

## 8. *Customer Services & Consumption Management*

### 8.1 *Services Offered to Customers*

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#### ➤ *Equipment information centres*

Historically the power utilities have been monopoly companies in Germany.

To advise customers in questions of electricity use, in the main customer contact centres (paying bills, if higher connection power is needed, questions concerning tariffs, ..... ) show rooms have been installed with a lot of electrical technical equipment for the private household, concerning

- cooking
- cooling
- heating / heat insulation
- lighting
- washing
- drying
- .....

Normally there have been devices from different producers.

Special trained advisers could give **neutral** information to customers as advantages, disadvantages, price, energy consumption, correct dimension, services stations, etc.

The equipment has been placed to the proposal of the utility at a lower price than the official in the normal shops. This price has been paid to the owner after 1..2 years, when the devices have been sold to utility employees.

To make this show rooms attractive cooking courses and other basic information courses have been organised. (This has been totally stopped about 10 years ago: costs, competition conditions.)

#### ➤ *Economical calculation & advise*

Bigger customers from small industry to trade and industry companies, communities, architects, etc. could get more or less support in questions concerning different possibilities of power supply, advises to the prices, comparison of the different offers.

In the planning phase of new housing areas the power utilities have been integrated with there knowledge to find acceptable solutions (OHL or UGC, transformer station places, gas – oil – electrical heating, total electricity power need, ... )

Advise of communities concerning

- street lighting
- thermal house wall insulation
- detecting thermal bridges in houses by thermographie

- using heat pumps (official buildings, swimming pools, ...)
- .....

➤ ***Repair service out of office hours (night, weekend)***

If power interruption happened in **households**, small companies out of office hours, the standby duty for the LV network helped, if only a fuse had to be renewed. A small fee had to be paid for this service. A supply interruption in family houses can be the failure of the house connection fuses, which can only be changed by utility staff (before the meter !!)

During normal daytime the electrical workman, normally small private companies, have to be contacted to repair the fault.

Principle: House installations belong to the responsibility of the house owner  
House connection fuse boxes and meters are belonging to the utilities responsibility

**MV customers** too could get support in case of a failure, if no own electrical qualified personnel could be reached. By electrical arc destroyed equipment has been made available, if the utility had such devices in the store.

**Today**, maintenance service is offered commercially to customers as a method of binding the customers on the utility.

**Map information centres**

As most of the lines in Germany are underground cables (UGC), very early map information centres have been installed. Architects and especially street, lines, pipes and building construction companies **had** to inform themselves about lines and pipes in the underground when they want or have to dig. Justified persons get copies of the maps for that area concerned.

If they don't inform themselves before they are working coarse negligence (negligence – coarse negligence – voluntary)

➤ ***Call centres***

As a consequence of the liberalisation of the electricity market all non-effective activities have been proved.

Today, call centres are the central information place to be reached by telephone and e-mail. Estimated about 80% of the questions can be answered directly there; more difficult questions are switched over from the trained staff there to the professionals.

Many services free of costs are not longer offered. A technical equipment information centre changed to an internet cafe with powerline communication devices to surf free in the internet. Now closed again. Other use of these rooms.

## Consumption Management

### In LV networks

- households get 63 a fuses for the house connection; this is no power limitation in reality.
- customers paid an amount as "power price"; several components; today only energy as price base. Small consumption, only one price component.
- house owners can order a new house connection by internet; normally the installation master, who has a license, transmits the order to the utility
- calculating the load curve as preventive measure to avoid overloading of lines

### In MV networks

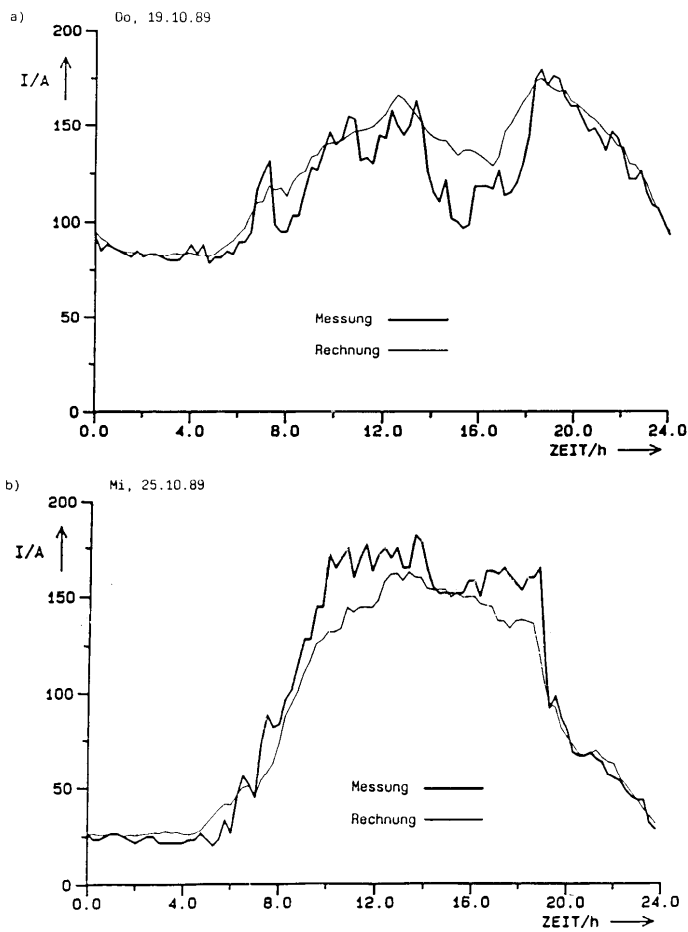
- customers pay for an definite amount of power (power price)
- transformer station is paid by the customer as well as a separate line
- load flow has preventively to be checked
- installation of current limiting relays in case of only small free capacity in the network
- in case of an outage, power supply via a second line connection; a current limiting relay is obligatory.
- double measured energy
- utility owned devices are sealed
- active and reactive power peak is daily measured; monthly peak is relevant
- annual analyses of load development in the MV network after winter season

### Consumption control by prepaid meters.

Load shedding is only foreseen in emergency cases, but this is prepared on the central computer.

Meter reading is done by staff, by the customer himself, by internet or by telephone and other communication possibilities.

Annual energy consumption is the base for load curve calculation in meshed LV networks. By this method a good supervision without extensive measuring work is possible and experienced. Only some representative measuring have to be done to actualise the comparable specific data base.



Comparison of measured and calculated load curves

