

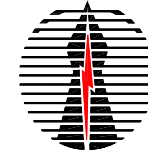
Improving Grid Discipline through ABT

**Dr. S. K. Agrawal,
General Manager,
POWERGRID**

Chronological Sequence of Implementation of ABT

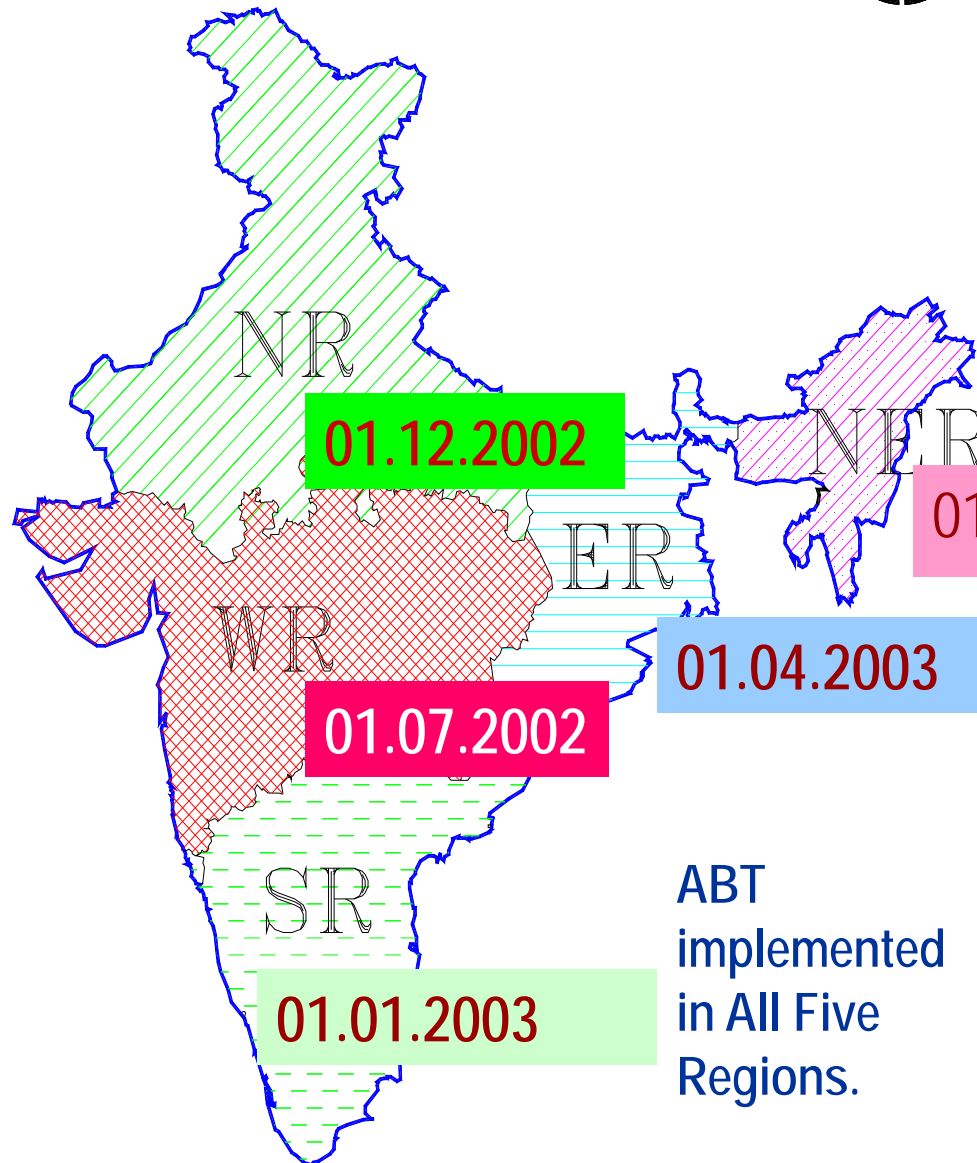
- 1990 : K. P. Rao Committee – Proposed Two – Part Tariff structure consisting of Fixed and Variable charges
- 1993-94 : A structured study by M/s ECC, USA, funded by ADB, sponsored by WB as a covenant of loans to POWERGRID
→ Availability Based Tariff (ABT)
- 1995-98 : NTF / RTFs, formed for ABT implementation.
- 1999 : Matter transferred to CERC : Hearings etc.
- 2000 : CERC Order, but stayed due to petitions
- 2001-02 : Problems of regional grid operation continued
: Many intractable commercial disputes also arose
- 2002-03 : ABT implemented successfully.

INDIAN POWER SYSTEM



POWERGRID
co-ordinated and
provided all
infrastructure for ABT
implementation.

Pool
Accounts
Operated by
RLDCs.



ABT
implemented
in All Five
Regions.

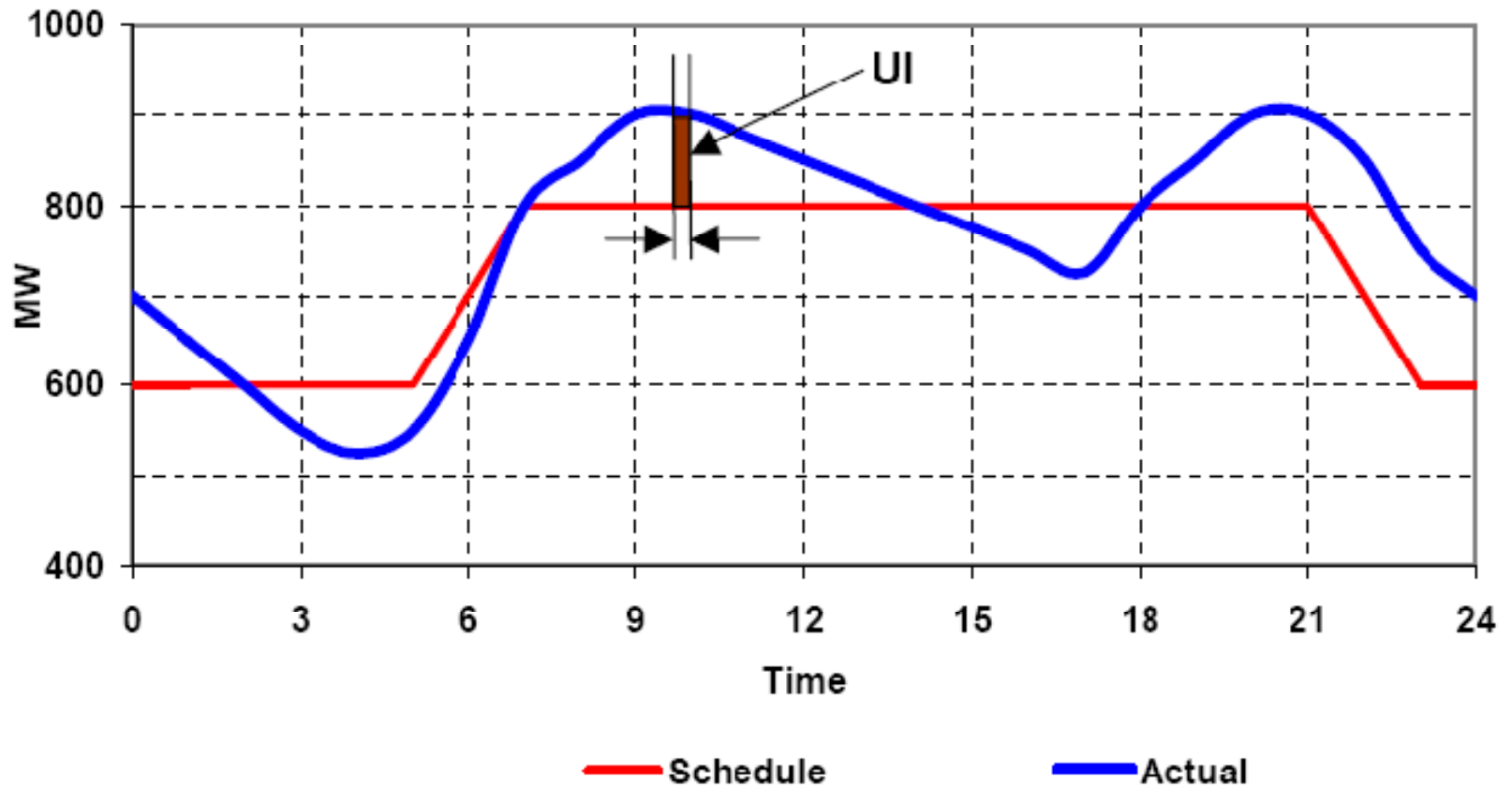
ABC of ABT

- **Scientific settlement system**
 - for contracted sale & purchase of power
- **Has three components**
 - Fixed Charges or capacity charge
 - Linked to day-ahead declared availability / subscription
 - Variable Charges or fuel charges
 - Linked to before the fact energy schedules
 - Charges for deviation from commitments

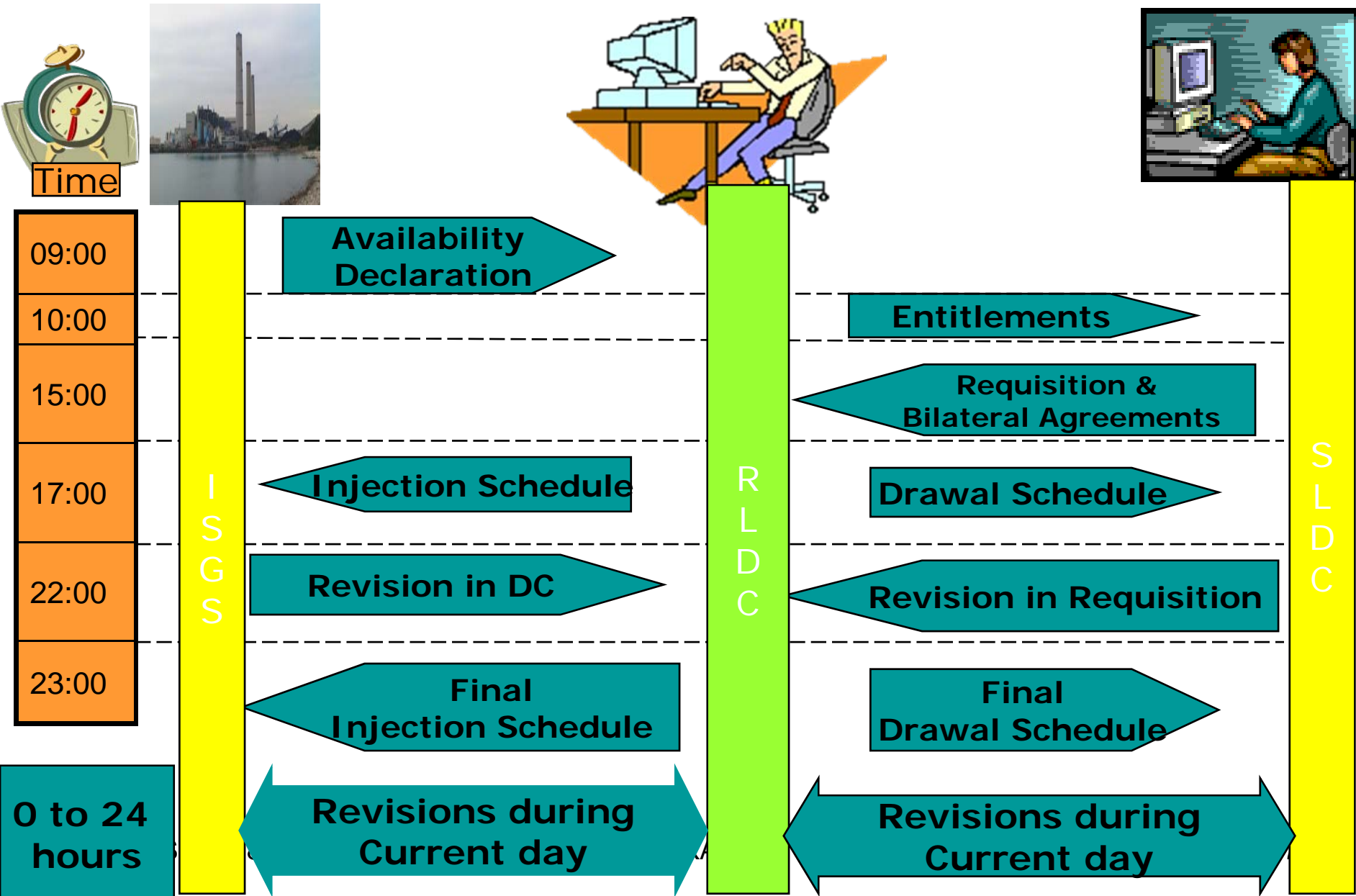
ABC of ABT

- **Frequency actuated signal**
 - Signal transmitted at the speed of dynamics to be controlled
 - Quasi-steady state assumption not valid
- **Real time pricing stretched to its physical limits**
 - Merit order
 - Economic load management
- **Incentives for helping the grid**
- **Opportunities for a diligent player**
- **Simple, dispute-free weekly settlement system**

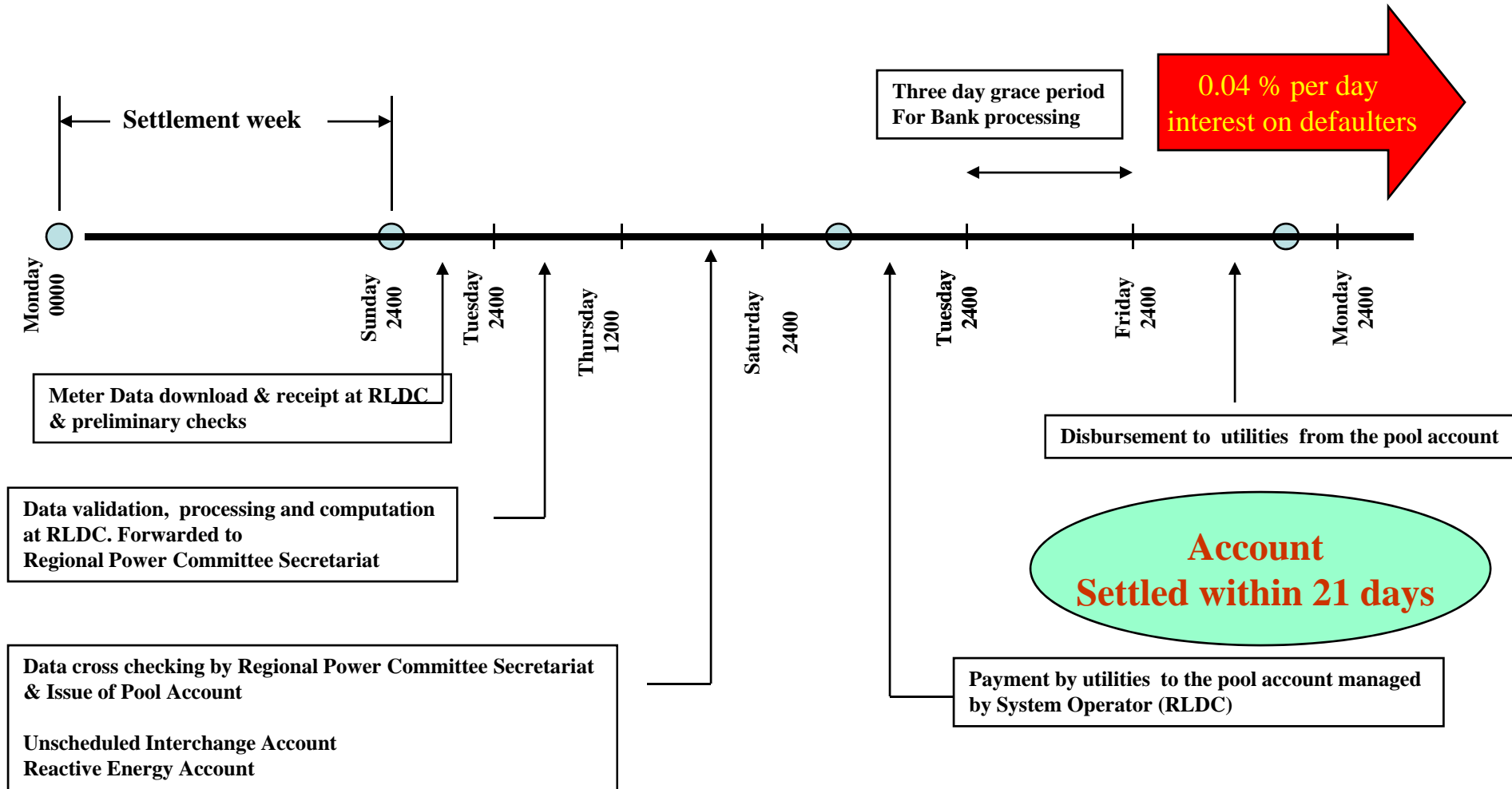
Deviations from Schedule - UI



DECENTRALIZED SCHEDULING

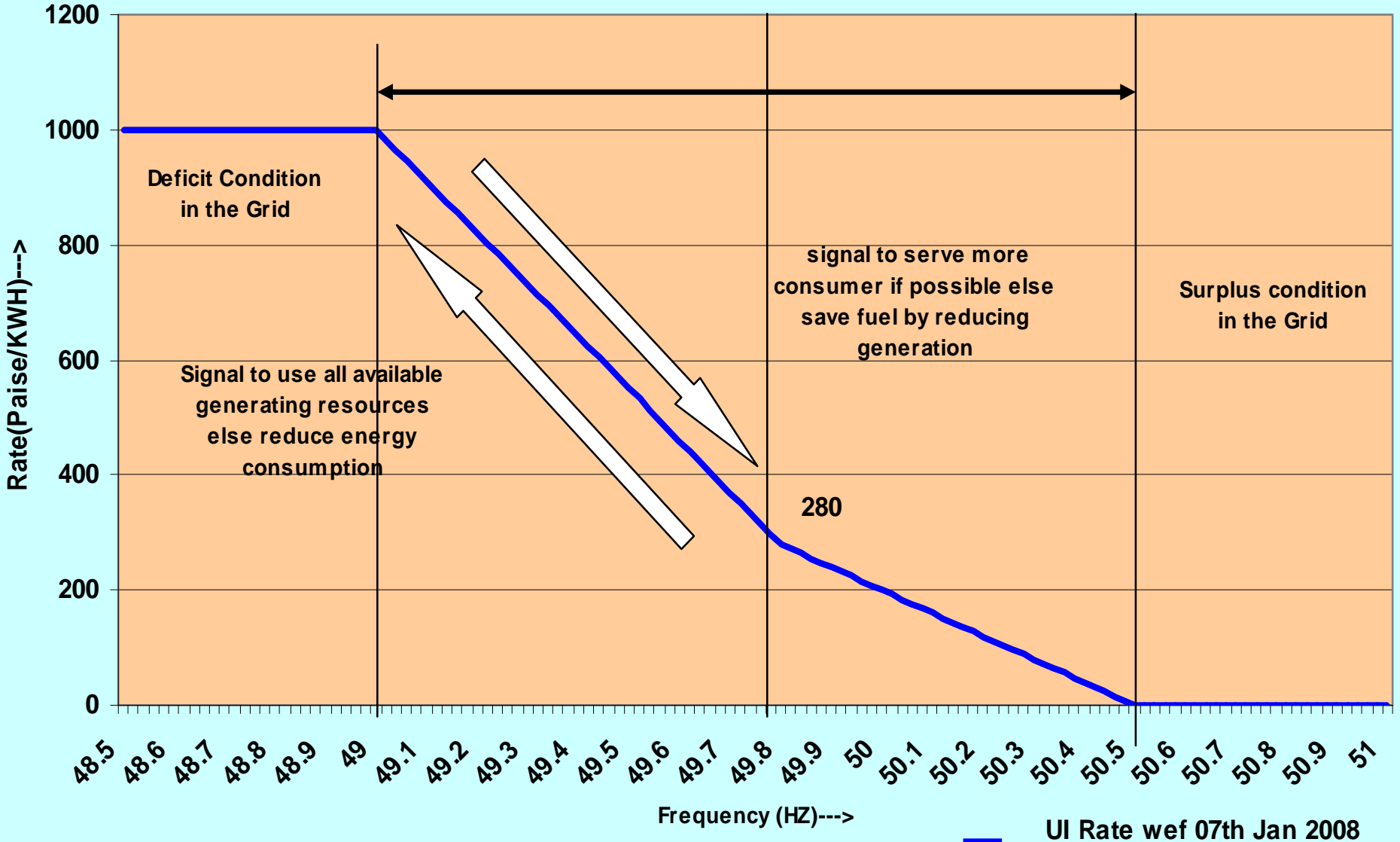


Time Line For UI Settlement



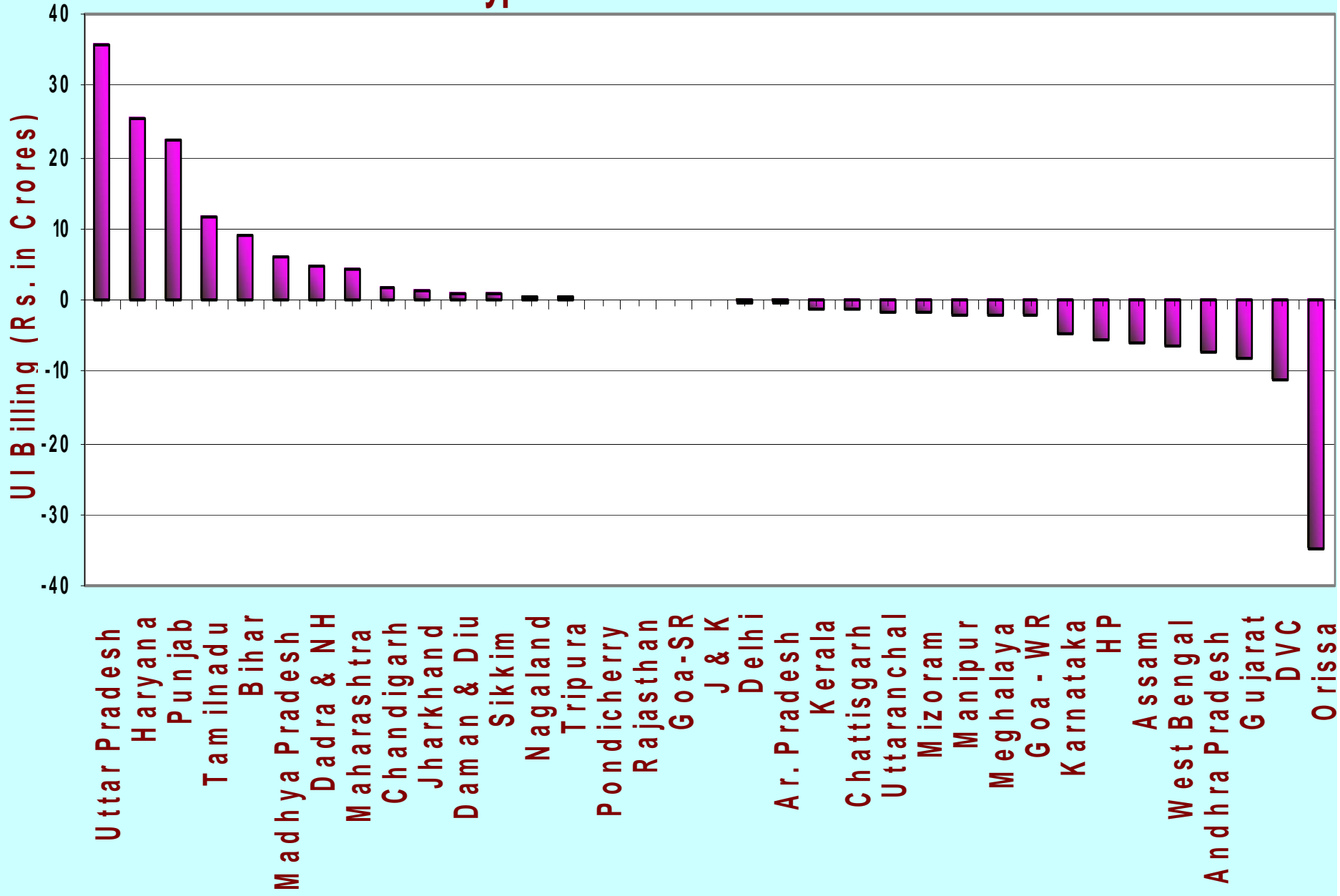
Balancing Market guiding Vector

Unscheduled Interchange (UI) Rate
Applicable only for deviations from contract in real-time

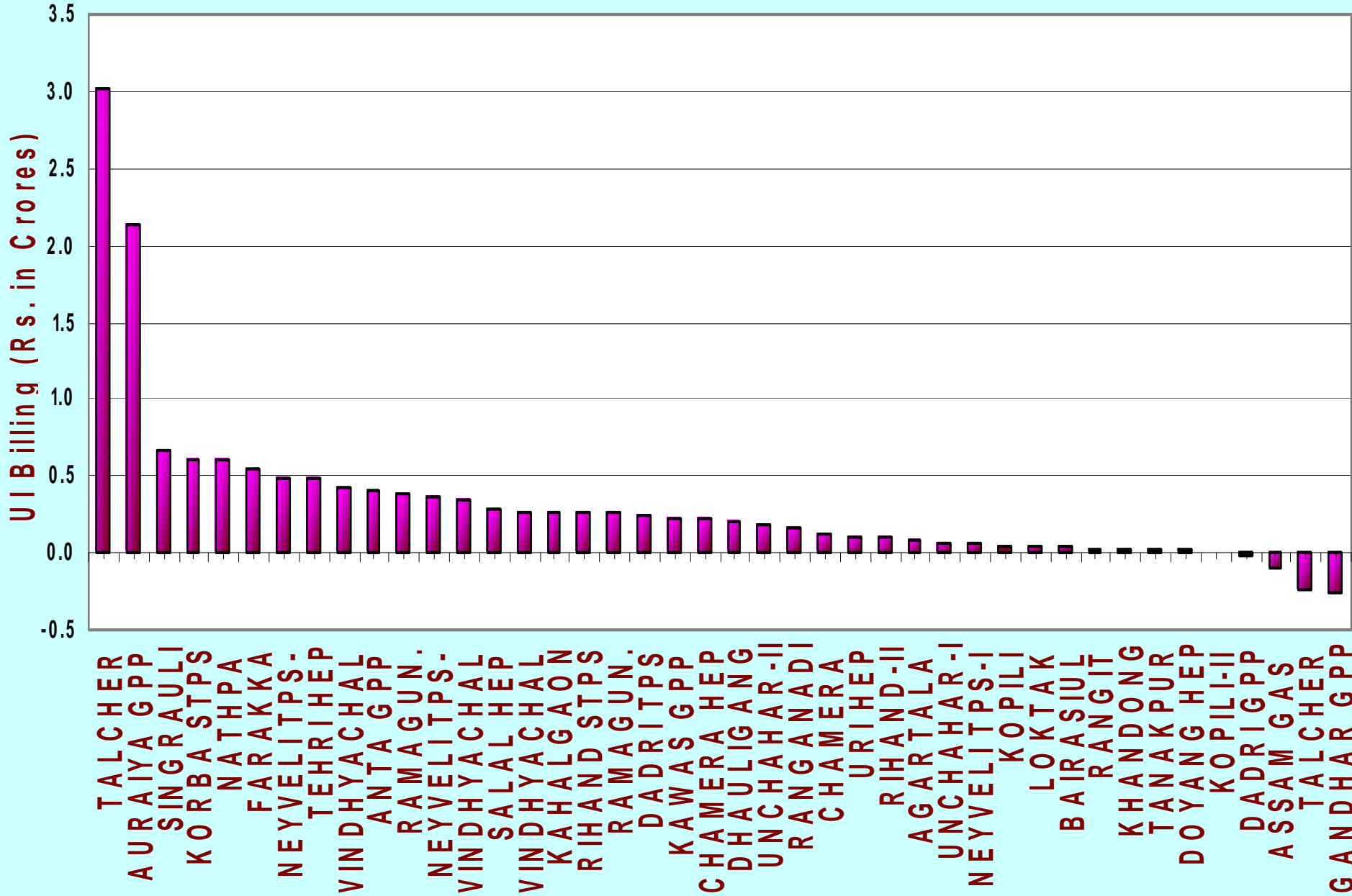


UI Rate wef 07th Jan 2008

A Typical week UI Bill-Statewise Pattern



A Typical Week UI Billing For ISGS (UI Payables(-) / Receivables (+))



The End Result

- ✓ **Frequency is**
 - collectively controlled
 - democratically stabilized
- ✓ **Wholesale market is workably competitive**
 - allocative efficiency
 - productive efficiency
- ✓ **Economic signal available for**
 - optimum utilization of resource
 - investments in generation capacity
- ✓ **Settlement is**
 - streamlined
 - dispute-free

THANK YOU