

# ENERGY RECIPES FOR REDUCED HOUSEHOLD ENERGY CONSUMPTION AND PEAK SHAVING

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18.10.2018 VTT – beyond the obvious

## Background: Smart city

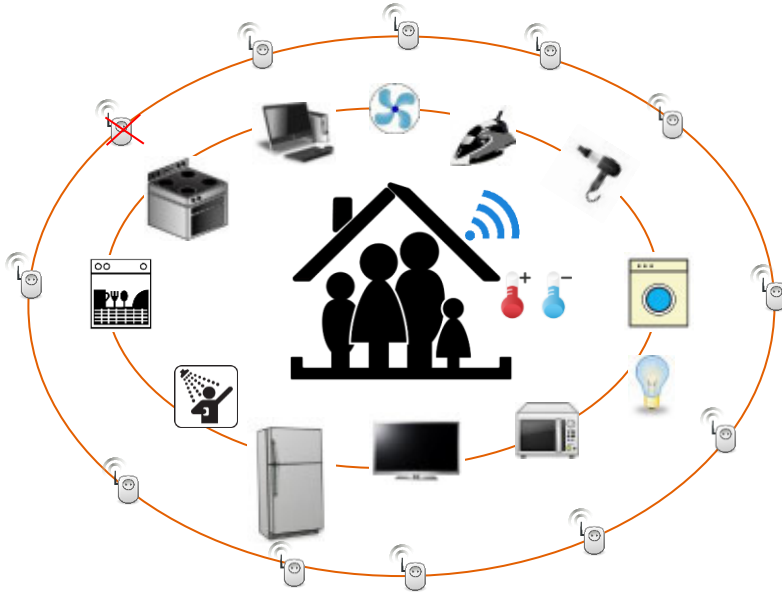


- interconnected entities: **environmentally friendly** life playgrounds
- energy infrastructure: **bidirectional** communication
- understand and comply with real time **people needs**
- **sustainable** lifestyle

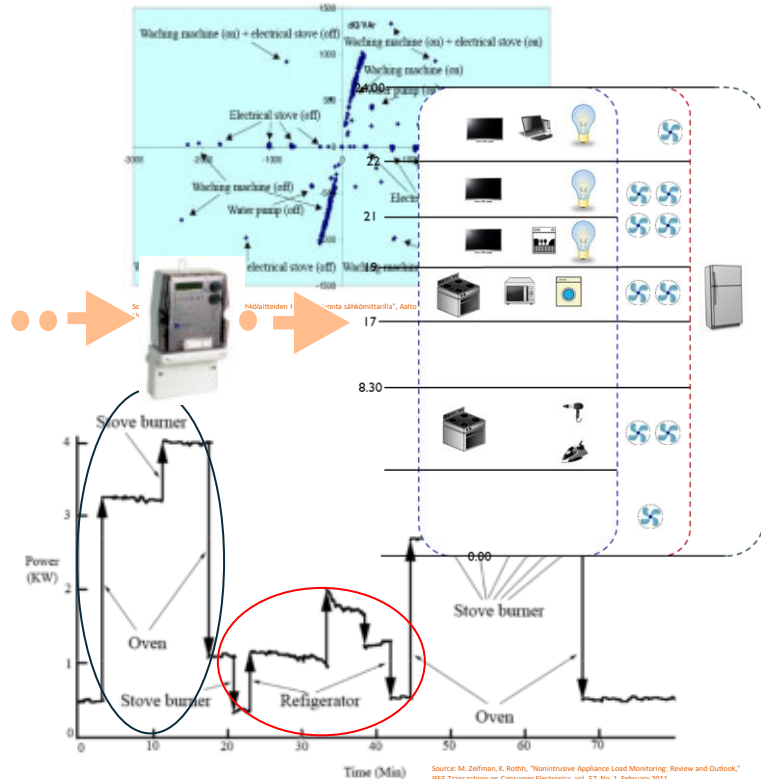
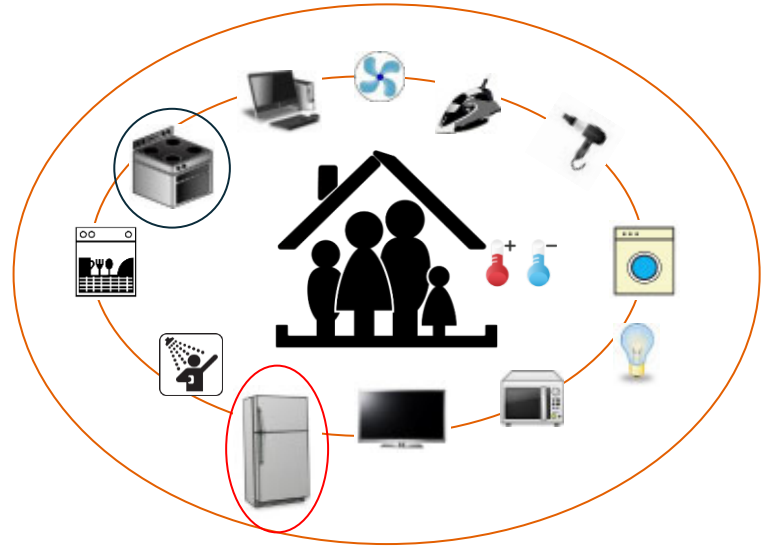
## The need for energy recipes

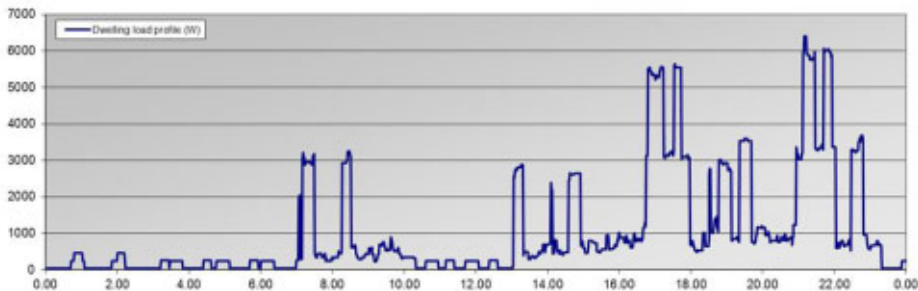
- Occupants affect energy consumption by their behaviors: use of lighting, appliances, thermostats etc. and interacting with envelope components such as windows and blinds
- Energy recipes are premade rules and instructions meant for tackling energy hungry everyday life actions
- Simplified (but extensive) knowledge for people, engaging them and keeping them informed
- Indirectly transforming complex energy-related info into digestible information

## Transition phase towards IoT



# Solution! Nonintrusive appliance load monitor (NIALM)





## Solution!

### Appliances

Washing machine,  
Oven, Refrigerator,  
Lights, Microwave,  
TV, Iron, Shower etc.

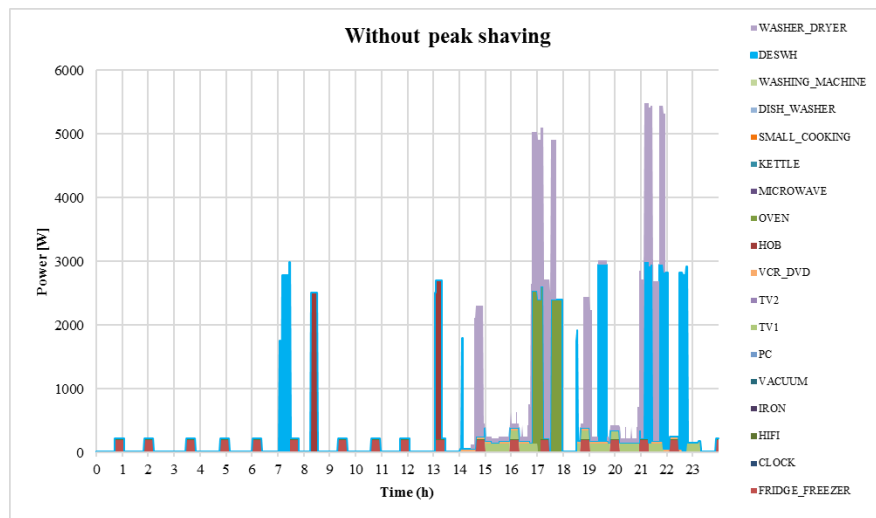
### Nonintrusive appliance load monitor (NIALM)



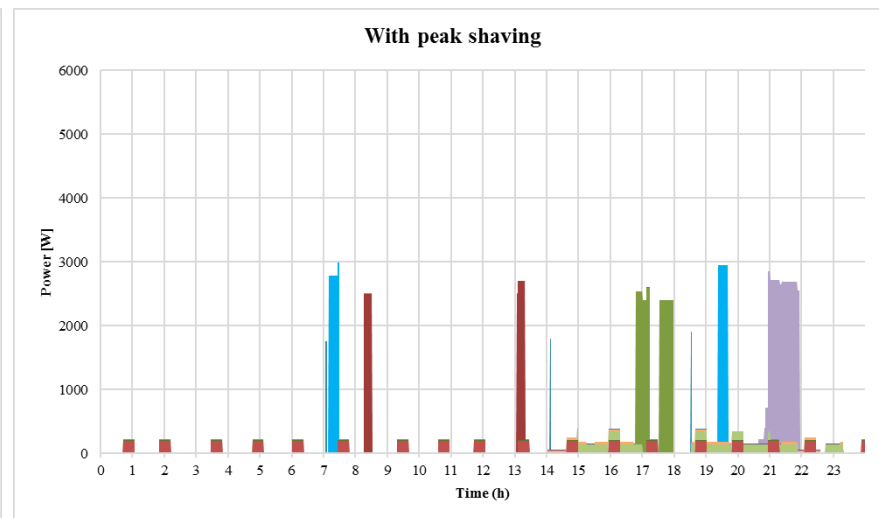
### Display shows:

- All appliances in use
- Time & duration of use
- Energy consumption (kW)
- Peak periods
- Electricity prices

## Before



## After



Thanks!

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