

## Solution for 0.4 kV networks

A major problem in power systems is the uneven distribution of electricity at 0.4 kV.

The reasons include distance deviation between objects from the centers of power, heterogeneity of the load on its size, the dilapidated state of old cables and overhead lines and inadequate power supply transformers.

The results range from some consumers overpaying for electricity above needed capacity, while others not able to receive the needed voltage, with both user groups bearing the cost of eventual equipment failure.

Electricity distributors tend to maximize the voltage on the distribution substation (10 / 0.4, 6 / 0.4) so that even most remote consumers receive at least the minimum power required according to state standards , while at the same time, nearest clients receive too high of a voltage.

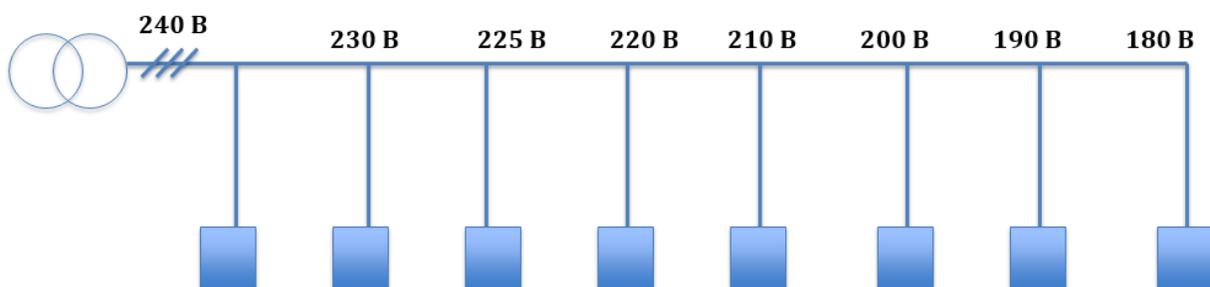


Fig.1

Simply said, in order to have remote users receive standard voltage, the neighboring consumers suffer from high voltage, and have to cope often with defective lighting and heat up devices, expending between 10 to 20% excess of electricity.

Power supply organizations also suffer from increased electricity losses in the supply network.

The increased current in the transmission lines leads to losses, customers complain of poor electricity quality and inability to connect new consumers due to power shortage.

Traditional ways of solving such problems is the use of series-connected booster transformers in the power line.

Wherever the voltage drops to unacceptably low levels in the transmission line, booster transformers raise the voltage.

The solution is not always acceptable, whenever the "long line" problem kicks in resulting in insufficient energy and power losses in the line.

Increases in line voltage boost current level of the transmitted power and thus increases the losses therein.

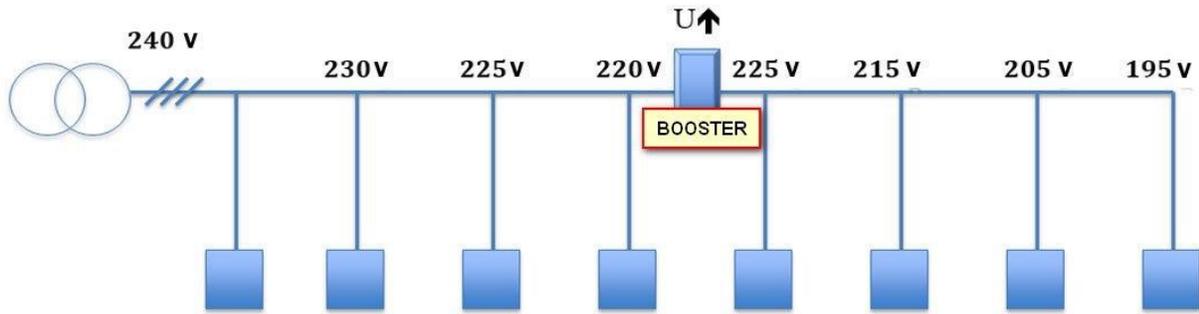


Fig. 2

### The proposed methodology for the use of equipment

Feigin Electric's ECOD optimizer series with efficiency of at least 99.7%, successfully solves this problem and offers a new perspective.

ECOD Line Optimizers include a comprehensive approach with a wide range of devices in various capacities ranging from 10 to 330 kVA.

The compact size and relatively low weight allows for deployment along the line, thus flexibly adjusting the voltage for maximum results.

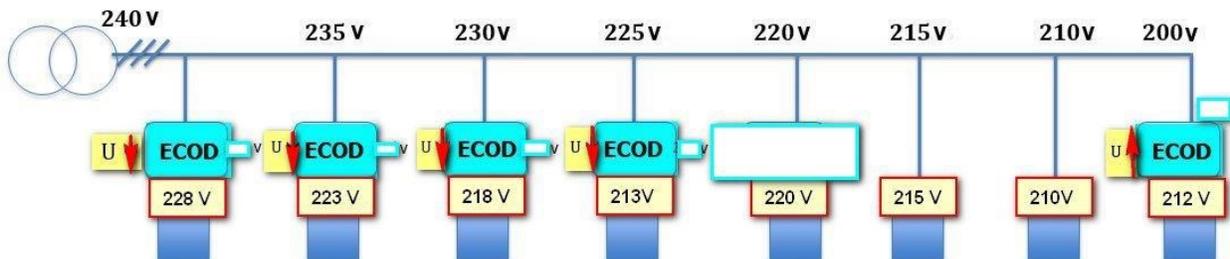


Fig. 3

Properly placed equipment ECOD automatically adjusts energy release within the parameters of the network, flexibly adapting to external and internal changes.

The benefits result in delivering quality power within the norms of state standards, reducing energy consumption and "release" of reserve capacity.

Feigin Electric's technology is already being successfully implemented in United Energy Systems' distribution network in the Novosibirsk region, Russia.

