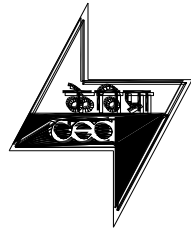


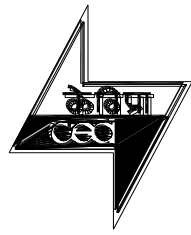
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# **Transmission and Distribution Losses (T&D Losses)**



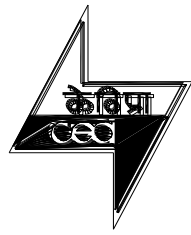
## T&D losses

- 
- ❑ Energy losses occur in the process of supplying electricity to consumers due to technical and commercial reasons.
  - ❑ The technical losses are due to energy dissipated in the conductors, transformers and other equipments used for transmission, transformation, sub-transmission and distribution of power.
  - ❑ These technical losses are inherent in a system and can be reduced to a certain level.
-



# T&D LOSSES continue

- 
- ❑ Pilferage by hooking, bypassing meters, defective meters, errors in meter reading and in estimating un-metered supply of energy are the main sources of the commercial losses
  - ❑ when Commercial losses are added to Technical losses, it gives Transmission & Distribution (T&D) loss.
-



# T&D LOSSES continue

- 
- There is another component of commercial losses, which is attributable to non-recovery of the billed amount, which is reflected in collection efficiency.
  - T&D losses together with loss in collection give us **Aggregate Technical & Commercial (AT&C) losses.**
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# METHODOLOGY FOR COMPUTATION OF T&D losses and AT&C losses

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Transmission & Distribution losses (T&D losses)

$$\text{T\& D Losses} = \{ 1 - (\text{Total energy Billed} / \text{Total energy Input in the system}) \} \times 100$$

Aggregate technical and commercial losses (AT&C losses)

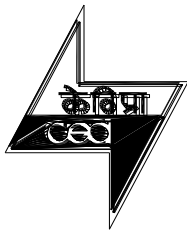
$$\text{AT\&C Losses} = \{ 1 - (\text{Billing Efficiency} \times \text{Collection Efficiency}) \} \times 100$$

**Where**

**Billing efficiency = Total unit Billed / Total unit Inputs**

**Collection efficiency = Revenue collected / Amount Billed**

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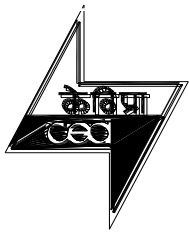
# ACHIEVEMENT IN REDUCTION OF T&D LOSSES AND AT&C LOSSES

<b>Year</b>	<b>T&amp;D(%) (CEA)</b>	<b>AT&amp;C(%) (PFC)</b>
2004-05	31.25	34.33
2005-06	30.42	33.02
2006-07	28.65	30.62
2007-08	27.20	29.45
2008-09	25.47	27.37
2009-10	25.39	26.78
2010-11	23.97	26.04
2011-12	23.65	26.63
2012-13	23.04	25.48
2013-14	22.84	22.58
2014-15	22.77	24.62



## Appropriate indicators for evaluating the performance of DISCOMs under the PAT scheme

- ❑ Ideally, reduction of technical losses should be the parameter for evaluation of performance of Discoms under the PAT scheme.
  - ❑ However, the technical losses of the discoms are not available and also it involves a cumbersome process to calculate the technical losses, which varies based on various factors like loading pattern etc.
  - ❑ Now, only the T&D losses and AT&C losses are available as the performance parameter for achieving energy efficiency by DISCOMs
  - ❑ It was decided that out of the two parameters, T&D loss parameter seems to be appropriate parameter which reflects energy savings to a greater extent as compared to AT&C losses.
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**THANK YOU**

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