

Financial Analysis  
ROI Mining and  
Product Valuation

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# OUR PRODUCTS CAN EFFECTIVELY REDUCE LINE LOSS

➤ Principle: For every 1% reduction in line loss, customers can deliver more electricity and increase revenue.

➤ Formula :  $1\% \times \text{Average electricity purchased} \times \frac{\text{Operating income}}{\text{Electricity Sales}} \div 65220 \times \text{durability} = \text{Node value}$

➤ Parameter setting :

1)  $\text{Line Loss} = \frac{\text{Electricity purchased} - \text{Electricity sold}}{\text{Purchase electricity}}$  (2016 the annual line loss is 3.85%)

2) The service life span is based on...for...

3) There are a total of 5435 345kv high-voltage towers, there are 3 large sections of wires between every 2 electric towers , each section of wire needs 4 nodes, totally  $5435 \times 2 \times 3 \times 4 = 65220$  nodes

➤ Trial calculation :  $1\% \times 2224.48 \times \frac{5936.05}{2095.11} \div 65220 \times 10 = 9.66 \text{ million}$

# EFFECTIVELY IMPROVE TRANSMISSION EFFICIENCY

➤ Principle : In terms of current electricity sales, if the transmission efficiency can be increased by 1%, customers can deliver more electricity and increase revenue.

➤ Formula :  $\frac{\text{Current electricity sales}}{\text{Current transmission efficiency}} \times 1\% \times \frac{\text{Operating income}}{\text{Electricity Sales}} \div 65220 \times \text{durability} = \text{Node value}$

➤ Parameter setting :

1) The current transmission efficiency is based on...for...

2) There are a total of 5435 345kv high-voltage towers, there are 3 large sections of wires between every 2 electric towers , each section of wire needs 4 nodes, totally  $5435 \times 2 \times 3 \times 4 = 65220$  nodes

➤ Trial calculation :  $\frac{2095.11}{\text{Current transmission efficiency}} \times 1\% \times \frac{5936.05}{2095.11} \div 65220 \times 10 = \text{Node value}$

# REAL-TIME DETECTION OF FAULTY WIRES

- Principle : In the event of a major accident, it takes time to find faulty wires manually, which increases the economic loss. If the fault point can be detected in real time, the power supply can be speeded up.
- Formula : Natural disaster losses x Shortened power supply days = Reduced economic loss
- Parameter setting :
  - 1) According to the "Evaluation of the Impact of the September 21st Earthquake on Taiwan' s Economy" by China Economic Research, the Power Company implemented power rationing from September 21 to October 8, 1999. The total cost of power shortage is approximately NT\$49.9 billion.
- Trial calculation :  $499 \times \frac{3}{14} = 109.83$  (billion yuan)