Project BUURZAME STROOM

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gent: klimaat-stad

ZERO EMISSION SOLUTIONS

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

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- **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-efficiënt houses with maximum integration of solar and cogen heat grid

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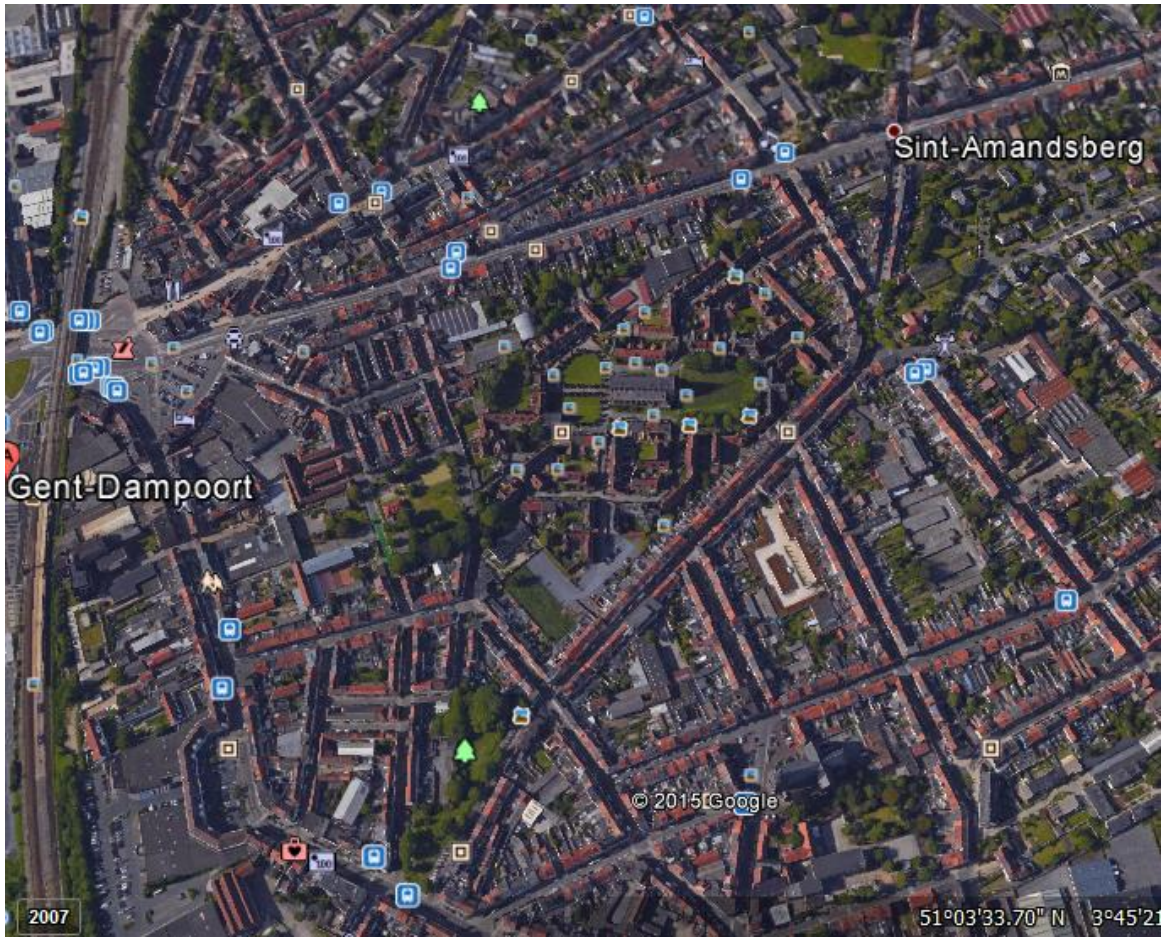
- **Selected city district "Sint Amandsberg" :**
  - 1128 houses/apartments
  - 1371 families
  - 3171 inhabitants
  - Dense populated district
  - Rather poor quarter
    - 98 budgetmeters
    - But strong social cohesion

  - 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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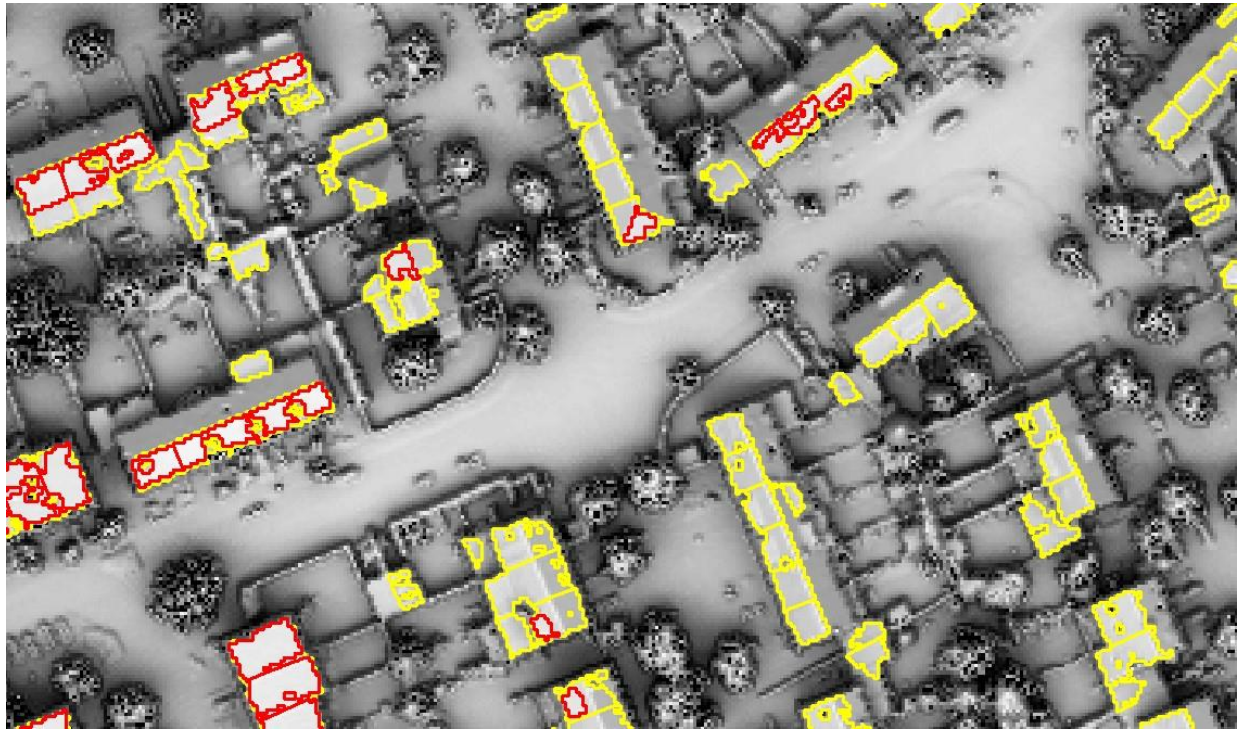
- **Increase renewable energy share (= solar PV) :**
  - Potential electricity yield = 6,7 GWh
  - Reach target by :
    - Group purchase for residentials & SME's with suitable roof and investment appetite
    - Search for roofs owned by people & SME's without invenstment appetite
    - Coöperation by 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

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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

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