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Central Smart Network Pilot Project

19/09/2018

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MAIN TARGETS, TASKS

- **Increasing the efficiency** of energy consumptions
- Developing and testing of an **infrastructure for data collection** contributing to the **modernisation** of the energy system – taking into consideration sustainability, competitiveness and security of supply
- Contributing to **solving system regulation problems** (household power plants, E-Mobility) and decreasing the system level energy losses
- Ensuring energy demand by applying new, innovative technologies
- Targeted **awareness** – creating **environmental** conscious approach
- Promoting the integration of **renewable energy sources** and small power plants **into the system**
- Providing necessary information for the **country wide roll-out** of smart metering in Hungary, collecting and methodizing experiences, creating recommendations

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SMART METERING AND USER NEEDS

Making visible the advantages of smart metering for the consumers is a precondition for spreading smart metering

The Pilot Project supports the process by the help of the followings:

- The basis of the **Smart City Program** – Budapest, Miskolc, Paks, Pécs, Kecskemét
- **Urban** energy production and usage **balance** – Miskolc, Budapest
- Municipality **buildings** public utility usage metering – Budapest, Miskolc, Nyíregyháza, Paks, Pécs, Kecskemét
- Metering of public utility consumption of **Municipality rental houses** – Budapest, Miskolc, Nyíregyháza
- **Benefits for retail consumers (monthly settlements based on fact data, planable expenses, alerts like pipe breaking)** – both in urban and rural environment

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CLOSING OF THE PILOT PROJECT, EXPERIENCES

- The final implementation deadline and the **public procurement system** are not compatible
- International manufacturers adjust the **product support** to the ration of the delivery volumes.
- The **temporary nature** and regulatory background of the Pilot Project caused a major challenge in concluding partner agreements

- The central system is receiving the data, the **metering data collection started at the end of 2016**.
- The **installation** of the smart meters in the district heating and waterworks area was done by the end of march (2018), but in the field of natural gas and electricity delayed until September 2018 (end of the pilot project).
- **Installation capacity is limited**, costs are rising.

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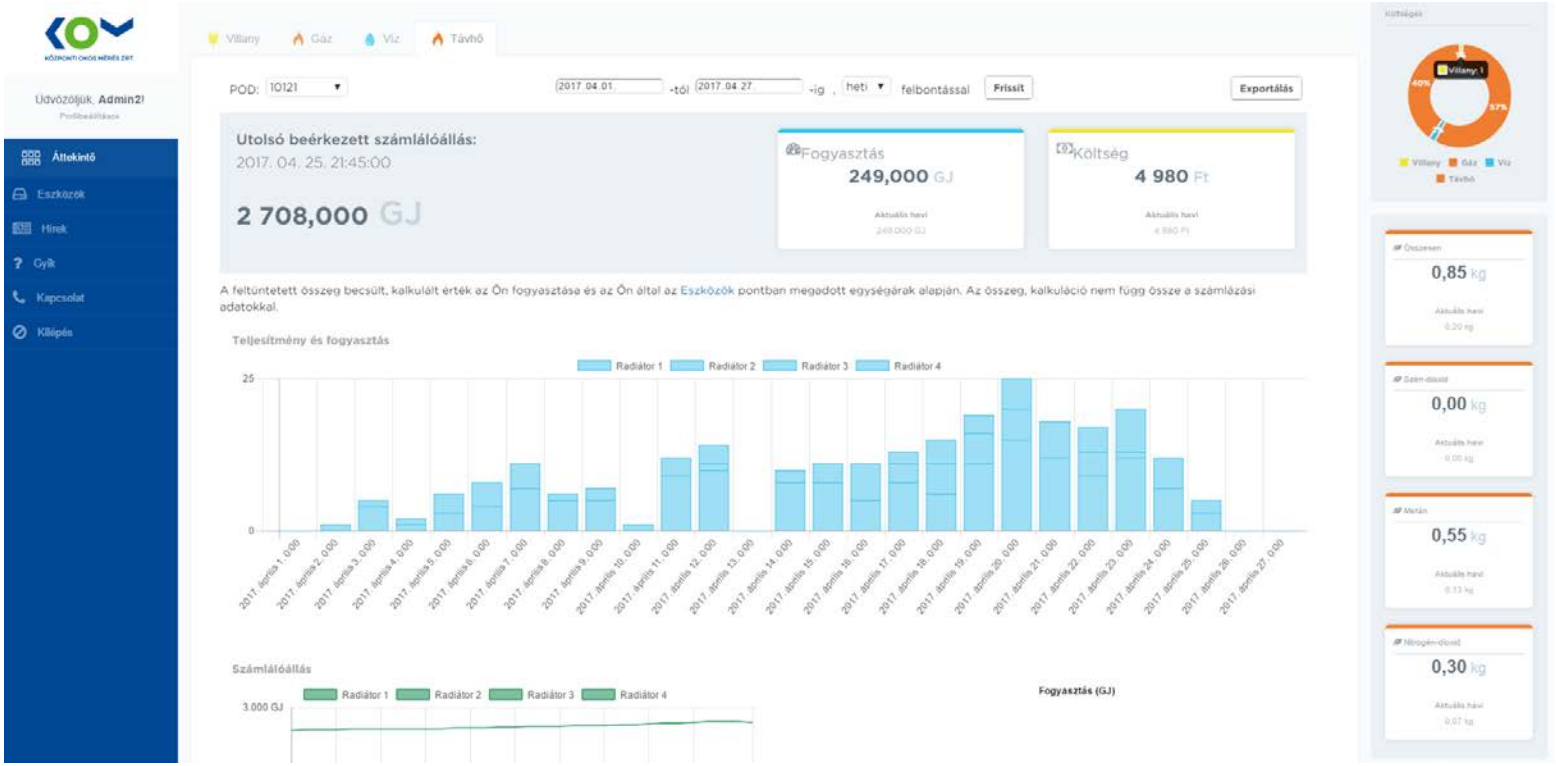
TOOLS FOR DECREASING GREENHOUSE GAS EMISSION – WEB PORTAL



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TOOLS FOR DECREASING GREENHOUSE GAS EMISSION – ANALYTICAL SYSTEM

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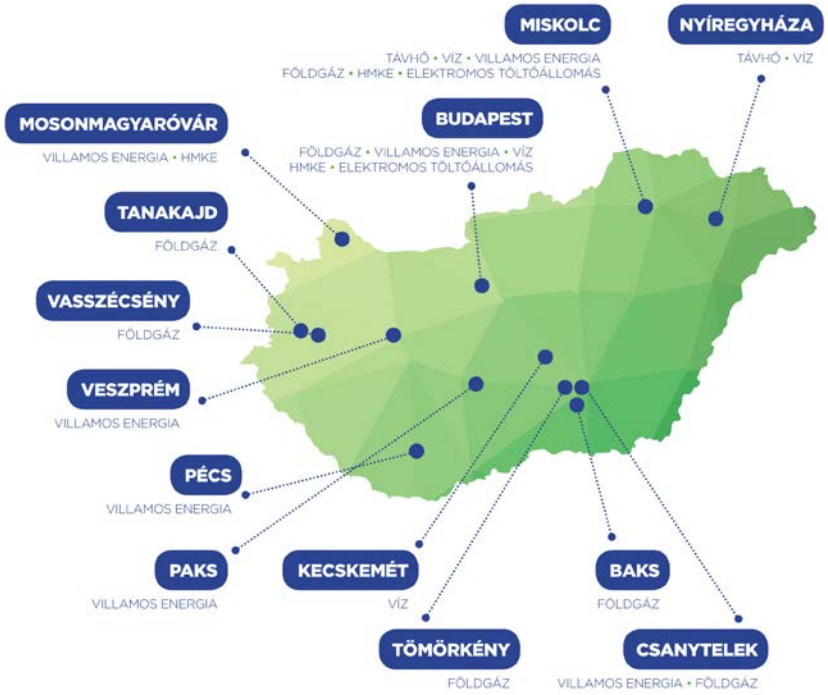
METERING LOCATIONS, PARTNERS IN COOPERATION

- Municipalities of Budapest and rural municipalities managing city administration offices, **public institutions:** nursery**,** kindergarten, school, hospital, university
- Small household power plants and

  Electric filling stations
- Infrastructure operators
- Energy Traders
- Market Players
- Citizens – Universal Service



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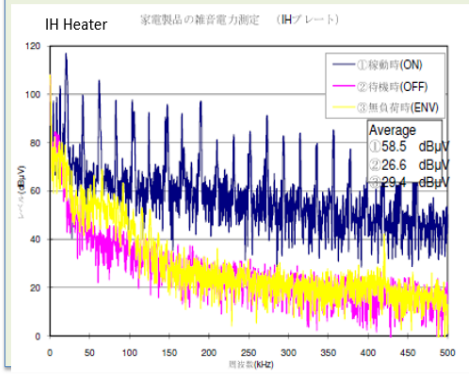
TECHNOLOGICAL OUTLOOK
DIFFERENT PUBLIC UTILITIES I.

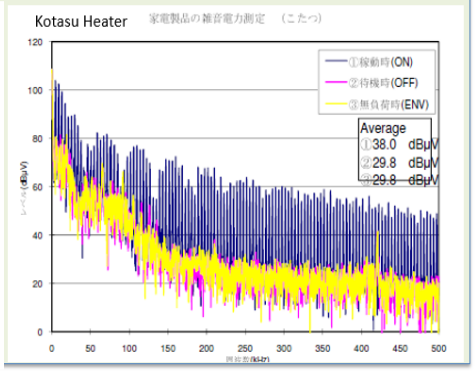
Electricity - G3 PLC*

Home Appliances Noise

G3-PLC Alliance

- The following appliances are used as the noise source in the field trial:
  - IH Heater, TV, triac, 3 Kotasu Heaters, Microwave, Rice Cooker, Water Pot, Blanket, and carpet vacuum
- The noise spectrum of two major noise sources IH Heater an Kotasu are as shown below:





Natural gas – 169 MHz WMBUS concentrator

The mentioned technologies will be tested in Hungary for the first time

*Source: G3-PLC Alliance Technical Presentation

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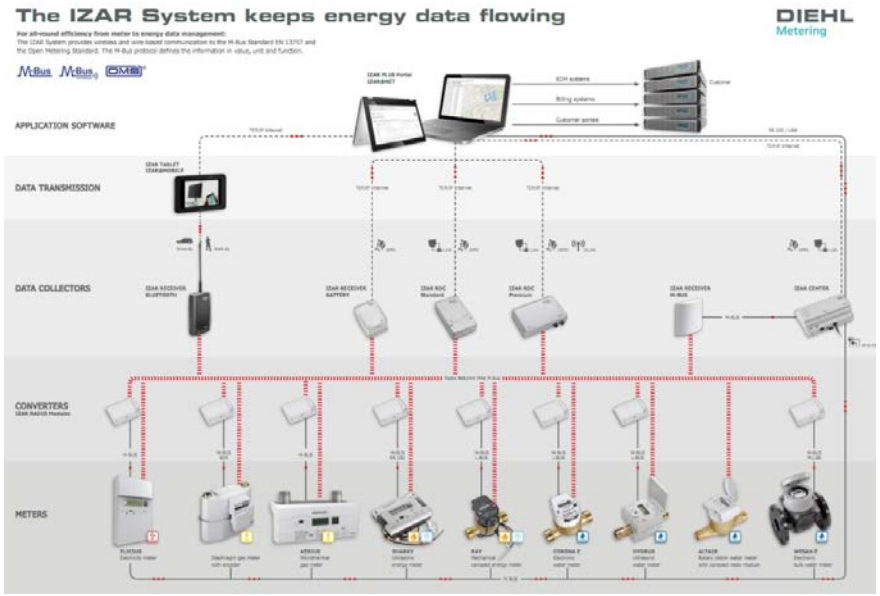
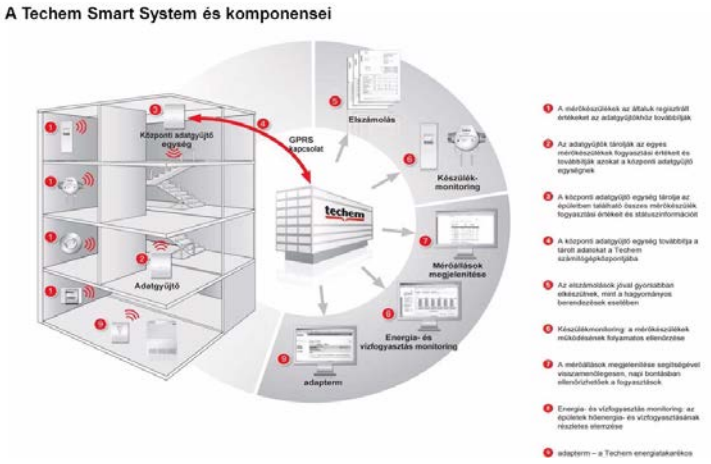
TECHNOLOGICAL OUTLOOK
DIFFERENT PUBLIC UTILITIES II.

Water and district heating metering





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WHAT HAVE WE LEARNED

- We need strong support and cooperation with the energy suppliers to make smart metering wide-range
- A multi-utility system could be an answer for the users, the government and private sector consumers
- The installation and the ownership of meters and DC-s need to be at the DSO-s
- The communication need to be unified and managed by one
- There should be more programs for consumers to make their bulidings more energy efficient
- The household power plants should be integrated in a virtual network to become controllable by the TSO

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Thank you for your attention