SMART APPLIANCES IN SMA SMART HOME

Heatpumps

Electric vehicle charge stations

Amtron

- Direct data connection via local network
- Currently SMA proprietary SEMP protocol
  → in near future: EEBUS

Smart Appliance:

- Device identification with property profile
- Energy demand request:
  - „I need 3.5 kWh in the next 5 hours"
  - „Energy should be 100% PV only"
  - „I must be fully charged before 17:00"

Energy Manager (Sunny Home Manager):

Sample: Good day

Sample: Changy day

- Control commands (based on energy availability)
  - „I recommend you to switch on now !"
  - „I recommend you to switch on now with 1550 W !"
  - „I recommend you to switch off now!"

SMART APPLIANCES – HEAT PUMPS

SMA

Stiebel Eltron Heat Pumps (Compatibility status October 2015) in combination with the Stiebel Eltron ISGweb and EMI Software Module

- Integral Systems
  - LWZ 303, 403 (Integral/SOL) from manuf. date 08/2008
  - LWZ 304, 404 (SOL)
- Air-Water heat pumps
  - WPL 10 I, IK, AC
  - WPL 13/ 20 A
  - WPL 13/18/ 23 E, cool
  - WPL 34/47/57
- Brine-Water heat pumps
  - WPF 10/13/16 M
  - WPF 20/27/27 HT/35/40/52/66
  - WPF 04/05/07/10/13/16 cool
  - WPC 04/05/07/10/13 , 04/05/07/10/13 cool

Internet Service Gateway ISG web

Integral system LWZ

SMART APPLIANCES – HEAT PUMPS

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Tecalor heat pumps (Compatibility status October 2015) in combination with the ISGweb and EMI Software Module

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  - THZ 304, 404 (SOL)
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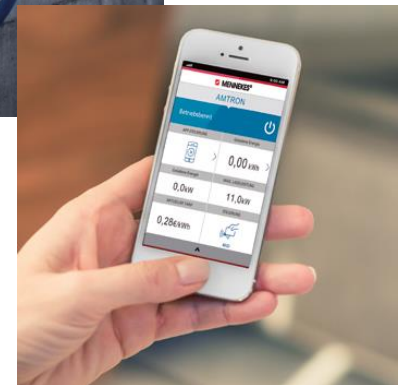 - TTC 04/05/07/10/13 , 04/05/07/10/13 cool

Internet Service Gateway ISG web
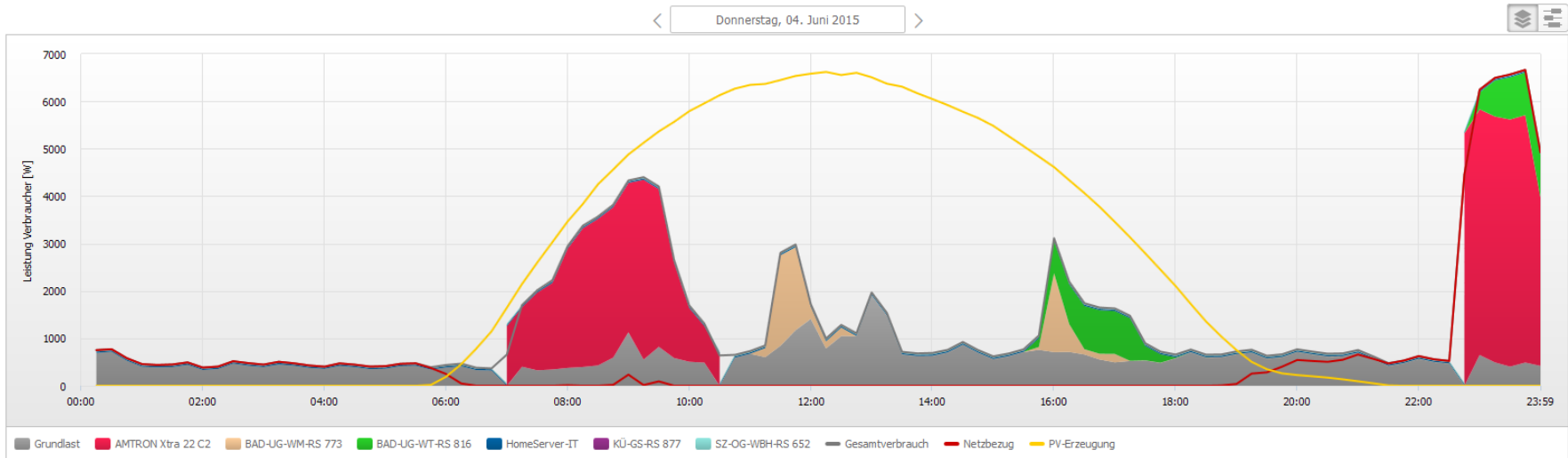
Integral system THZ

SMA

E-Vehicle AC Charge Stations

- Mennekes AMTRON wallboxes
    - → AC charge stations for electric vehicles

    - Data for Energy Management is generated by the internal AMTRON controller:

        o Charge status of electric vehicle battery
            → required kWh

        o Customer request for full charge completion time
            → time period definition

    - Sunny Home Manager assigns energy usage recommendations to the AMTRON wallbox

        o ... with indication of available PV excess power level

MENNEKES®

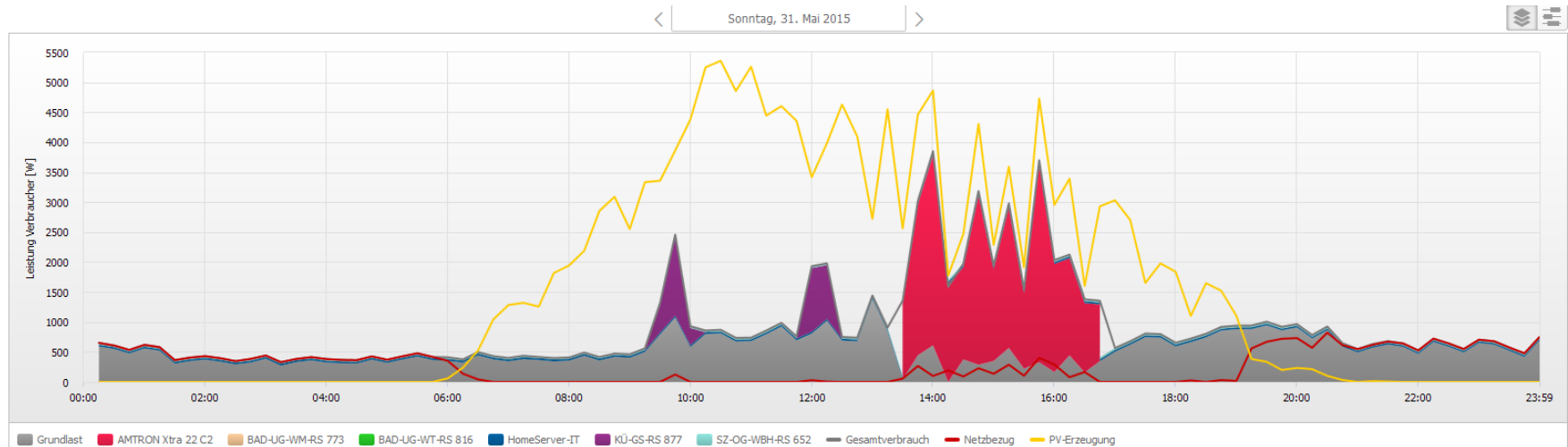# ENERGY MANAGEMENT OF HOUSEHOLD APPLIANCES ELECTRIC VEHICLE CHARGING

E-Vehicle AC Charge Station – „A sunny day"

Model: Mennekes AMTRON Xtra22C2

- 07:00 am: Sunny Home Manager controls E-Vehicle charge process: 100% PV excess energy

  Electric vehicle limits charging level from 09:30 due to high SOC

- 22:30: Manual charge process initiated by user.

ENERGY MANAGEMENT OF HOUSEHOLD APPLIANCES ELECTRIC VEHICLE CHARGING

E-Vehicle AC Charge Station – „A day with cloudy skies"

Model: Mennekes AMTRON Xtra22C2

- 13:15: Start of charging with100% PV excess energy

- 16:30: Battery full