METU

Retail Business

Retail Business

Retail Business

Retail Services

Basic Retail Services

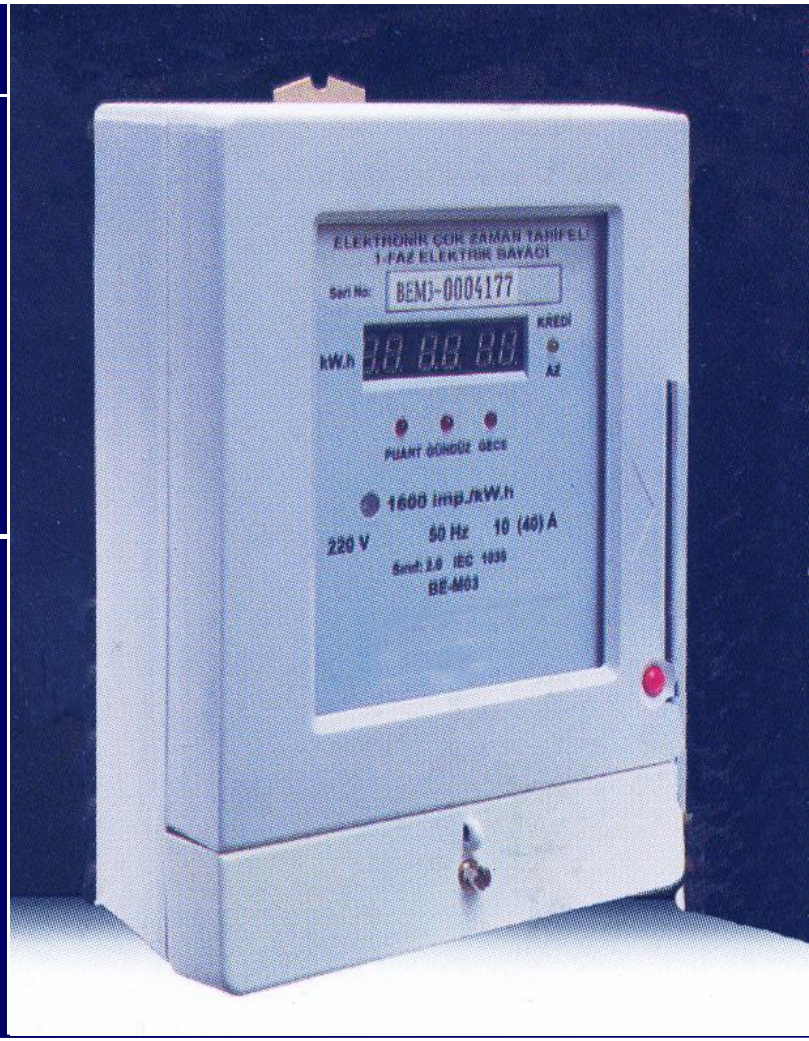
Basic retail services are;

- Electricity service and billing at retail level,
- Meter reading,
- Meter calibration, repair and maintenance,
- Customer relations,
- Toll collection,
- Customer connection or disconnection

Retail services can partially be deregulated,

- The service component of the tariff is regulated,
- The electricity component of the tariff may be deregulated if a market environment can be established at retail level

Retail costs are at most 5 % of the overall costs



Retail Business

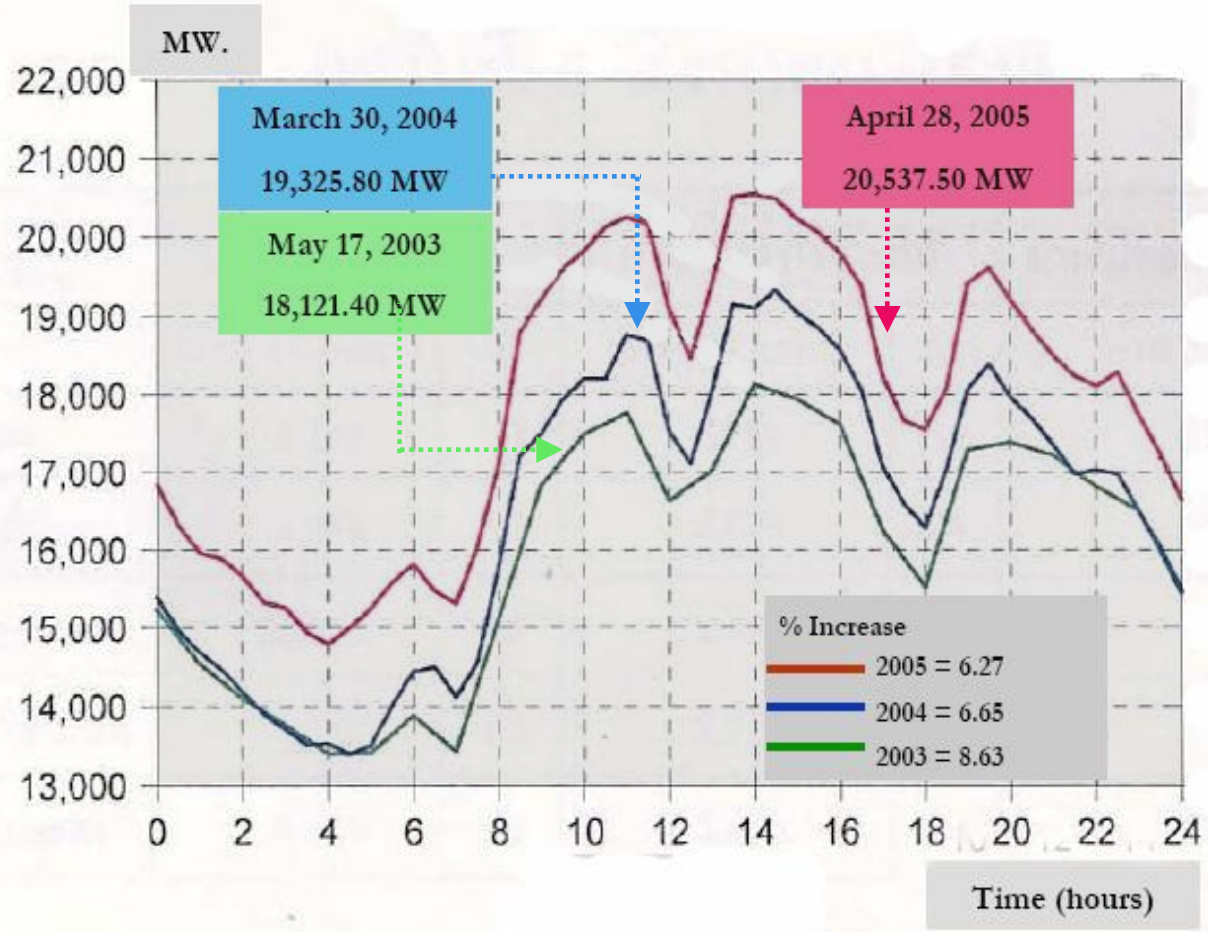
Daily Loading Curves

Daily Loading Curves

A basic characteristics of electrical loads is that the demand is not constant, but a function of time. In other words the demand varies with respect to hours, days, weeks and season.

As seen from the figure, the peak level of demand in the winter season is about 4000 MW, while the off-peak level is 2610 MW, which is 0.65 of the peak level

Ratchaburi Electricity Generation Holding PLC (Tailand)



Retail Business

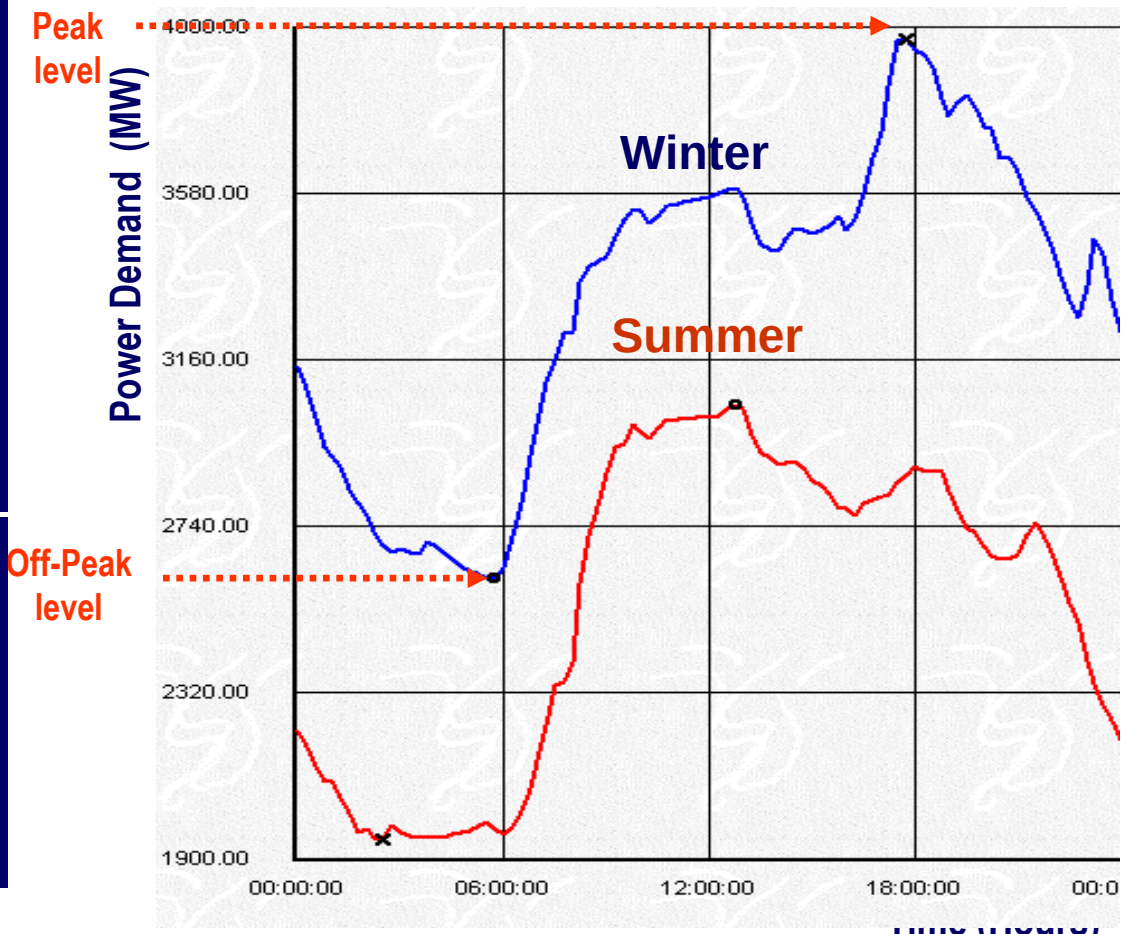
Daily Loading Curves

Daily Loading Curves

This situation creates serious difficulties in system operation, as electricity cannot be stored, hence the total supply must always be matching the total demand and losses in in the system

The system operator therefore, spends a considarable amount of care and effort to follow the balance between the total supply and demand

Ireland Electricity System Daily Loading Curve

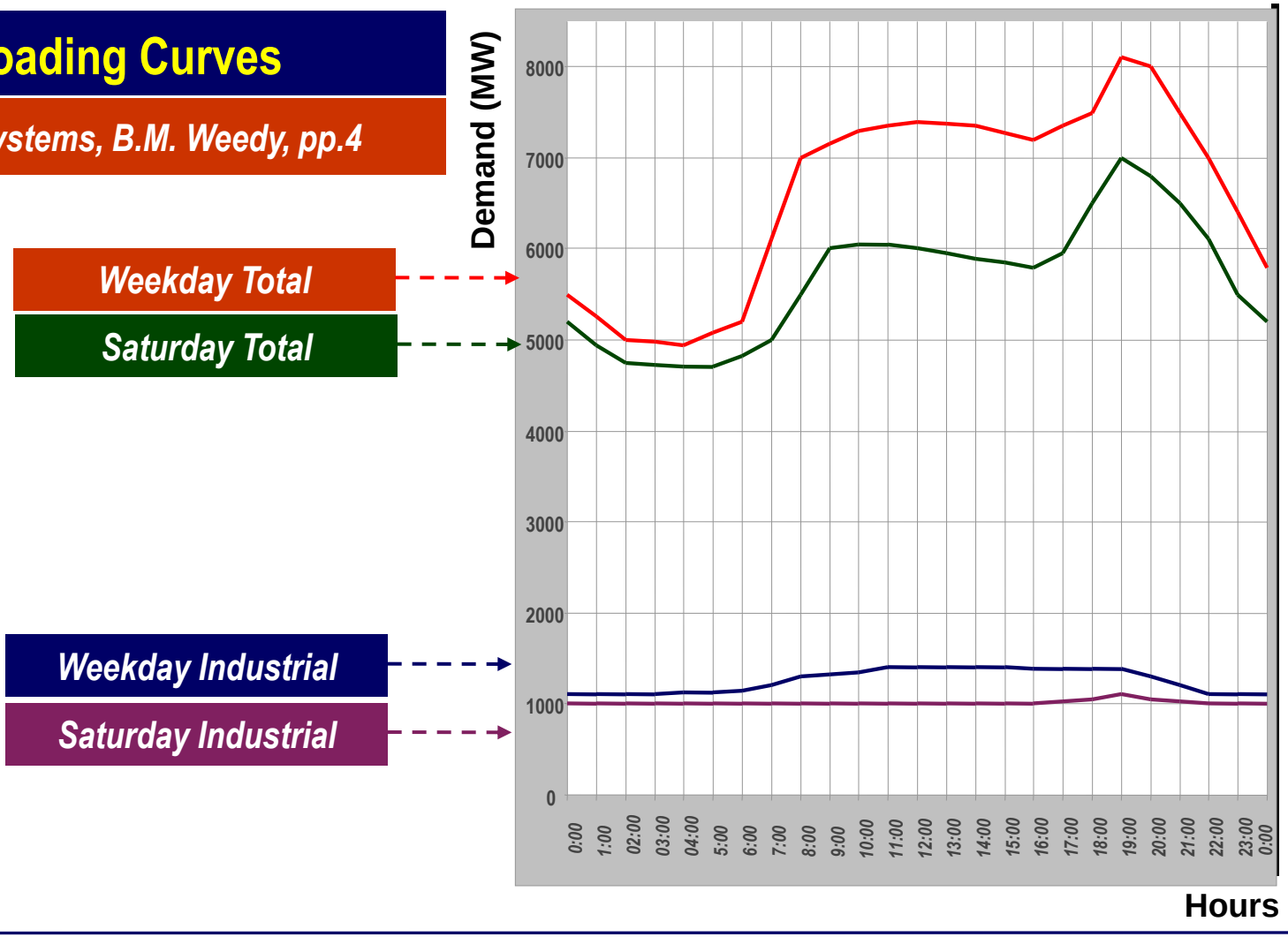


Retail Business

Daily Loading Curves

Daily Loading Curves

Ref: Electric Power Systems, B.M. Weedy, pp.4



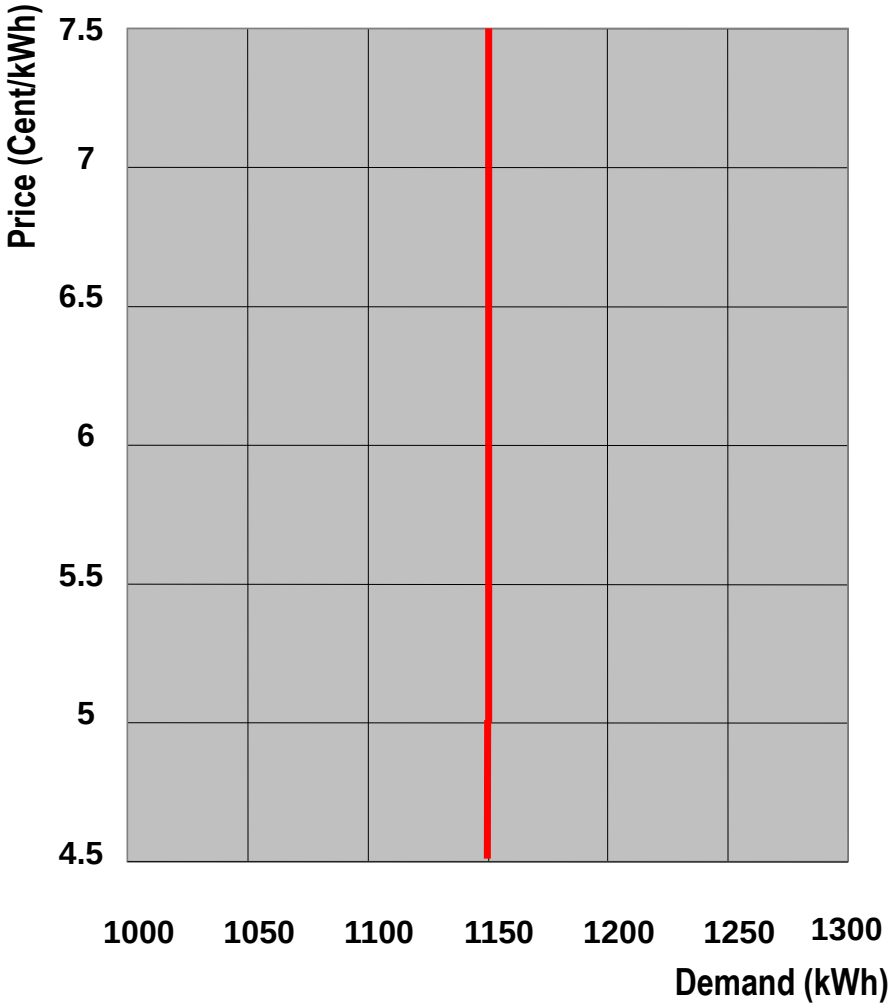
Retail Business

Two Demand-Side Flaws

Demand-Side Flaw-1

In addition to the above difficulties, demand side has two important flaws that make the market design and operation even more difficult;

Demand characteristics of the customers in a regulated retail market is rather ridig, i.e. it is almost insensitive to the price fluctuations in the wholesale market,



Retail Business

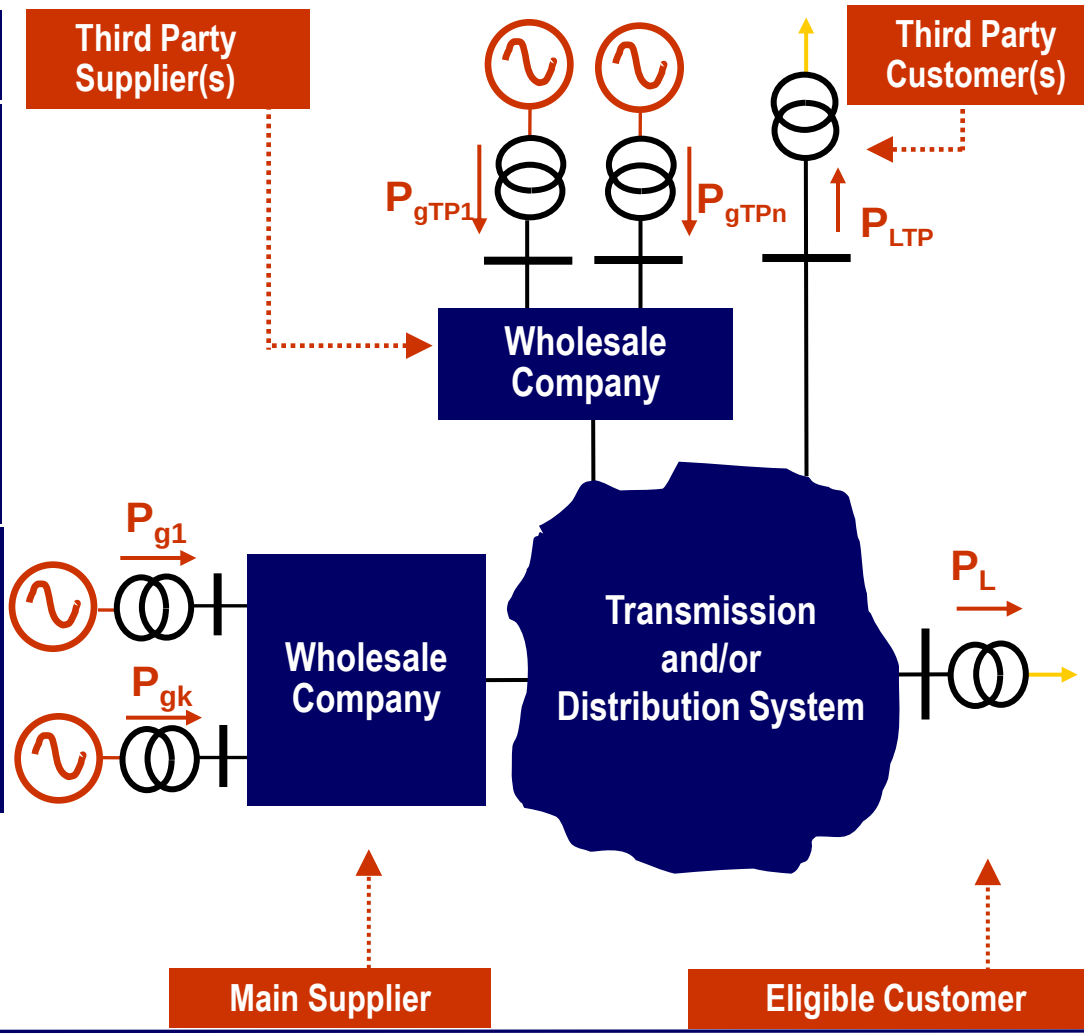
The Second Demand-Side Flaw

Definition

The second demand-side flaw is the situation that the parties in a Bilateral Agreement absorb or supply power from / to third party suppliers or to customers in grid without any contract

In practice, an exact match of the generation to consuption in a Bilateral Agreement can never be achieved

Hence, consumers always absorb from and generators submit power to grid without contract



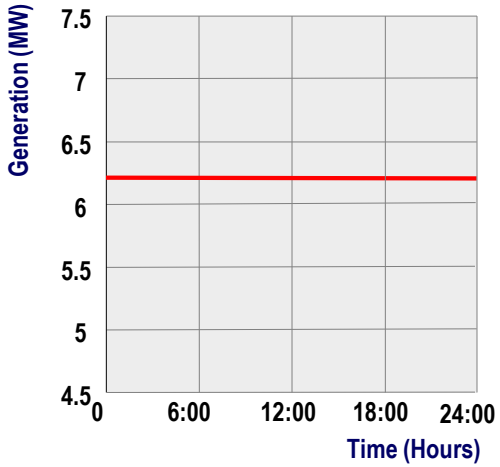
Retail Business

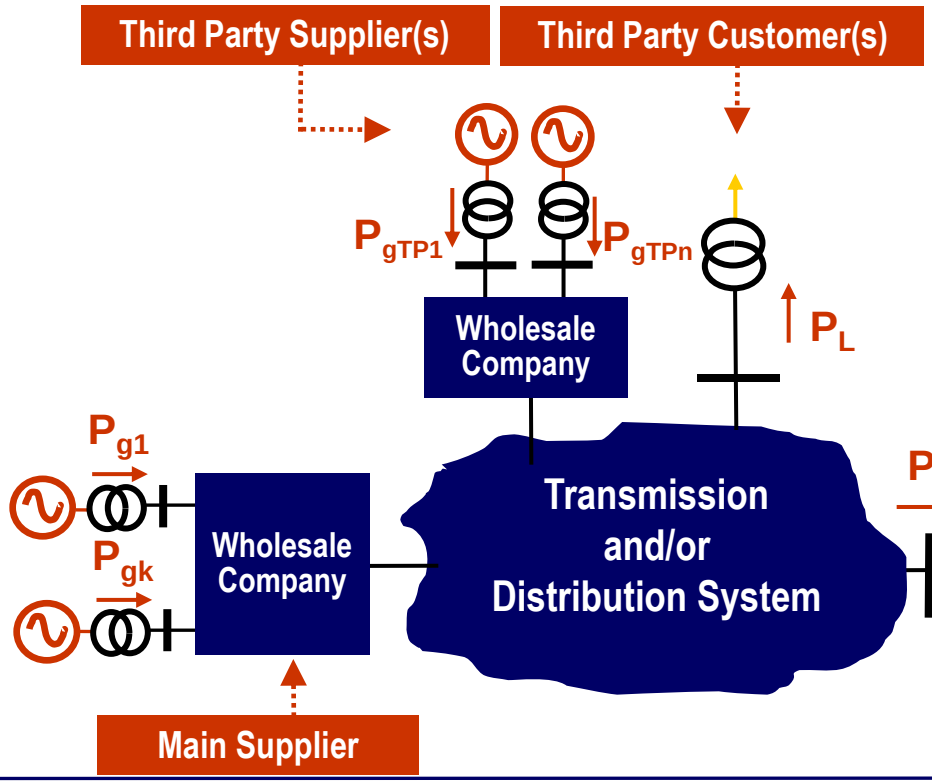
The Second Demand-Side Flaw

Mismatch between Supply and Demand

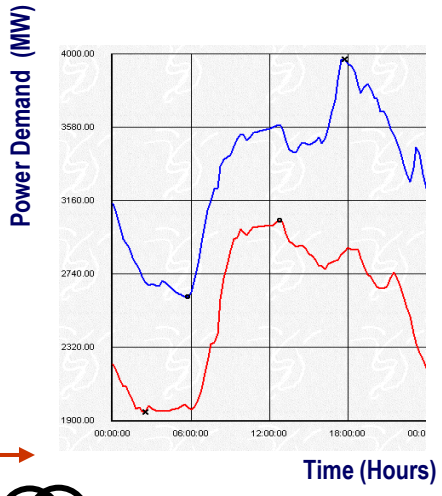
Load characteristics follows the daily loading curve, while the generation follows a flat linear profile, hence the two curves never match exactly

Generation Characteristics





Consumption Characteristics



The Second Demand-Side Flaw

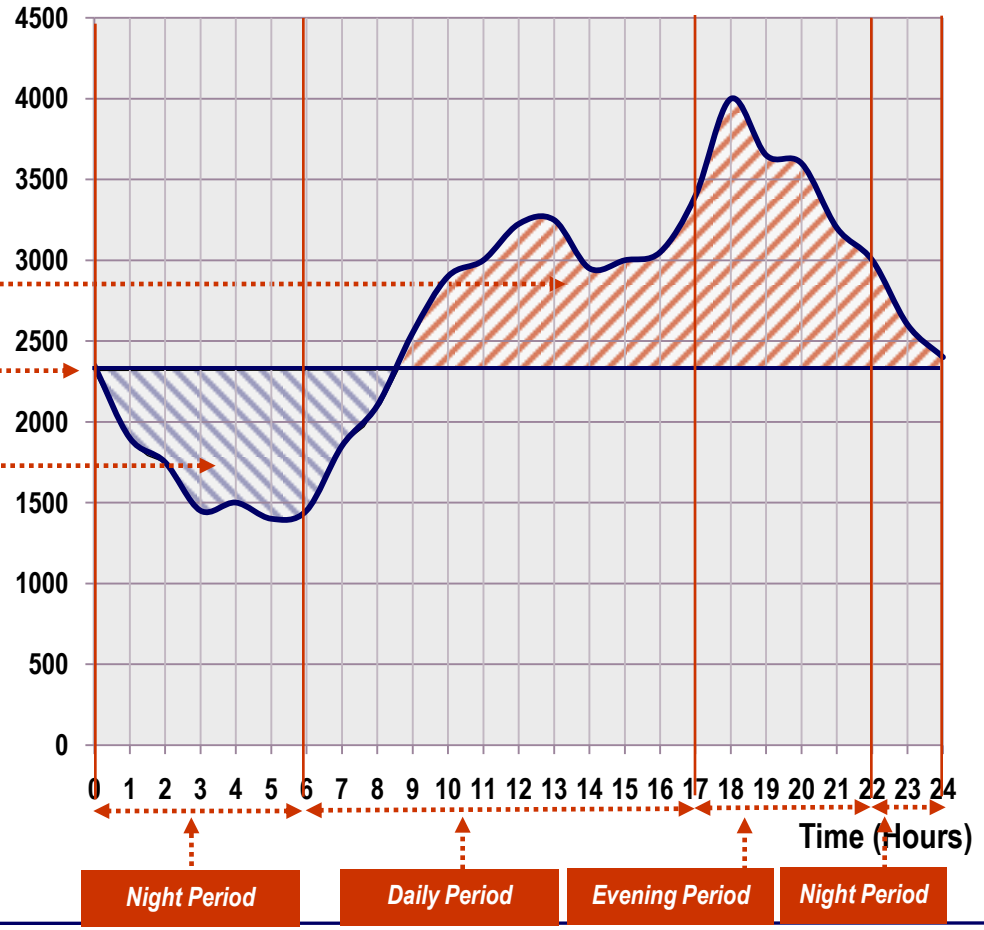
Daily Mismatch between Supply and Demand

Energy absorbed from third parties

Generator power output (MW)

Energy supplied to third parties

Please note that for a wholesale company with healty balancing and settlement characteristics, the payments made for the energies in these areas (not the energies themselves) must be equal after a certain period of time, such as one month



Retail Business

The Second Demand-Side Flaw

Mismatch between Supply and Demand

An exact match between supply and demand is never possible and hence, the customer sometimes absorbes power from third party supplier(s) through grid without any contract

hence

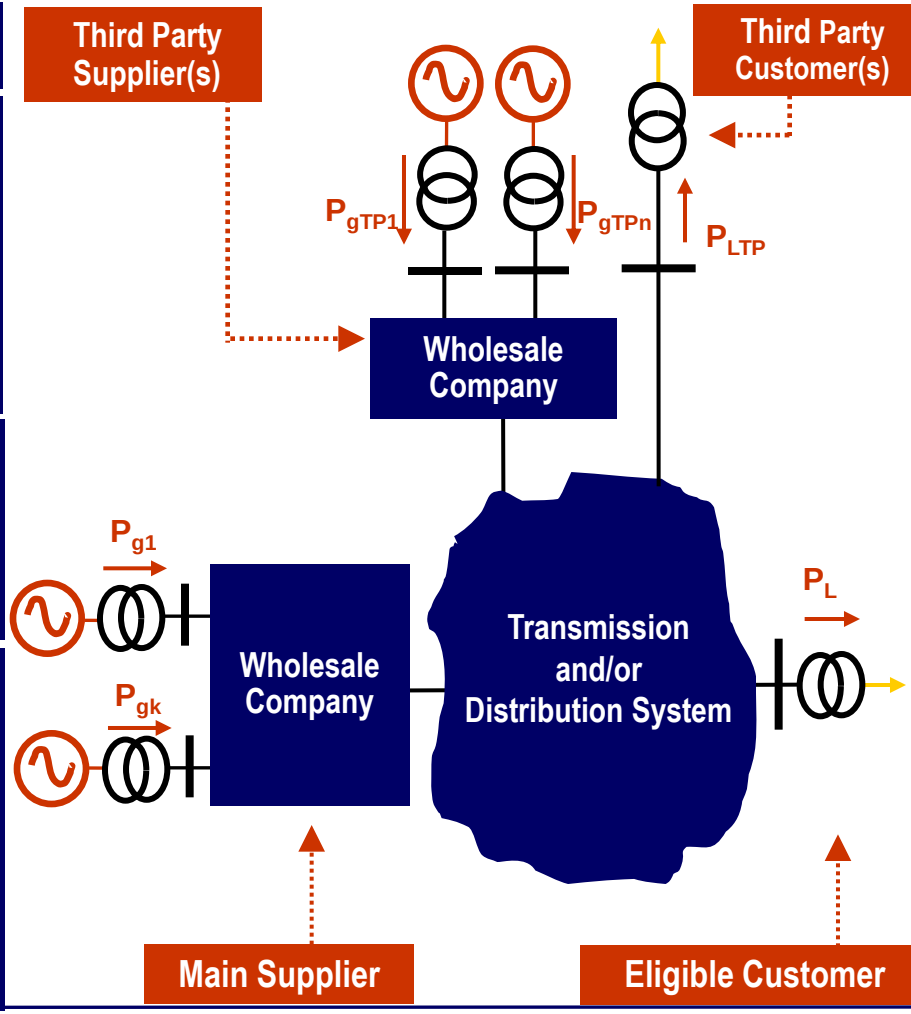
$P_L < P_g$ or $P_L > P_g$

$P_L = P_g - P_{LTP}$ or $P_L = P_g + P_{gTP}$

where, P_L *is the power consumed by the customer,*

P_g *is the power generated by the supplier,*

P_{gTP}, P_{LTP} *is the power generated or absorbed by the third party*



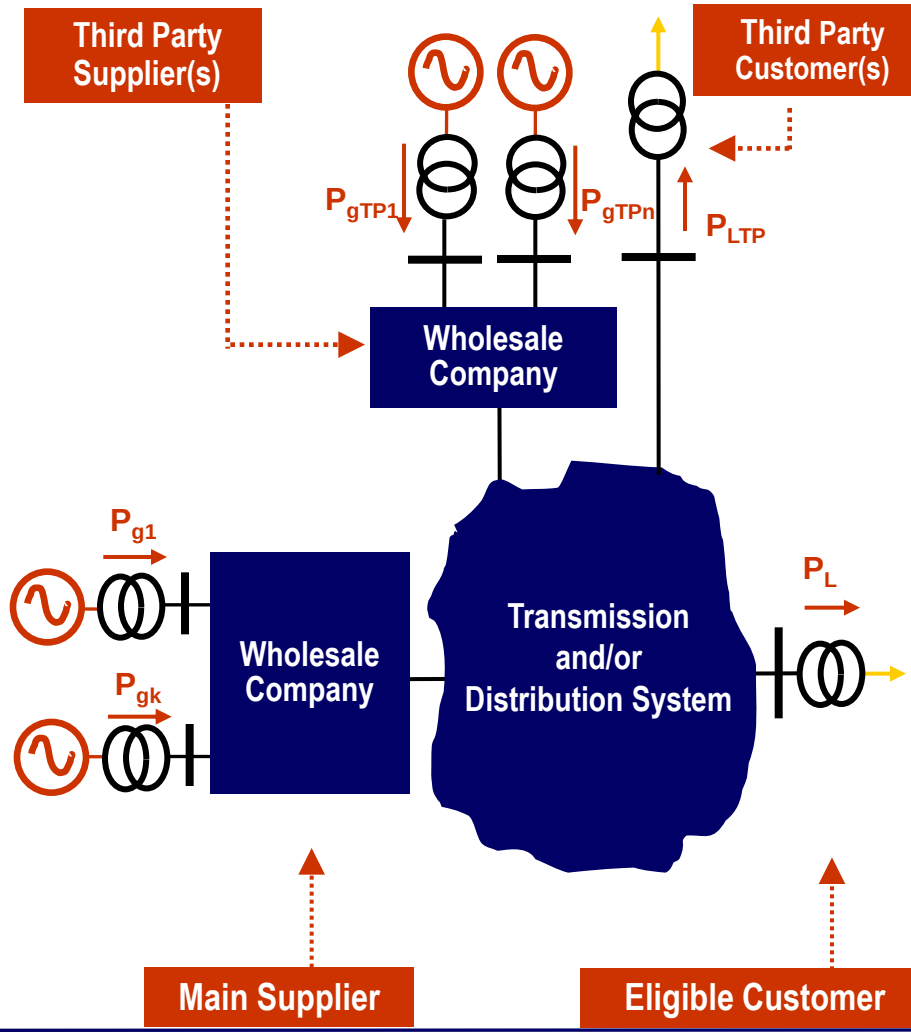
Retail Business

The Second Demand-Side Flaw

Mismatch between Supply and Demand

Hence;

- An exact match of supply to demand in a Bilateral Agreement is never possible,
- Customer sometimes absorbes power from third party supplier(s) through grid without any contract,
- Customer sometimes absorbes less power than the written amount in the contract, hence the supplier may be supplying a third party customer in the system through grid,
- hence, an accounting mechanism is needed among the supplier, demand and the third party supplier(s) and the customers



Retail Business

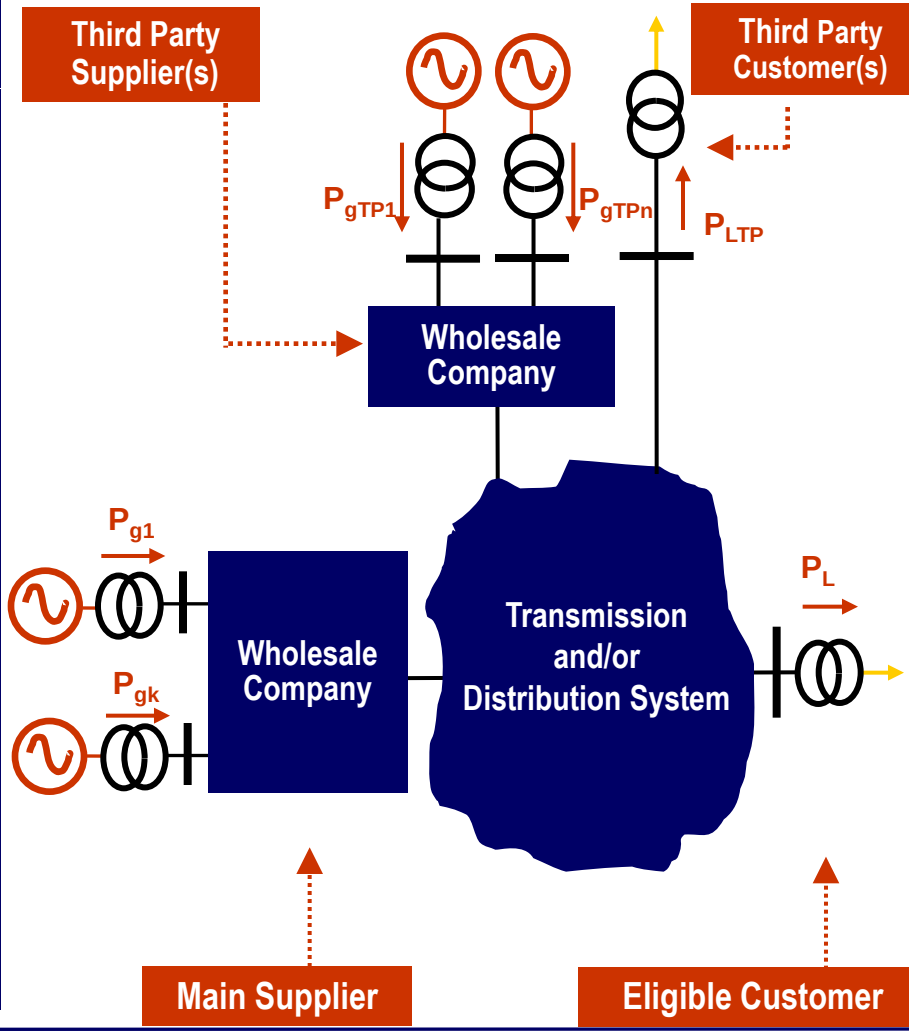
The Second Demand-Side Flaw

Mismatch between Supply and Demand

Sometimes power consumed by the customer from third party supplier(s) through grid without any contract may be so high that, the system operator may find himself in a situation that he has no other solution, except;

a) some consumers are to be blacked out, hence, a rotating blackout program is to be implemented without regarding the contracts or consumption levels of customers,

b) some extra power is to be purchased at a very expensive price



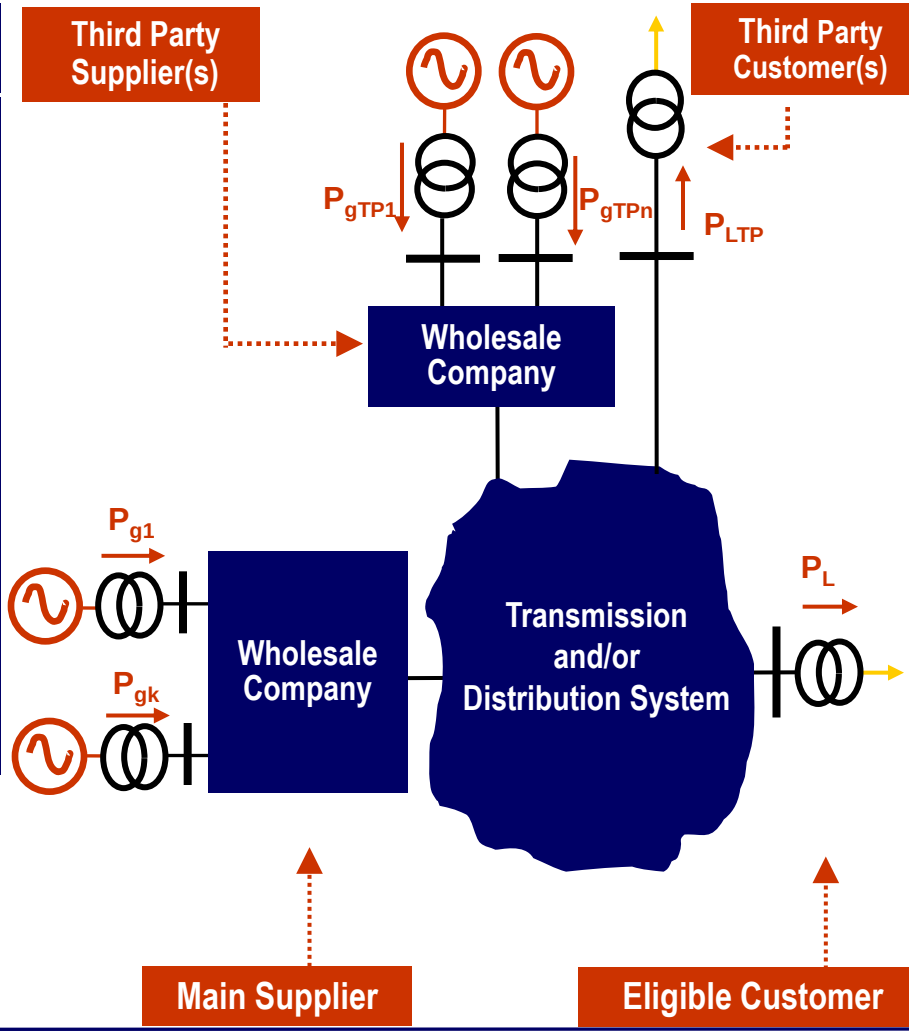
Retail Business

The Second Demand-Side Flaw

Mismatch between Supply and Demand

The system operator may prefer;

- purchasing power from third party suppliers, if the price is reasonable, i.e. it is within the limits of up to 10 times the long-range average,
- blacking out loads by implementing a rotating black out program to all loads without regarding the contracts or consumption levels of customers,



Retail Business

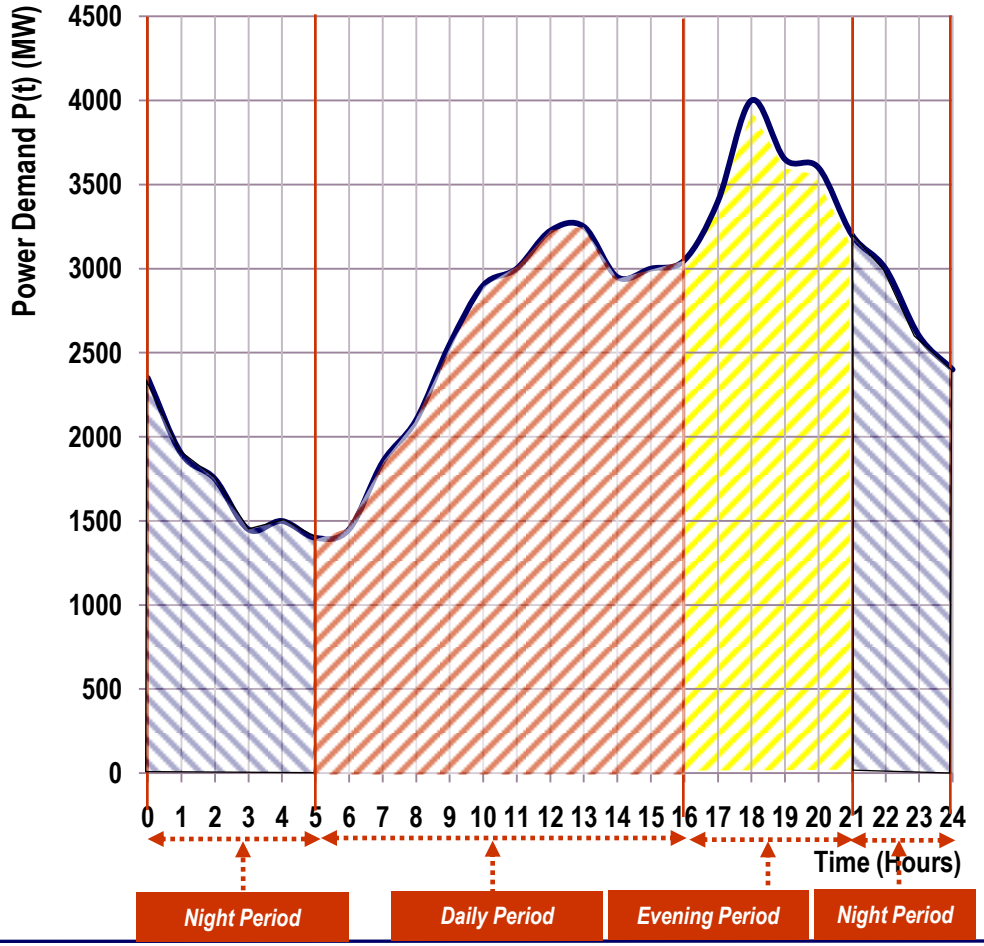
Remedies for the First Demand Side Flaw

Remedies

The general principle is quite simple and obvious;

- Install meters with three-rate tariff structures at retail level;
  a) Discourage consumption during the evening period by imposing a relatively higher price,
  b) Encourage consumption during other periods, particularly, during the night period, by imposing rerlatively lower prices,
- Establish competitive retail markets to mix the wholesale markets

Three-Rate Tariff



Retail Business

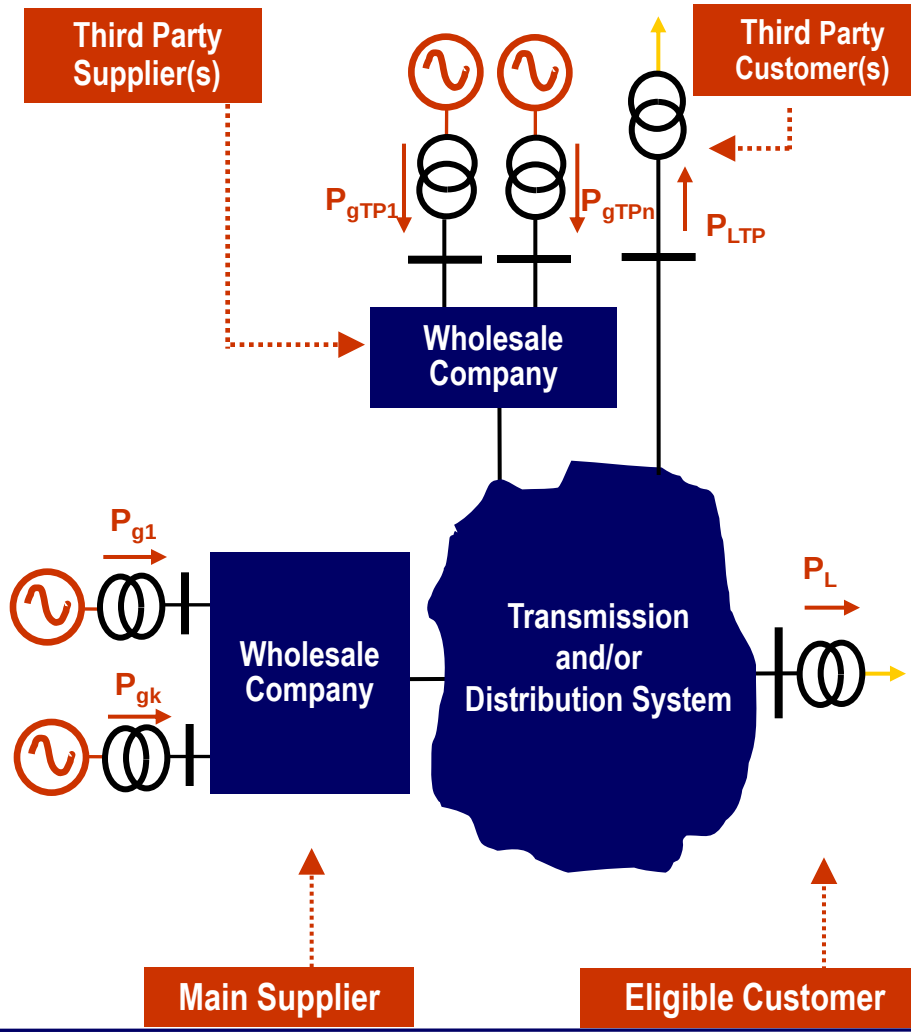
Remedies for The Second Demand-Side Flaw

Remedies

In principle remedies for the Second Demand Side Flaw are two folded:

- Flattening the daily loading Characteristics by;
  a) wholesale trading,
  b) employing a Three-rate Tariff structure,
- Establishing a Balancing Market

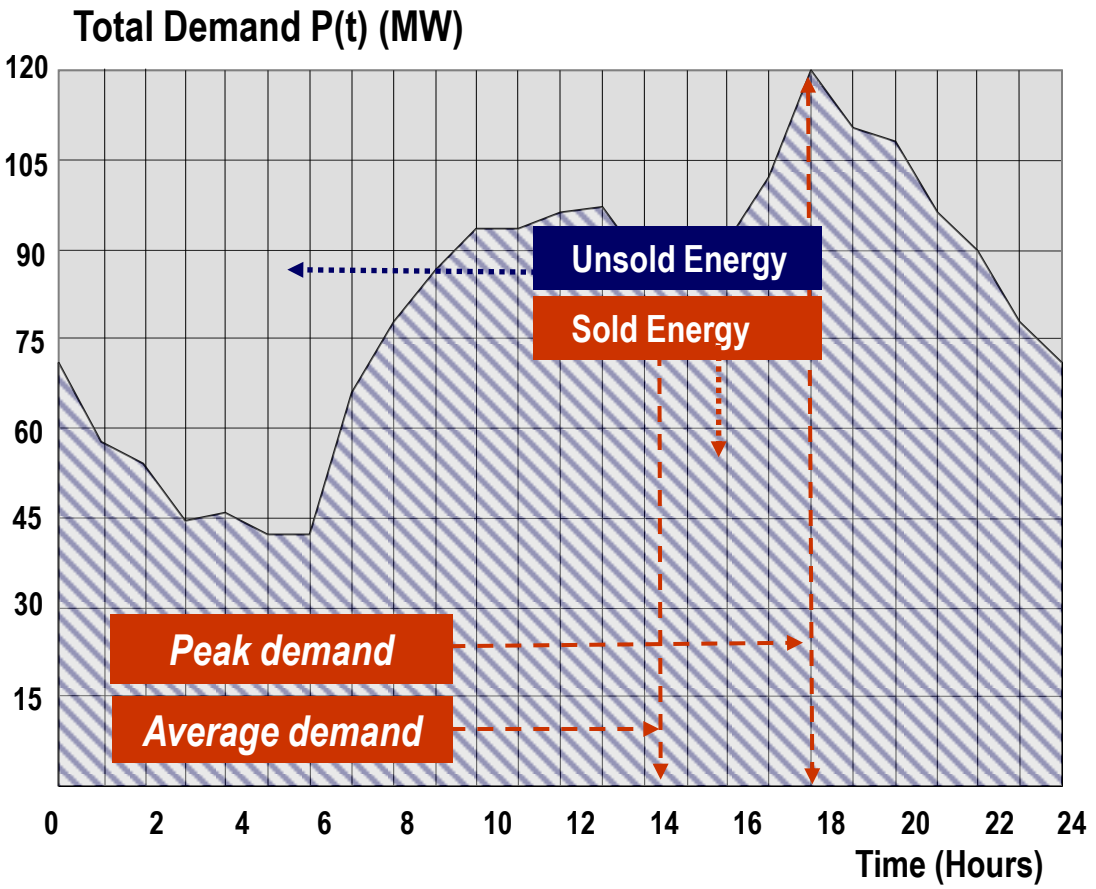
The first remedy does not completely eliminate the flaw, but only reduces the amount of power taken / given from / to the third parties



Flattening the Daily Loading Curve

Flattening the Daily Loading Curve by Wholesale Trading

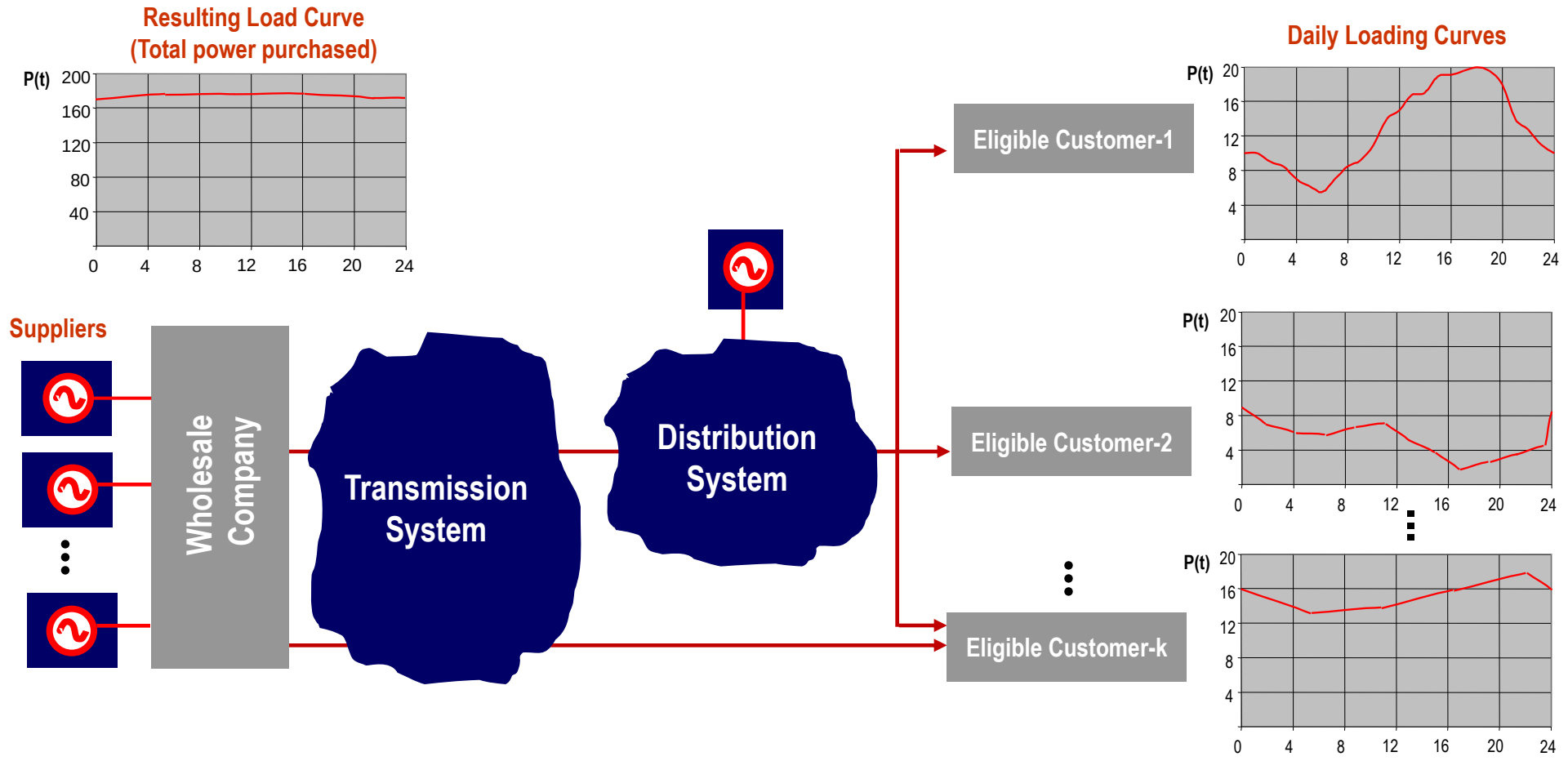
Basic Principle of Wholesaling:
Try to market the unsold energy remaining above the daily loading curve by offering a cheaper rate



Retail Business

Formation of Customer Portfolio

Formation of Customer Portfolio for Wholesale Trading



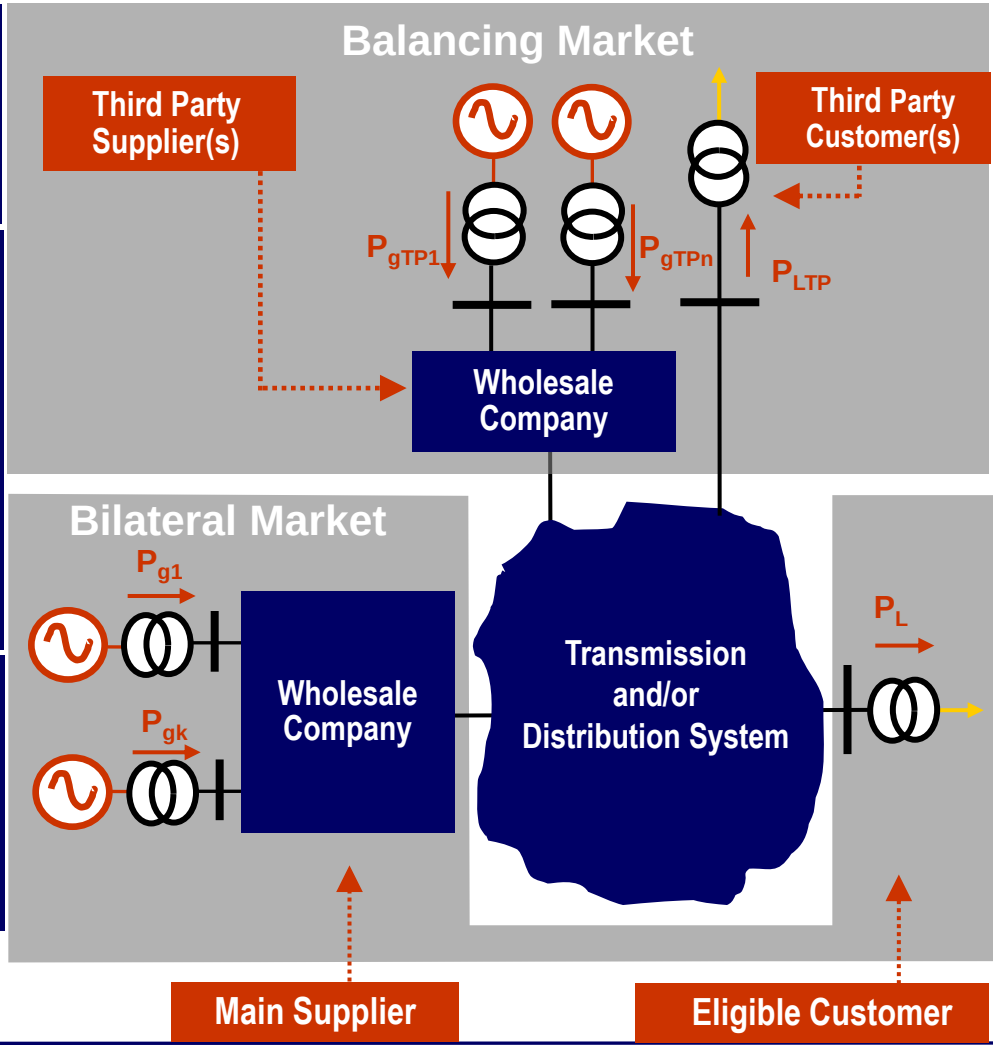
Retail Business

Balancing Market

Definition: Balancing is the task of maintaining the supply-demand balance in real-time

Definition:
Balancing Market is an environment, where supply and demand are balanced, i.e. mismatches in Bilateral Agreements are resolved in real time on spot price basis

Balancing Market compensates or absorbs power depending on whether the mismatch in bilateral conract is positive or negative real-time



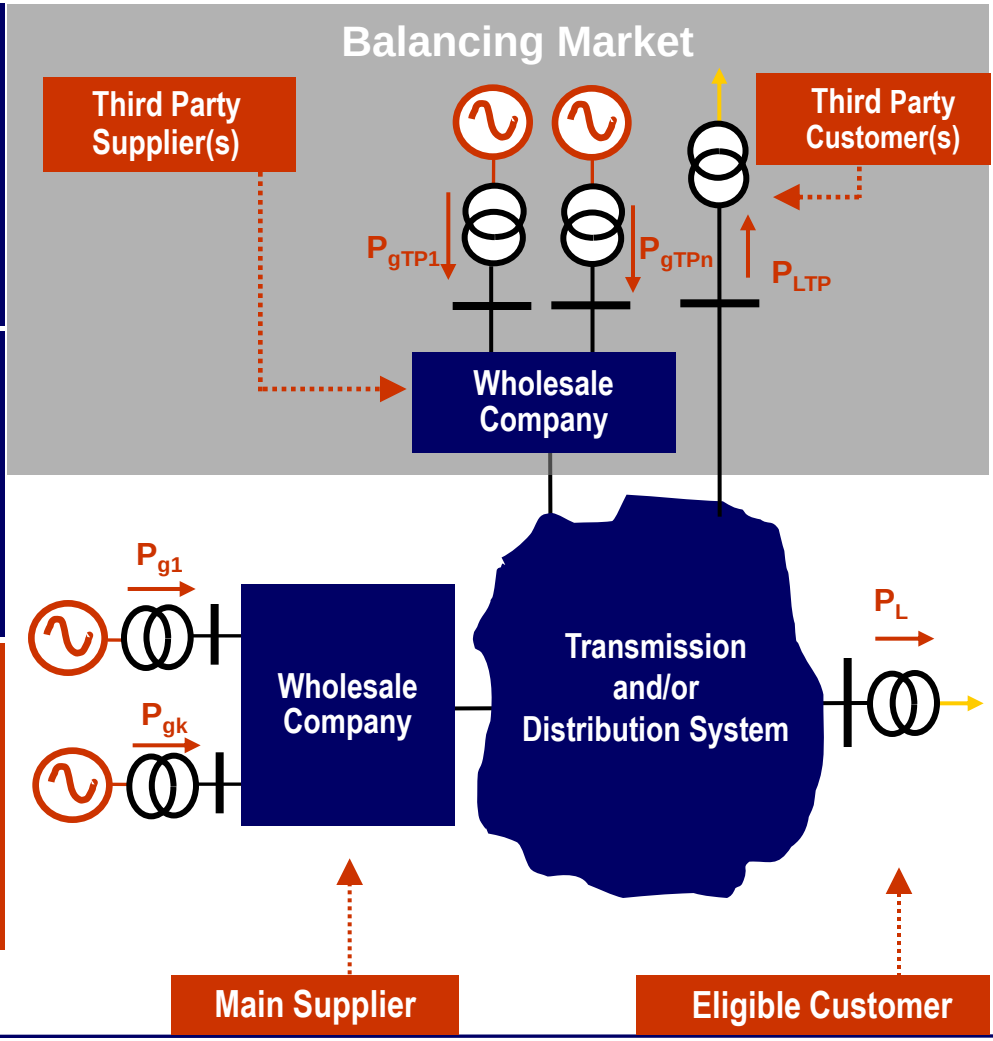
Retail Business

Balancing Market

The system operator sorts the third party suppliers or operating reserves (balancing plants) with respect to their marginal costs and then commits them in that order

These suppliers are committed and decommitted automatically by the Load Frequency Control (LFC) System installed in the the System Balancing and Settlement Center (BSC)

In case that the resulting prices are extremely high, the system operator, or the Customer itself may decide that load shedding would be a cheaper alternative

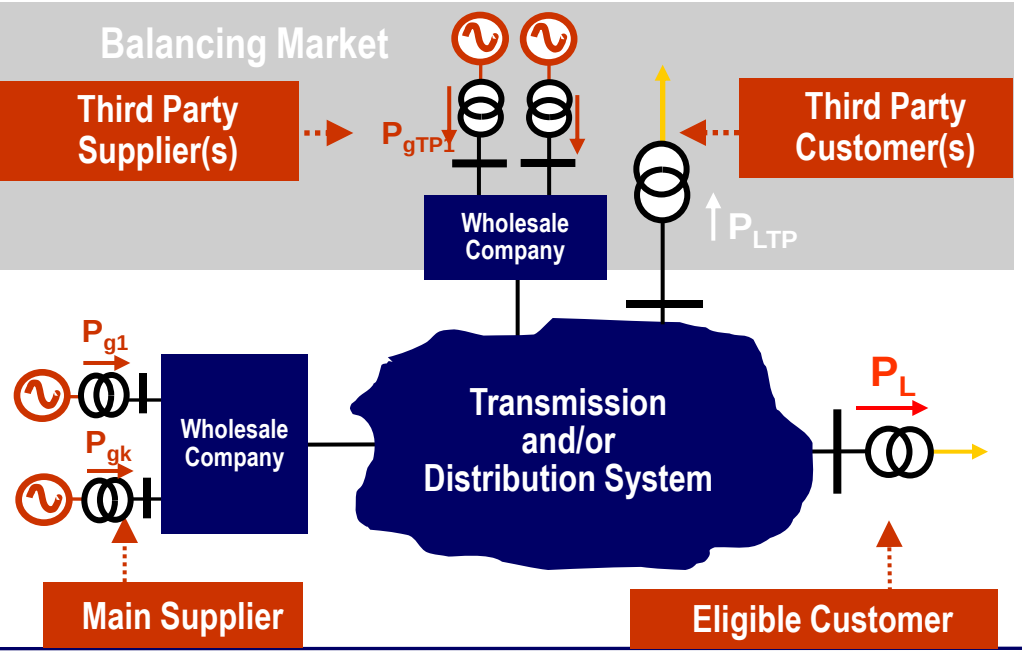


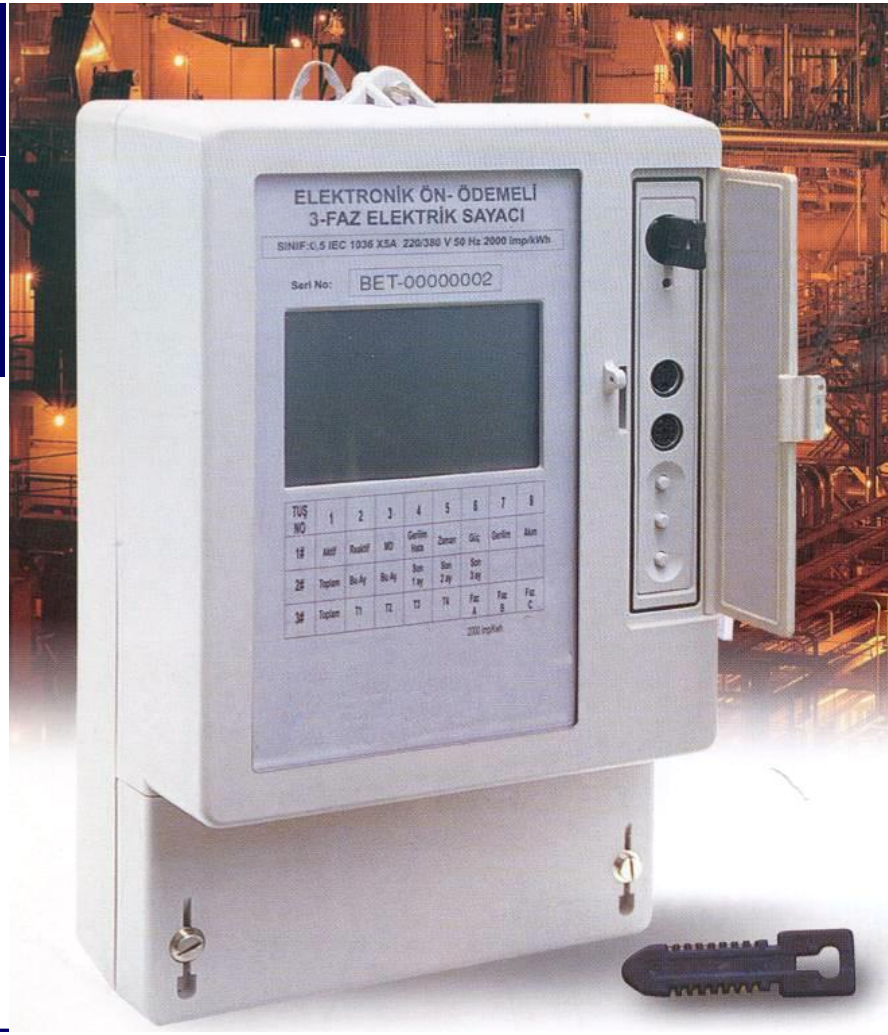
Retail Business

Three-Rate Meters and Balancing Market

Three-rate meters are quite important in balancing supply and daily demand

A retailer who cannot match the load fluctuations and supply will pay (will lose) a significant amount in the spot market



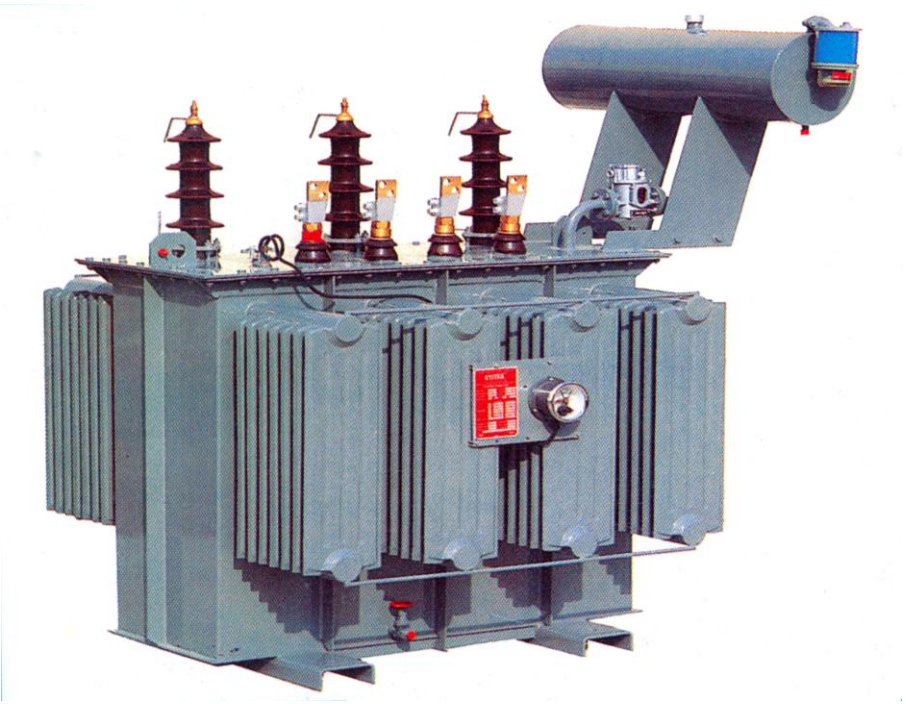


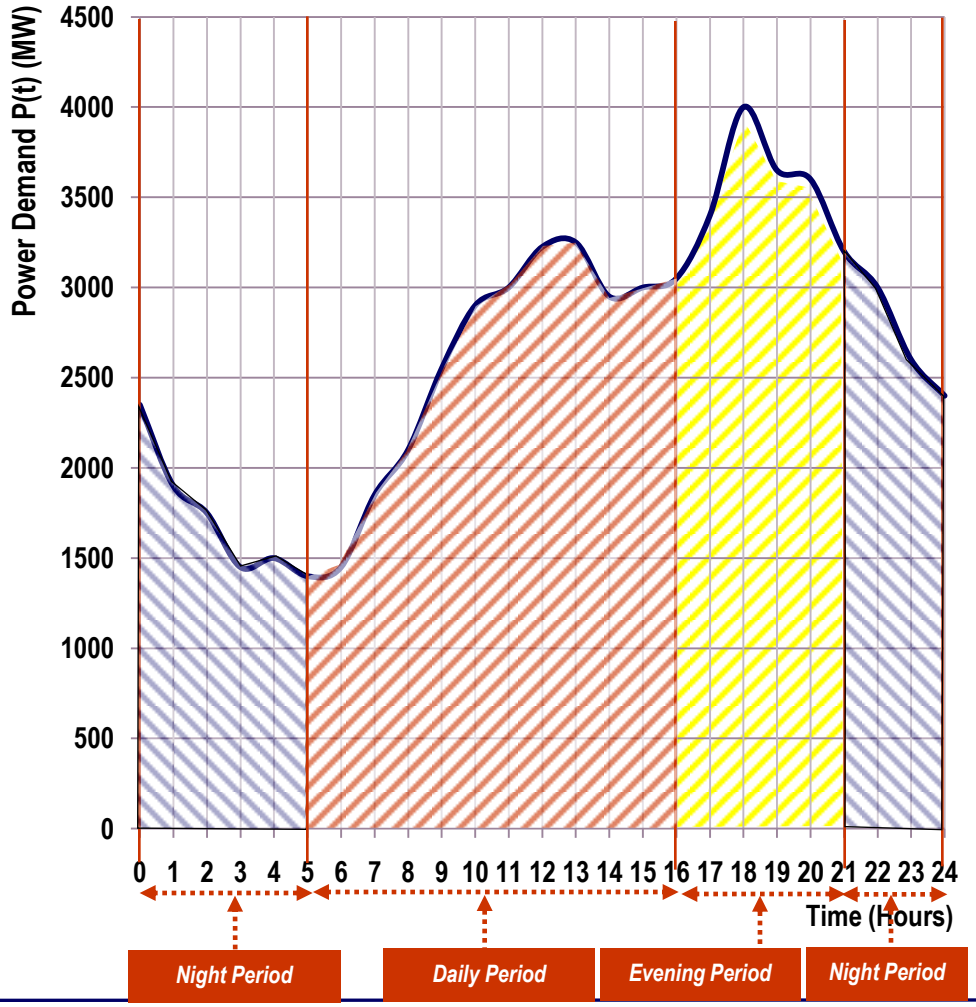
Retail Business

Single and Three-Rate Tariffs

Real-Time Metering and Billing

Area under each segment of the curve correspond to the total energy consumed within that period





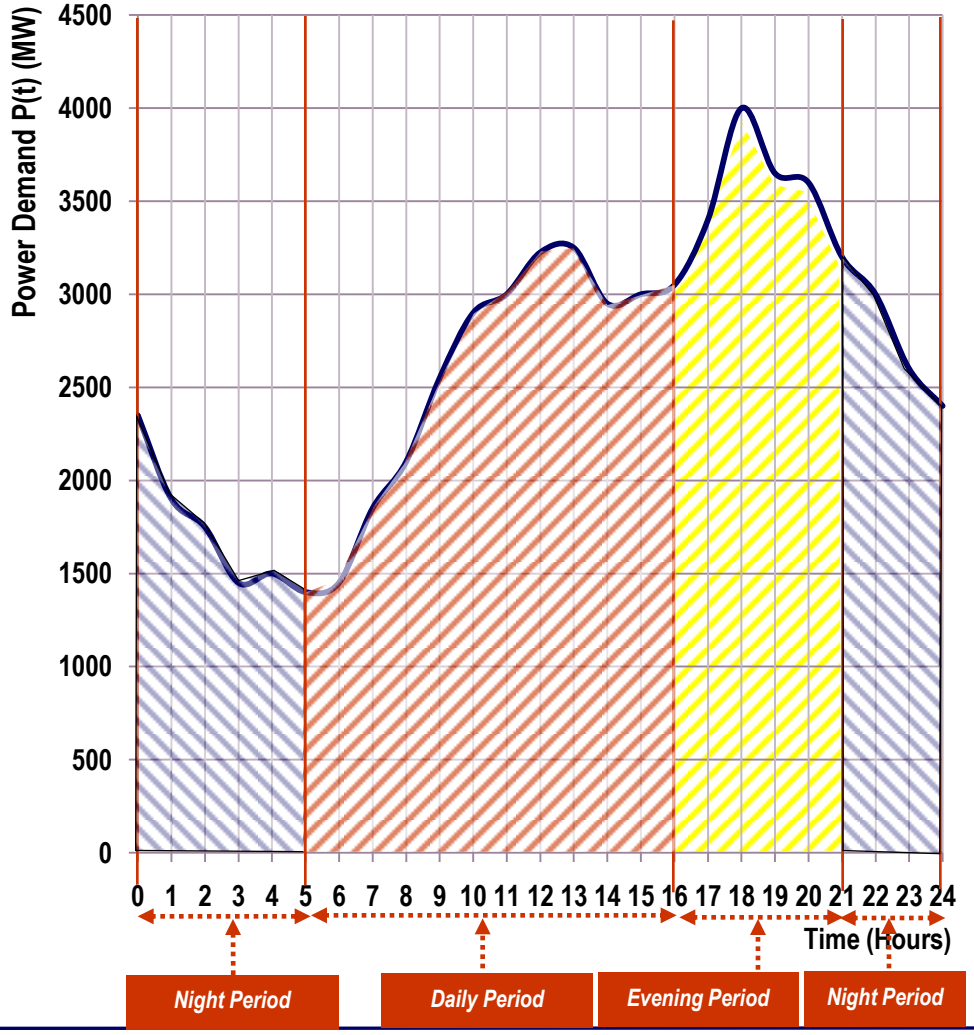
Retail Business

Single and Three-Rate Tariffs

Single and Three-Rate Tariffs (*),(**) (TL/kWh)

Customer Type	Single Rate Tariff	Evening (17:00-22:00)	Night (22:00-06:00)	Daily (06:00-17:00)
Industrial(**)	119.800	202.740	58.240	113.810
Spring Water	123.300	206.450	61.300	117.150
Sewage Treatment	119.800	202.740	58.240	113.810
Commercial	151.950	277.250	61.300	144.350
Residential	127.800	201.350	61.300	115.000
Agricultural	115.250	186.550	61.300	109.500
Government Inst.	119.500	186.550	61.300	109.500

(*) TEDAS (64 cities +1 associated share), January 01, 2004
(**) No incentive



Retail Business

Reshaping the Daily Loading Curve

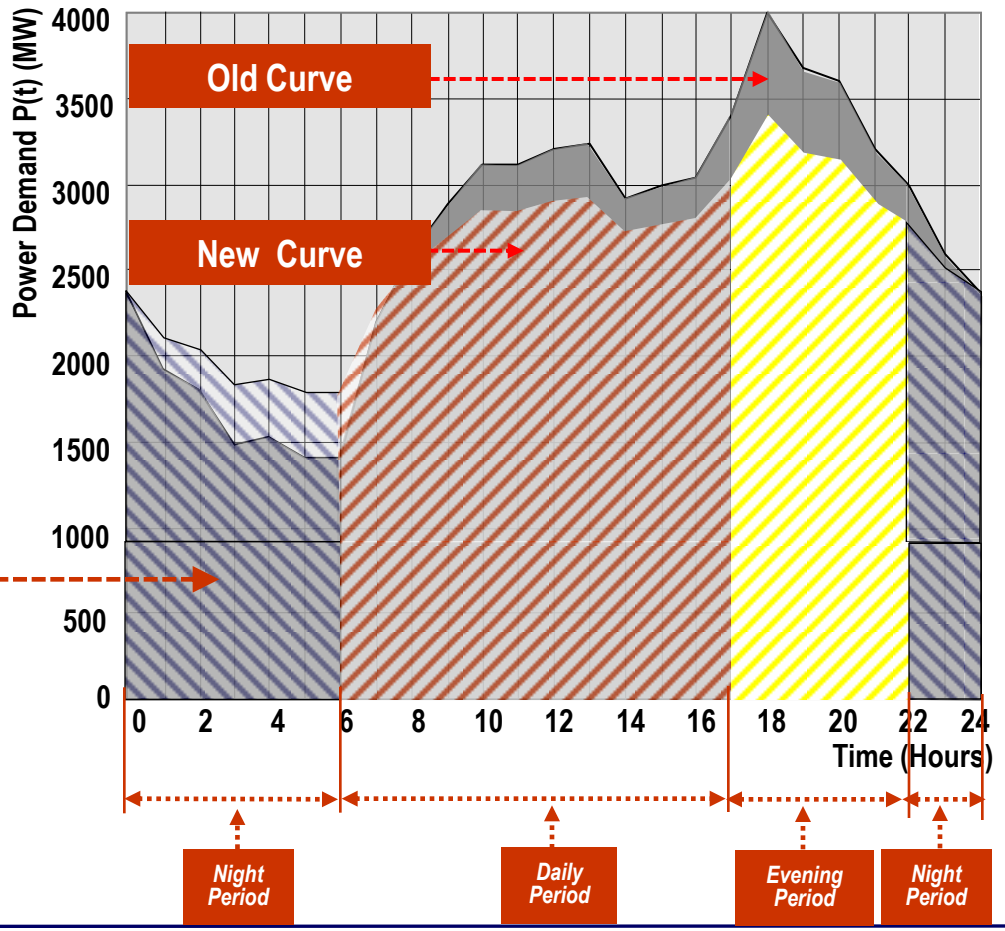
Three-Rate Tariff

Total area under the curve is the overall demand, hence it does not vary with reshaping

In other words, the area reduced within the peak period is the same as the area increased within the off-peak period

Total area under the curve is unchanged after reshaping

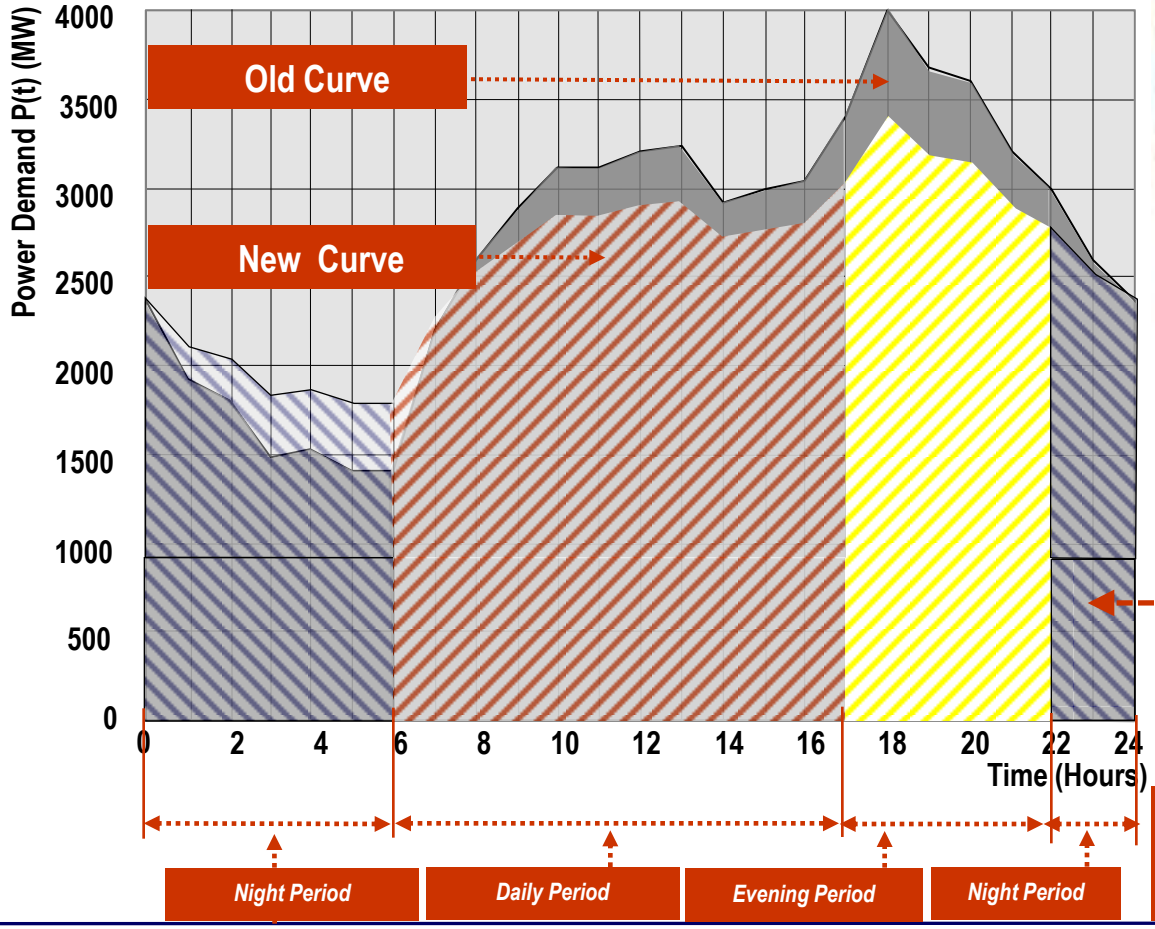
Reshaped Daily Loading Curve



Retail Business

Reshaping the Daily Loading Curve

Reshaping Daily Loading Curve



Total area under the curve is unchanged after shaping

Retail Business

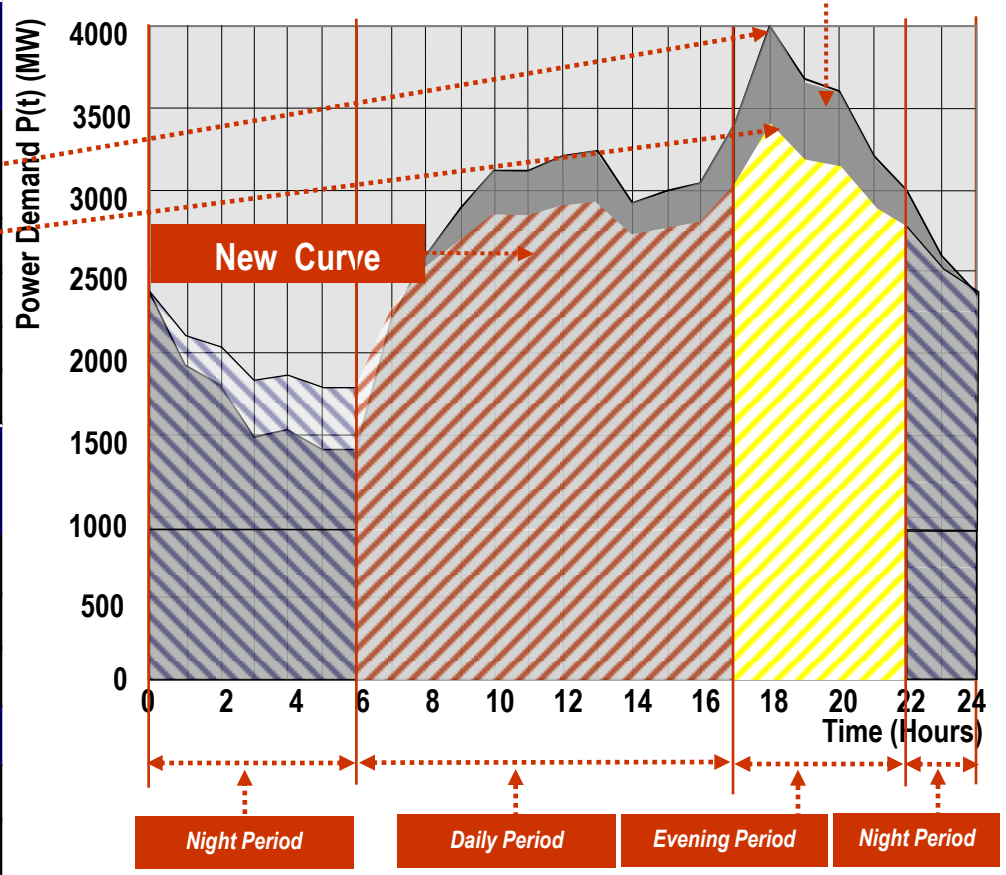
Reshaping the Daily Loading Curve

Example

Period	Residential Consumption (Before Reshaping)		Peak Demand
	(kWh)	(%)	(MW)
17:00 - 22:00	8.330.000.000	49	4.000
22:00 - 06:00	3.570.000.000	21	3.300
06:00 - 17:00	5.100.000.000	30	3.250
Total	17.000.000.000		

Period	Residential Consumption (After Reshaping)		Peak Demand
	(kWh)	(%)	(MW)
17:00 - 22:00	6.800.000.000	40	3.400
22:00 - 06:00	5.100.000.000	30	3.000
06:00 - 17:00	5.100.000.000	30	2.950
Total	17.000.000.000		

Reshaped Daily Loading Profile



Only (49-40)/49 = 18.3 % of the evening load is shifted to night

Retail Business

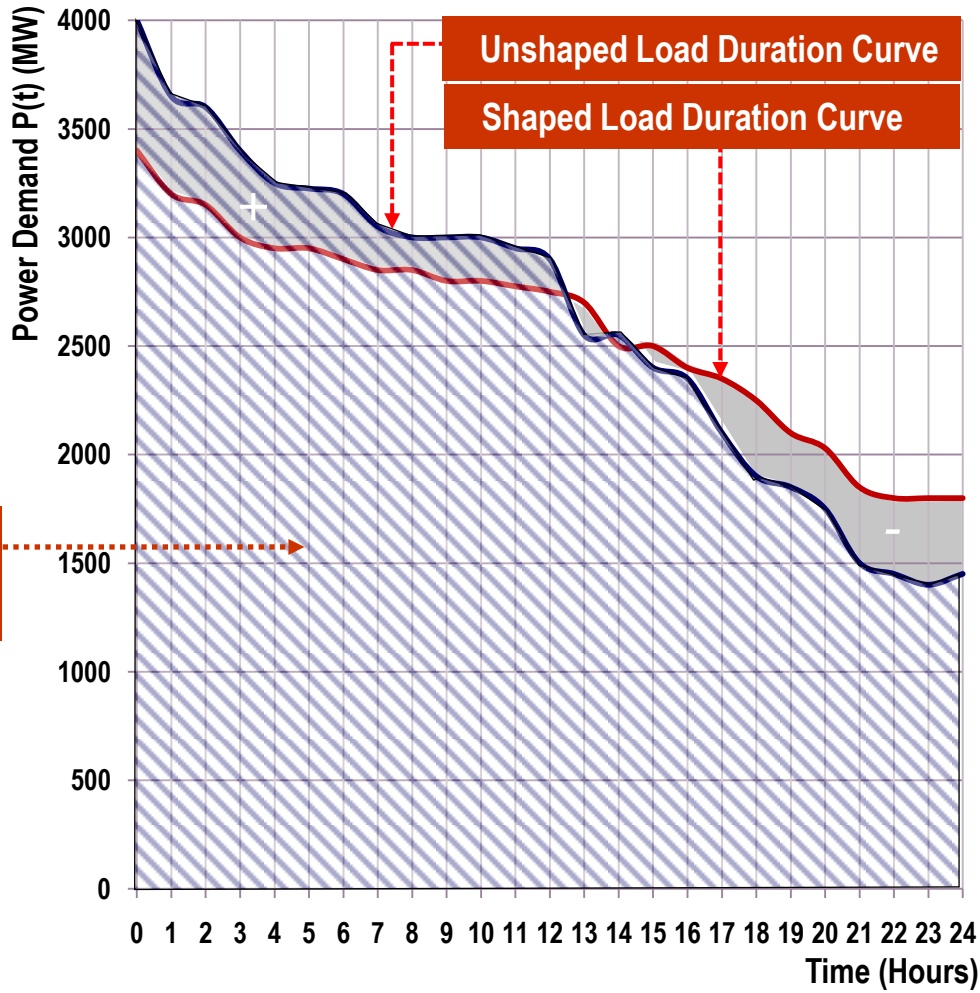
Reshaping the Daily Loading Curve

Reshaped Load Duration Curve

Reshaping;

- will clip peak portion of the Load Duration Curve, thus resulting in a "Re-shaped Load Duration Curve",
- will raise the lower part of the curve

Total area under the curve is unchanged after reshaping



Retail Business

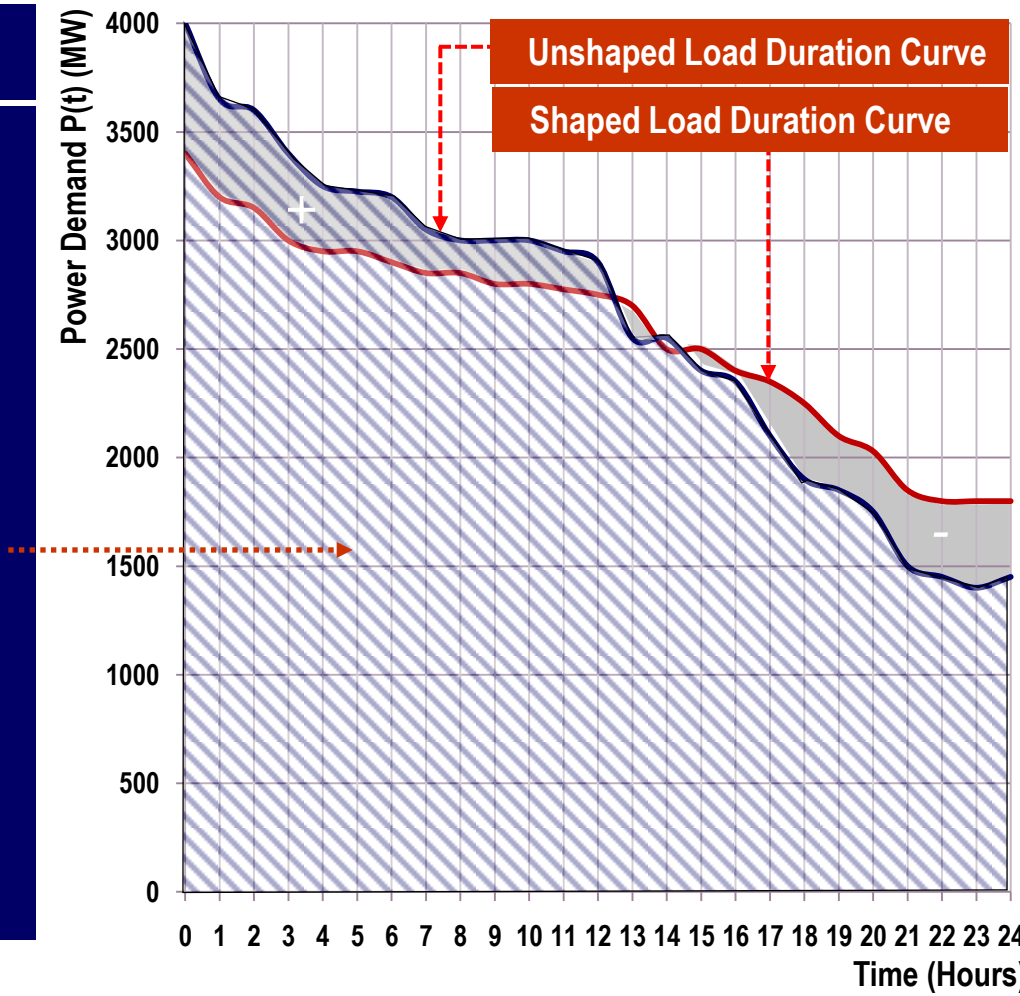
Advantages of Load Reshaping

Advantages Gained

By re-shaping the load duration curve;

a) Investment for the generation, transmission and distribution facilites to meet the same amount of energy demand will be reduced,

Hence, the generation, transmission and distribution facilities will be utilized more efficiently, since they will be more uniformly loaded,



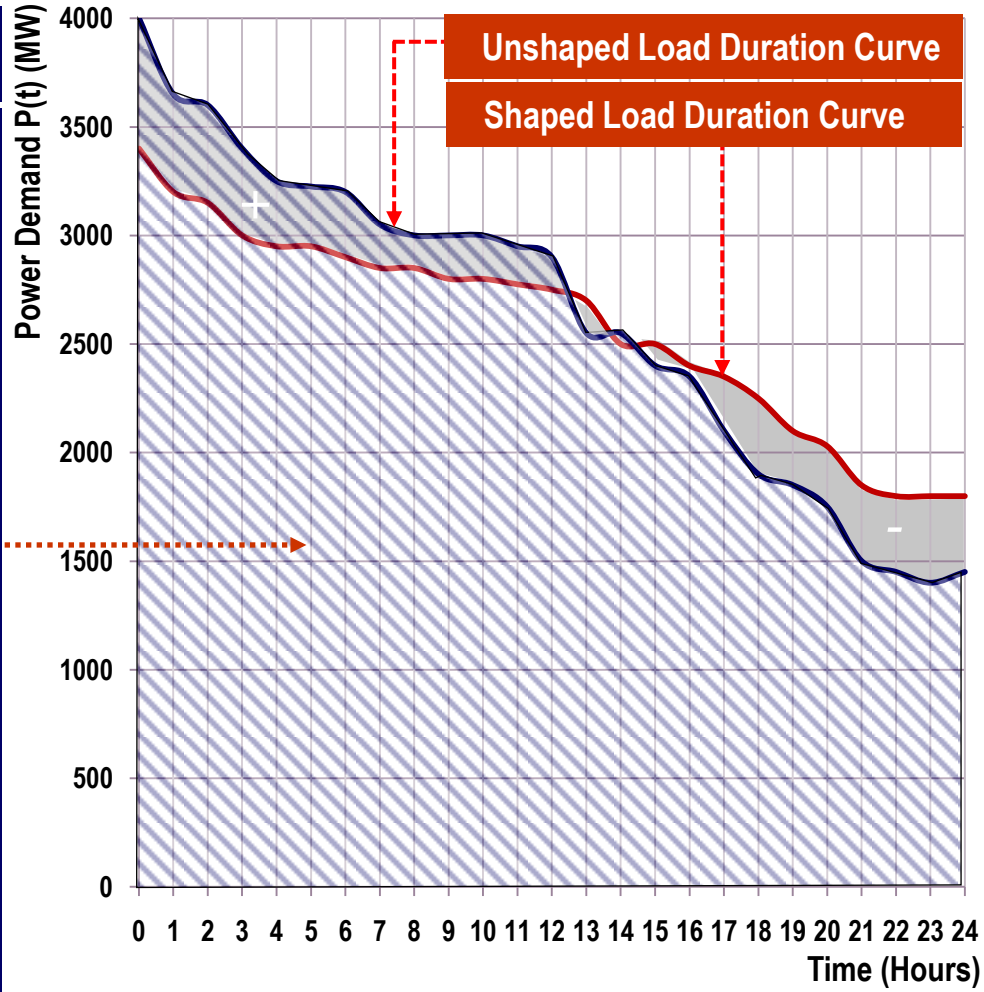
Retail Business

Advantages of Load Reshaping

Advantages Gained

b) Overall tariff will be reduced since;

- No peaker plant with expensive fuel costs will be utilized, i.e. only base plants will be utilized,
- Expensive power exchange with the third parties (ref. to next section; "Second Demand Side Flaw") will be reduced,
- Capacity cost is reduced since less capacity is utilized
- No payment for scarsity rents



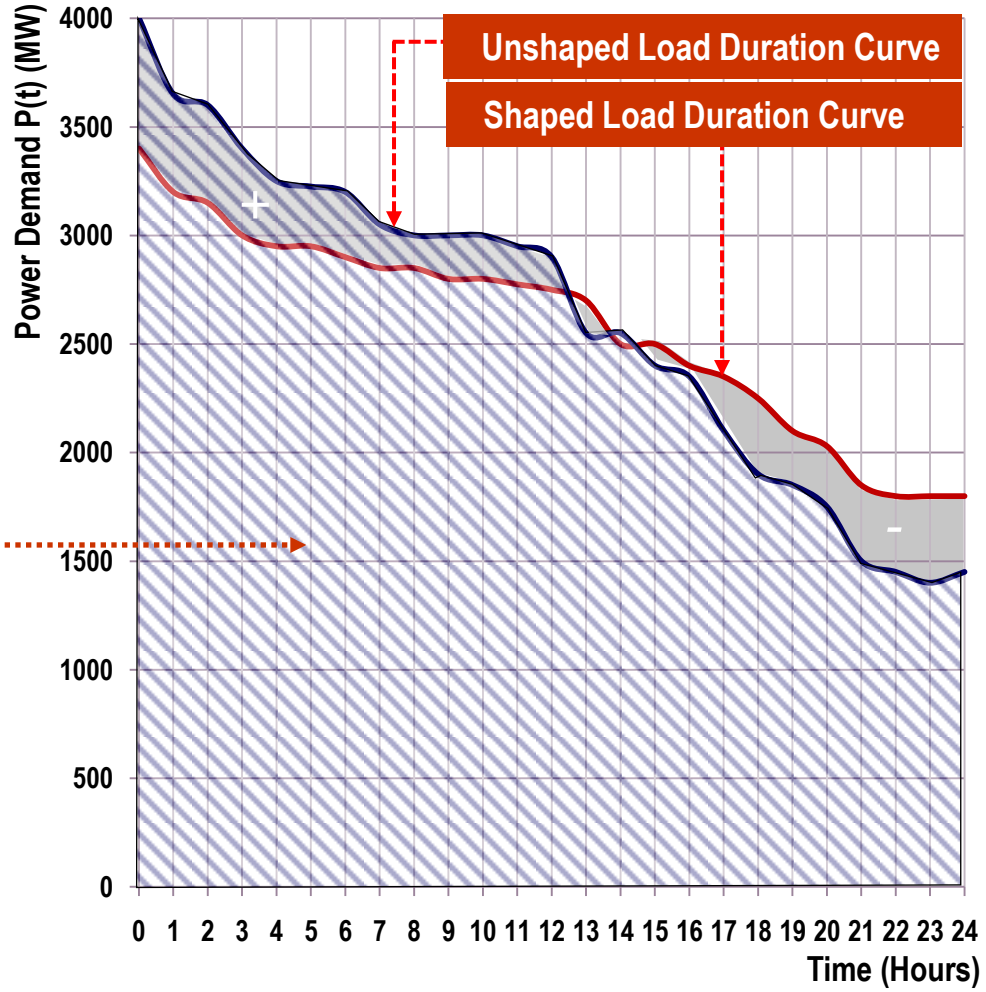
Retail Business

Advantages of Load Reshaping

Price Elasticity of Demand

d) Consumption will be more uniform and stable and hence investors, who plan to make investment in the generation sector will gain more confidence about the loading characteristics,

e) Market power will be curbed, since there will be no power shortage during evenings

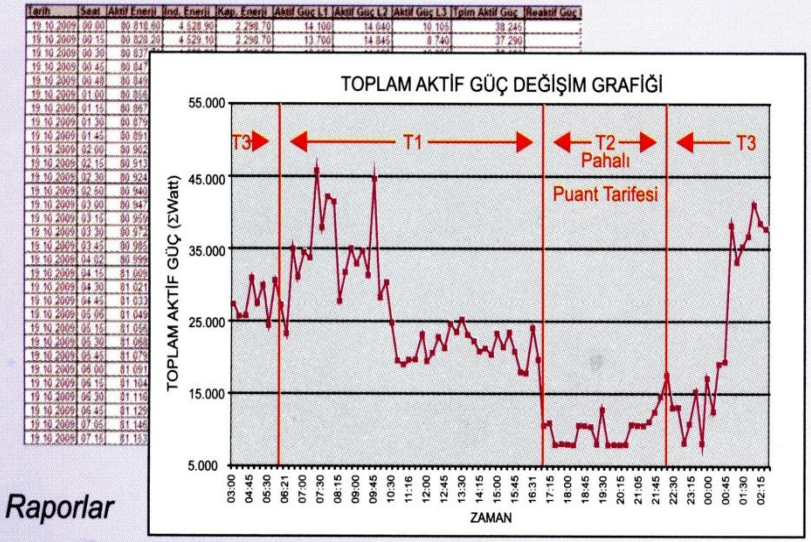


Retail Business

Monitoring Consumption

Bilgisayarda izlenecek olan bir fabrikada kompresör, soğutma kulesi, hidroforlar, aydınlatmalar, UPS, klima santrali, idari bina gibi önemli enerji tüketen makineler ve mekanlar...

Gerçek Zamanlı Veri Görüntüleri



Raporlar

MPR-SW: Bilgisayar Haberleşme Yazılımı

- Bilgisayar ortamında istenilen zaman aralığında periyodik raporların alınma
- Adetsel olarak makina başına elektrik tüketim maliyetini çıkartmak
- Elektrik enerjisi analizi ile birlikte Cosφ, faz akımı ve gerilimlerinin 31. Harmoniğe kadar takibi
- Gereksiz elektrik tüketimlerinin fark edilmesini sağlamak ve nedenlerinin araştırılarak çözümün sağlanması

Retail Business

Three-Rate Meters

Three-Rate Tariff Equipment

The meter is

- Digital,
- Multi-rate (Three rates for Turkey; night, daily and evening),
- Capable of receiving and providing data through a magnetic card reader

Multi-Rate Meter with Magnetic Card Input

Retail Business

Three-Rate Meters

Multi-Rate Meter

The meter is

- Digital,
- Multi-rate (Three rates for Turkey; night, daily and evening),
- Capable of receiving and providing data through optical port

Three-Rate Tariff Equipment

Retail Business

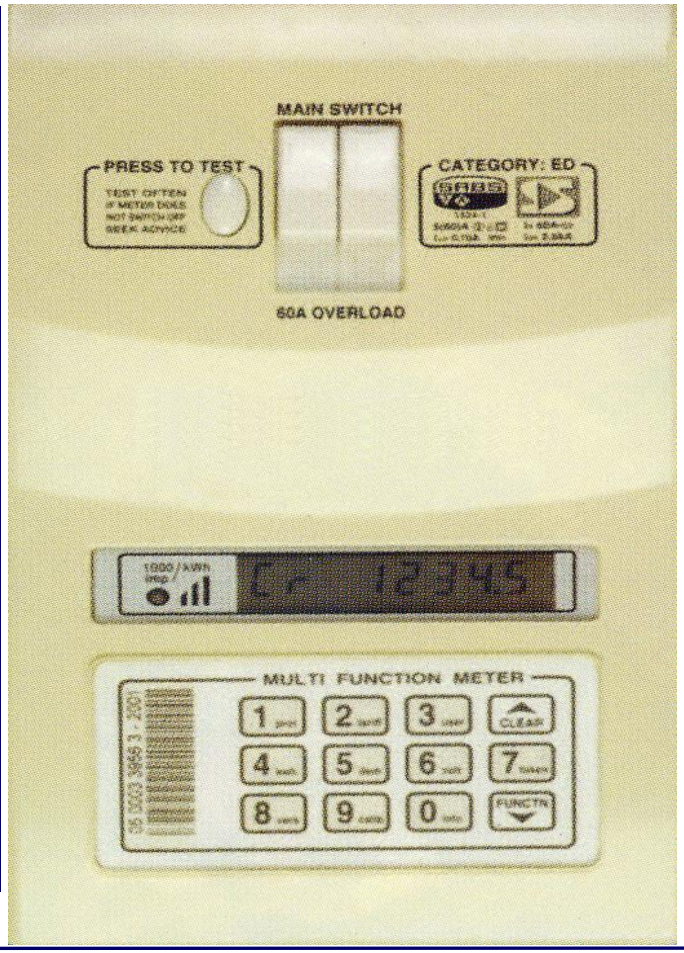
Three-Rate Meters

Multi-Rate Meter

The meter is

- Thre-phase, digital,
- Multi-rate (Three rates for Turkey; night, daily and evening),
- Capable of receiving and providing data through optical port,
- Measurement of each phase,
- Meaurement of demand,
- Measurement of phase voltages,
- RS232 port

Three-Rate Tariff Equipment



Retail Business

Three-Rate Meters

Multi-Rate Meter

The meter is

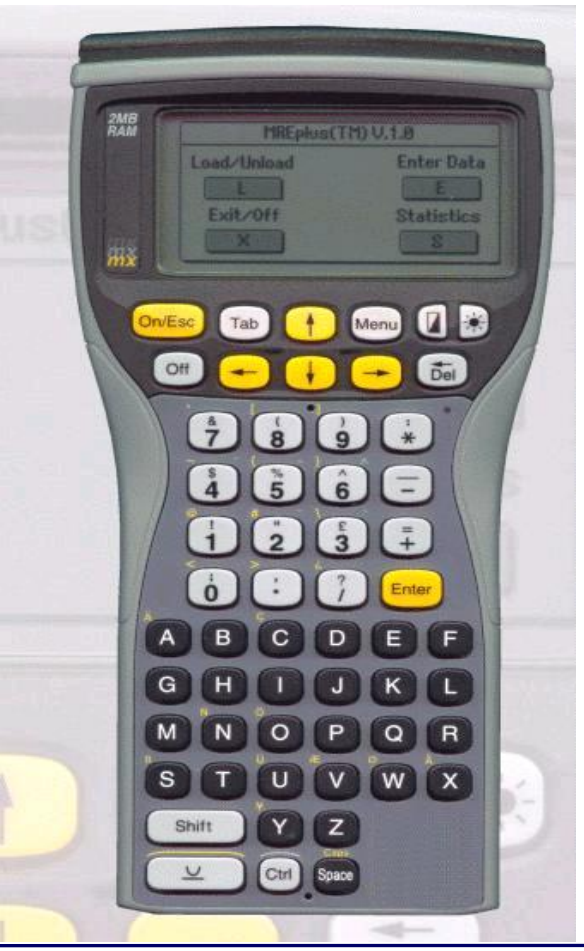
- Thre-phase, digital,
- Multi-rate (Three rates for Turkey; night, daily and evening),
- Capable of receiving and providing data through optical port,
- Measurement of each phase,
- Meaurement of demand,
- Measurement of phase voltages,
- RS232 or RS 484 port

Three-Rate Tariff Equipment

Retail Business

Reading and Data Transfer Equipment

Hand-held Reader and Optical Port Interface



Reading and Data Transfer Equipment

Sayaç okumada yeni dönem

Şirketler Grubu'na bağlı bilişim şirketi bağımsız sayaç okuma işi yapan 7 firma ile oluşturdukları bir platform sayesinde 7 binden fazla noktada sayaçları uzaktan okumaya başladı.

Bilgi İletişim Teknoloji Şirketi, 7 binden fazla noktada, bağımsız sayaç okuma işi yapan 7 firma ile oluşturdukları platform sayesinde sayaçları uzaktan okuyor. Bilgi İletişim Teknoloji Şirketi Genel Müdürü şirketlerinin abonelerine ait sayaçları uzaktan okuduklarını söyledi. uzaktan okuma işlemini telefon altyapısından faydalanarak gerçekleştirdiklerini kaydetti.

VRP'yi, Türkiye'de pazarlayacak

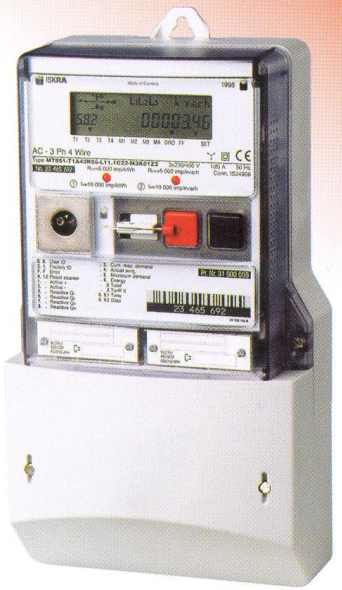
Sunduğu teknolojik altyapı çözümleri nedeniyle dünyaca ünlü GSM operatörü Orange'ı 2 milyar dolarlık yazılım ve donanım satın alma anlaşmasından caydıran VRP'yi, Türkiye'de pazarlayacak. Türkiye'de bir GSM operatörü ile anlaşma imzaladıklarını belirten bekleme sürelerini de sıfıra indirme gibi imkansız sanılan birçok uygulamanın bu yazılımla mümkün hale geldiğini söyledi.

Retail Business

Three-Rate Meters

Multi-Rate Meter

The meter is
- Pre-payment,
- Digital,
- Multi-rate (night, daily and evening)



Three-Rate Meters

Multi-Rate Meters

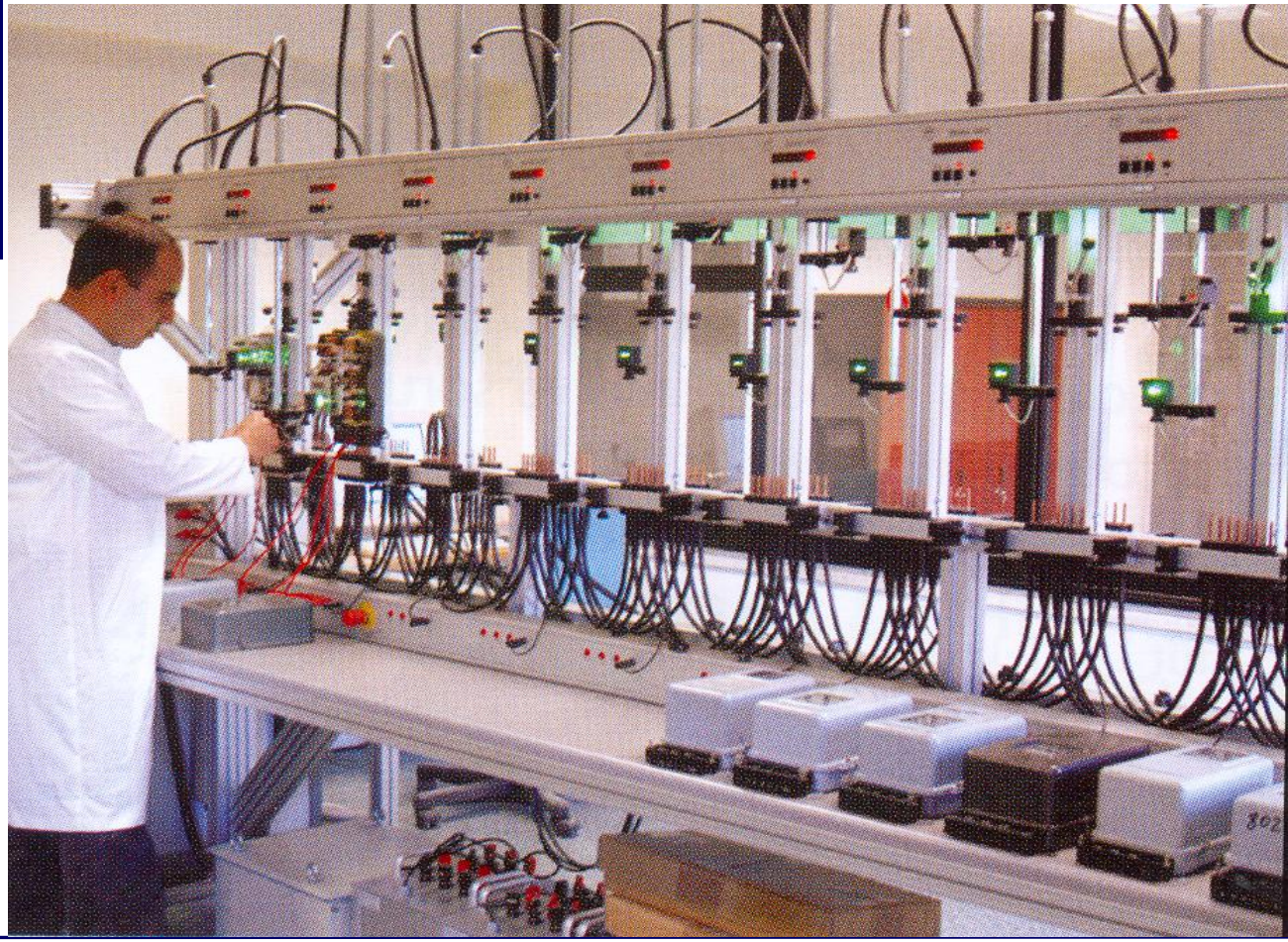
Three-Rate Tariff Equipment

Retail Business

Calibration of Meters

Reading accuracy of meters are compared by using a standart meter, “etalon” with a known accuracy

Comparison of Accuracy by Etalon Device



Retail Business

Calibration of Meters

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Comparison of Accuracy by Etalon Device

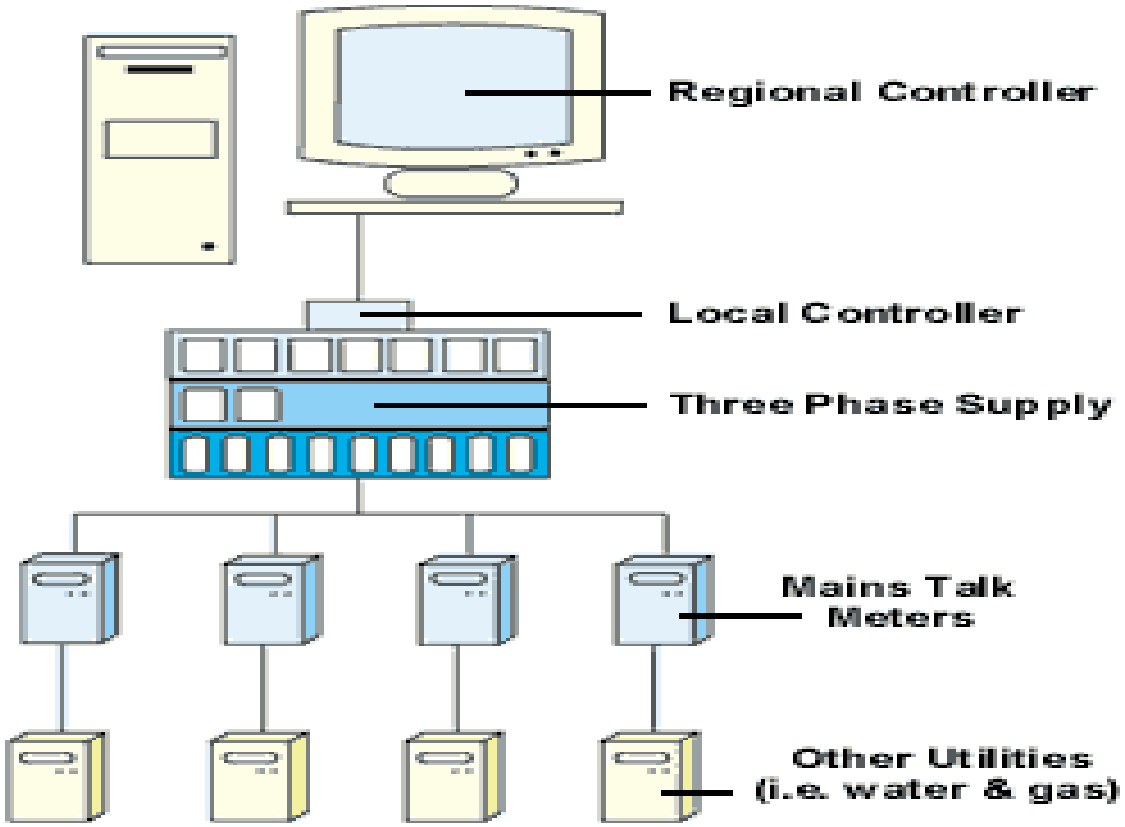
Retail Business

Reading Network

Reading network is used to monitor, meter, record, log, calculate real-time measurement data for;

- accounting
- billing,
- detecting and locating illicit utilization

Three-Rate Tariff Equipment



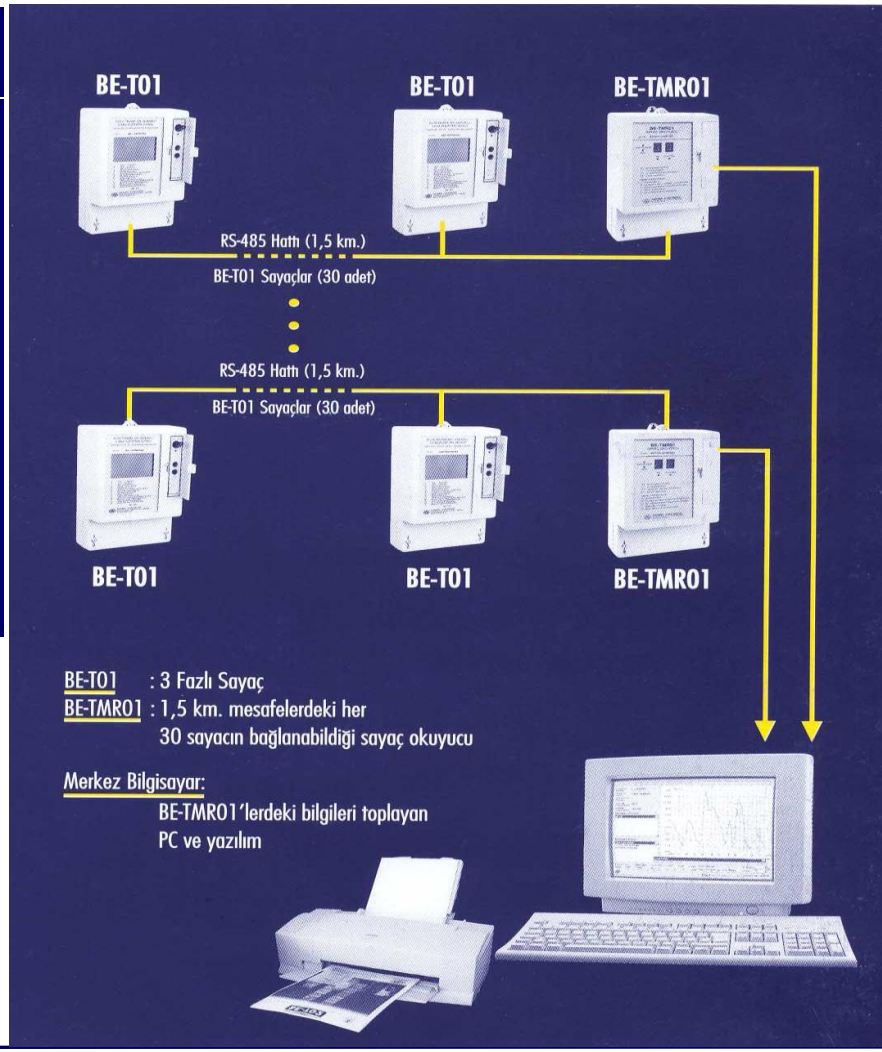
Retail Business

Reading Network

Main Functions of the Reading Network

Reading network is used to monitor, meter, record, log, calculate real-time measurement data for;

- accounting,
- billing,
- statistics,
- detecting and locating illicit utilization



Retail Business

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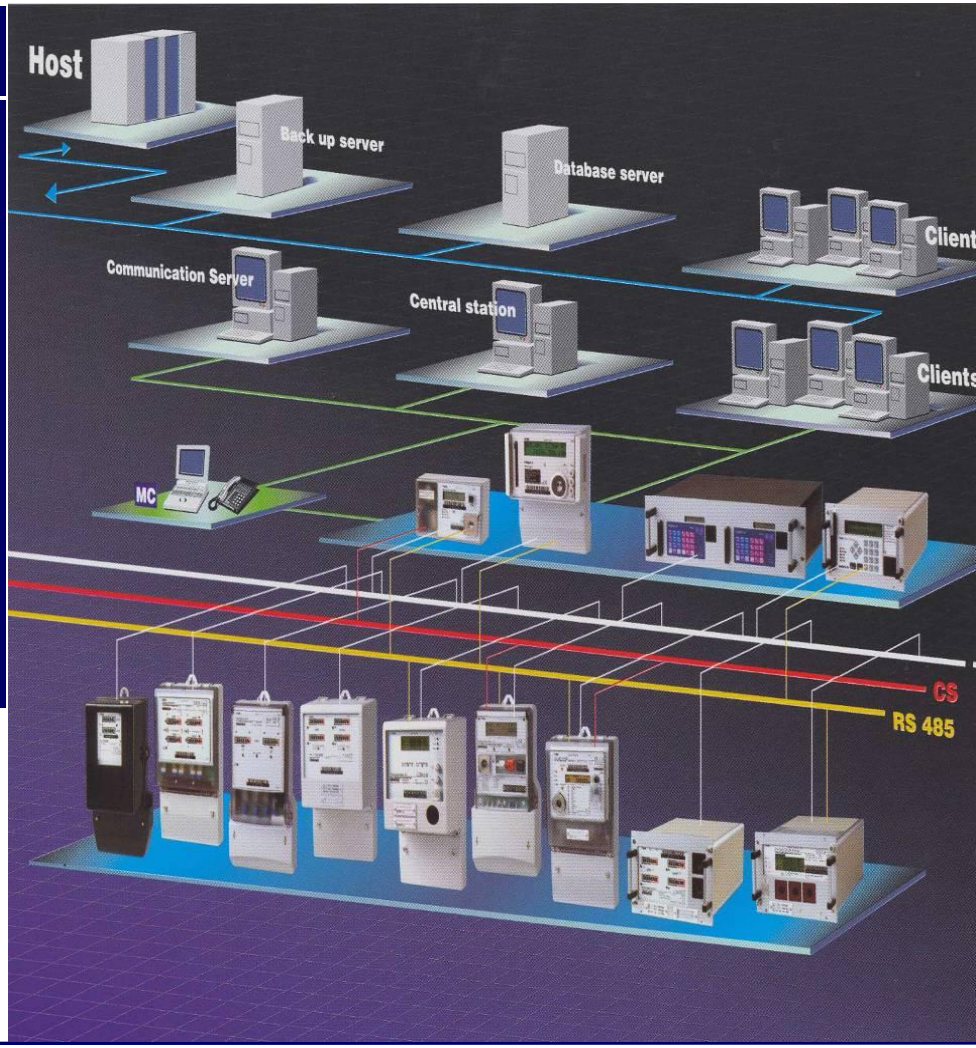


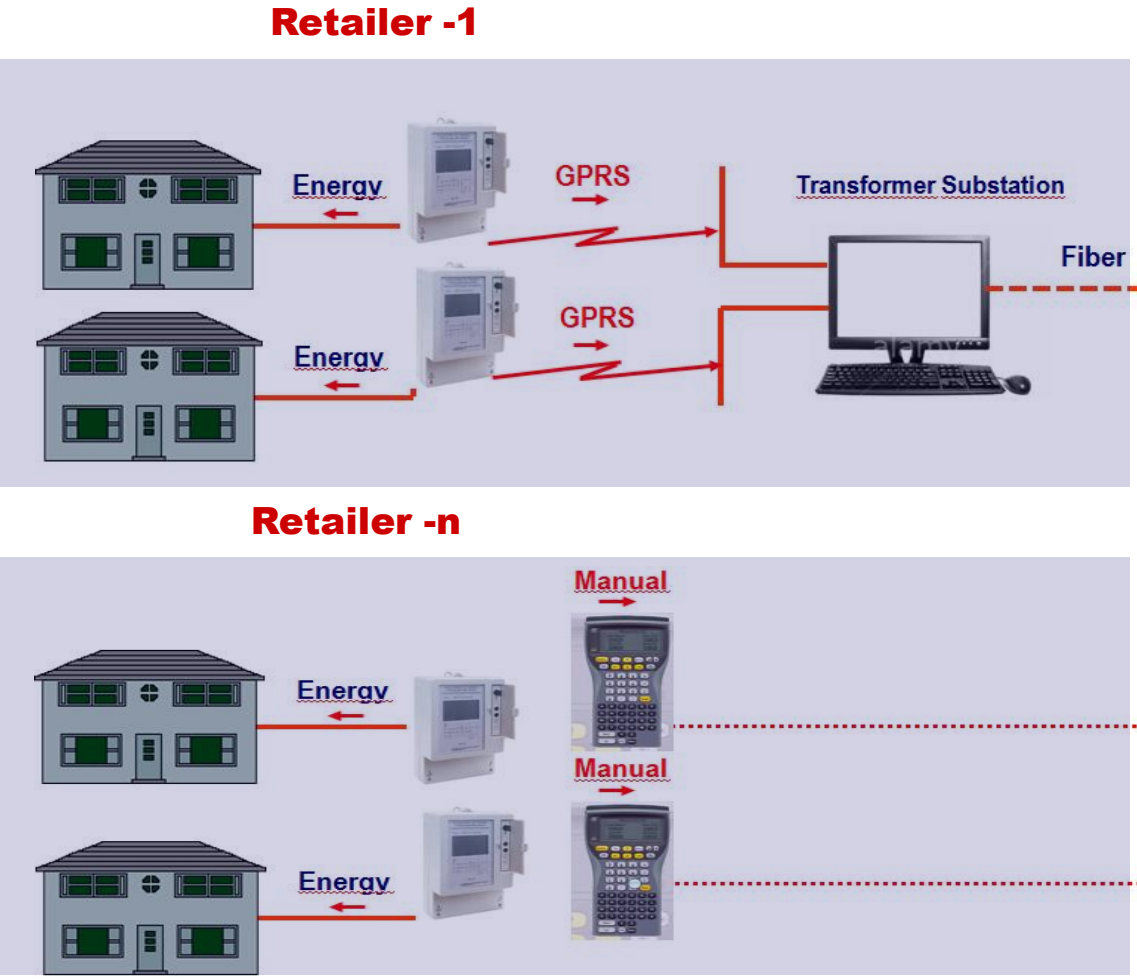
Retail Business

Reading and Recording Equipment

Measurement, audio and video data transmission, processing and display system

Retail Business

AMR System in a Competitive Retail Market



Host (Main Computer)

GEM-10: GPRS Modem

Return Rate of Three-Rate Tariff Equipment

Return Rate

In New York, when operating reserves run extremely short, prices has driven up to ***6000 USD / MWh, i.e. 600 Cents / kWh***

It can be easily calculated that the return rate of the investment made in three-rate real-time metering equipment is quite short

Extension of real-time meters from 8 to 13 GW and implementation in California in just a few months cost $ 25 M, the amount of money a utility was losing paer day at the height of the crisis

Three-Rate Tariff Equipment

Retail Business

Return Rate of Three-Rate Metering Equipment

Three-Rate Tariff Equipment

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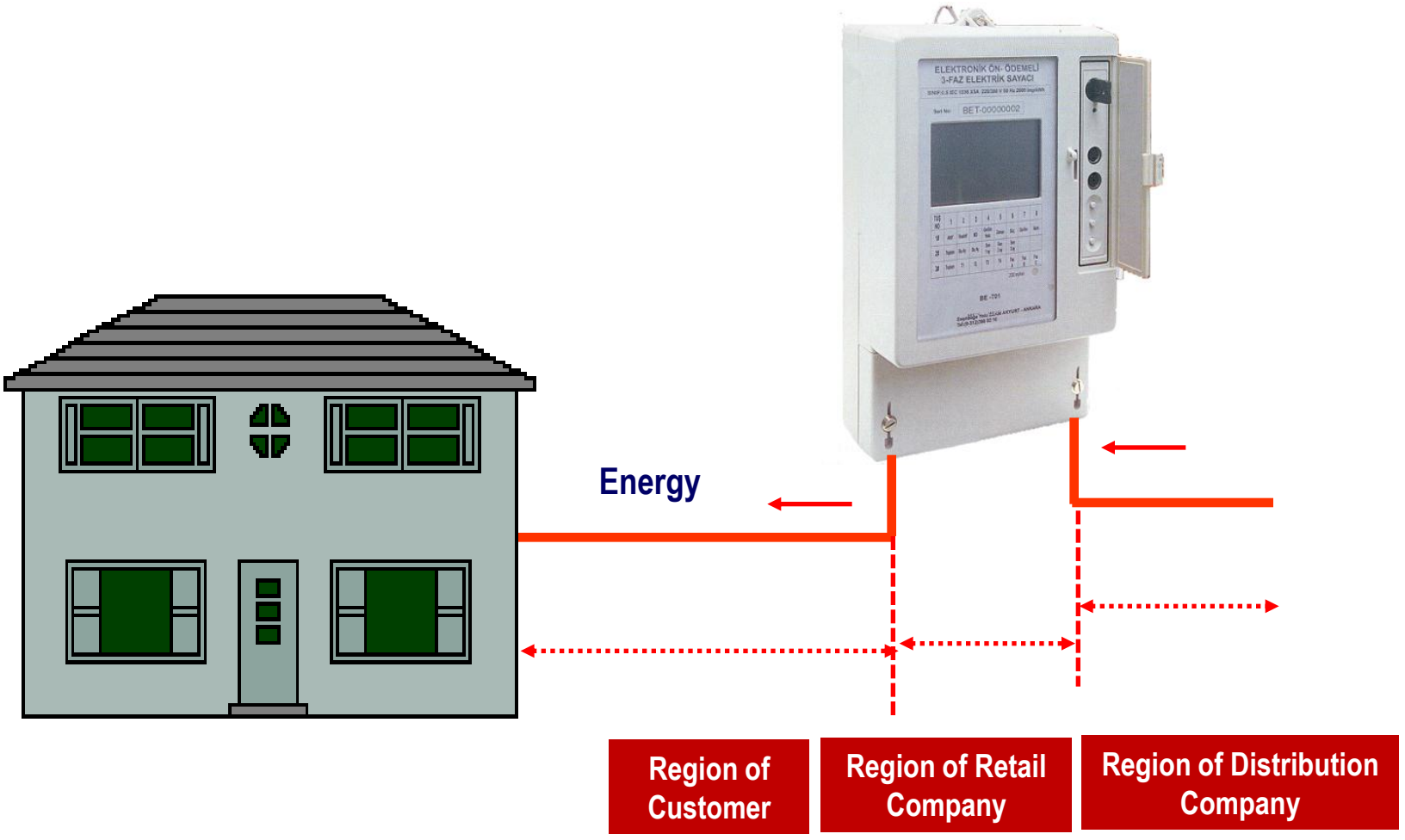
Return Rate

Retail Business

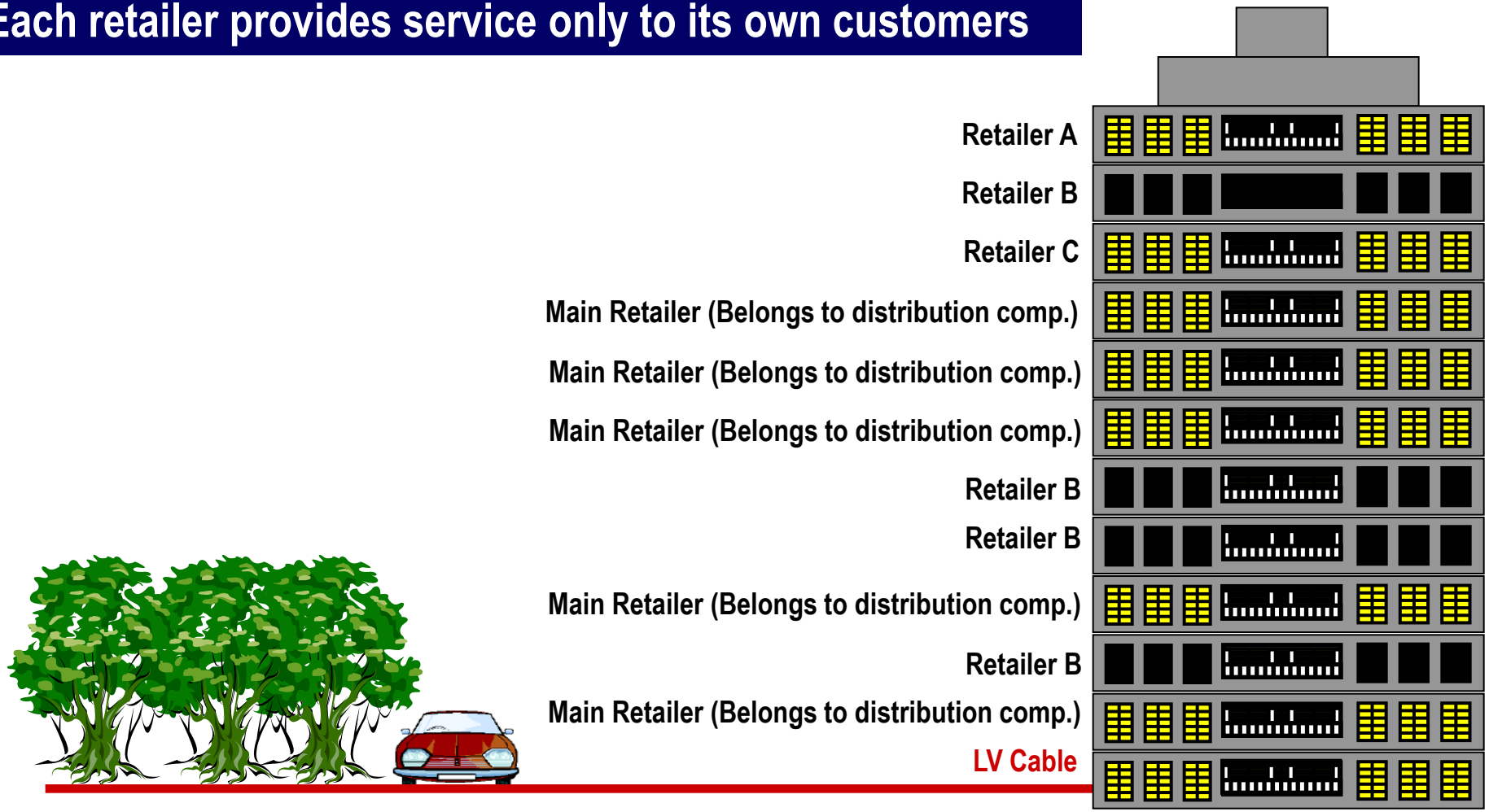
Regions of Activity



Retail Business

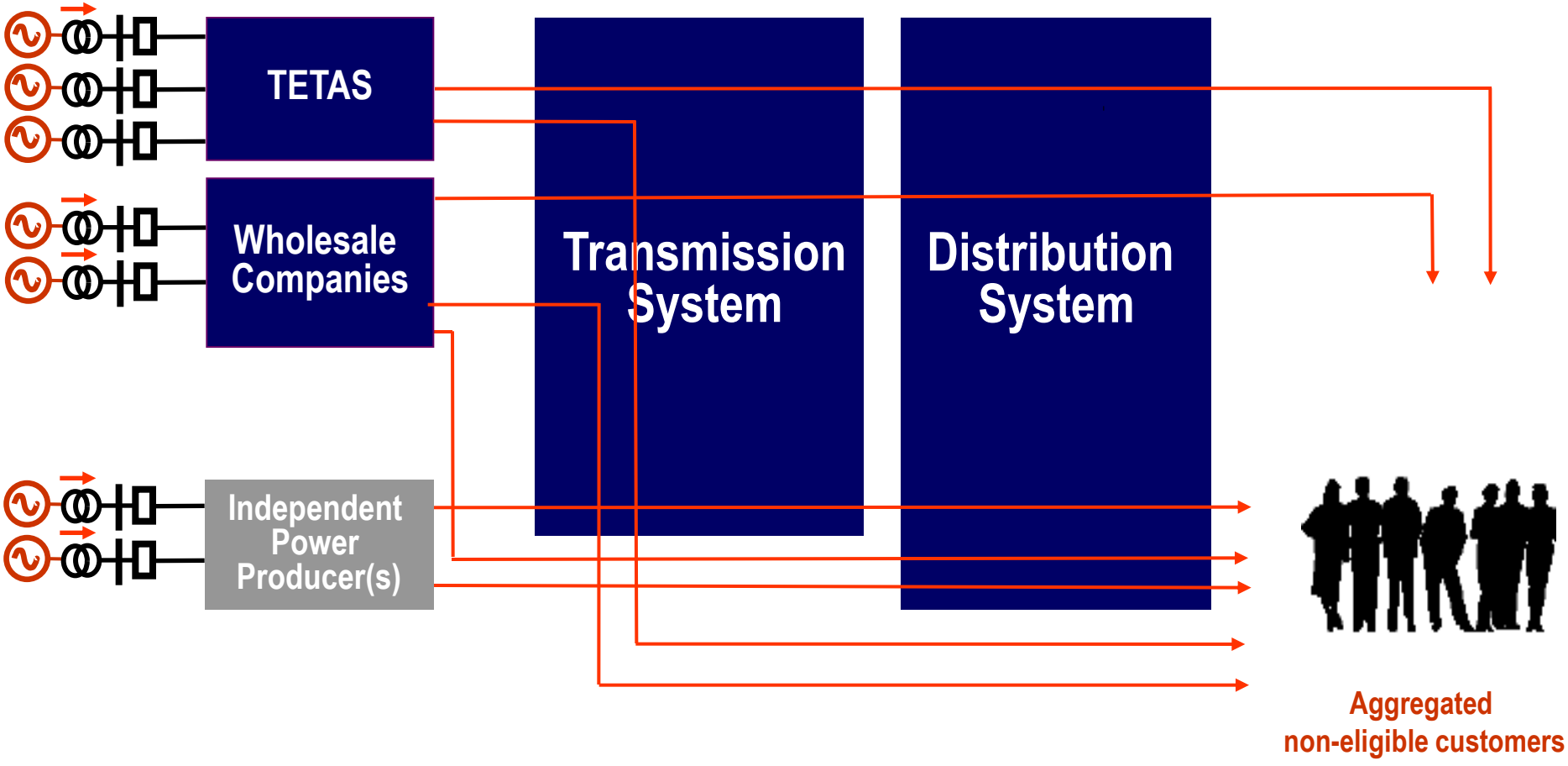
Competitive Retail Markets

Each retailer provides service only to its own customers



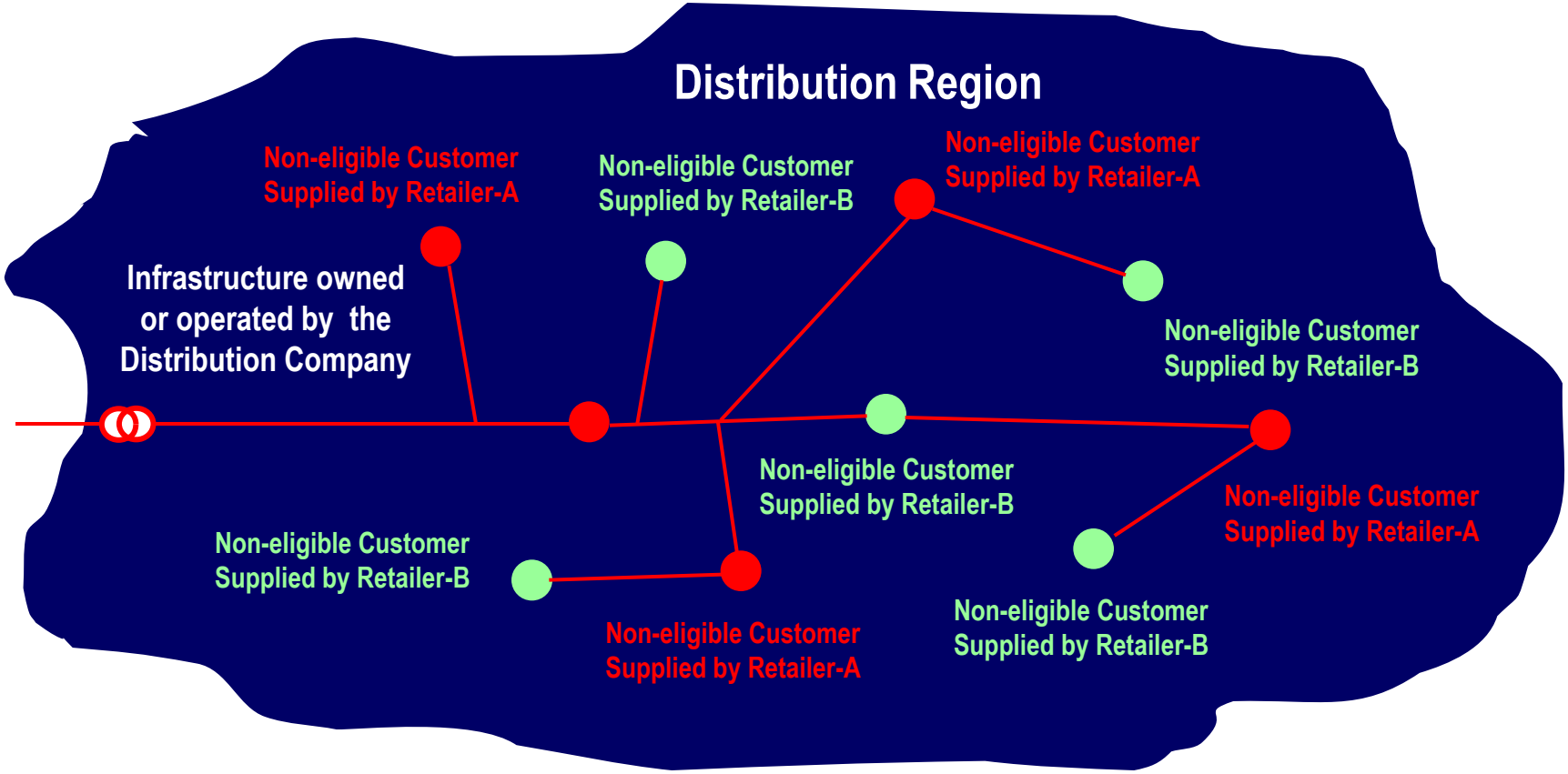
Retail Business

Aggregation of Demands



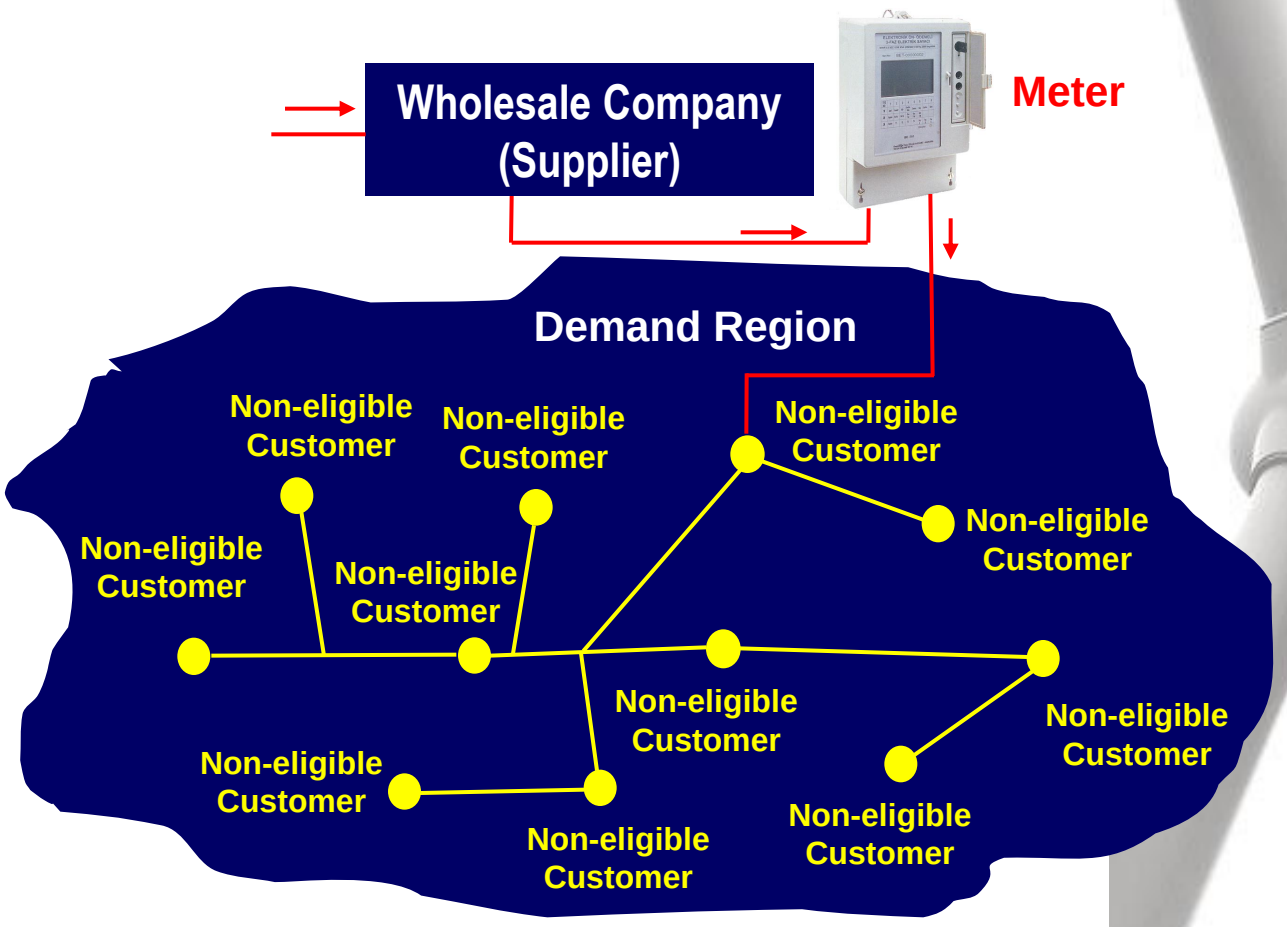
Retail Business

Retail Competition in a Region



Retail Business

Aggregation of Demands by a Single Meter

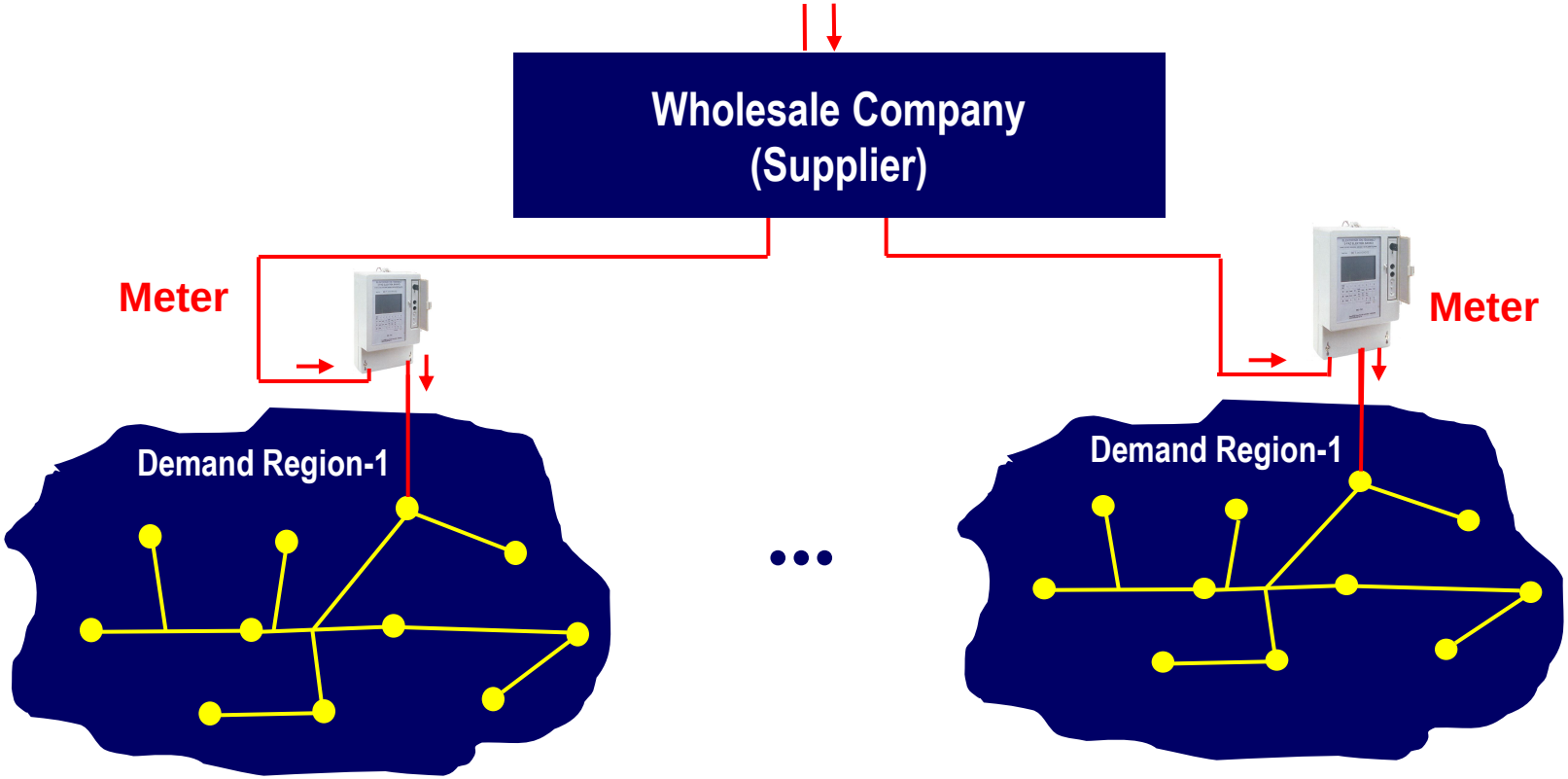


Retail Business

Aggregation of Decentralized Demands

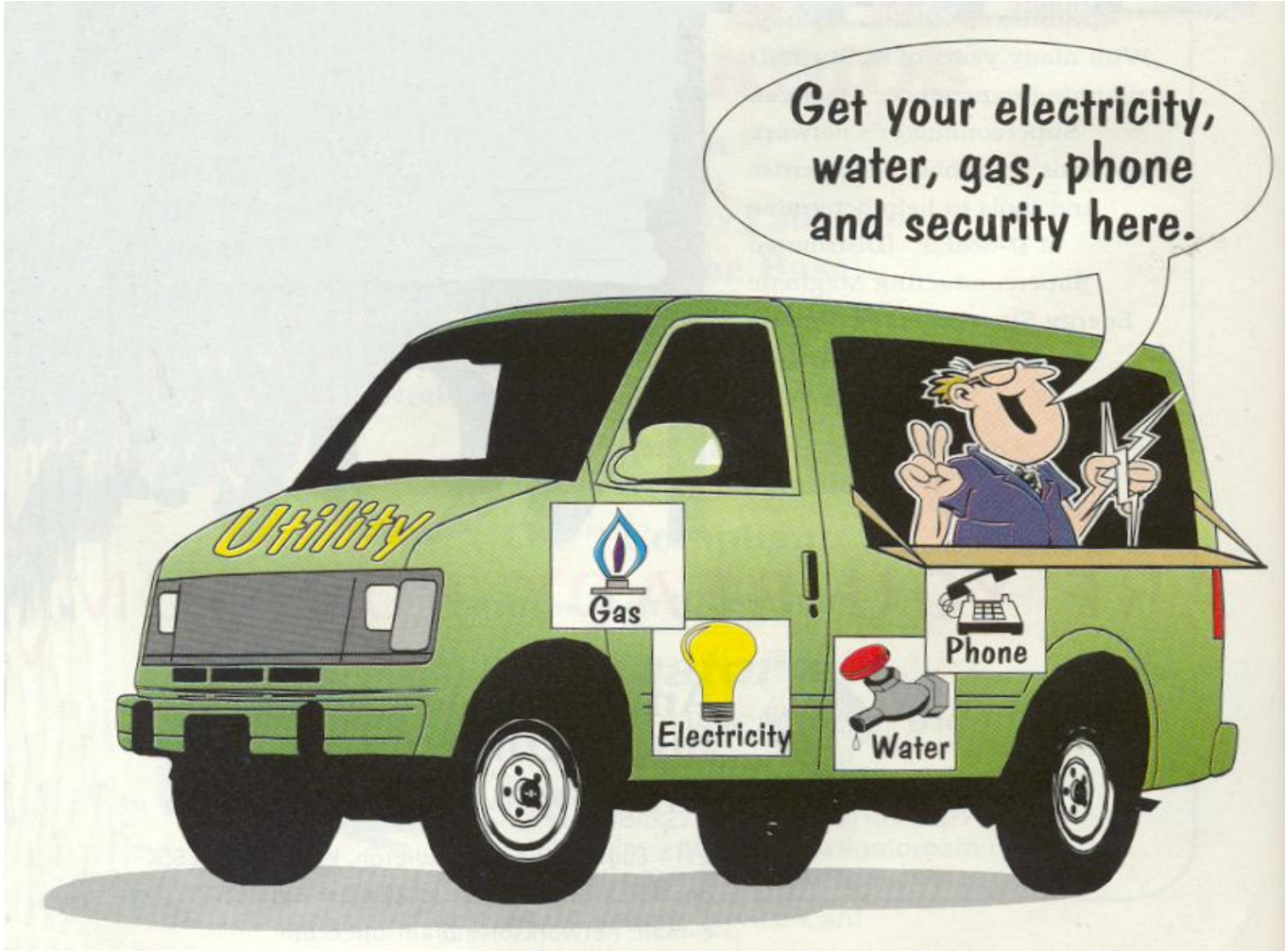
Customers or customer groups located in the same Distribution Region(*)

(*) Distribution Region: (a) TEDAS Regions (64 cities and related coordinators),
(b) Shares of TEDAS (7 regions)



Retail Business

Competitive Retail Markets



Retail Business

An Example in USA

Utility Choice Electric

A Texas company run by Texans

Utility Choice Electric is a Texas based company providing electricity services to industrial, commercial, and residential customers in Texas.

With over 250 years of combined experience and expertise in the energy industry, the founders of Utility Choice understand how the energy value chain works in its entirety.

We are committed to providing our Texas customers with a reliable and competitively priced supply of electricity and related services that help create a safe and secure environment in which to conduct their businesses and personal lives.

Utility Choice Electric

...bringing you the power

to make a choice!

5773 Woodway Dr., PMB-U

Houston, Texas 77057

T: 713.465.6200 F: 713.973.1411

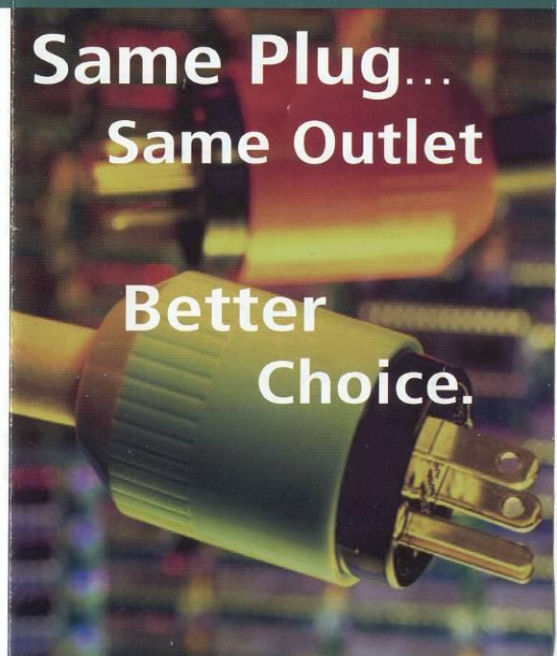
www.uchoice.com

Deregulation

means Choice.

Utility Choice Electric

means Savings.



Retail Business

An Example in USA

Utility Choice Electric

The process is simple.

Here's how it works:

Utility Choice Electric has firm contracts with the local distribution company that continues to maintain the wires and measure the electricity we purchase on your behalf. You now have the power to choose... You receive the same reliable service at a lower cost.

Everything stays the same:

- You will not need new power lines.
- You will not need to change your meter.
- You will enjoy the same uninterrupted service.

The only thing that changes is your bill.

It's less.

They turn at the same speed,

but not the same rate.

It's your choice!

When selecting your electric service provider, we believe that reliability and price are of utmost importance. That's why Utility Choice Electric is committed to providing our Texas customers with a reliable and competitively priced supply of electricity and related services. We source the best supply for our customers, which means our customers get the best price.

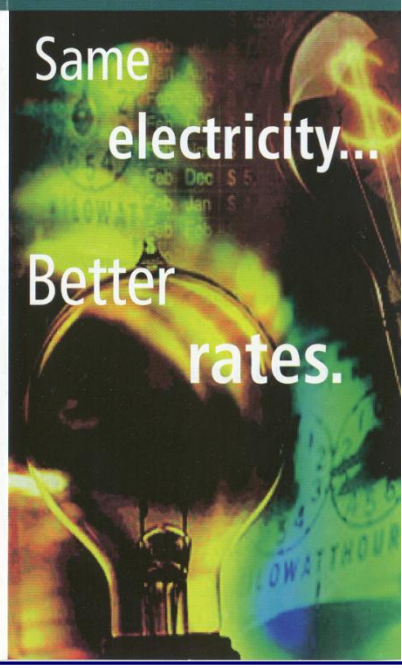
Now that you have the power to make a choice,

Make a change.

Call Utility Choice for the best rate.

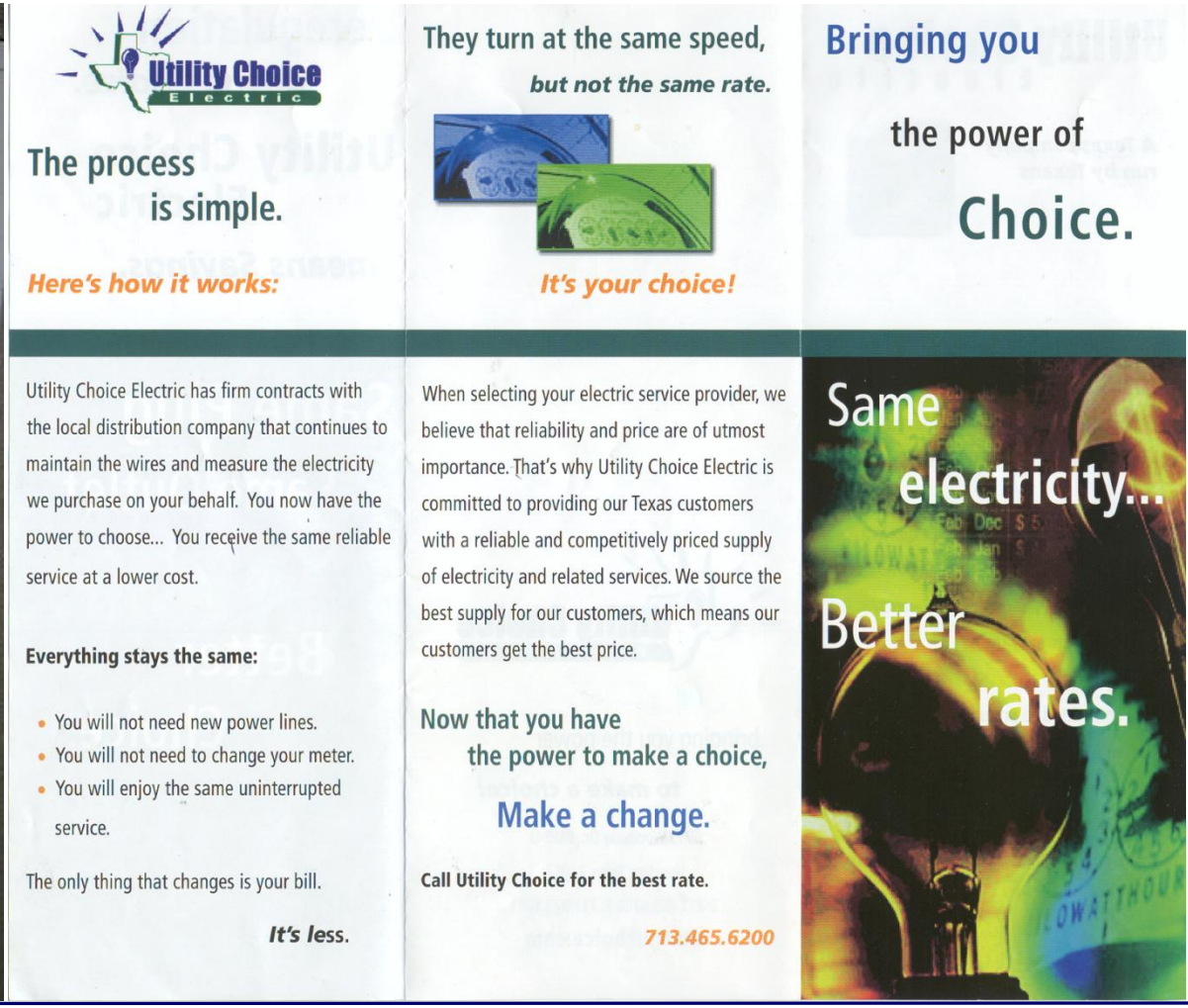
713.465.6200

Bringing you the power of Choice.



Retail Business

An Example in USA



Transaction of Meter Readings by Web Facilities

Transmitting meter readings through Web facilities

Meter Reading Form - Electricity

Please complete the form and click the send button to process your meter reading.
All the fields marked with an asterisk * must be completed to send this form.

24 | June | 2003 | send | clear

London Electricity
on call 24hrs a day

My name is *

My E-mail address is

My telephone number is

My house number or name is *

My postcode is *

My account number (see bill) is *

The meter was read on *

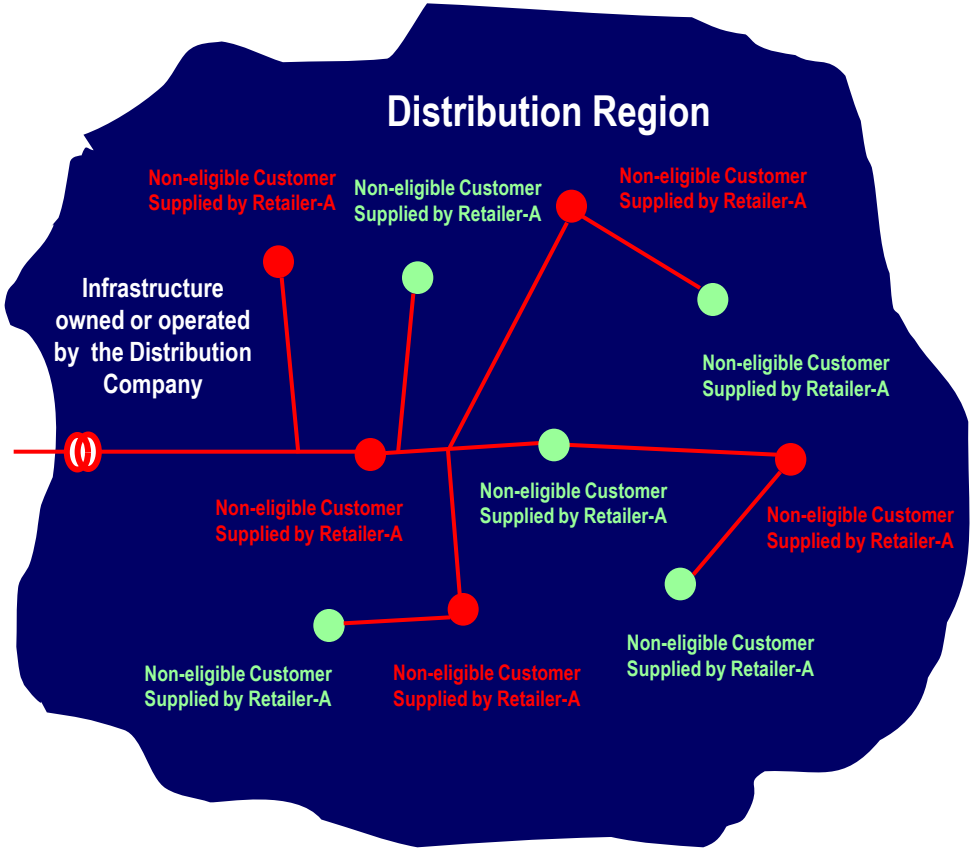
My electricity readings;
Meter1 (Daily); **Meter2 (Evening);** **Meter 3 (night); ***

My electricity Economy7 rate reading (if applicable) is

Our Privacy Policy Top

Retail Business

Distribution Operational Expenditures

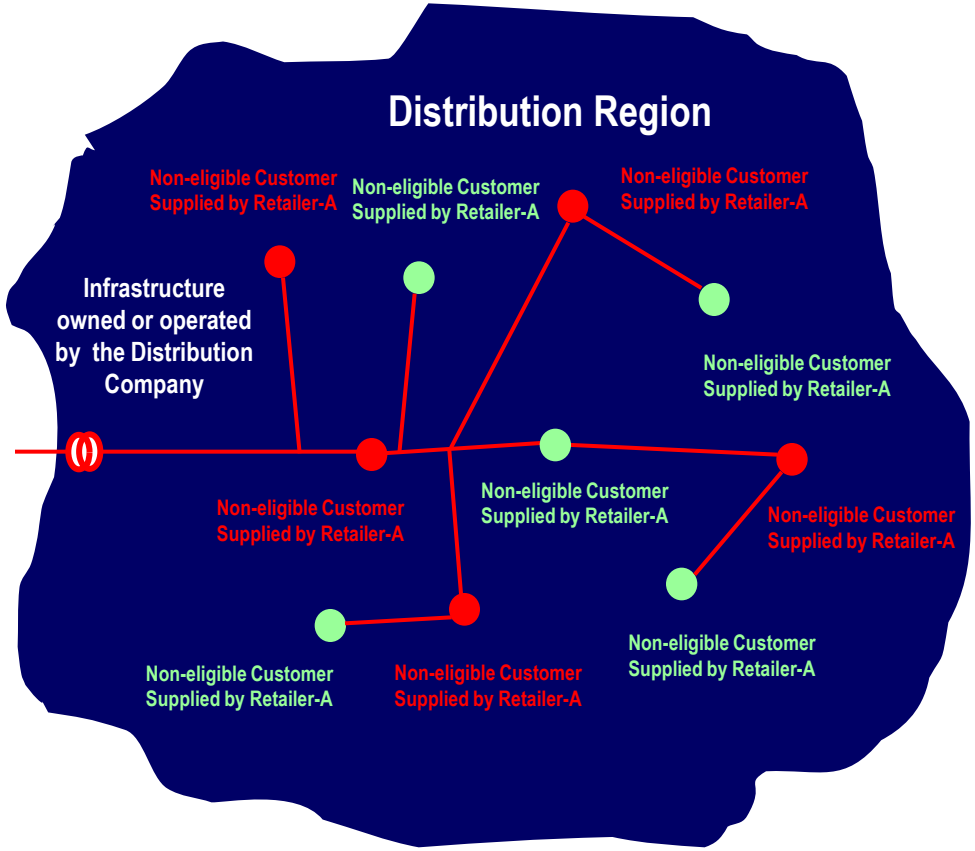


- O&M Expenditures
- Management Expenditures
- Operational taxes, fees and duties
- Annual personnel and staff salaries
- Payments for outsourced services
- Various annual operational expenditures
- Annual technical and capital depretiations
- Payment for auditing services
- Annual payments for TOR charge and interest
- Annual payments for capital amortization
- Reasonable divident for distribution services

Distribution Operational Expenditures

Retail Business

Distribution Operational Charges

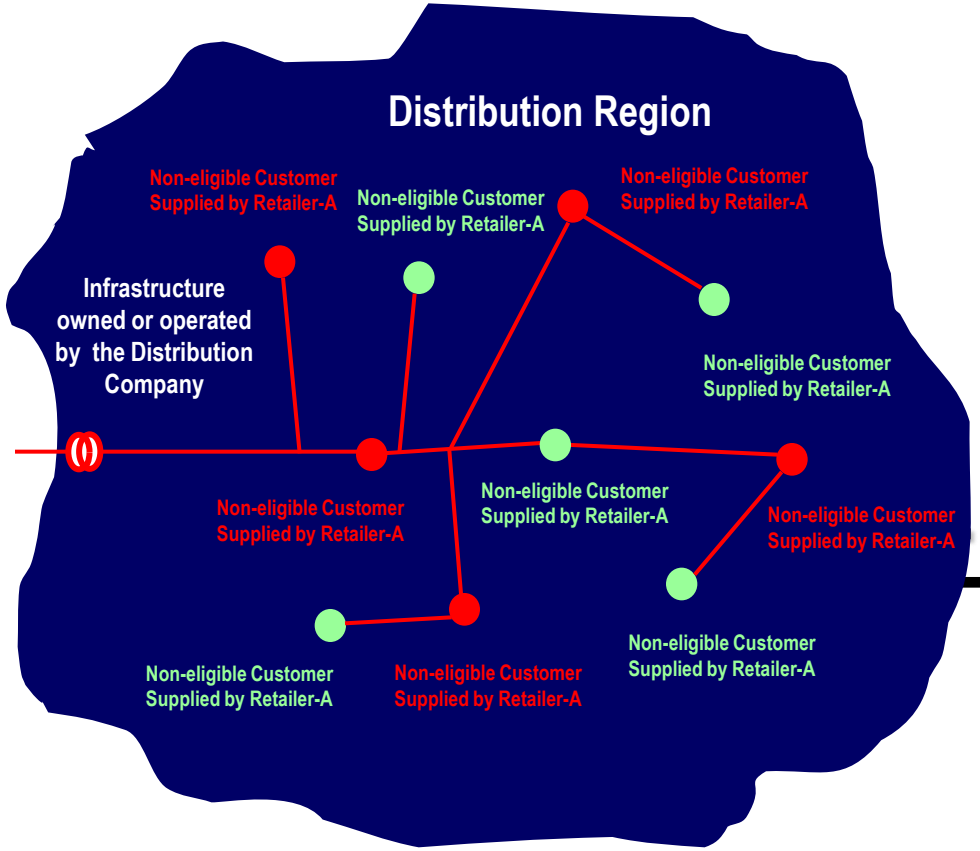


- Expenditures for all kinds of services
- Expenditures for street illumination and similar services
- Expenditures for power service to worship facilities

- Distribution Operational Charges

Retail Business

Distribution Service Charge

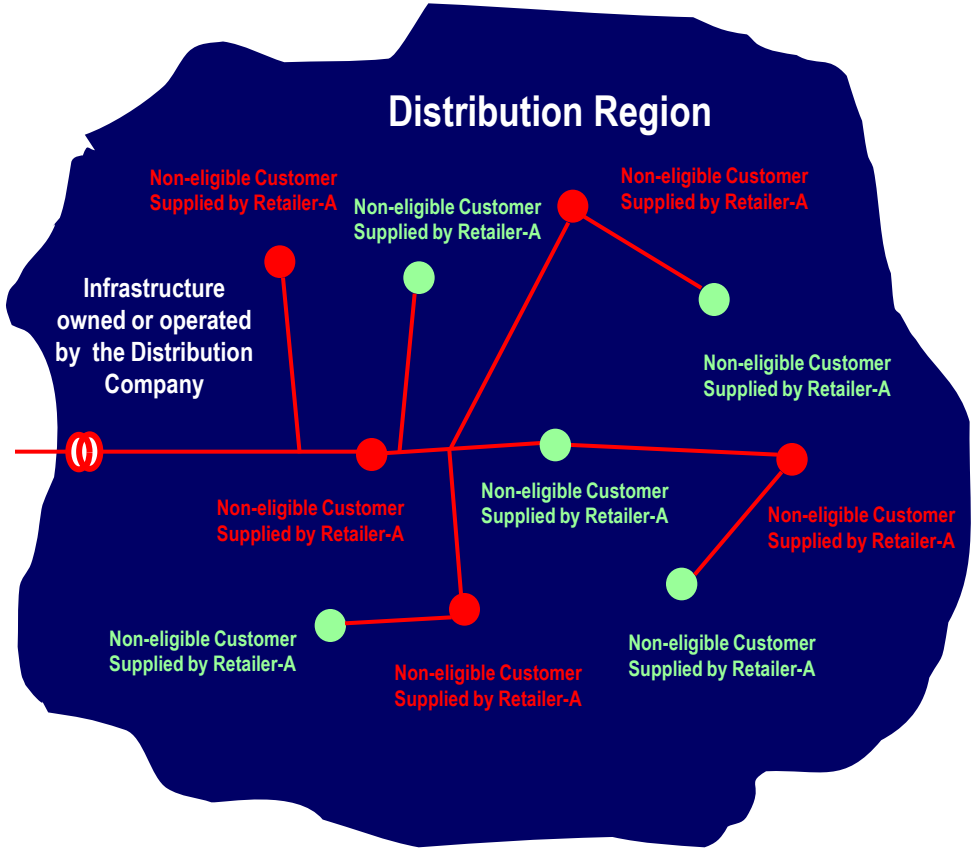


- Distribution Operational Expenditures
- Distribution Operational Charges
- Capital, Exchange differences and Interests for investments
- Emergency Reserve Funds

- Distribution Service Charge

Retail Business

Retail Price



Energy Price

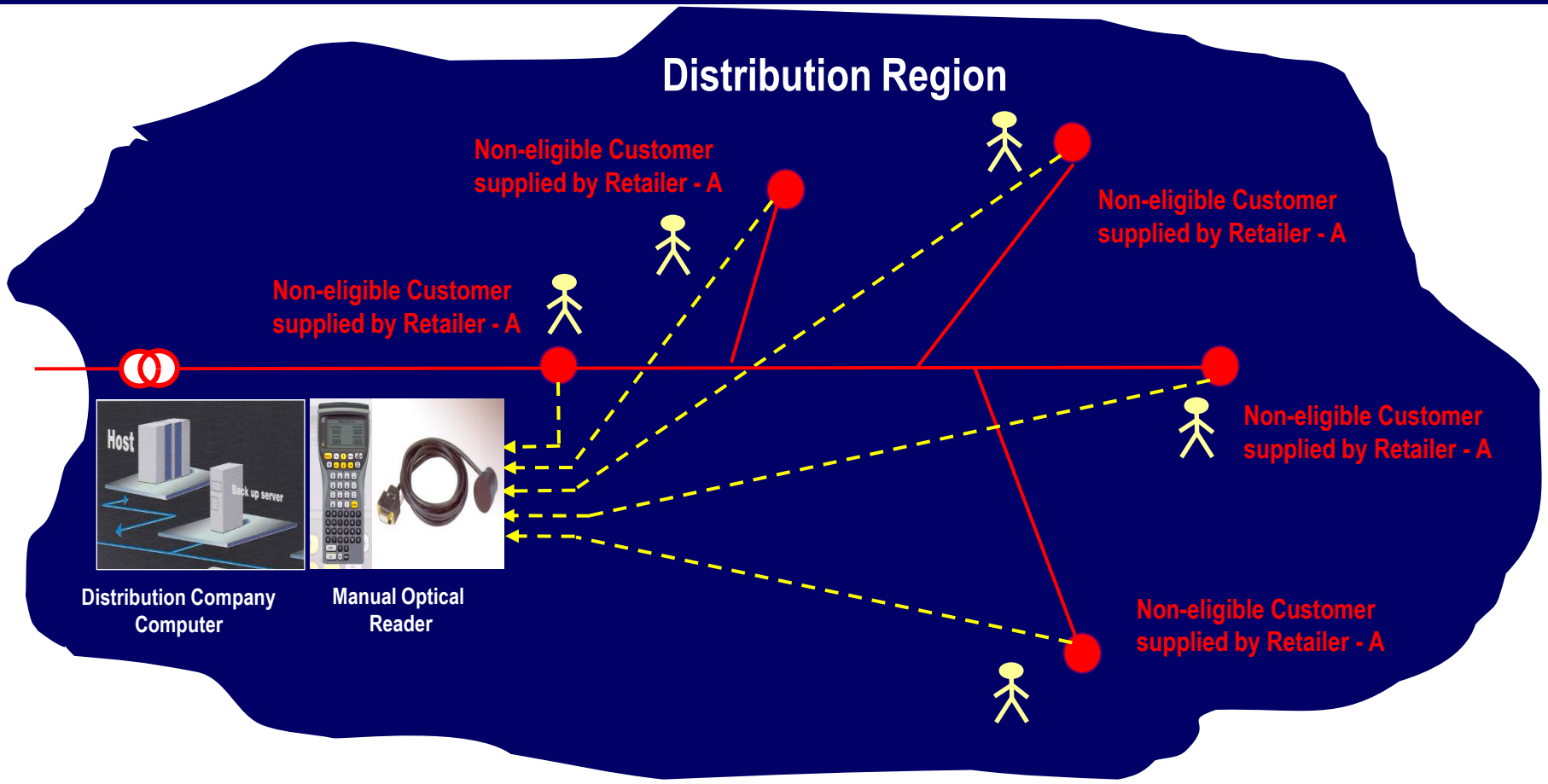
\+ Distribution Service Charge

Retail Price

Retail Business

Distribution Service Charge

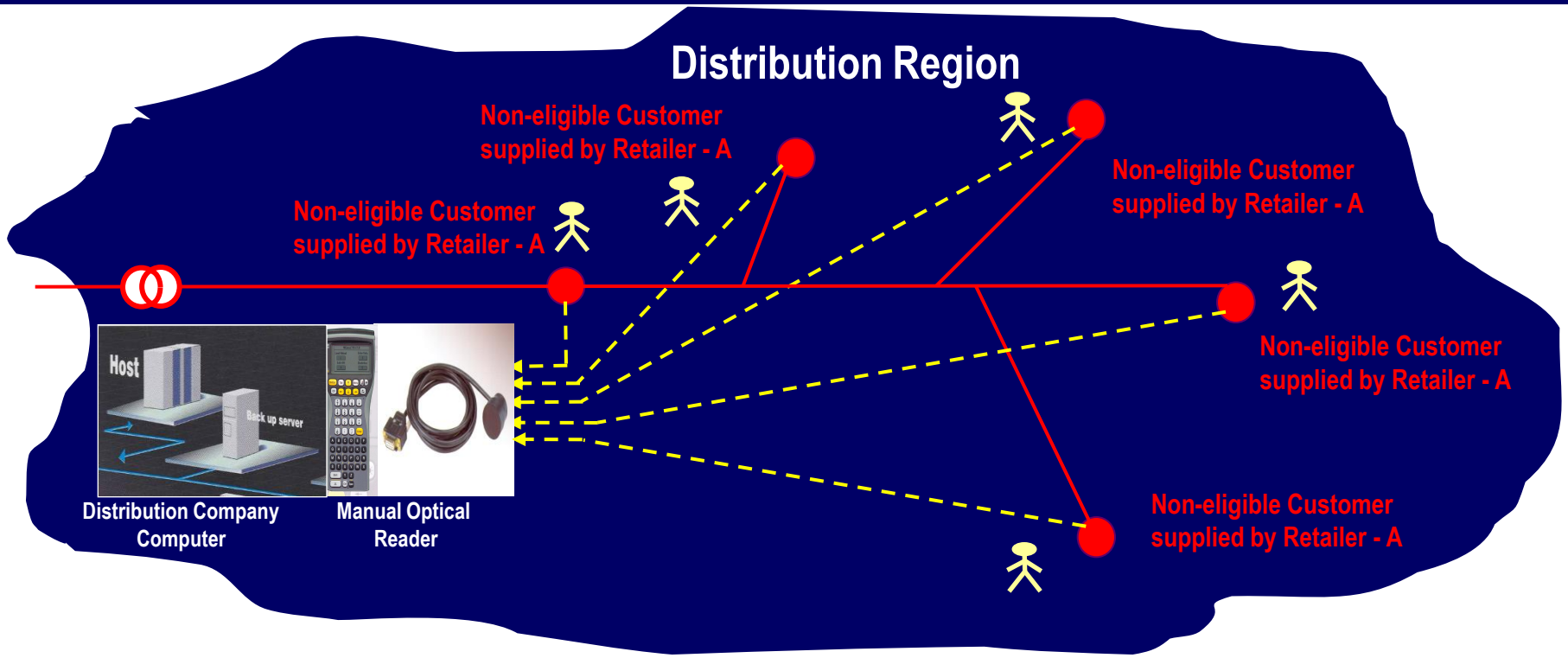
Accounting of Distribution Service Charge



Retail Business

Distribution Service Charge

Calculation of Distribution Service Charge

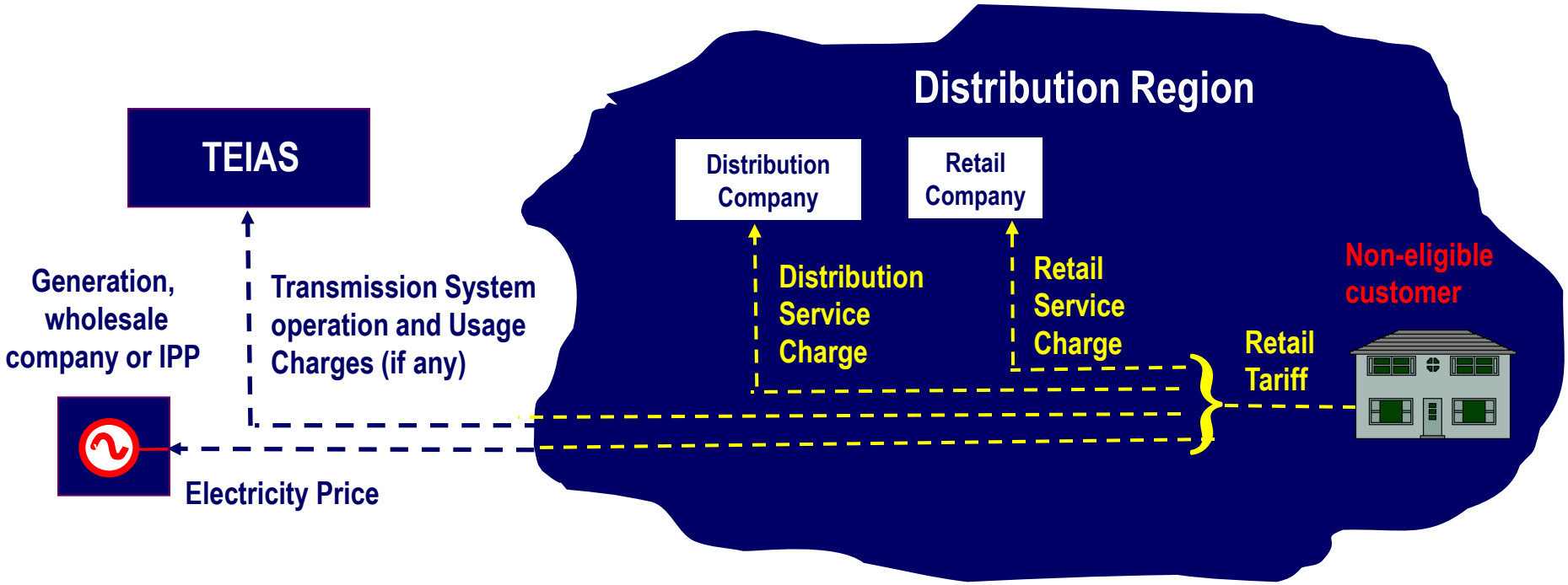


$$\text{Service Charge/Retailer} = \frac{\text{Energy sold by the Retail Company}}{\text{Total Energy sold in the Region}} \times (\text{Total Annual Expenditures in the Distribution Region})$$

Retail Business

Components of Retail Tariff

Components of Retail Tariff



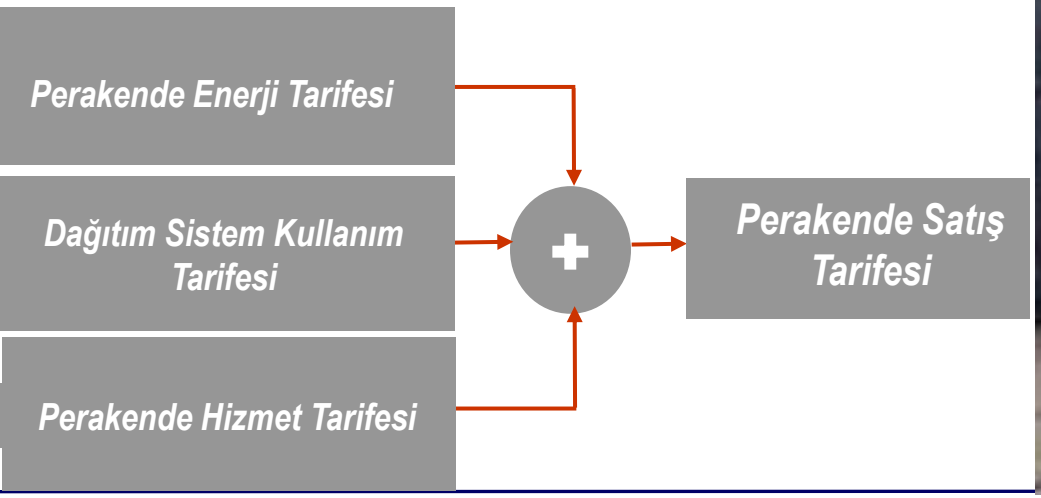
Tariff = Retail Service Charge + Distribution Service Charge + Transmission Service Charge + Energy Purchasing Price

Perakende Satış Tarifesi

Perakende Satış Tarifesinin Bileşenleri

Prensip olarak Perakende Satış Tarifesinin üç bileşeni vardır;

- Perakende Enerji Tarifesi,
- Dağıtım Sistem Kullanım Tarifesi,
- Perakende Hizmet Tarifesi



Retail Business

Perakende Satış Tarifesi

Perakende Ortalama Satış Tarifesi

Perakende Enerji Tarifesi

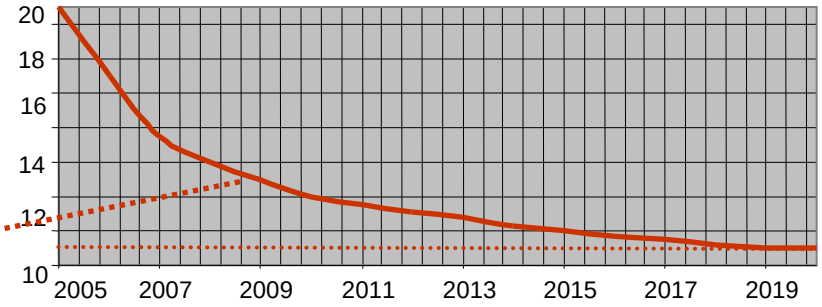
1 / (1 - a)

a = o yıla ait Kayıp ve Kaçak Oranı (%) / 100

g + 1

g = Perakende Hizmet Kar Oranı (%) / 100

x



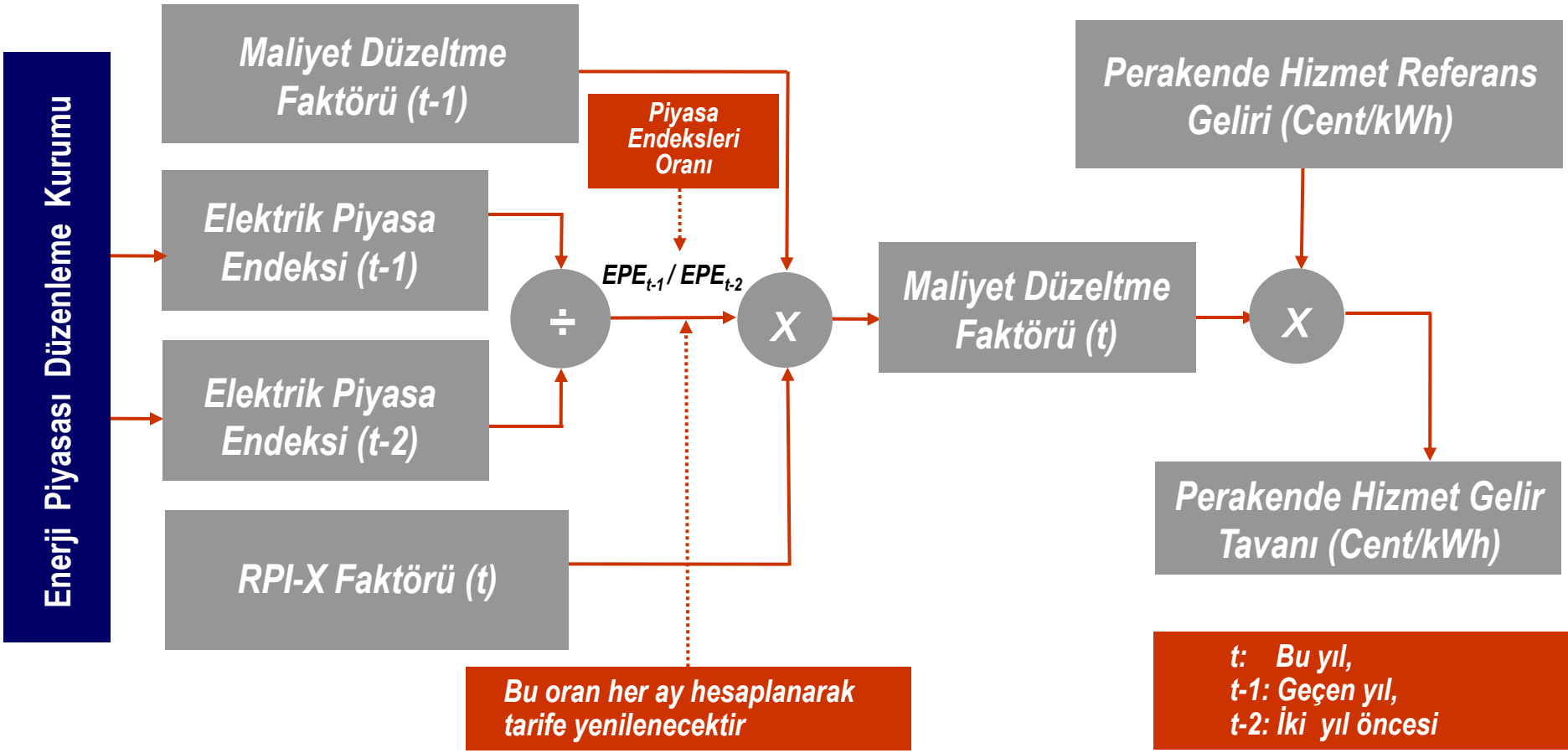
Ortalama Perakende Enerji Satış Tarifesi

Prensip olarak rekabet ortamında Perakende Ortalama Satış tarifesi üzerinde düzenleme yoktur.

Perakende Faaliyetin münhasıran Görevli Şirkete devredildiği mevcut yapıda Perakende Ortalama satış Tarifesinin TETAŞ'ın Toptan Tarifesi ile düzenleneceği şüphesizdir.

Perakende Satış Gelir Düzenlemesi

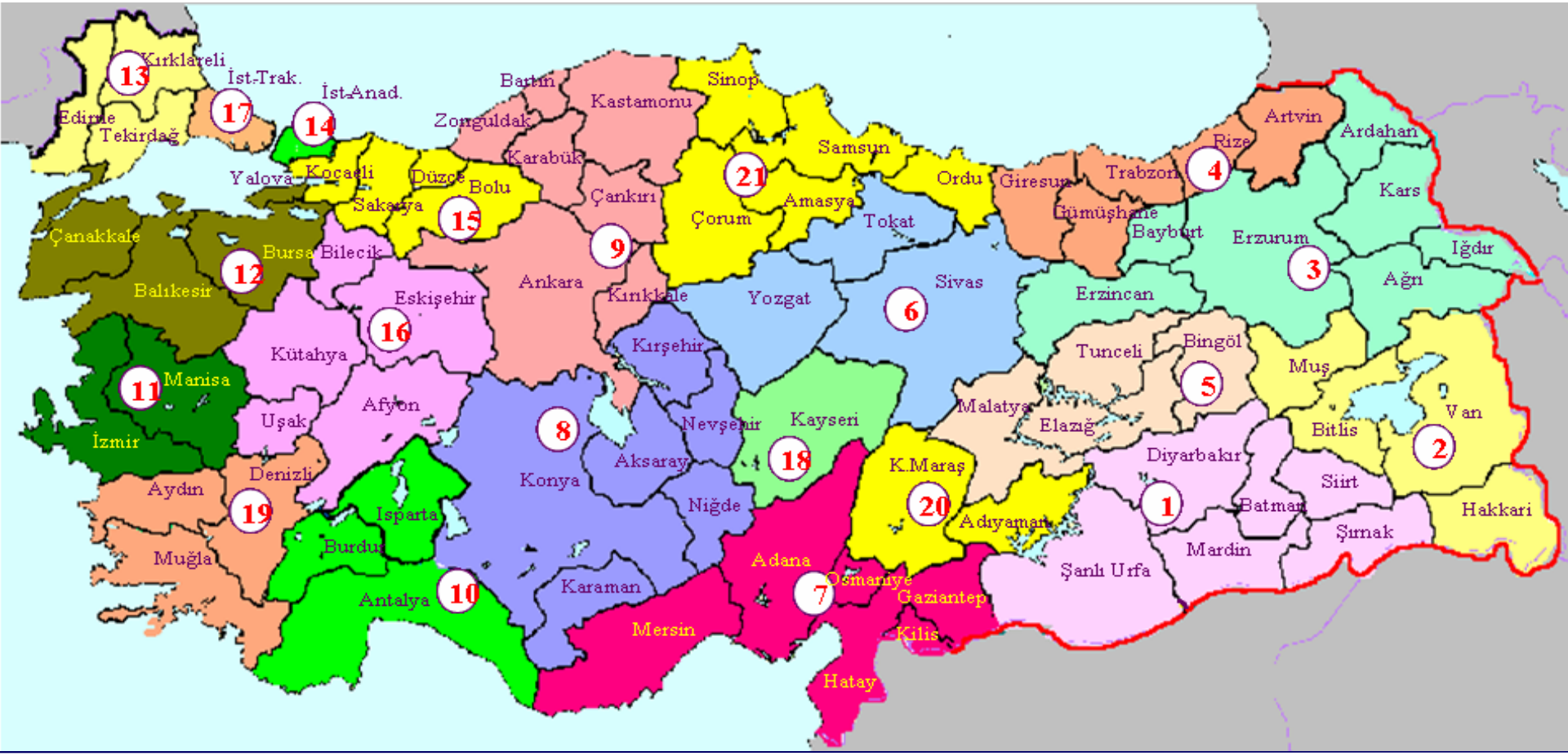
Perakende Ortalama Hizmet Tarifesi



Retail Business

21 Bölge İHD Modeli (2005)

21 Bölge (2005)	İHD (Lisans Devri) Modeli



Retail Business

Maliyet Esaslı Tarife İstanbul (Avrupa)

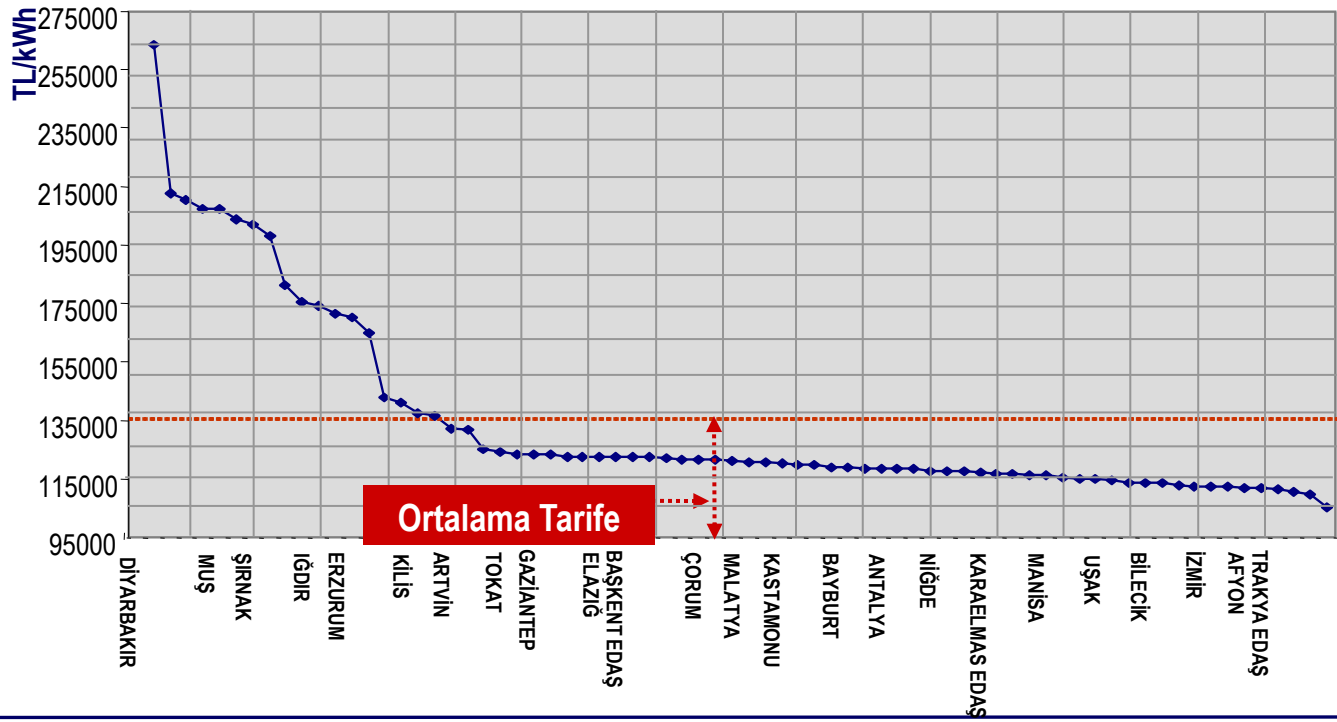
Hazine Desteği (DGD) Yok

Bu modelde;

- Her bölgede fiyat maliyete göre oluşur,
- Hazine desteği DGD yoktur,
- KK yüksek bölgelerde fiyat yüksektir

- Sosyal değil,
- Siyasete, özellikle muhalefetin tahrikine son derece açık,
- Uygulanması son derece zor ve siyaseten riskli

Sanayi		Mesken	
Perakende	Perakende+Şebeke	Perakende	Perakende+Şebeke
TL/kWh	TL/kWh	TL/kWh	TL/kWh
108.680	114.330	110.210	119.670
109.050	118.590	110.590	126.560



Bölge Ortalama Satış Fiyatı

Ortalama Tarife

Retail Business

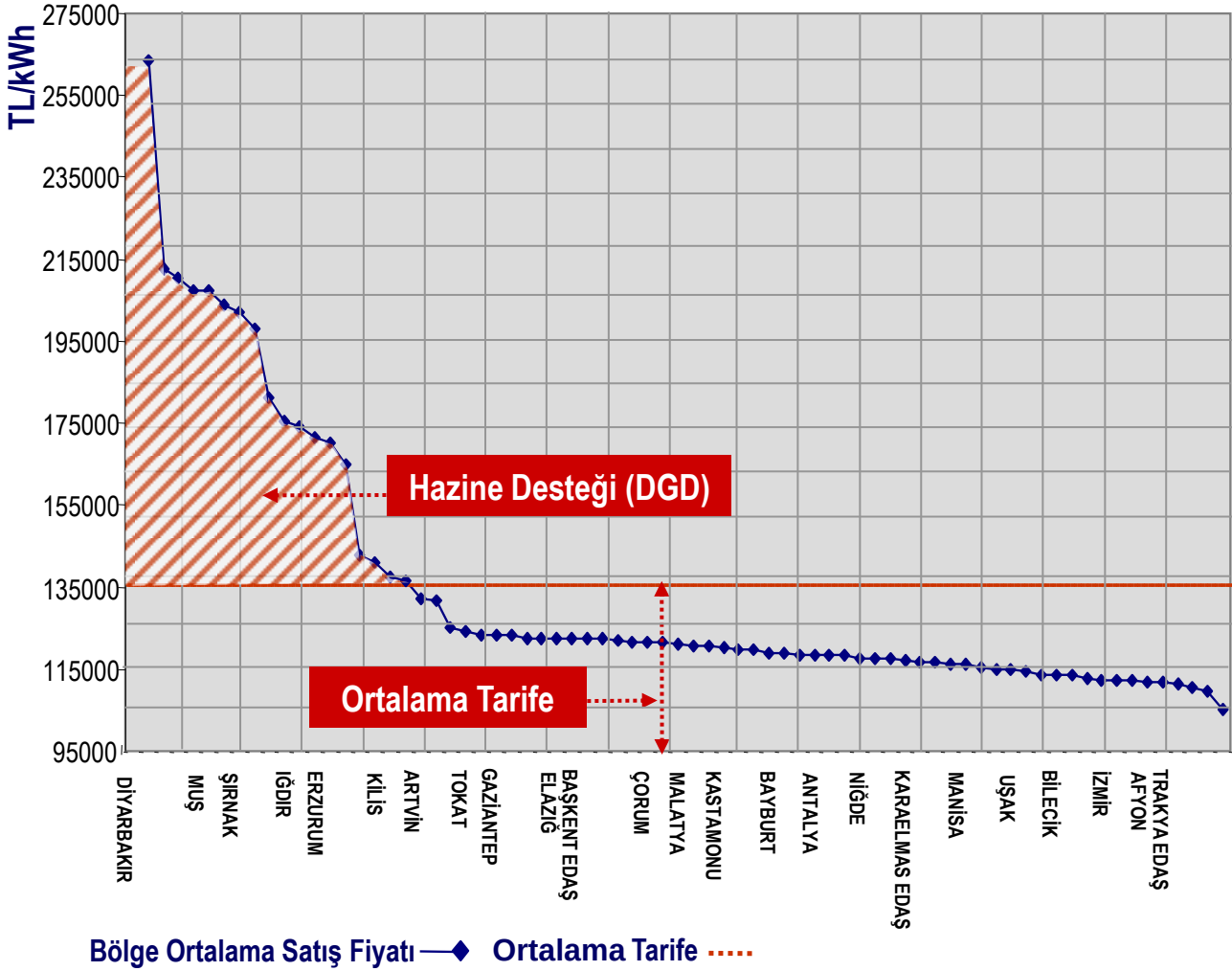
Maliyet Esaslı Tarife

Hazine Desteği (DGD) Var

Bu modelde;

- Hazine desteği vardır,
- Her bölgede fiyat maliyete göre oluşur,
- KK nedeniyle tarifesi ortalamadan yüksek bölgelere DGD yapılacaktır,
- Bu DGD EPDK tarafından yıllara göre X-Faktörü ile azaltılacaktır.

- Sosyal,
- Fakat, Siyasi İrade gerektiriyor,
- Hazine kabul etmiyor,
- DGD toplamının doğru bir şekilde hesaplanması lazım



Retail Business

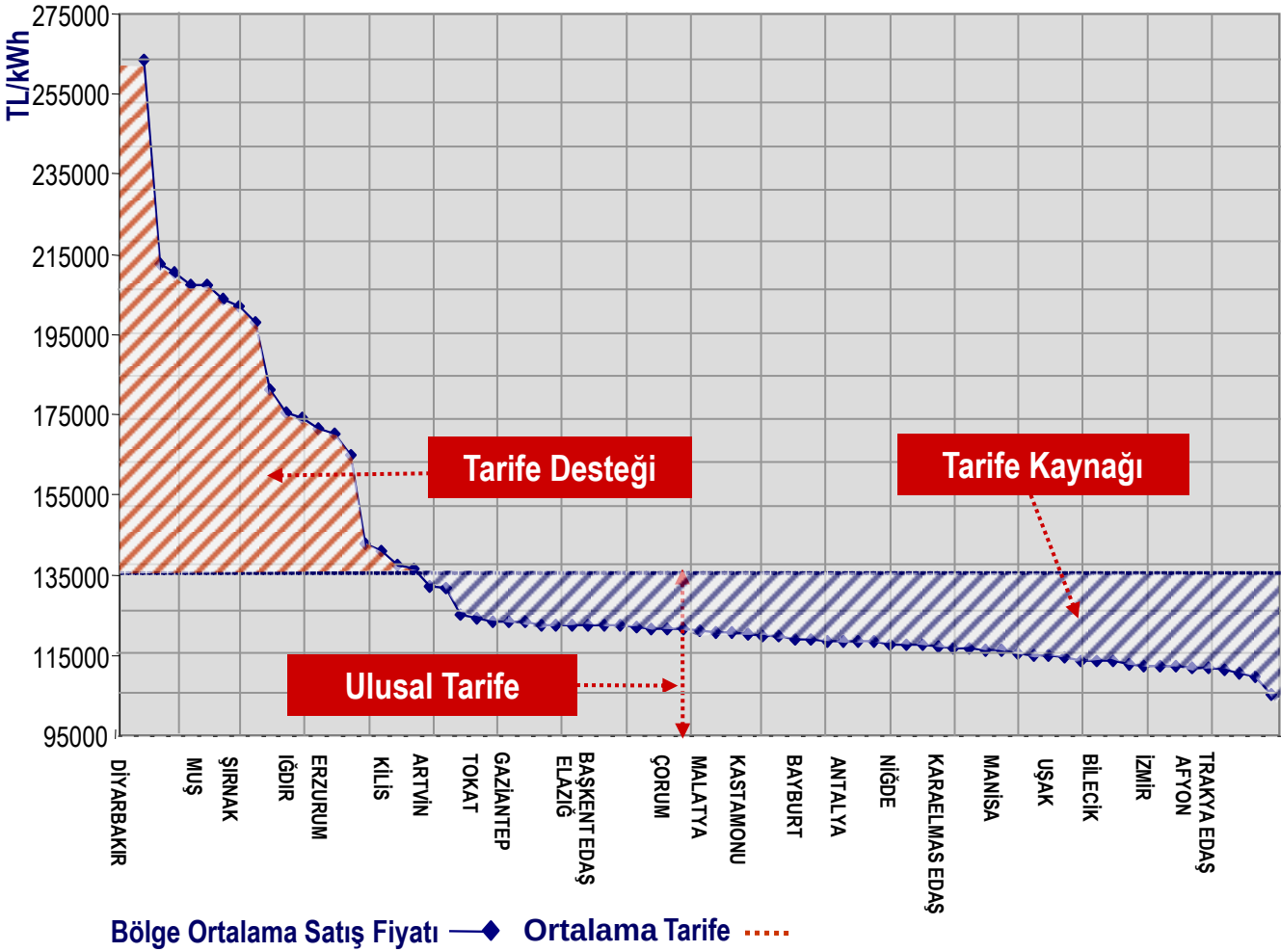
Fiyat Eşitleme Mekanizması (Strateji Belgesi)

Hazine Desteği (DGD) Yok

Bu modelde;

- Hazine desteği yoktur,
- Her bölgede fiyat maliyete göre oluşur,
- KK yüksek bölgeler KK düşük olan bölgeler tarafından desteklenecektir,
- DGD Enerji Piyasası Düzenleme Kurumu tarafından yıllara göre X-Faktörü ile azaltılacaktır.

- Sosyal değil,
- Batı Bölgesindeki sanayiciler itiraz edecek,
- Yasal dayanağı zayıf



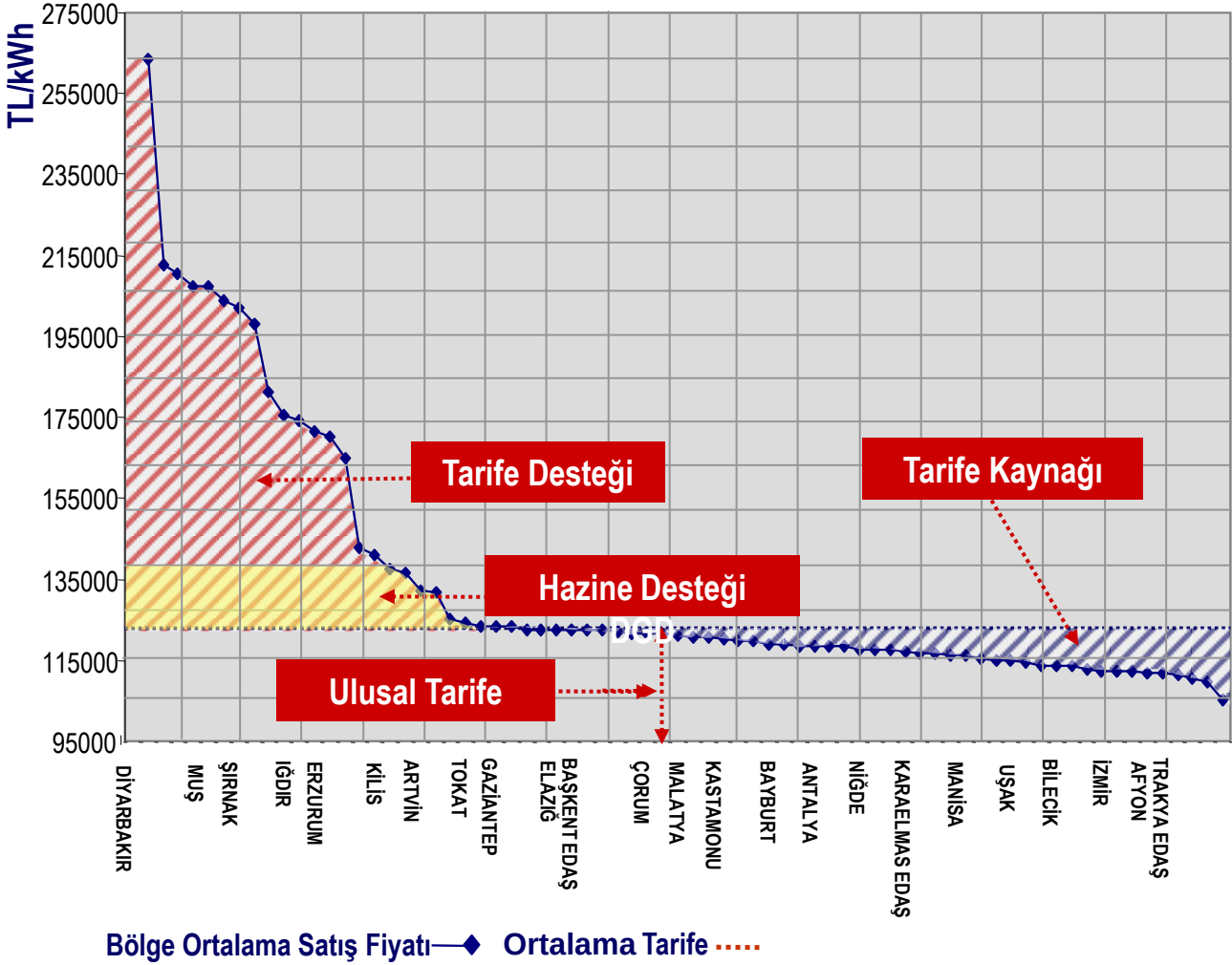
Fiyat Eşitleme Mekanizması (Strateji Belgesi)

Hazine Desteği (DGD) Var

Bu modelde;

- Hazine desteği kısmen vardır,
- Her bölgede fiyat maliyete göre oluşur,
- KK yüksek bölgeler; kısmen KK düşük olan bölgeler tarafından, kısmen de Hazine tarafından desteklenecektir,
- DGD EPDK tarafından yıllara göre X-Faktörü ile azaltılacaktır.

- Sosyal değil,
- Batı Bölgesindeki sanayiciler itiraz edecek,
- Yasal dayanağı zayıf



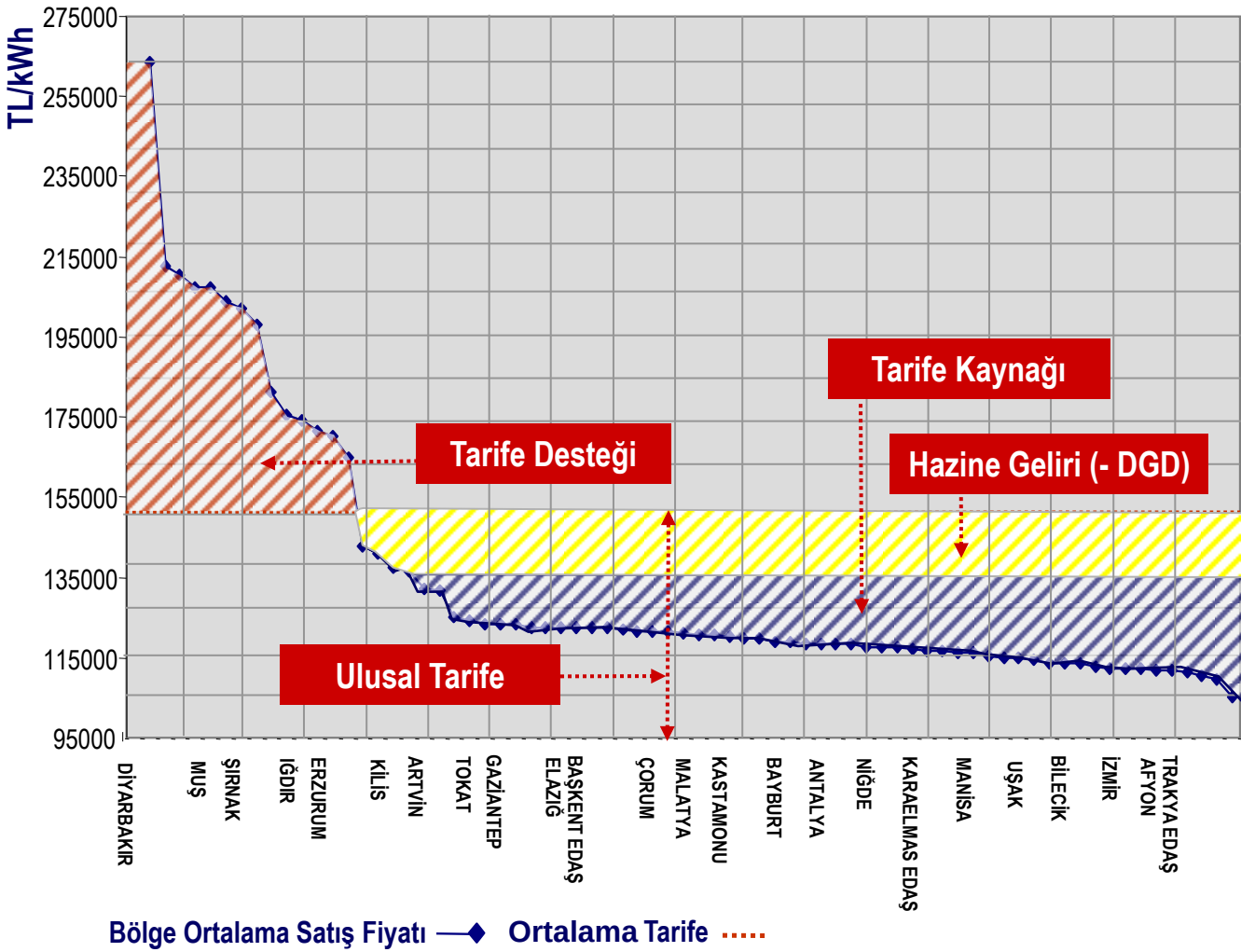
Retail Business

Fiyat Eşitleme Mekanizması (Strateji Belgesi)

Hazine Geliri (-DGD) Var

Bu modelde;

- Her bölgede fiyat maliyete göre oluşur,
- Ulusal Tarife Ortalama tarifeden daha yüksek seçilir,
- KK yüksek bölgeler;
- KK düşük olan bölgeler tarafından desteklenir,
- Ulusal Tarife Ortalama Tarifeden daha yüksektir,
- Tarife farkı Hazineye akar (-DGD),



Hedging Program for Competitive Retail Markets

Implementing Price Hedging Program

Most customers are risk averse and not willing to transfer to three-rate tariff

Hence an appropriate ***"Price Hedging Program"*** may be used to convince the customers

For that purpose, past usage patterns of each customer are documented, submitted and the expected prices in the near future, if they agree to transfer to three-rate tariff structure are informed

The hedging program is continually updated for any change in; principles, prices, consumption profiles

Three-Rate Tariff

ELEKTRİK FATURA BİLDİRİMİ

BAŞKENT
ELEKTRİK DAĞITIM A.Ş.
Necatibey Cad. No.: 10 KIZILAY/ANKARA

İşletme	006.07.77.00.00 ÜMİTKÖY ŞB.				
Dosya No	3465-00	Abone No	Tarife	5.08.1.3	
Sıra No	39/00	3004692.0	Kent Mesk.		
				Dönem	2004/05
				Ekip	906
AKTİF	19778 MKB		Çarpan		1.000
	Gündüz		Puant		Gece
Son Endeks	26559.000				
İlk Endeks	26402.000				
(+/-) KWh	0				
Tüketim	157.000				
Tüketim Tut.	20 064 549				
ENDÜKTİF			Çarpan		
Son Endeks			İlk Okuma Tarihi		09.04.2004
İlk Endeks			Son Okuma Tarihi		05.05.2004
(+/-) KWh			Okuma Saati		11:17.08
Tüketim			Tebliğ Tarihi		05.05.2004
Tüketim Tut.			Kira-Bakım		0
Enerji Tutarı	20 064 549		Güç Bedeli		0
Tüketim Ver.	1 003 227		K.D.V.		3 792 200
(+/-) Tutar	0		Teşvik İndirimi		0
FATURA TUTARI	24 860 000 -TL			Yuvarlama	24
ÖDEME TAR.	10.05.2004 - 20.05.2004				
Eski Borç (Gecikme Zammı Hariç)					0 -TL
ÖDEME YERLERİ	BAŞKENT E.D.A.Ş.TAH.VEZNELERİ ŞEKERBANK-PAMUK-VAKIFBANK-HSBC TEKSTİL-TURKISHBANK-PTT-OYAK ALTERNATİF-DIŞBANK-KOÇ-Y.KREDİ İŞBANK-FİNANS-DENİZ-AKBANK-TEB GARANTİ-HALKBANK-ANADOLUBANK				

Retail Business

Hedging

Hedging Program

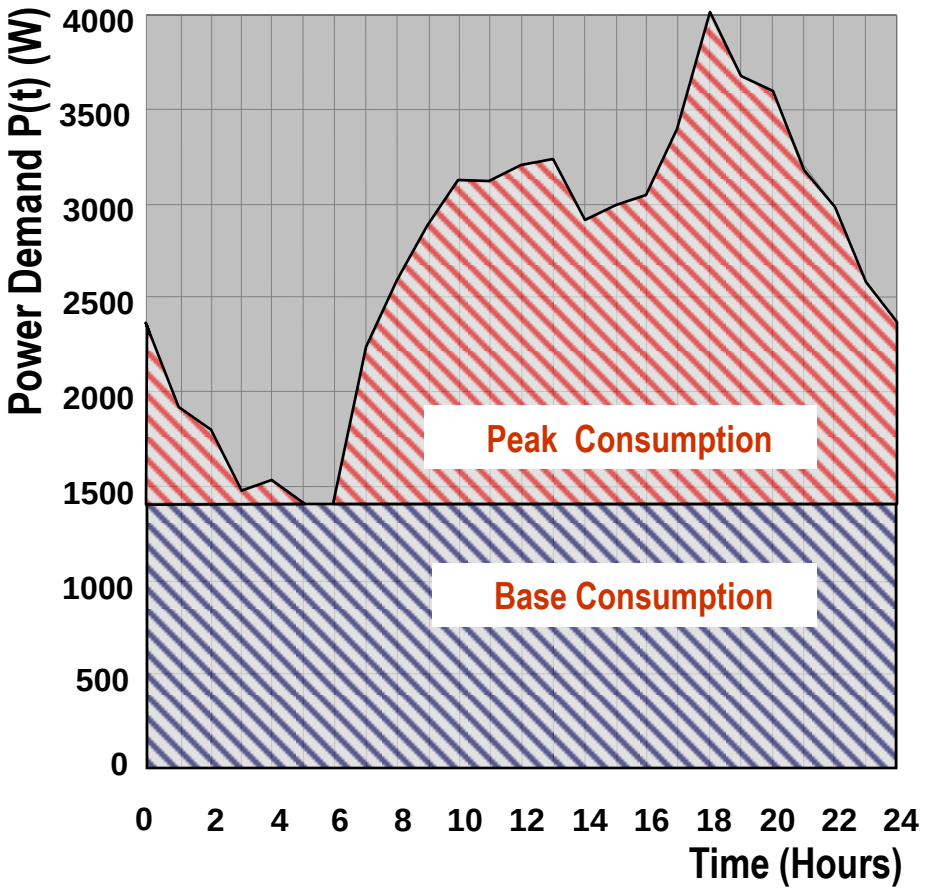
To hedge a customer's bill under real-time rates, consumption characteristics into two parts;

- Base consumption,
- Addititonal consumption

Base consumption is the energy corresponding to minimum power, most likely being insensitive (rigid) to tariff structure

Additional consumption is the time varying part of the energy consumption This component is more sensitive (elastic) to to tariff structure

Consumption Profile



Retail Business

Hedging

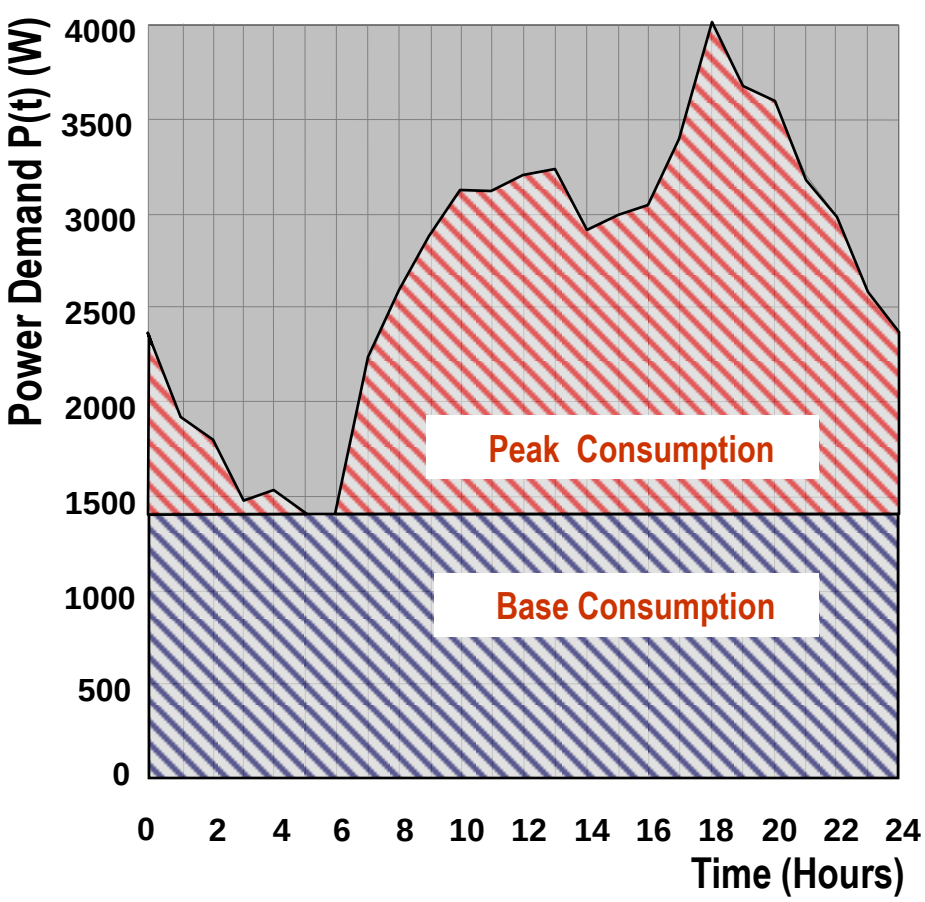
Hedging Program

Main objective of employing three-rate tariff is to change the shape of the "additional comsumption" component in the curve

In case that it is not easy to calculate "base component" of consumption for each customer, the average of the customer class may be used

Real-time rate program is an essential part of competitive power markets. No power market should be designed without implementing a major real-time rate program

Consumption Profile

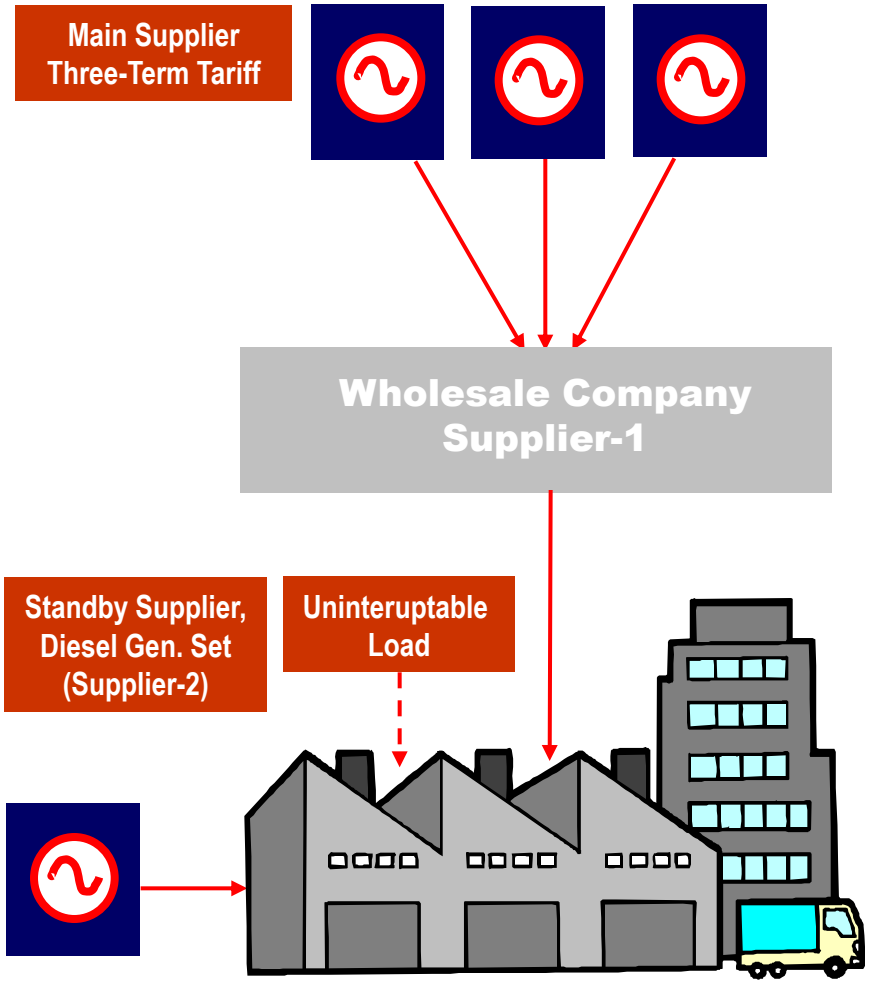


Retail Business

Increasing Service Reliability by a Standby Supply

Standby Supplier;

- has a higher tariff,
- provides stand-by energy in case of emergency



Retail Business

Bilateral Agreements

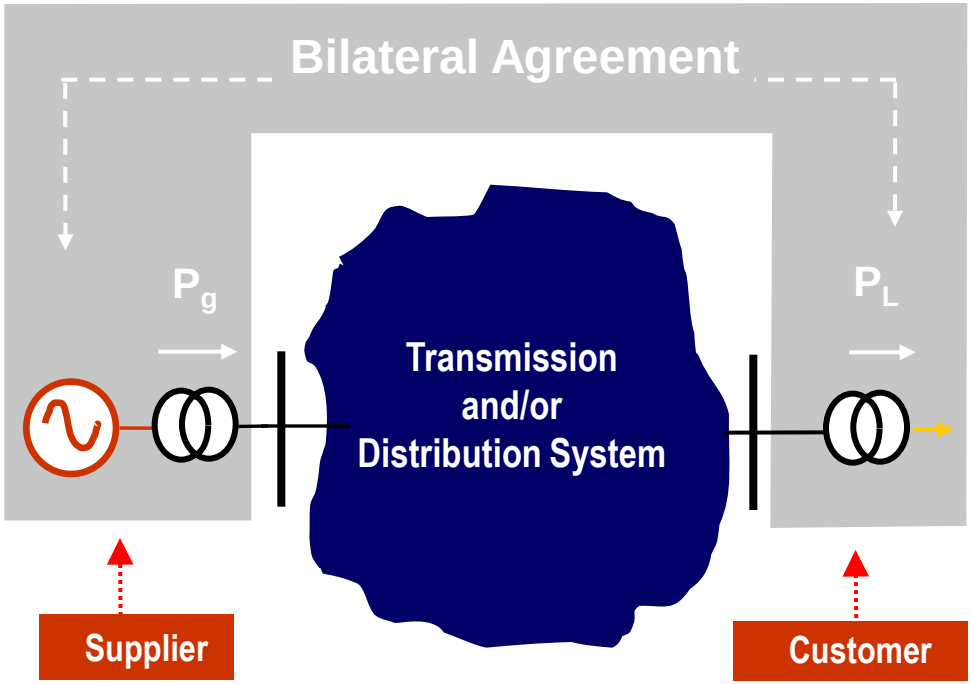
Definition

Definition: **Bilateral Agreement** is an electricity trading contract made between a supplier and a customer on;

- the amount,
- price,
- duration,
- and other conditions

of trading

The general principle in designing Bilateral Agreements in competitive markets is that the parties are <u>completely free</u> on the technical and commercial conditions in the Contract



Retail Business

Bilateral Agreements

Application

All Bilateral Agreements (Electricity Sale Agreements) (ESA) concerning power trades among all market participants are submitted to BSC for approval and recording

BSE examines the agreements in terms of ;

- amount,
- feasibility,
- system security, (congestion possibility),
- system stability,
- load frequency control,
- resulting increase in system losses

Retail Business

Formation of Supplier Portfolio

Bilateral Agreements with two or more suppliers