

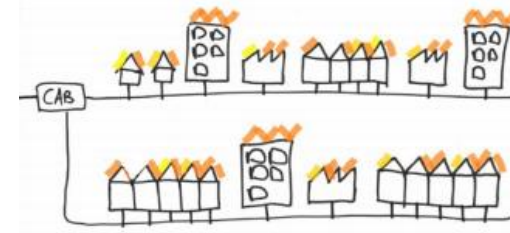
Project BUURZAME STROOM



Alex Polfliet

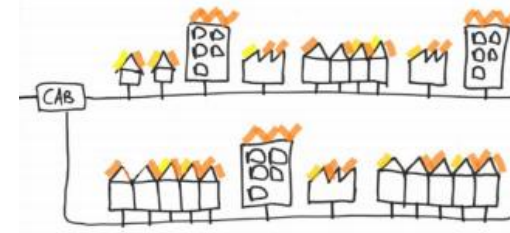


BUURZAME STROOM



- **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

BUURZAME STROOM

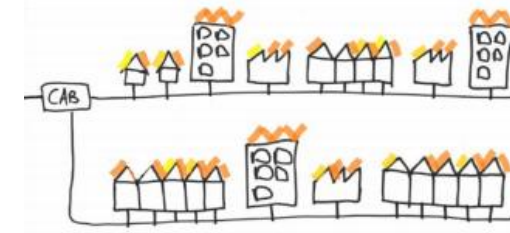


- **International inspiration :**

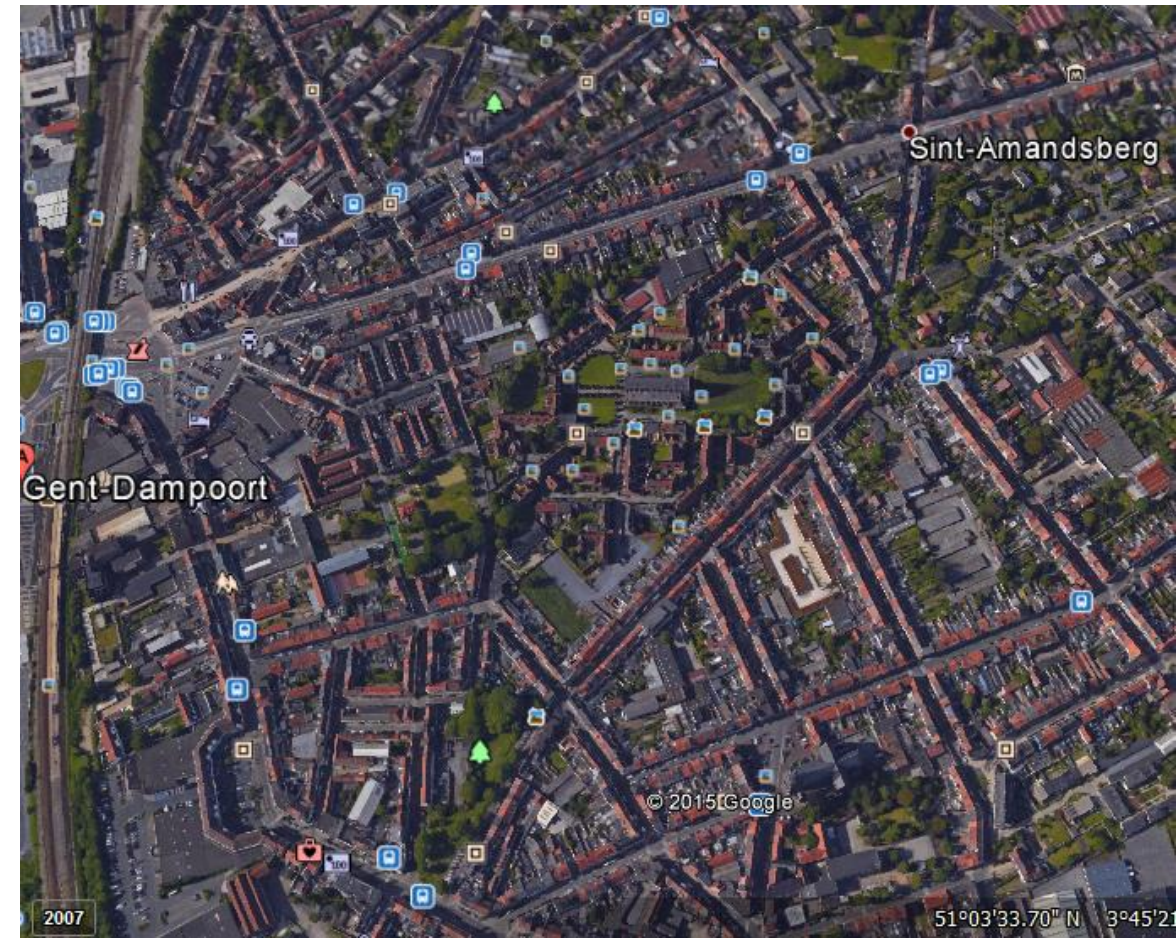
- Dearsum (NL) & Eigg (GB) : neighbourhood is informed about local RE production versus consumption
- Sweden “Andelsel” & Minnesota (USA) Solar Garden : RE-share leads to decrease your personal electricity bill
- Brixton (GB) : co-operative solar project to fight energy poverty
- Hamburg (GE) LichtBlick : 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



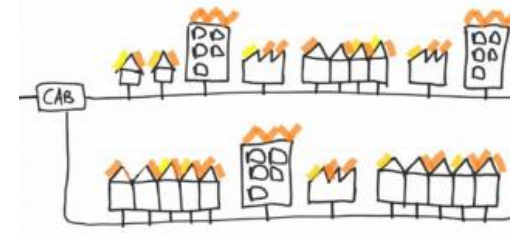
BUURZAME STROOM



- **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

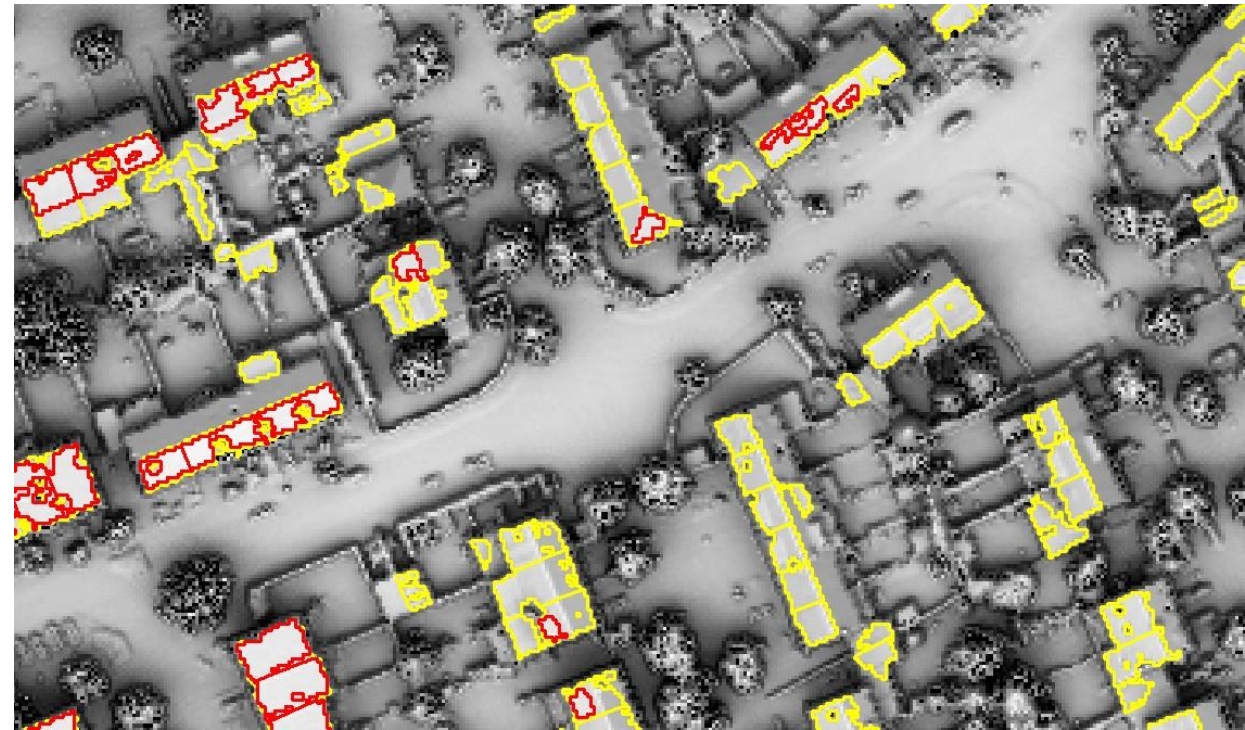


BUURZAME STROOM

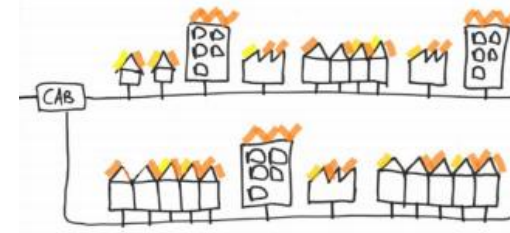


- **Increase renewable energy share (= solar PV) :**

- 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 investment appetite
 - Coöperation by people with investment appetite but no suitable roof



BUURZAME STROOM



- **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



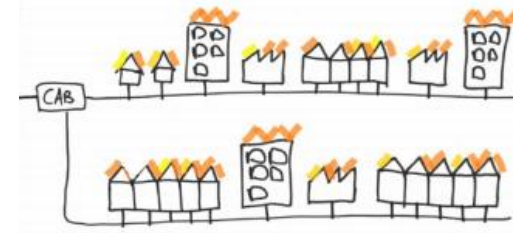
BUURZAME STROOM



- **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



BUURZAME STROOM



- **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



BUURZAME STROOM

