

Concept of ATC Loss Calculation

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In absence of feeder metering in the past, substantial portion of T&D loss, including theft of electricity was attributed to agricultural consumption. While, agricultural consumption was around 20-25%, utilities were showing it as 35-40% and correspondingly T&D losses were shown as 20-25%. Also, T&D loss was being computed by showing electricity bills issued to consumers as accrued income, and not on the basis of actual collection. Therefore, T&D loss figures did not capture the major gap between the billing and the collection, over and above large scale of theft. To get over this problem, the concept of Aggregate Technical & Commercial (ATC) loss was introduced.

ATC Loss calculation

It is the difference between energy input units into the system and the units for which the payment is collected.

T&D Loss do not capture losses on account of non-realisation of payments.

ATC Loss is the actual measure of overall efficiency of the distribution business as it measures both technical as well as commercial losses.

$$\text{ATC Loss(\%)} = \frac{(\text{Energy Input} - \text{Energy Realised}) \times 100}{\text{Energy Input}}$$

$$\text{Energy Realised} = \text{Energy Billed} \times \text{Collection Efficiency}$$

$$\text{Collection Efficiency (\%)} = \frac{\text{Amount Realised} \times 100}{\text{Amount Billed}}$$

Main reasons for Technical Losses

- Overloading of existing lines and substation equipments
- Absence of up gradation of old lines and equipments
- Low HT: LT ratio
- Poor repair and maintenance of equipments
- Non-installation of capacitors for power factor correction

Main reasons for Commercial Losses

- Low metering/ billing/ collection efficiency
- Theft of electricity by illegal connection
- Tampering of metering system
- Low accountability of employees and corruption
- Absence of Energy Audit and Accounting