Project BUURZAME STROOM

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BUURZAME STROOM

- **Ambitions:**
  - integrate as much renewable energy as possible in a city district
  - Use the grid capacity as efficient as possible
  - decrease the grid cost and thus the electricity bill

- **Stakeholders:**
  - City of Ghent
  - Local social organisations and representatives
  - Zero Emission Solutions

- **Name:**
  - Duurzaam = sustainable
  - Buurt = neighbourhood
  - Stroom = electricity
• **International inspiration:**
  • Dearsum (NL) & Eigg (GB): neighbourhood is informed about local RE production versus consumption
  • Sweden “Andelsel” & Minnesota (USA) Solar Garden: RE-share leads to decrease your personal electricity bill
  • Brixton (GB): co-operative solar project to fight energy poverty
  • Hamburg (GE) LichtBlick: micro-cogens form a virtual back-up powerplant for wind & solar
  • Schönau (GE) “Strohmrebellen”: took over their local grid and balance it with solar, cogen and fuel-cells
  • Freiburg (GE) “Baugruppen”: neighbours work together to have performant energy-efficient houses with maximum integration of solar and cogen heat grid
• **Selected city district “Sint Amandsberg”**:
  • 1128 houses/apartments
  • 1371 families
  • 3171 inhabitants
  • Dense populated district
  • Rather poor quarter
    • 98 budgetmeters
    • But strong social cohesion

• Electricity consumption : 5.7 GWh
  of which 2.6 is residential
• 3 medium voltage cabins feed the grid
• Gas consumption : 20.6 GWh
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• *Increase renewable energy share (= solar PV):*
  • Potential electricity yield = 6.7 GWh
  • Reach target by:
    • Group purchase for residential & SME’s with suitable roof and investment appetite
    • Search for roofs owned by people & SME’s without investment appetite
    • Cooperation by people with investment appetite but no suitable roof
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- Decrease electricity consumption:
  - Consumption per household is 4.16 MWh/year (above average)
  - Reach target by:
    - Training sessions on energy efficiency behaviour
    - Offer individual energy coaching for households and SME’s
    - Group purchase for energy saving technologies (LED, HE-boilers, …)
    - Collective renovations
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- **Increase efficiency of the grid:**
  - Training sessions in Demand Response Management
  - Install cogeneration in “Begijnhof”
    - Heat can be stored
    - Electricity production when no solar production
  - Install battery storage
  - Vehicle to grid
  - Grid operator will install smart meters to monitor effect
  - Keep the local grid in balance
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• Decrease the electricity bill by:
  • Energy efficiency
  • Autoproduction (even at distance) of electricity and heat
  • Efficient use of the grid capacity
  • Offering balancing services to the grid

⇒ Strive for “low regulation zone” where creative ‘ad hoc’ solutions are allowed e.g. chosen quarter was not entitled to have smart meters