

- o We face a serious crisis
- o Situation will worsen in coming years
- o We must work on all fronts to increase the power supply
- o One source for early relief :  
Captive Power

- ❑ Adopt a new approach to harness captive generation which the conventional approaches have not been able to bring into the grid, i.e. U.I.
  
- ❑ Every MW counts
  - can light up 10,000 homes, and
  - enable 20,000 children to study

## Characteristics of Captive Generation:

- Installed for self-use, mostly as a standby source of power to run critical parts / services of the associated industrial unit/commercial establishment.
- Idling or working at part-load most of the time
- May have a high fuel cost

# Categories of Captive generation

- Stand-alone, i.e. isolated from the grid
- Stand-by, i.e. normally idling
- Running, but separately
- Running in synchronism
- Located away from the associated industry, and wheeling power through the utility network

# Ways to harness the surplus (idling) capacity

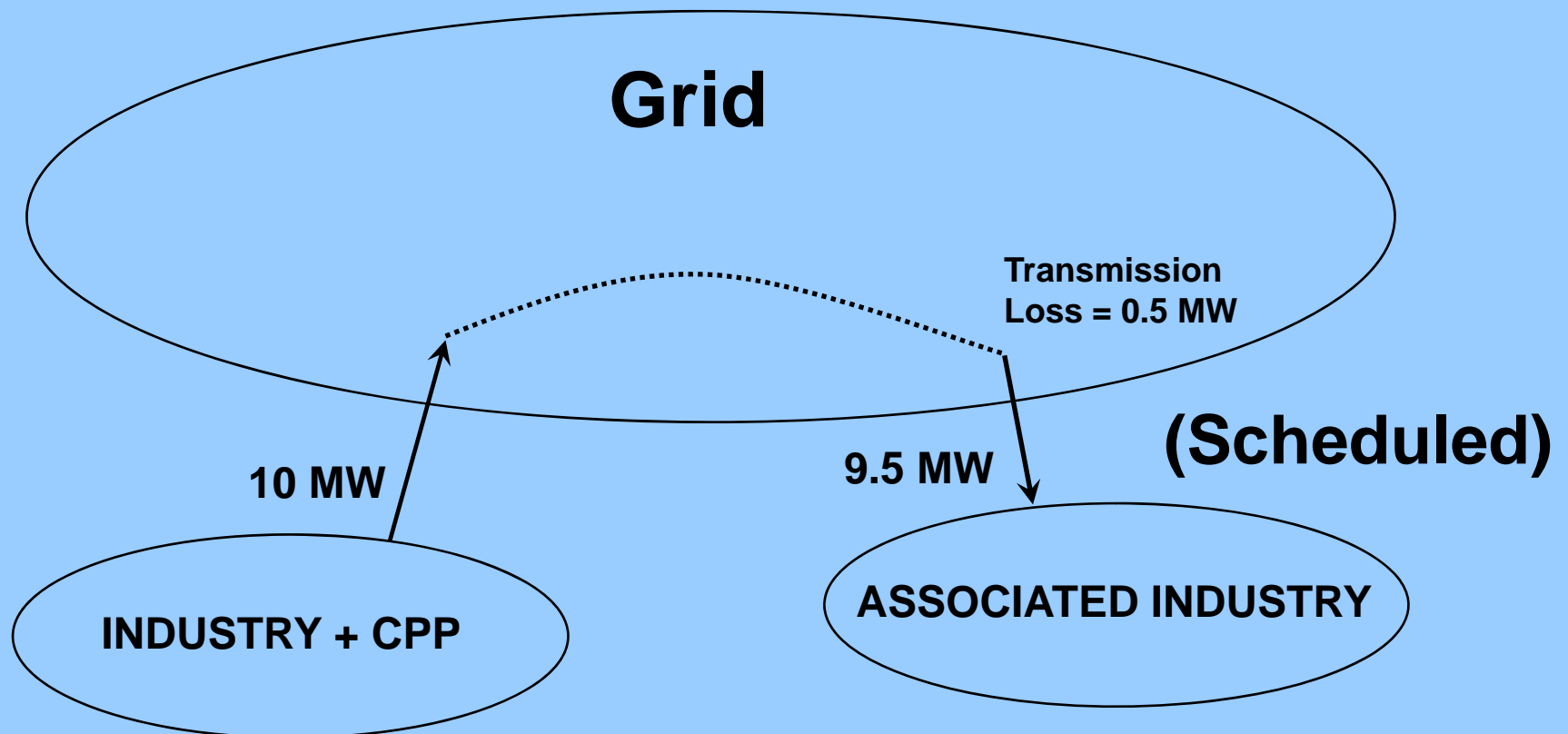
- Increased self-use (Pune-model)
- Sale to local DISCOM/SEB
- New wheeling to associated industry
- Sale to third parties
- Sale to the grid, as U.I.

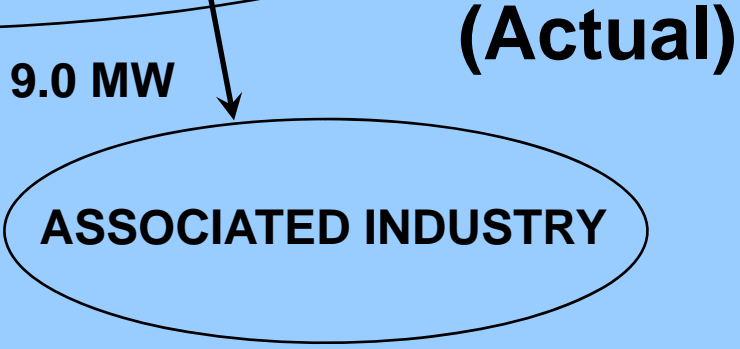
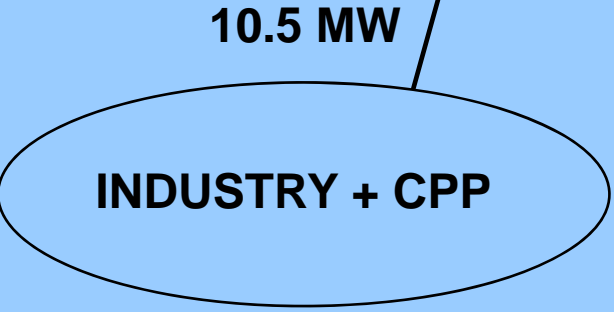
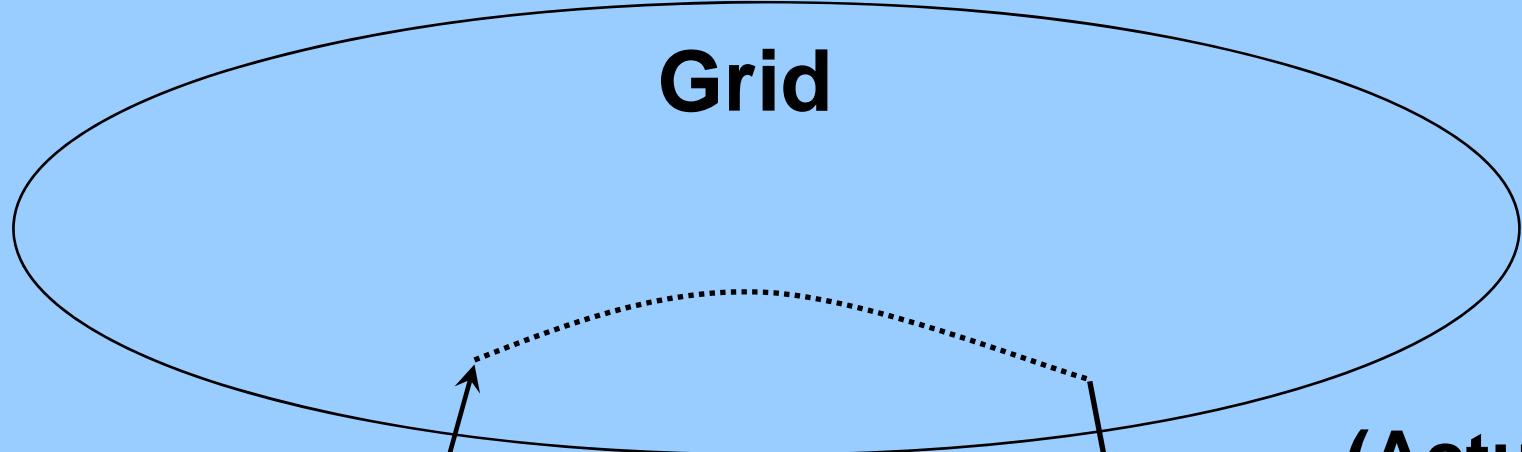
All these should be enabled, by removing the road-blocks and putting in place the required frame work

# Aspects to be kept in view:

- Availability is lower during peak-load hours than in off-peak hours
- Availability is unpredictable
- Cost too high for absorbing during off-peak
- Coordination with SLDC : Scheduling and handling of deviations
- Metering of actual injection, energy accounting and settlement

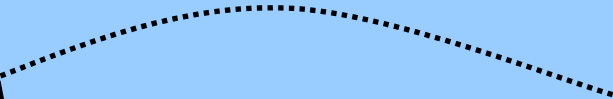
In all cases, correct metering and appropriate settlement of deviations is most crucial for dispute-free operation

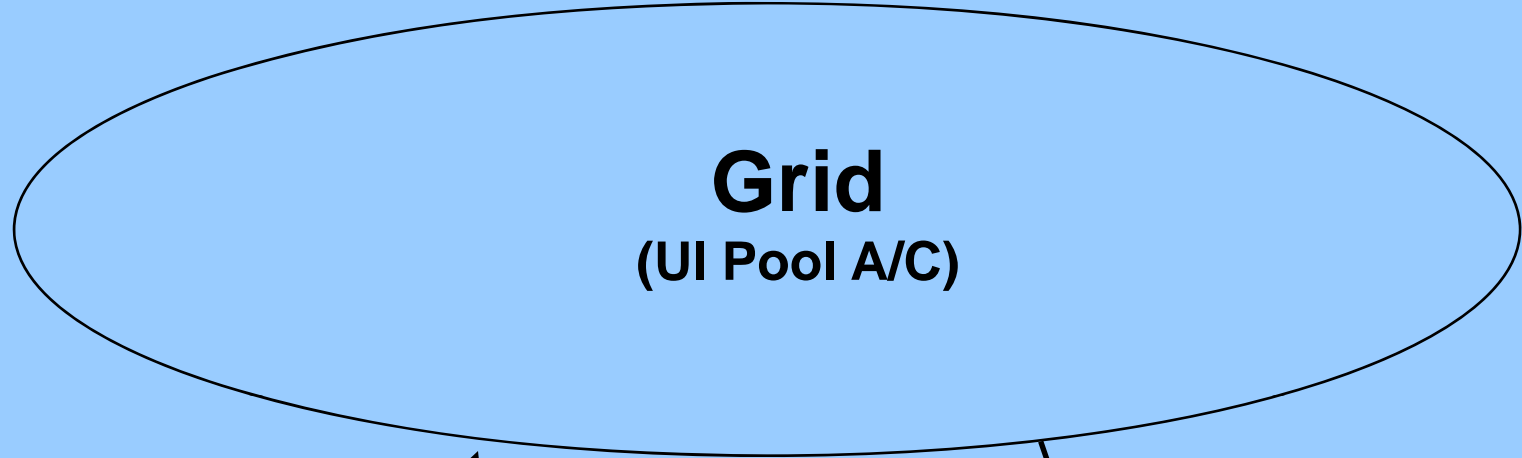




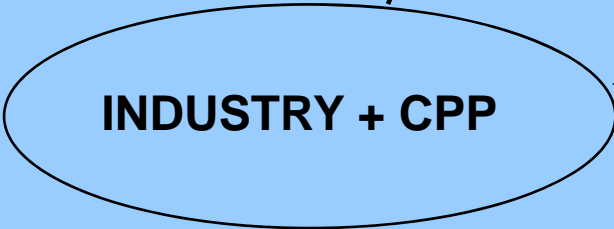
**10.5 MW**

**9.0 MW**





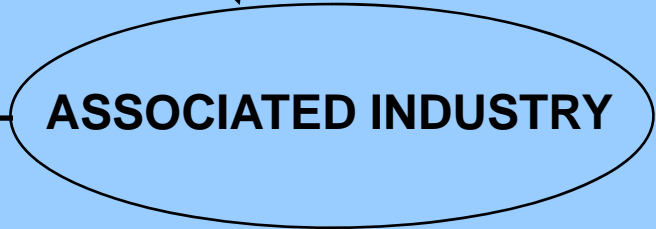
For  
0.5 MW



For  
0.5 MW

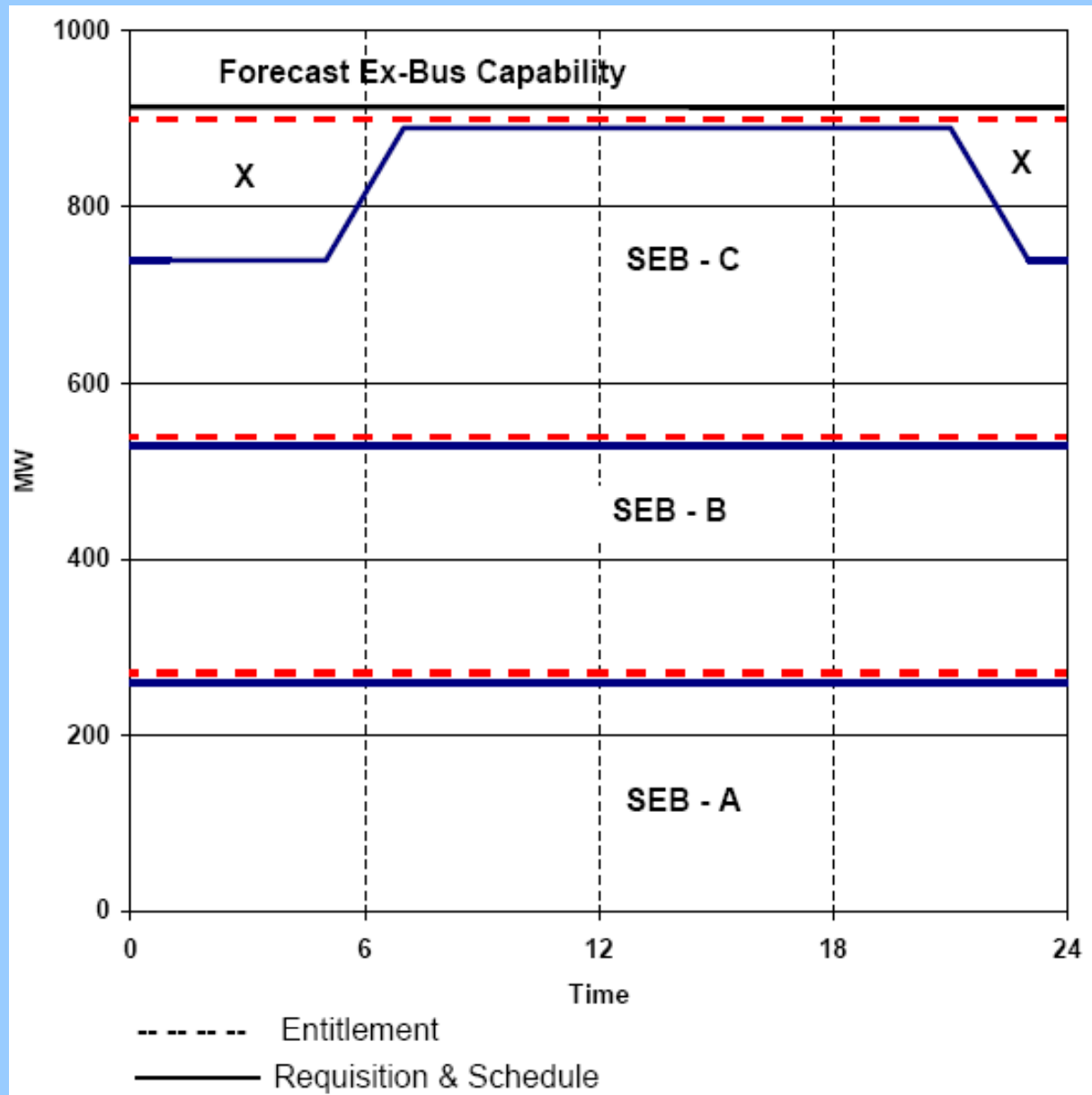


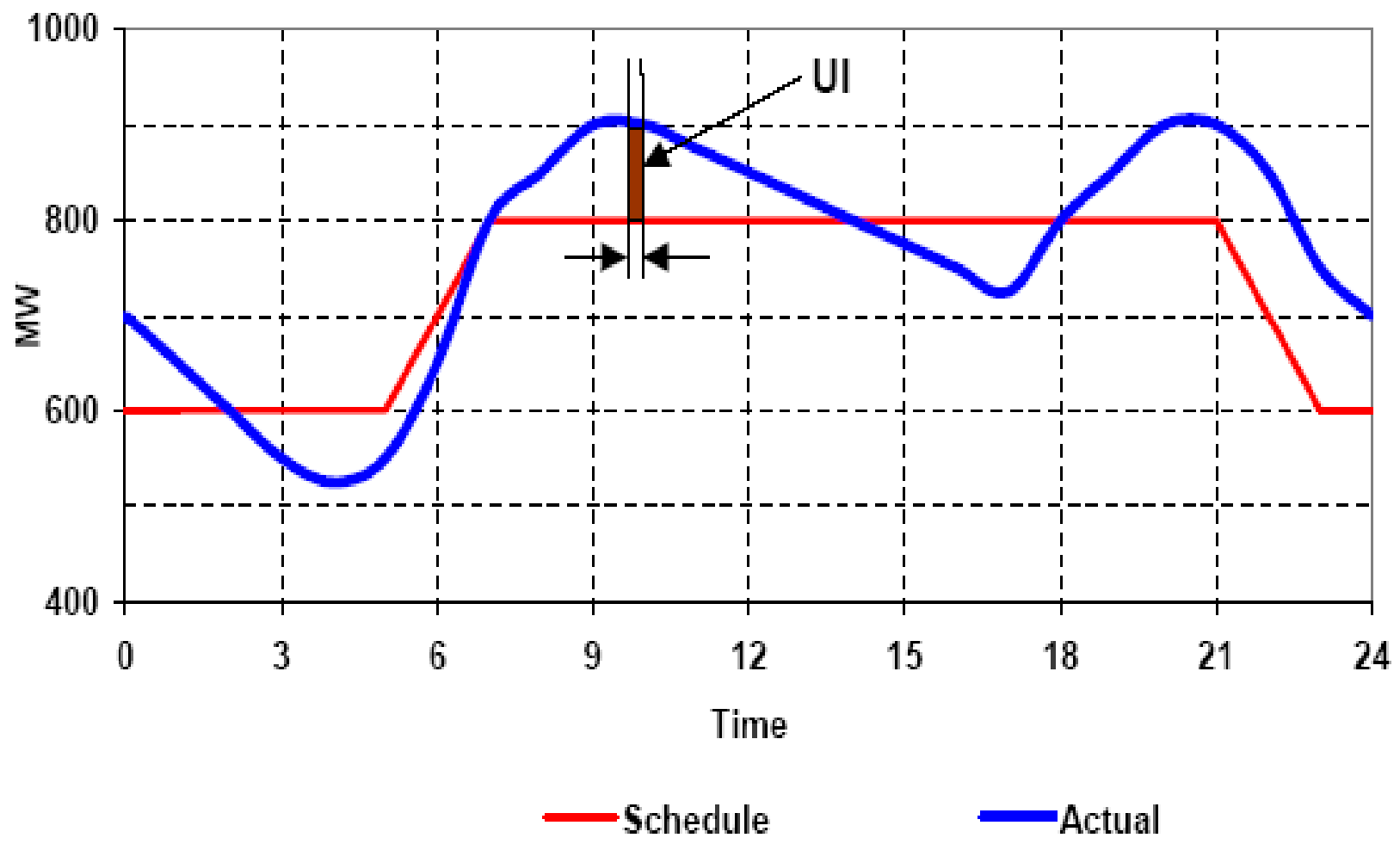
**(Payments)**

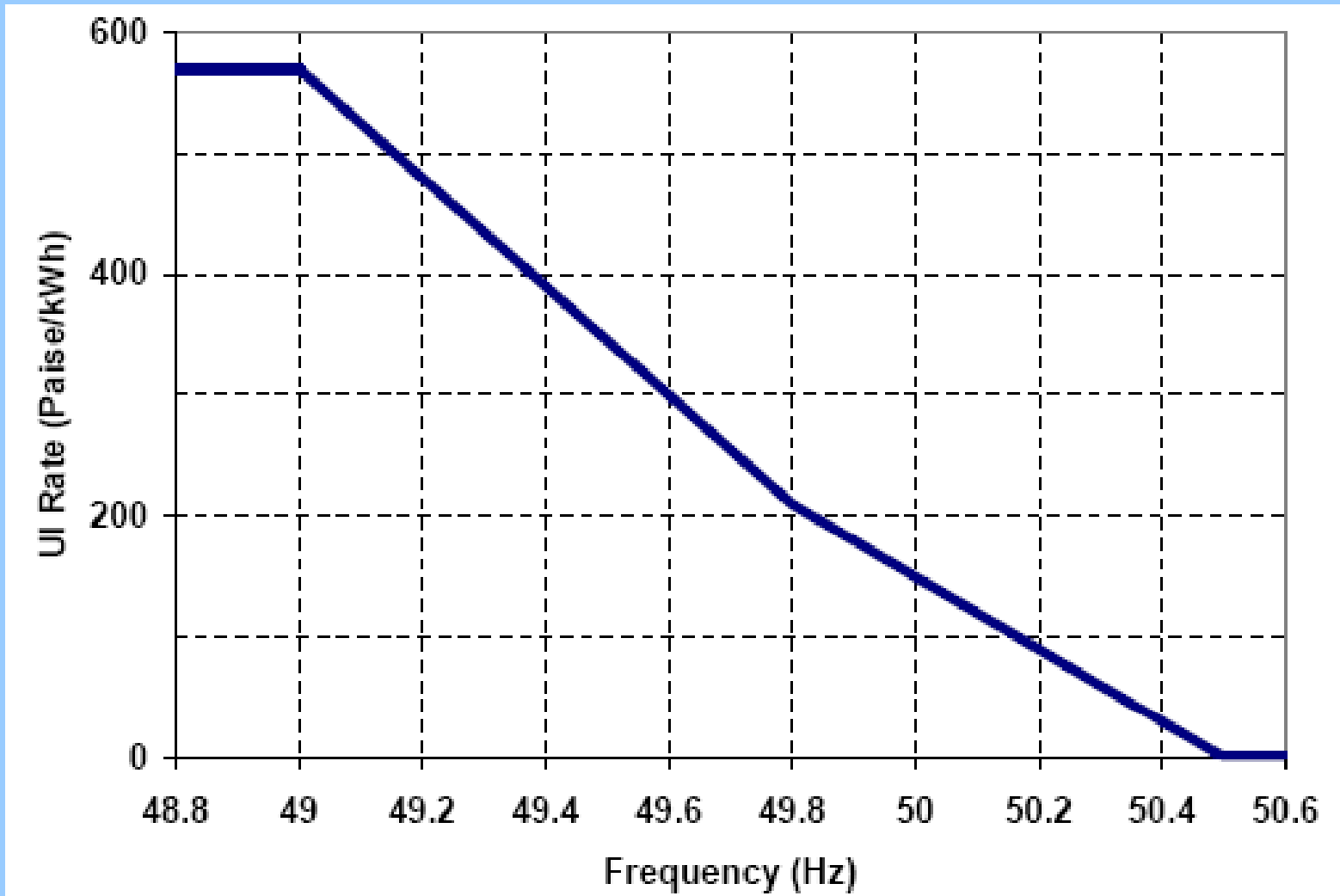


For  
10 MW

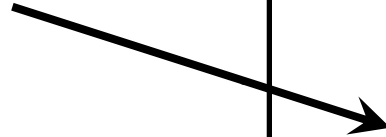








**ENTITLEMENT  
IN CENTRAL  
GENERATION  
(1000 MW)  
@ CC + EC**



**OWN GENERATION  
= 2500 MW**

**LOAD MET = 3500 MW  
DEMAND = 4000 MW  
LOADSHED = 500 MW**

**ENTITLEMENT  
IN CENTRAL  
GENERATION  
(1000 MW)  
@ CC + EC**

**+ 20 MW  
@ UIR**



**OWN GENERATION  
= 2500 MW**

**LOAD MET = 3520 MW  
DEMAND = 4000 MW  
LOADSHED = 480 MW**

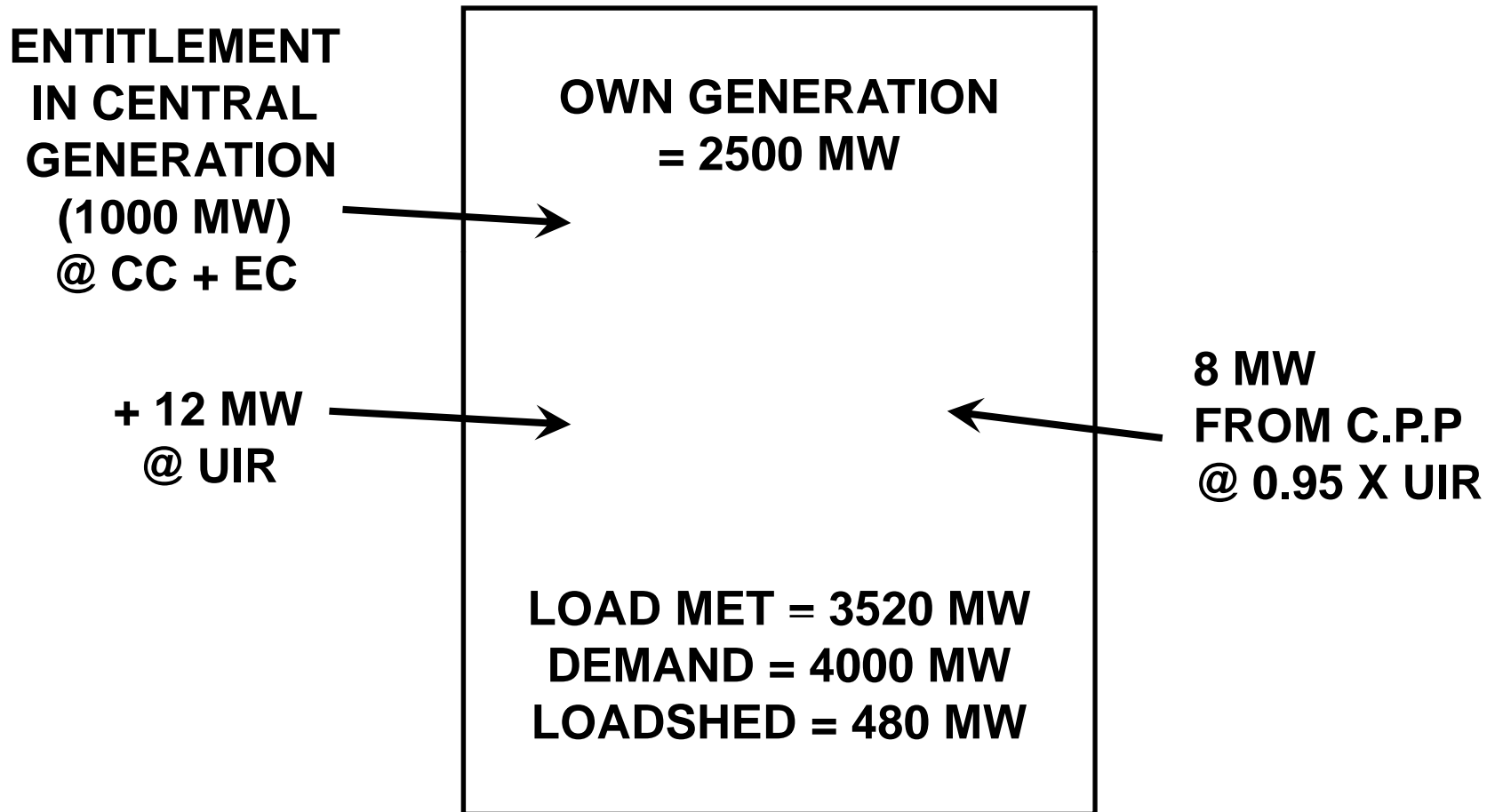
**ENTITLEMENT  
IN CENTRAL  
GENERATION  
(1000 MW)  
@ CC + EC**

**+ 12 MW  
@ UIR**

**OWN GENERATION  
= 2500 MW**

**8 MW  
FROM C.P.P  
@ 0.95 X UIR**

**LOAD MET = 3520 MW  
DEMAND = 4000 MW  
LOADSHED = 480 MW**



**ENTITLEMENT  
IN CENTRAL  
GENERATION  
(1000 MW)  
@ CC + EC**

**OWN GENERATION  
= 2500 MW**

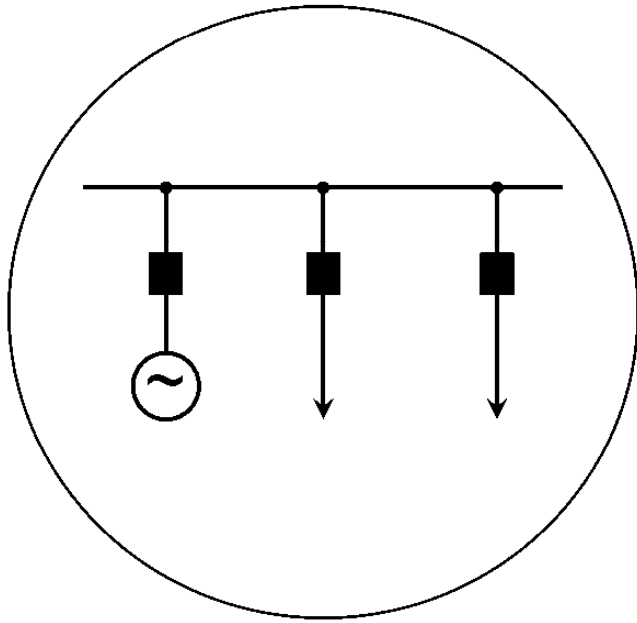
**8 MW  
@ UIR**

**8 MW  
FROM C.P.P  
@ 0.95 X UIR**

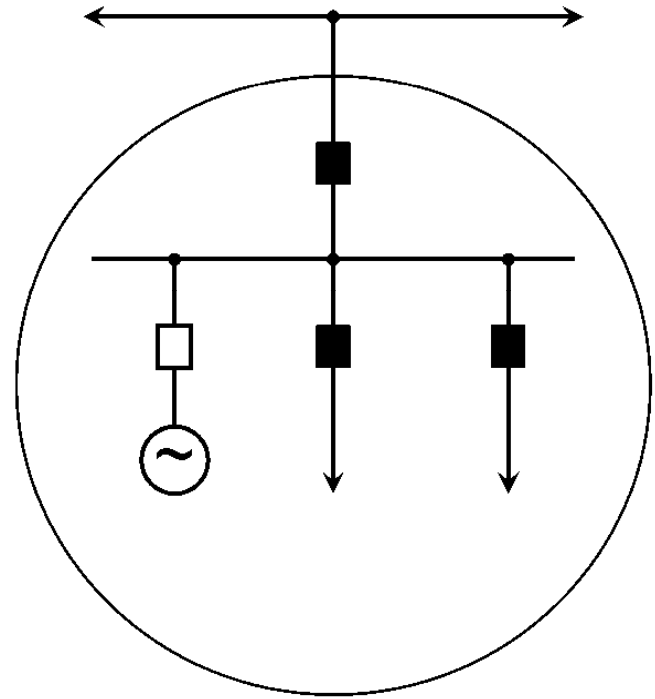
**LOAD MET = 3500 MW  
DEMAND = 4000 MW  
LOADSHED = 500 MW**



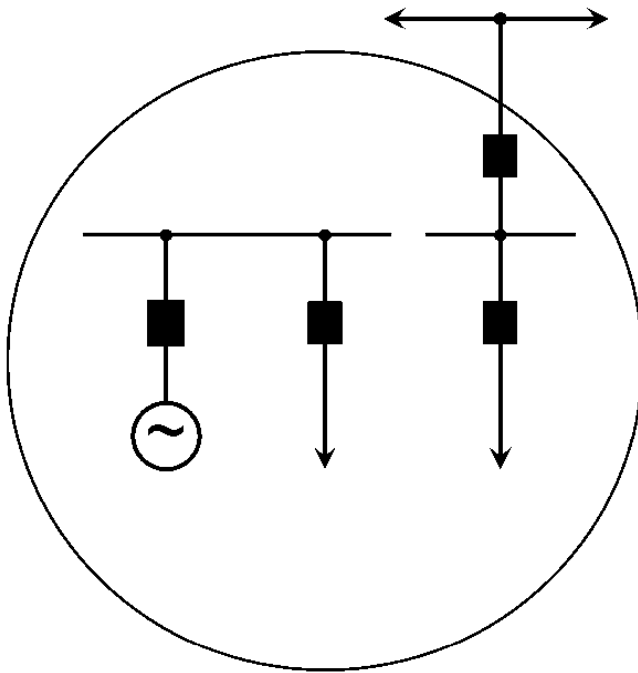
(i)



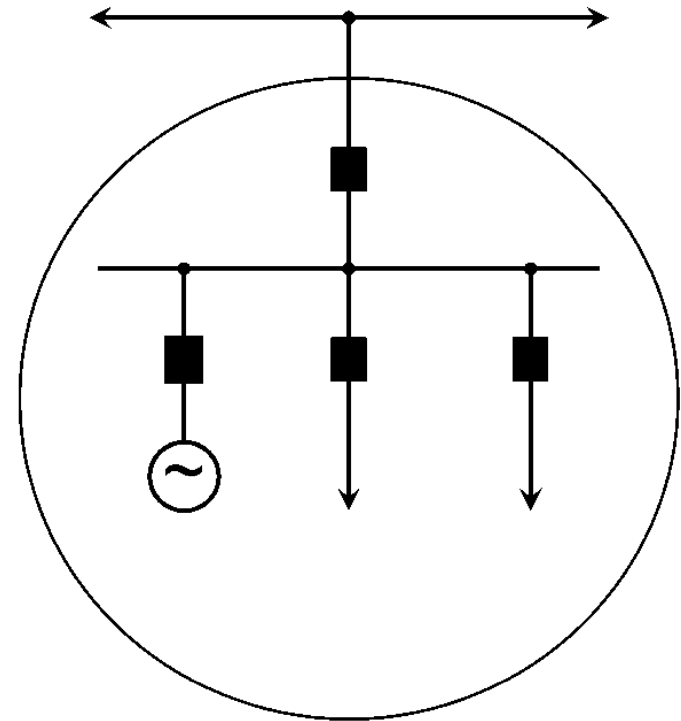
(ii)



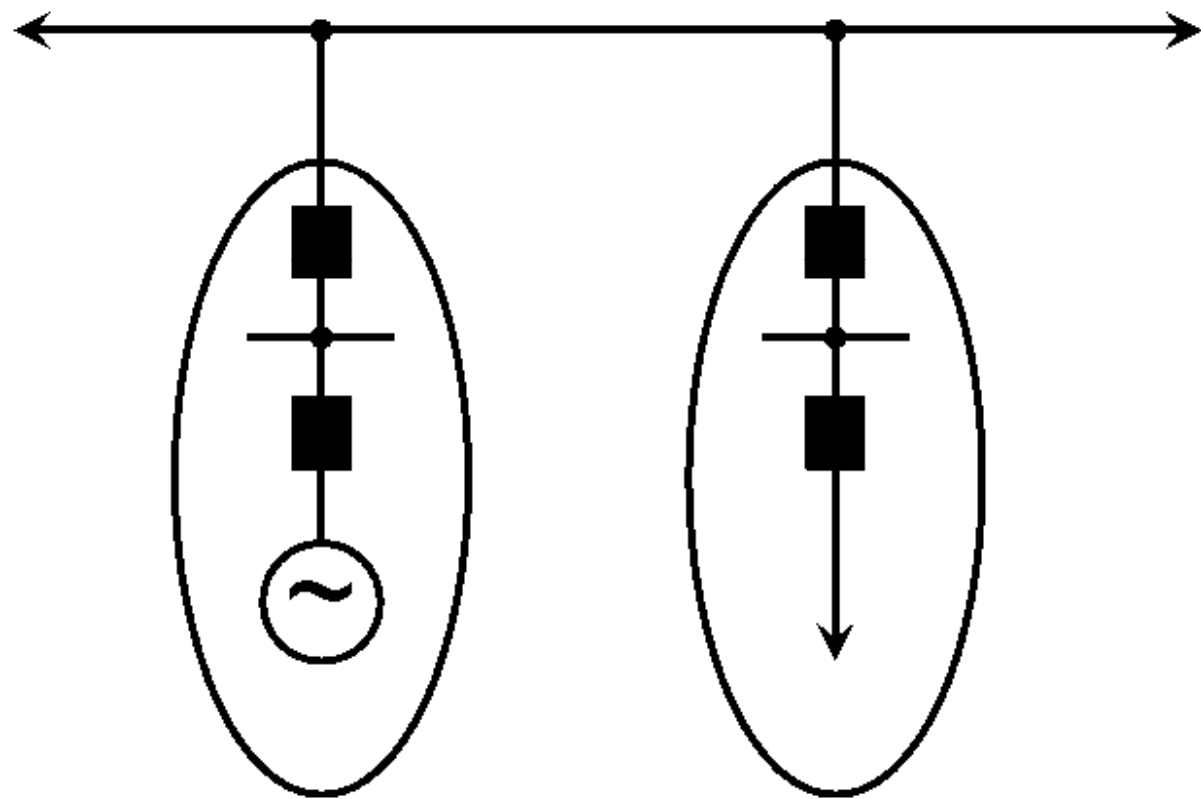
(iii)



(iv)



(v)



← @ 0.95 X UIR

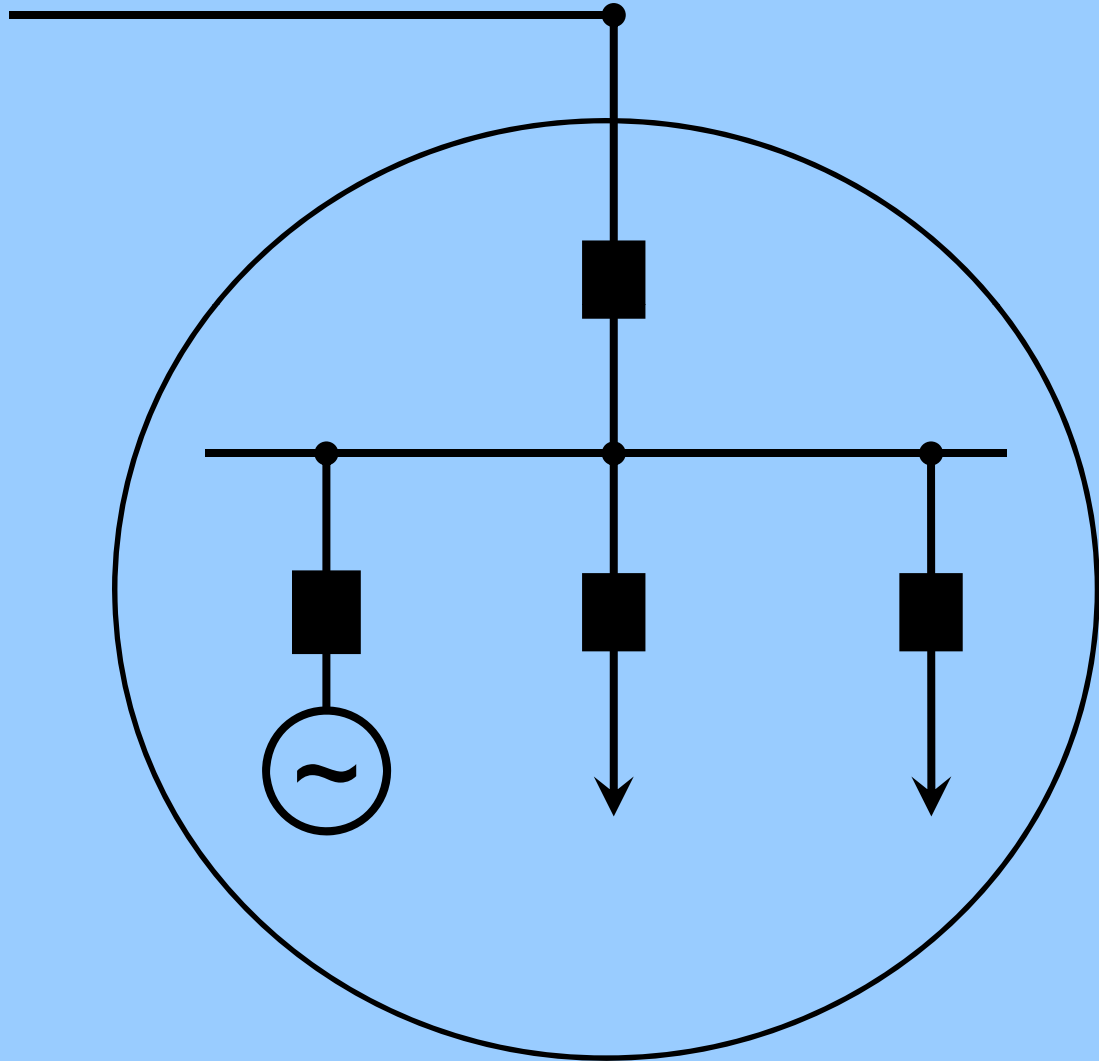
→ @ 1.05 X UIR

## ALTERNATIVE - 1

ENTIRE EXCHANGE  
AS U.I ONLY

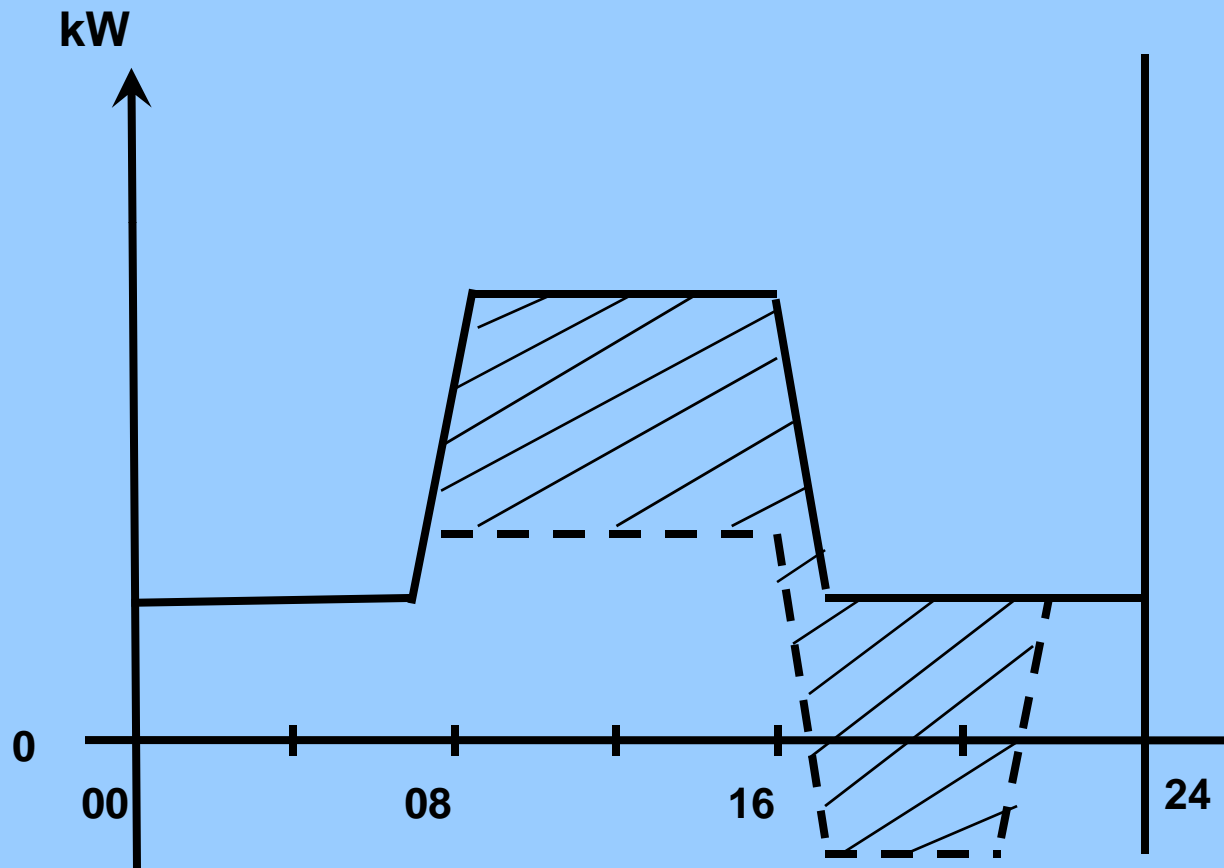
(SCHEDULE = 0)

FOR (i), (iv), (v)



## ALTERNATIVE – 2

DEVIATIONS FROM DATUM SCHEDULE AS UI,  
NORMAL INDUSTRIAL TARIFF FOR DATUM SCHEDULE



FOR (ii), (iii), (iv)

## What the TRANSCO/SLDC must do any case (for open access, captive wheeling, etc.)

- ❑ Installation of Special Energy Meters
- ❑ Weekly reading, data transfer, energy accounting
- ❑ Operation of State UI pool account

# What complications can be avoided when UI route is adopted

- Determination of cost of captive generation
- Daily scheduling, on-line monitoring
- Heart-burning and disputes
- Continuous regulatory oversight

# Role of State Regulatory Commission

- Acceptance of UI route as an alternative mechanism
- Intra-State rate for over-drawal/ under-drawal – e.g. 105% / 95%, of UI rate on State periphery

- Increase in U.I. rate ceiling
- State Government guarantee for U.I. payment to suppliers of U.I.

to get as much power into the grid  
as possible