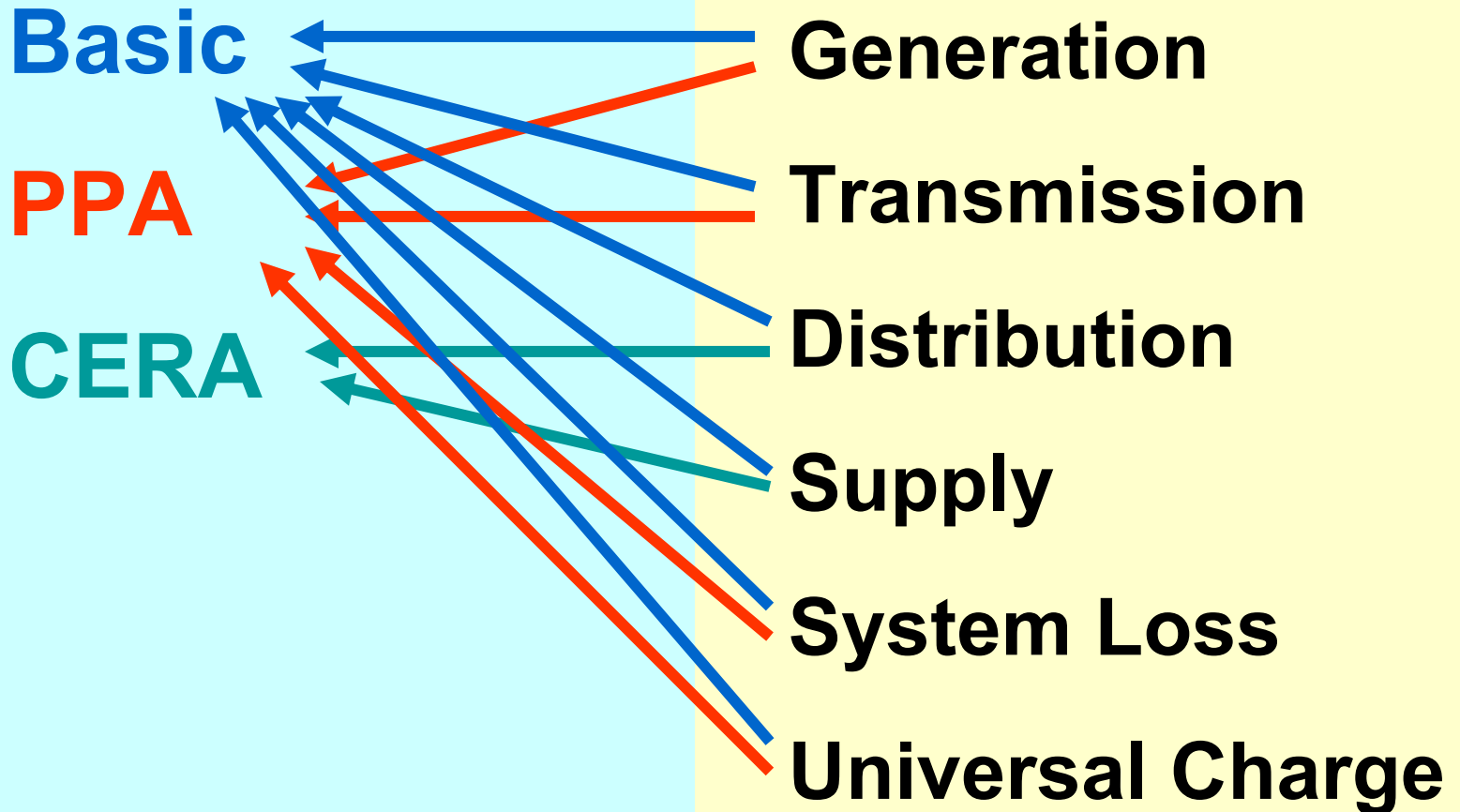
**CERA**

**Distribution**

**Supply**

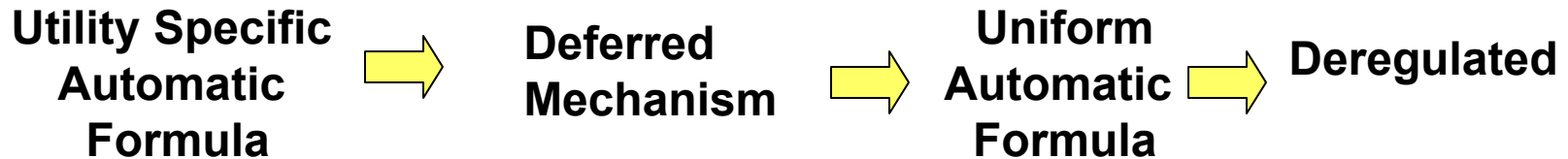
**System Loss**

**Universal Charge**

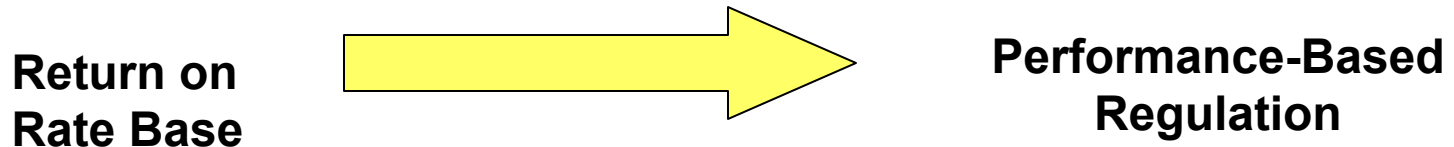


# How Rate Components Move

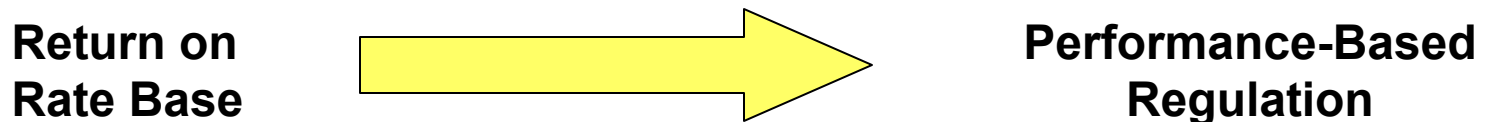
## Generation



## Transmission

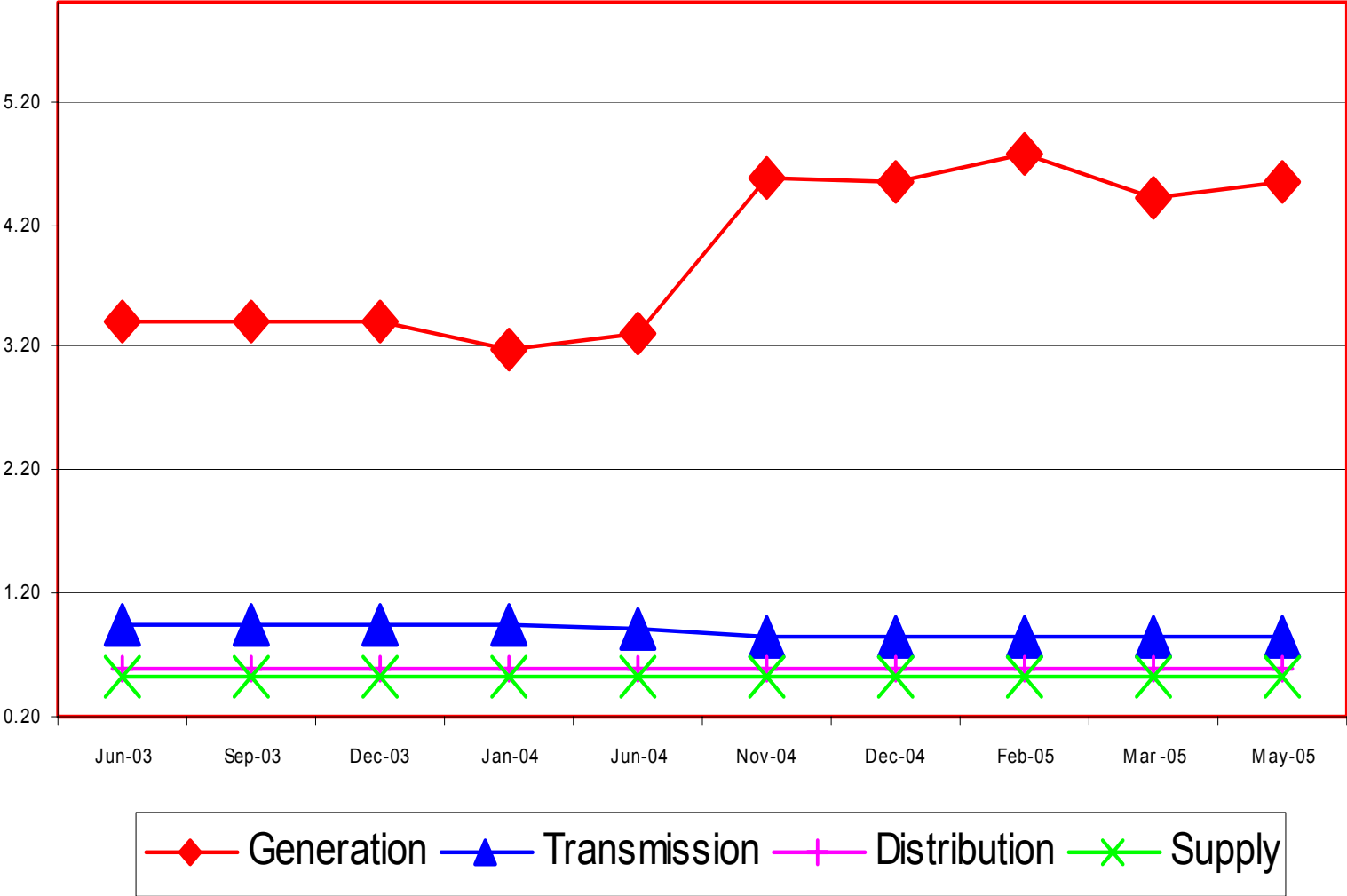


## Distribution





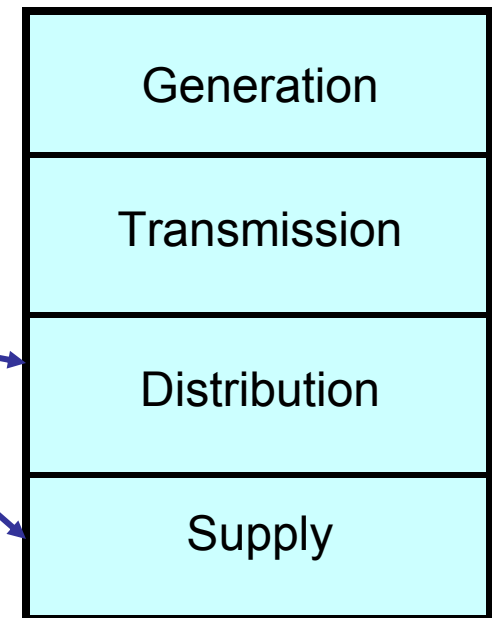
# MERALCO UNBUNDLED RATE MOVEMENTS for Consumption at 100 kWh, In P/kWh



# The Next Step: Business Separation Unbundling Plan

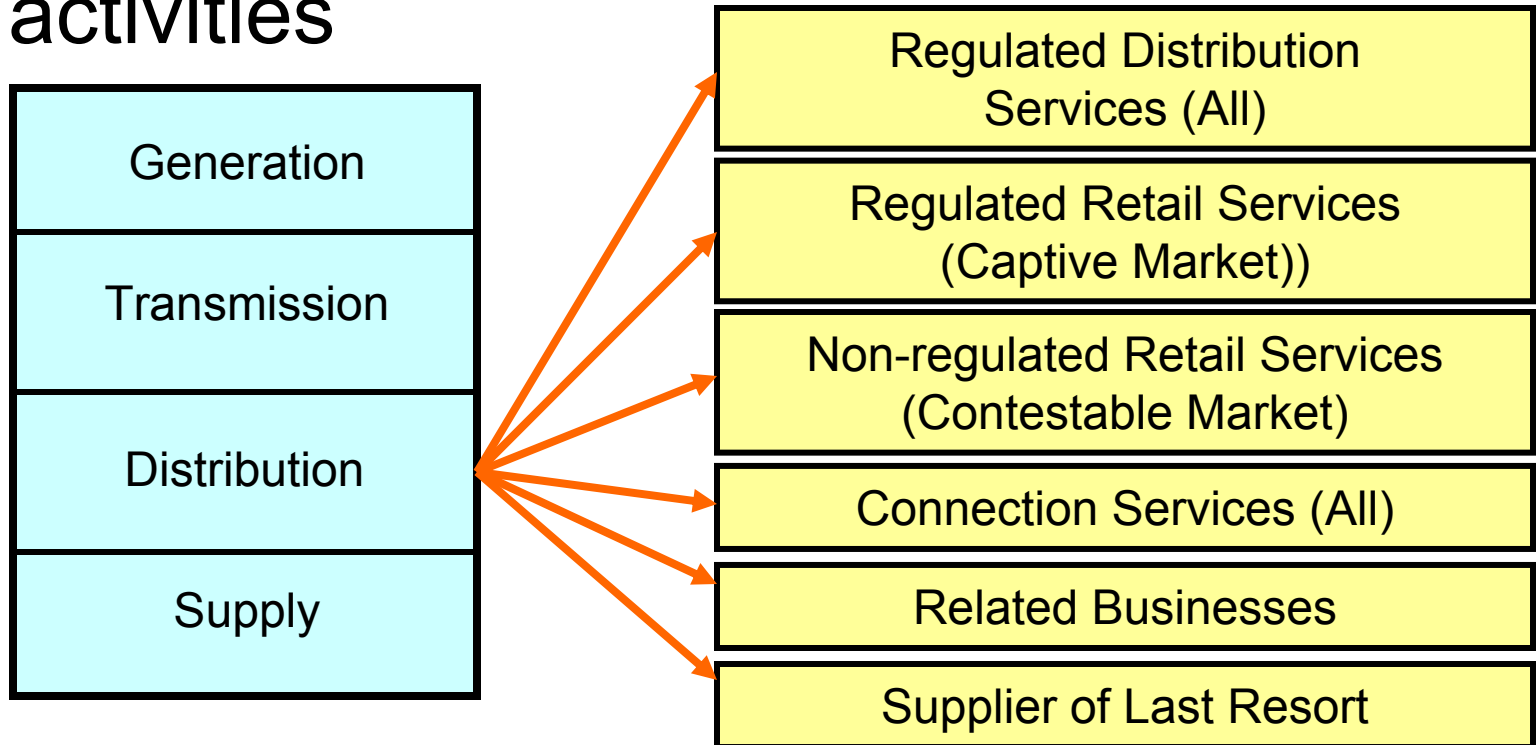
- Clearly separate accounts between regulated and non-regulated business activities

**DISTRIBUTION UTILITIES**



# The Next Step: Business Separation Unbundling Plan

- Clearly separate accounts between regulated and non-regulated business activities



# The Final Step: When Necessary Structural Unbundling

- “ Separation of different activities through the creation of separate divisions within a single company or separation into different juridical entities xxx ”
- “ A distribution utility, which has not structurally and functionally unbundled its business activities shall be prohibited from operating in a Contestable Market”

# Part 3: Lessons Learned

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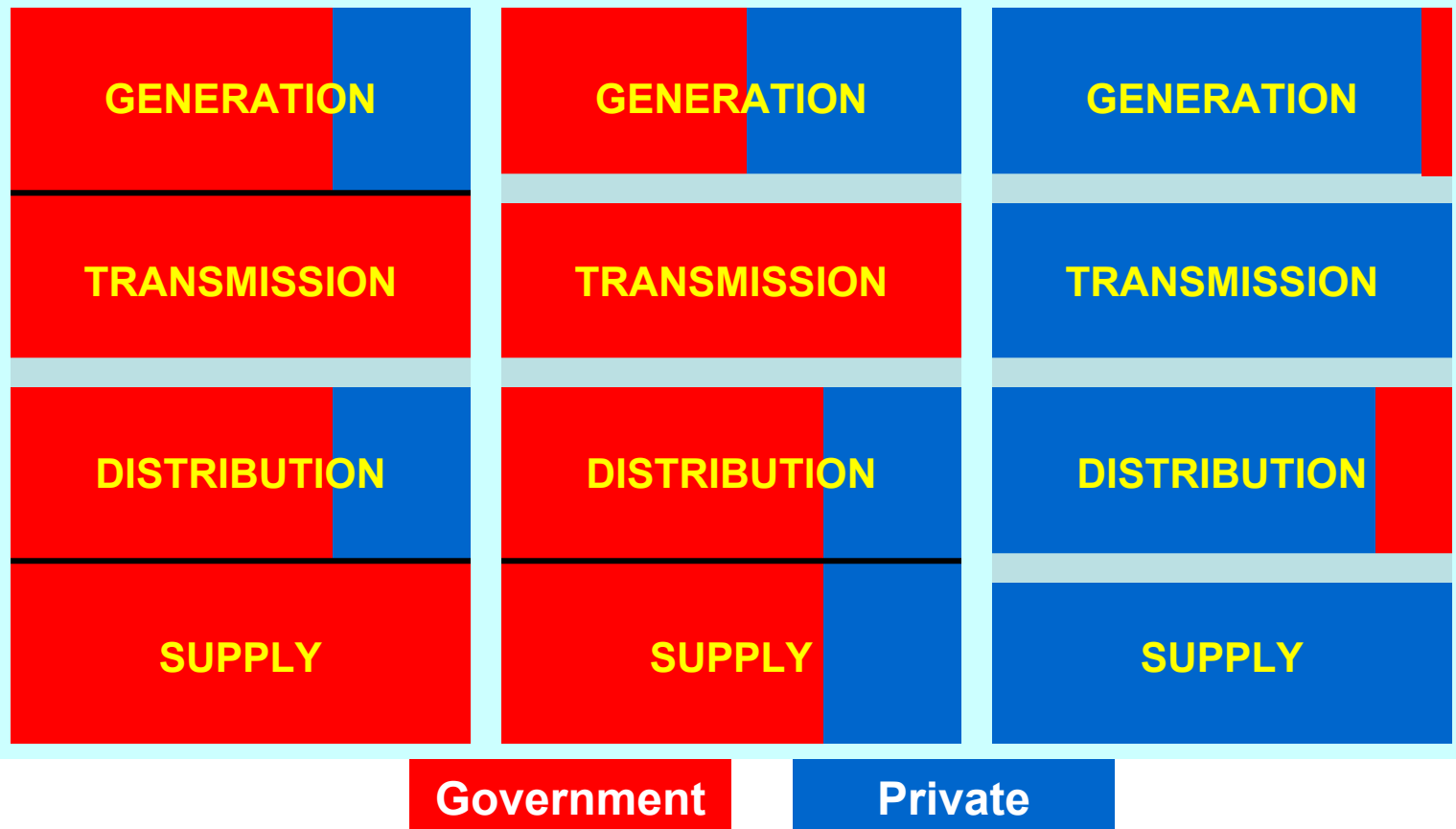
1. Ideal sequence:  
Business Separation → Rates Unbundling → Revised Rates
2. Policy Making → Situational vs. Universal
3. Adequate Staff Training
4. Consumer participation should have been managed
5. Time lines were unrealistic

# Where We Are Now

**Starting point  
in the  
Philippines**

**Where we are  
now**

**End Goal**



# Mabuhay!



Website: <http://www.erc.gov.ph>