

Loss Reduction in Distribution Networks

Jacobsen Elektro is one of the leading companies fighting losses in distribution of electricity.

Losses in electricity distribution consists of two components,

<u>Technical losses</u>	<u>Non-technical losses</u>
Technical losses are primarily caused by unbalance in the distribution of network and/or too high resistance between the generator and the consumer.	Non-technical losses are electricity used by a consumer but not paid for.

The fight against non-technical losses is a speciality of Jacobsen Elektro.



Un-willingness to pay.

The un-willingness to pay for the electricity can be caused by a number of different parameters. Among the strongest arguments are:

- Low generation capacity is resulting in a lot of outage.
- The voltage level is too low and destroying household equipment and machinery
- “My neighbours are not paying so why shall I pay?”
- “My Government is not giving me work, so at least they can give me free electricity”.

<u>Cause</u>	<u>Effect</u>
Theft of electricity Meter faults Meter reading faults Fraudulent staff in the utility	Loss in revenue Uncontrolled increase in demand Dissatisfied and angry customers as overload increases the fault rate in the network.

Remedy

It is no simple remedy to loss reduction. It is a combination of several factors which in the end results in the increase in revenue.

The correct recipe for your organisation will come out of our analyses of your problem.

In the fight against losses **Jacobsen Elektro** will chose weapons from this arsenal:

Assistance in revision of laws and regulations.

Jacobsen Elektro has experts in laws and regulations for the Power Sector. It is important that the consumer and the utilities rights and obligations are written down in laws and regulations. It is particular important to describe the result of theft and fraudulent behaviour.

Awareness Campaigns.

One of the most important single element in the fight against non-technical losses is to make the consumer aware of the reason he has to pay for electricity, his rights and the consequences he is facing by doing something illegal.

Jacobsen Elektro has developed templates which can be adapted to your situation. These campaigns stretch from advertising in the newspapers to information meetings in the local community.

Competence building in the utility.

Jacobsen Elektro supply comprehensive training programs. These programs are a combination of theoretical - and “on the job” training programs. We have training programs within:

- Customer support
- Pre-payment metering systems
- Safe installations of electricity
- Information to the public
- Inspections
- Accounting
- Low voltage improvement
- Balancing of low voltage networks
- Etc.

Customer Support Centres.

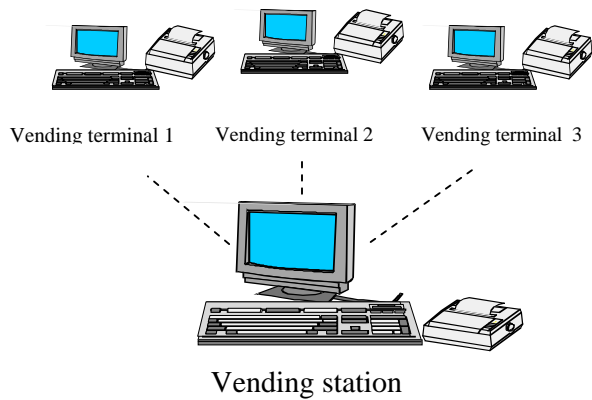
Jacobsen Elektro can supply a complete Customer Support Centre for information, purchase of electricity, new subscriptions, customer complaints, etc.

Supply of secure metering systems.

Jacobsen Elektro is supplying two types of secure metering systems. One system is a pre-payment metering system and the second is a “Safeguard Consumer Metering System”. It is conventional meters placed in a secure box and with a tamper safe installation.



kWh Meter



Prepayment Metering System

The electricity is purchased in advance at the vending station and a code, representing the purchased electricity, is registered into the meter by the touch pad.

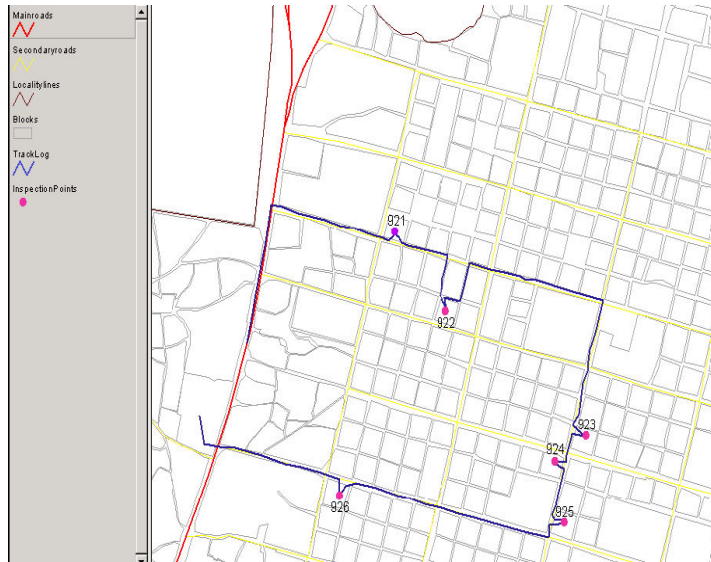


Safeguard Consumer Metering System

Ordinary electronic meters are supplied in a lockable box, single meter boxes for houses and multi meter boxes for apartment buildings. The meters are read off by an infrared instrument and its content downloaded into the billing system. A tampering safe installation system is used in order to maintain the high security.

Supply of GIS (Geographical Information System)

Jacobsen Elektro can supply a GIS system for an exact location of each meter in the network. This is a product for places where house addresses and location of kWh-meters are a problem.



Location of customers are registered in the GIS system



Handheld GPS

Key-account customers.

Jacobsen Elektro can supply a special Customer Care Program for the most important customers for the utility. This program will give these customer special attention and follow up. And for the utility it is an insurance for correct payment.

Management team.

Jacobsen Electro can provide a complete management team for the commercial section of the utility. This team will be experts on loss reduction and build competence in the utility at the same time as the revenue increase is secured.

Inspections.

Based on the information in the metering system, **Jacobsen Elektro** can provide the inspectors with a perfect tool to make inspections more efficient.

Each customer has an account with statistics with dates and amounts of purchased electricity.

Each meter is registered in a Geographical Identification System (GIS) with GPS address for easy location.

The inspection teams will have a listing every month of those customers not buying electricity with an exact location.

Visualisation of improvements.

Jacobsen Electro can supply an in-house information system for visualisation of the improvement in the loss reduction campaign.

Reinforcement of the distribution system.

Jacobsen Elektro can supply material and experts for improvement of the low voltage distribution system, if required.

Project Financing

Jacobsen Elektro can through its international network assist in providing the best project financing available.