MAKEL®

Use less to save more

ENERGY EFFICIENCY SOLUTIONS

The way to use energy efficiently, passes through be able to manage it effectively.

“So far meters which stand out with their measurement-intended features, now become part of the global communication system. This process starts with the remote reading of the information in the meters, extends to a smart grid, so “”SmartGrid””, that can manage the production, consumption, and distribution of energy, by expanding into a distributed data management system.

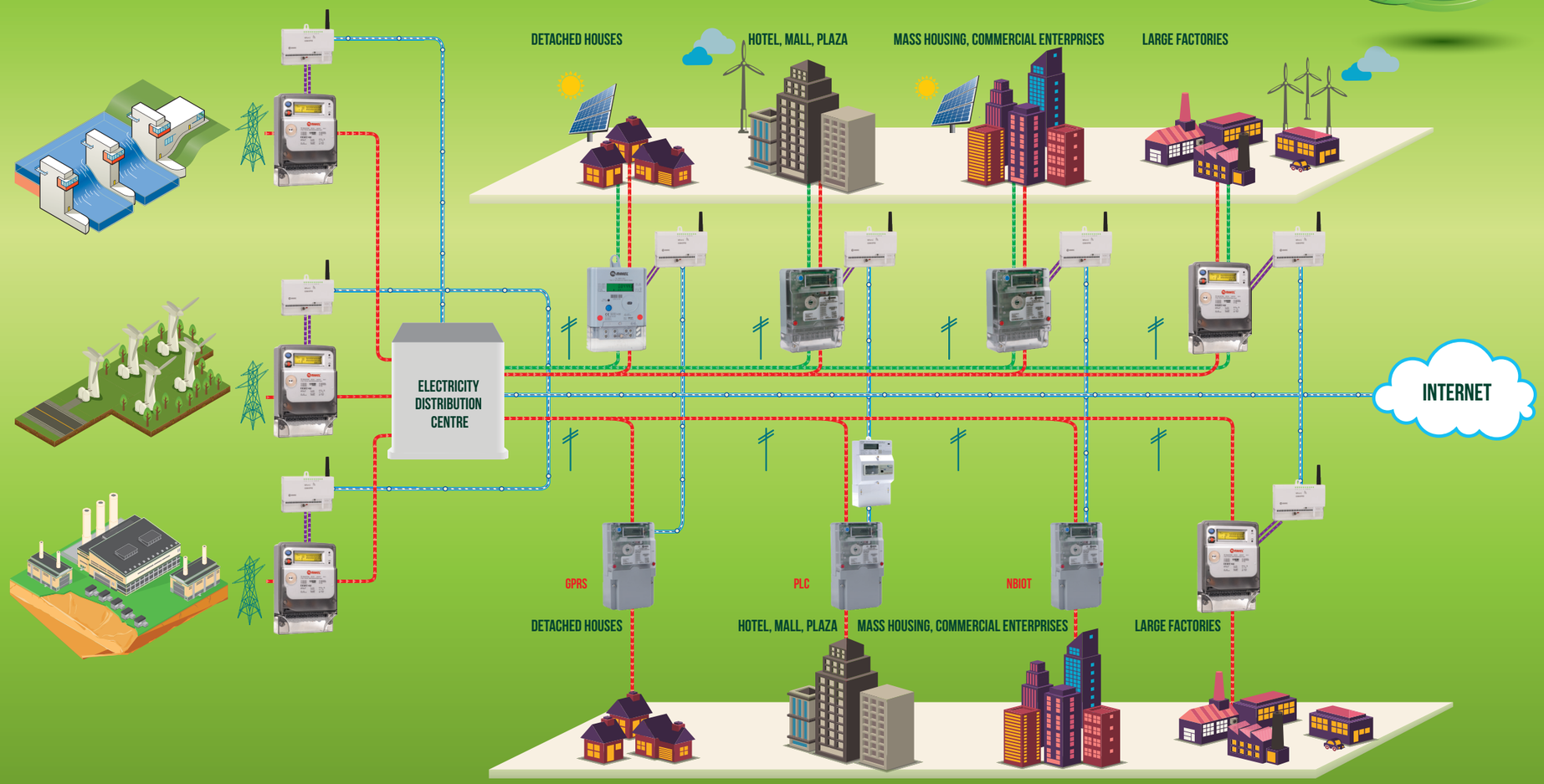
Remote reading and control systems are one of the basic structures of smart grids as well as the most important means for the rapid integration of renewable energy sources into the system.

In the coming years intended for smart grids, communication interface products related to the integration of counters into the internet network will lead the developments in this area. For today, the communication features required in industrial meters are become standard in three-phase and single-phase meters as of 2013.

Makel for the remote reading of counters started the USOBIM project 8 years ago. First of all, we have created web based counter data management system and headend solution and then realize original modem designs. Today, thousands of domestic and foreign counters are read and controlling in a 100% web-based system in private customers in different distribution companies.

MEASURE YOUR EFFICIENCY FOR

A MORE SUSTAINABLE WORLD



MAKEL

“In the coming years, the use of renewable energy sources will increase even more. This means that two-way meters that measure consumption and production will rapidly expand including single-phase meters.

Keeping within the strategic objectives of developing eco-friendly technologies to reduce energy dependence, Makel is expanding its product portfolio by further developing two-way three-phase and single-phase meters that encourages the use of environmentally friendly renewable energy sources since 2013.”

Electronic meters and contribution of remote reading systems to energy efficiency

1 Advantages of turning mechanical meters into electronic meters

A- Starting currents are reduced by at least 60% by passing to electronic meters. Mechanical meters record consumption of 10W and above, while electronic meters record consumption of 4W and above. This reduces the energy lost in the grid. (When an 8-watt nightlamp is used the mechanical counter will not record it, which means that for a million subscribers, a monthly energy of 5,760,000 kWh will not priced.))

B- The measurement accuracy starts from 2% in mechanical meters, but less than 1% in electronic meters Mechanical meters will write less energy consumption as the lifetime is longer. This causes large energy losses. This causes large energy losses.

C- Reactive balancing in electronic meters and industrial plants will be done separately in three phases, which will further reduce grid problems and loads.

2 Effects to productivity of the tariff structure of electronic meters

A- Due to the tariff process, users will change their consumption hours to pay less. In this way use of **renewable energy sources will be more efficient because network installations, failures and infrastructure investments will be reduced and energy distribution will be smooth.**

B- The use of two-way meters will encourage the use of renewable energy sources. Users will increase their usage of renewable energy resources because they will earn income by documenting their extra productions owing to two-way meter. Also consumers, by consuming less, will sell the portion of renewable energy that they saved.

3 With the use of electronic meters, illegal usage rates will decrease.

4 AMI Systems

A- By transferring the instant consumption information coming from the meters to a data center, planning of the grid, estimation of investments, optimum use of resources, fault and losses will be eliminated quickly, reading-related costs will decrease, as a result **total costs will decrease.**

B- Street lighting **by using remote reading systems** will be activate and deactivate at the desired time intervals **according to region and seasonality and special circumstances, significant energy saving** will be ensured.

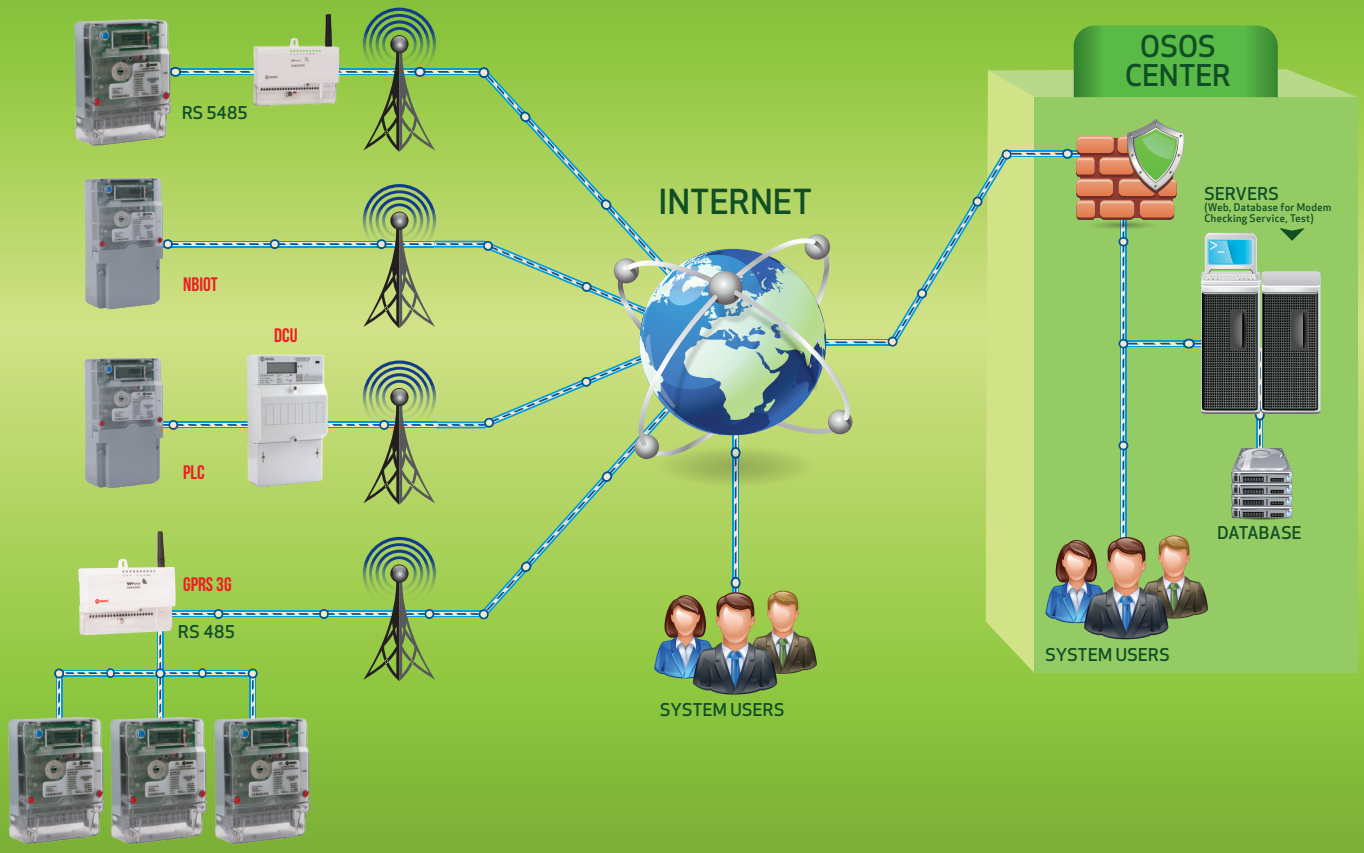
C- With dynamic tariff management and pricing, the consumer will be encourage to **less consume** and at intended time, the instantaneous power balance of grid will be more stable and **the problems of interruptions will be further reduce.**

USOBIM

Remote Meter Reading Data Center

MAKEL USOBIM, is a 100% web based OSOS(Automatic Meter Reading System) system that is designed for the AMI/AMR needs of the electricity distribution and industrial companies. Meters started to become a part of data communication system first by remote reading of the electricity meter data(AMR - Automatic Meter Reading) and this process is evolved to a Smart Grid: A distribution data management system enabling us to manage energy generation, usage and distribution.

Remote meter reading systems enables us to use the electricity infrastructure efficiently, to make correct estimations for investments, correct grid analysis and planning, reduce tampering and losses, in time billing, real time multi pricing in a multi tariff system, distribution web automation, remote closing and opening, to reduce meter reading cost and to increase customer satisfaction. These features give distribution companies an ease in management and reduce costs.
Makel automatic meter reading system, is designed to collect energy usage, state and notifications from customers into a central control station. Meters can also be controlled remotely by the help of the two-way communication. The system can be programmed to read metering data periodically or at the determined time. Also the central station can make immediate reading in cases of a new customer arrival, customer departure, customer objection, tamper or loss suspicion. Makel USOBIM system consists of 3 parts; communication software, application software and database.



"We produce for the world..."

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