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
    - Coöperation 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
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
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Questions vs Answers

- Who
- What
- Why
- When
- Where
- How

gent: klimaatstad

Zero Emission Solutions