Features of Electricity Distribution Tariffs in Jordan

Electricity Regulatory Commission (ERC)

Economic and Studies Research Dept.

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Contents:

1. Background.
2. Existing Electricity Law.
3. Consumption Structure by Customer Groups (2008).
4. Subsidy Indicator.
5. Fuel Clause.
6. Peak - off Peak Rate.
7. Metering Aspects.
8. Financial Cost Based on Voltage Levels.
9. Problems.

Background:

- **Current ERC's electricity Rate lists 10 main retail customer groups**

  [standard**,** Commercial, Small industries, Medium industries, Agriculture, Water pumping, Street lighting, Armed forces, Ports sector, Mixed Rate (Commercial/Agriculture)**]**.

- **Only the following retail customers subject to the TOU Rate:**
  - **Medium industries.**
  - **Agriculture → Optional for the consumers connected to the network before 14/3/2008. It was applied compulsory on the agriculture consumers whose connected to the network after 14/3/2008 and maximum load exceeding 100 KVA.**
  - **Hotels (under commercial Rate) → optional for 4 star hotels and above connected to the network before 14/3/2008. It was applied compulsory on the on the 4 star hotels whose connected to the network after 14/3/2008.**

Background (Cont…):

- **Standard Rate is a Four-part block rate for households, electricity employees, government agencies, and charities:**

1. **From 1 to 160 kWh/month.**
2. **From 161 to 300 kWh/month.**
3. **From 301 to 500 kWh/month.**
4. **Above 500 kWh/month.**

Background (Cont…):

- **Employees of electricity companies receive a reduction of 75%,**

- **A reduction of 25% is granted to government agencies, charities, and some of army forces consumptions,**

- **For street lighting the consumption not exceeding the amount of 1988 is free of charge,**

- **Other retail consumers are subject to a flat rate Rate.**

Background (Cont…):

No	Group / Sector	Type of Rate		Flat Rate Cent/kWh	Maximum Load $/kW/month	Day Rate Cent/kWh	Night Rate Cent/kWh	Reductions
1	Standard Rate applicable	Four-part block Rate	1 - 160 KWh/month	4.5				Electricity Companies Employees:75% Charieties:25%
2	for Households		161 - 300 KWh/month	10.0				
3	Electricity Companies employees,		301 - 500 KWh/month	12.0				
4	Government agencies and Charities		Over 500 KWh/month	15.9				
5	Commercial Sector applicable for commercials, TV & Broadcasting, and Hotels	Energy Charge (Flat Rate Rate)		12.1				
6	Small Industries	Energy Charge (Flat Rate Rate)		6.9				
7	Medium Industries	Maximum demand charge combined with day and night energy charge			5.3	6.5	5.1	
8	Agriculture	Energy Charge (Flat Rate Rate) Optional maximum demand charge combined with day and night energy charge		6.6	5.3	6.5	5.1	
9	Water Pumping	Energy Charge (Flat Rate Rate)		5.8				
10	Hotels	Energy Charge Optional maximum demand charge combined with day and night energy charge		12.1	5.3	11.4	9.9	
11	Street Lighting	free of charge for consumption equal to the 1988 level, for the exceeding consumption energy charge (Flat Rate Rate)		7.2				
13	Army Forces	Energy Charge: 25% reductions for Part of the consumption		11.4				
14	Ports Sector	Energy Charge (Flat Rate Rate)		8.2				
15	Mixed Rate (Commercial/Agriculture)	Energy Charge (flat rate Rate) 2/3 of consumption charged as commercial 1/3 as agriculture						
16	Large Industries	Maximum demand charge combined with day and night energy charge			4.2	9.2	6.9	

Background (Cont…):

- **No fuel clause available.**

- **Cross subsidy already exists.**

Existing Electricity Law:

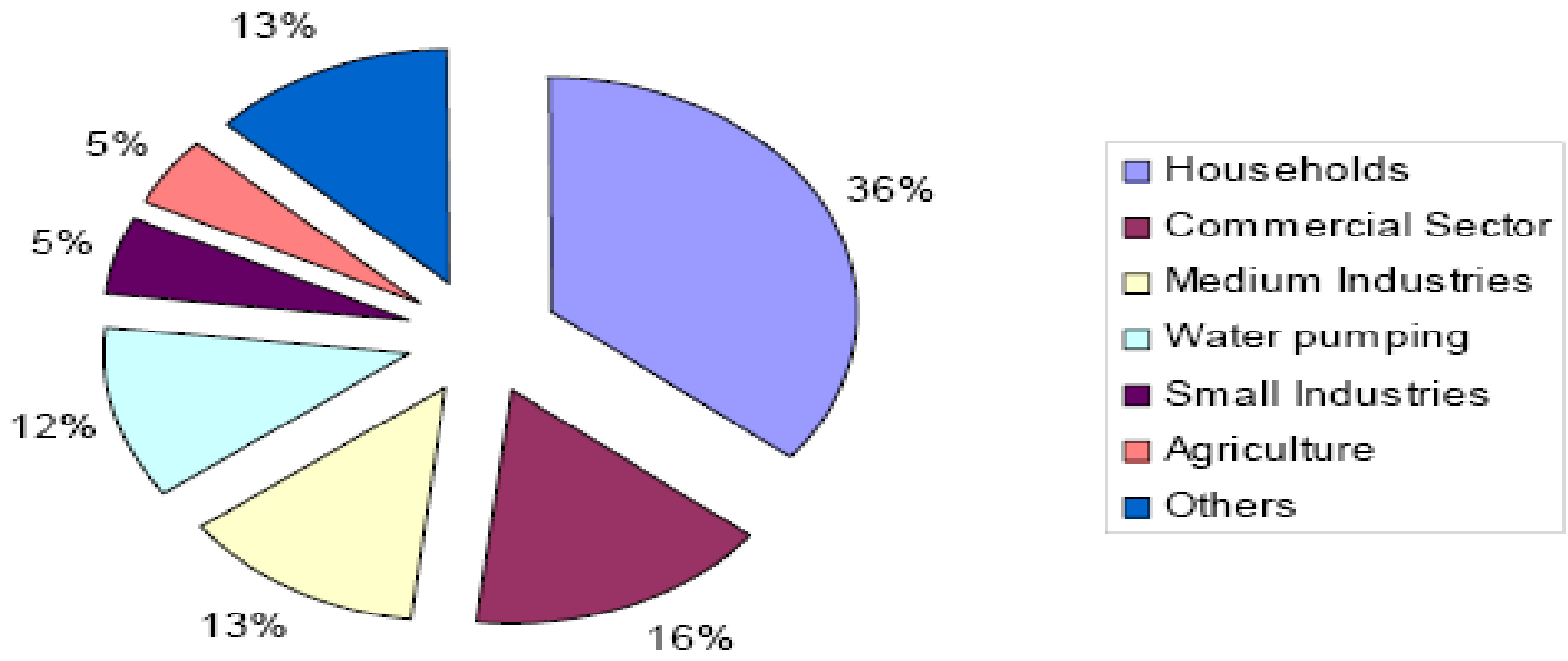
The electricity Law states in Article 47-C:

- **"C- When determining the Rate methodologies, the following shall be taken into consideration:…**

- **3- give to consumers economically efficient signals regarding the costs that their consumption imposes on the licensee's business;**

- **5- gradually phase out or substantially reduce cross subsidies, except while providing lifeline Rates."**

Consumption Structure by Customer Groups (2008):



Subsidy Indicator:

The strictly financial costs shows the following subsidy indicator:

	Subsidy Indicator
Household + Employees + Min. Charges	
- Up to 160 kWh/month	1.95
- Up to 300 kWh/month	1.54
- Up to 500 kWh/month	1.22
- Above 500kWh/month	0.99
Government	0.94
Charities	0.82
Commercial Sector	0.96
Small Industries	1.39
Medium Industries	1.31
Agriculture	1.36
Water Pumping	1.38
Hotels	0.75
TV and Broadcasting	0.75
Street Lighting	2.18
Army Forces	0.84
Sum Retail Customers	1.16
Principal Customers	0.80
Total Including Principal Customers	1.13

Fuel Clause:

- **Rate increased in March 2008. During the year 2008, fuel prices strongly rose, with NEPCO functioning as a "buffer" for these increased costs during the year 2008. As a result NEPCO's Income Statement as of 31 December 2008 showed a large operating loss.**

- **In conclusion, no adequate pass-through mechanism is currently functioning in the Jordan electricity sector. NEPCO did not recover the legitimate power purchase costs, putting under risk the economic viability of the firm.**

Fuel Clause (Cont…):

A solution would be a fuel clause. Two kinds of clauses could be applied:

- **Fuel Price Index Formula: this formula defines the increase of the Rate depending on the change of the fuel price and the share fuel costs have in total costs. The formula should be applied to bulk supply Rates and retail consumer Rates. Each period (debatable) the fuel prices will be monitored and price movements will have determined from those used in the existing Rate. If the impact of variations in the fuel costs is greater than 2% of NEPCO's revenue requirements, the ERC will update the bulk supply Rate and subsequently the retail Rates. If the impact is less than 2% the ERC might wait until the next month to take into account these variations.**

Fuel Clause (Cont…):

The Fuel Price Index Formula should applied by increasing and falling fuel prices.

- **The Fuel Fils. This is a charge in addition to the Rate charges and should compensate for fuel price changes. In case fuel prices increase, it compensates the licensees. When fuel prices drop electricity consumers benefit. The Fuel Fils will be shown on the electricity bill as separate item.**

- **This charge should be treated similar to the Fuel Price Index Formula. Each period the fuel prices will be monitored and price movements will have determined from those used in the existing Rate. If the impact of variations in the fuel costs is greater than 2% of NEPCO's revenue requirements, the ERC will update the bulk supply Rate and subsequently the retail Rates. If the impact is less than 2% the ERC might wait until the next month to take into account these variations.**

Fuel Clause (Cont…):

During the next few upcoming days Board of Commissioners will approve the Fuel Clause up to the end of 2010.

–0.42 cent/kWh

–Household consumption below 160 kWh/month will be exempted.

–Any consumption above that level will be subject to the fuel clause in retroactive bases.

–ERC considers' fuel clause as part of the Rate, so its subject to all kinds of reductions mentioned above.

–ERC design the fuel clause based on the current fuel price, in order to compensate the single buyer with safety margin for future fluctuation in fuel prices.

Peak - Off Peak Rate:

- **ERC will introduce Time of Use Rate at the beginning of 2010.**

- **Before commencement ERC & Distribution Licensee will pick a sample from household consumers for partially implementation during 2009.**

- **Distribution Licensee will calculate bill value for the sample based on flat and new Rate and the consumers will pay the lowest, just in the Testing Period.**

- **ERC will use propaganda for the purpose of introduce the Rate to public.**

Peak - Off Peak Rate (Cont…):

- **Current Household Rate:**

Block	Rate Cent/kWh
1 – 160 kWh/month	4.5
1 61– 300 kWh/month	10
301 – 500 kWh/month	12
Over 500 kWh/month	16

Peak - Off Peak Rate (Cont…):

Proposed Rate:

Block	Peak Rate Cent/kWh	Off Peak Rate Cent/kWh
1 – 160 kWh/month	4.6	3.9
1 61– 300 kWh/month	10.6	8.6
301 – 500 kWh/month	12.5	10.1
Over 500 kWh/month	16.6	13.5

Peak, off Peak Rate hours during the day

Time	Peak	Off-Peak
Summer time	9:00 – 23:00	23:00 – 9:00
Winter time	8:00 – 22:00	22:00 – 8:00

Metering Aspects:

- **Meters for the simple energy rate and the Maximum Demand Rate already exist in Jordan. Meters measuring energy separately for day and night have to be introduced. ERC states that they cost 28 JD (39 $) (1-phase) and 60 JD (85 $) (3-phase), while the normal 1-phase meters could be purchased for 15 JD (21 $) . The difference in capital costs seems to be affordable; the impact on energy efficiency makes the investment worthwhile.**

- **It is recommended to begin the implementation for residential customers. Among them the blocks with the higher consumption should be equipped first with such meters.**

Financial Cost Based on Voltage Levels:

- **Current Rate categories depends on the economic activity (Household, Commercial, Industrial,…..etc) but the future will depend on the connection voltage level for the customer.**
- **ERC Calculate the cost at each voltage level as a benchmark.**
- **The financial decisions for Rate depend on the some socio-economic factors.**
- **The calculation procedure starts from the generation and all its costs (Fuel, Capacity, Energy Charge) then transmission and its costs (O&M, Administrative Cost, Finance Cost) plus the Rate of Return.**

Financial Cost Based on Voltage Levels (Cont…):

- **Distribution cost breakdown to MV an LV and allocate the costs at each level (plus rate of return).**

- **HV consumers will pay all costs at that level but not other level's costs.**

- **MV consumers will pay all costs at that level (HV & MV costs) but not LV level's costs.**

- **LV consumers will pay costs at the all levels (HV, MV, & LV) costs.**

Problems:

- **There is no accurate records for the consumptions at each voltage level.**

- **There is no accurate allocation for cost based on voltage level.**

Financial Cost Based on Voltage Levels
(Fils/kWh)

Item	Generation	Transmission Lines	Distribution Lines	
		(H.V)	(M.V)	(L.V)
Fuel				
Generation Companies				
Purchases From Interconnection				
Purchases From Others				
Total (1)				
Depreciation & Amortization	-			
		-		
			-	
Total (2)				
Interests	-			
		-		
			-	
Total (3)				
General & Administrative, Operating & Maintenance Expenses	-			
		-		
			-	
Total (4)				
Other Expenses	-			
		-		
			-	
Total (5)				
Grand Total For Expenses				
Profits	-			
		-		
			-	
Total Profits				
Total Costs & Profits				

…….THANK YOU…….