Leveraging Open Data

Convergence of ICT infrastructures and energy infrastructures

Reducing carbon emissions, through:

- Greening of IT
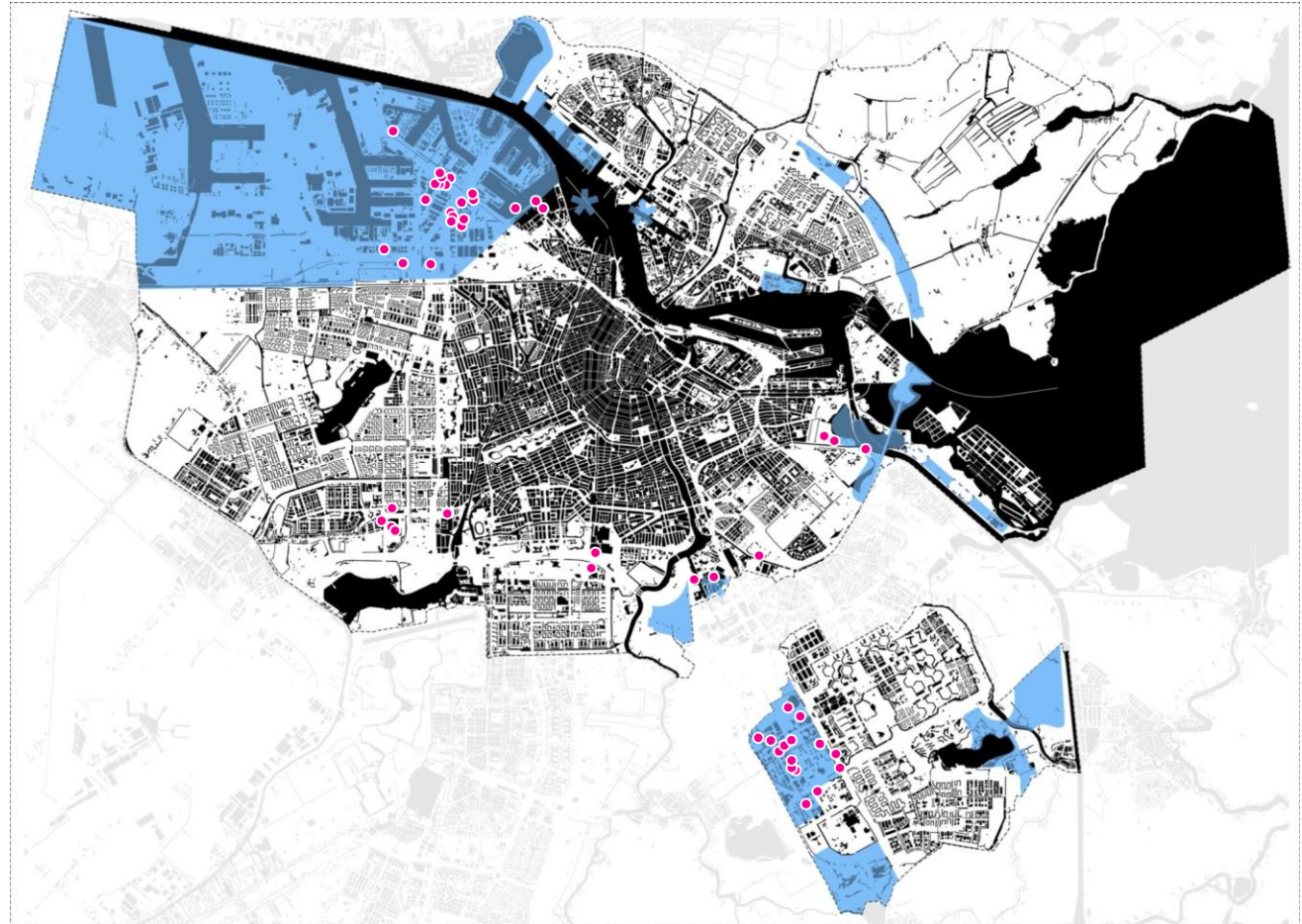- Greening by IT
- Green IT Economy

Carbon reduction in cities

Applications and good practices

Environ-mental

Carbon reduction

Social

Econo-mical

Sustainable ICT and infrastructure
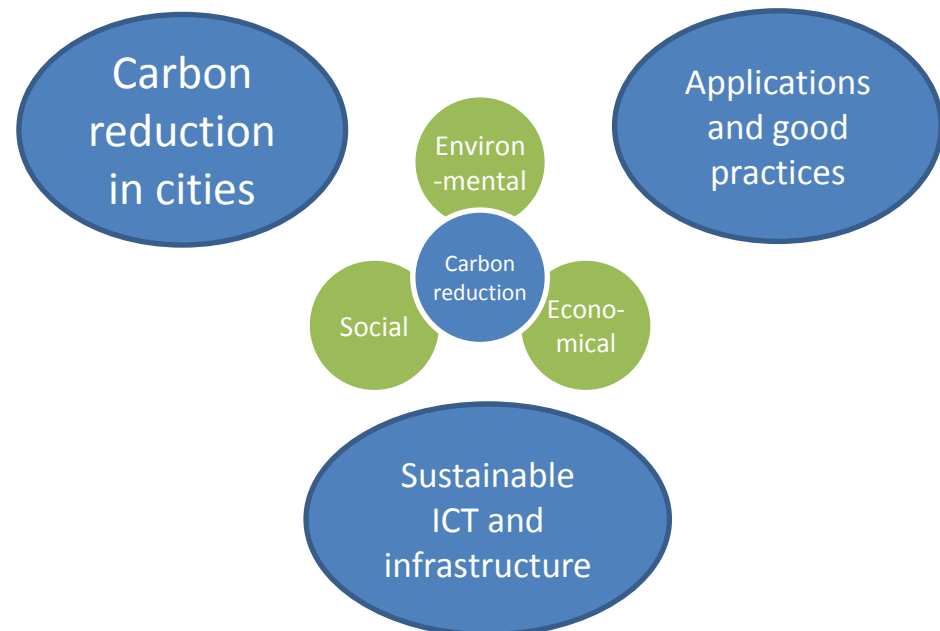
Wind energy and data centers

- Data centers are clustered in 5 areas
- 4 Intersections
- Viable in theory

- **Manual exercise**

Dots are datacenters
Blue areas are potentially interesting areas for wind energy
Source: City of Amsterdam and http://maps.amsterdam.nl/

Solar panels and energy cooperations

- Profitability co-depends on roof position

- Use open geo data

- Possibly automating suggestions for collaboration

- **Decision support systems**
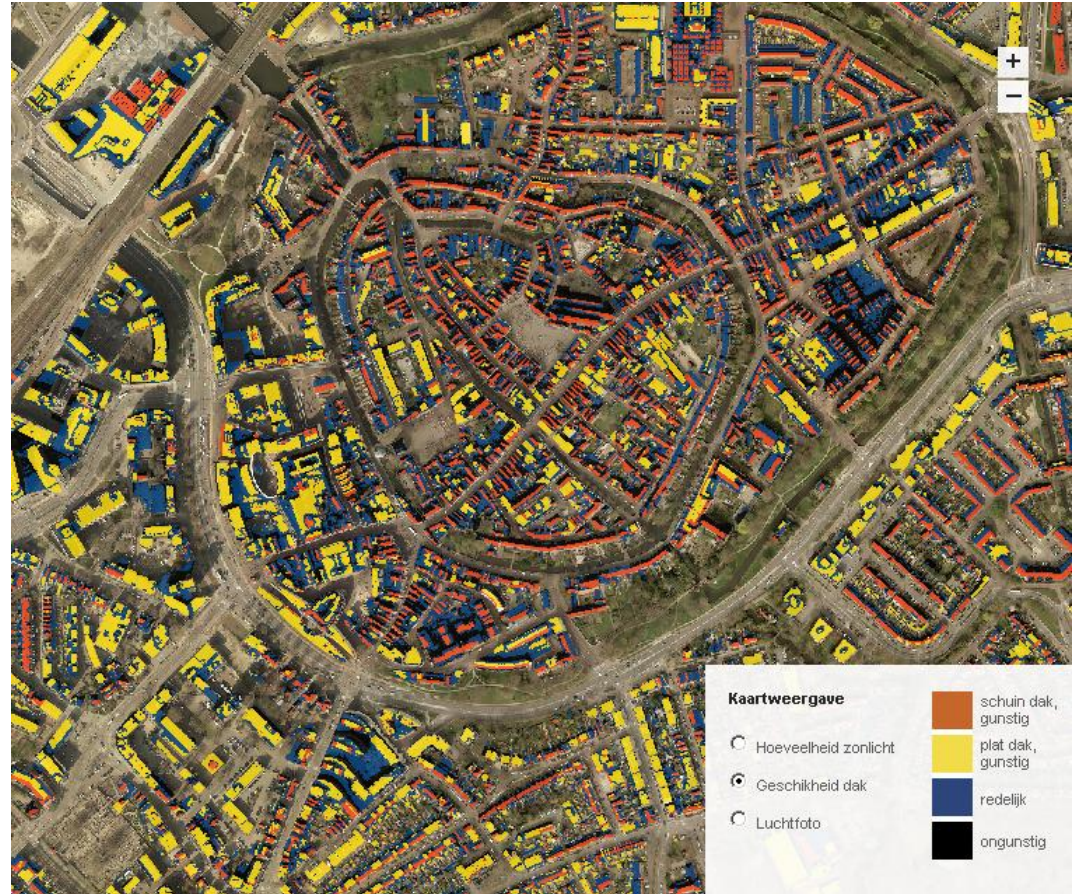
Build upon existing data sets such as Solar Scan Amersfoort
Source: City of Amersfoort, http://amersfoort.burokarto.nl/

Datacenters and smart grids

- Management systems with modular optimizers

- Include e.g. weather data and substation load

- Real-time adjustment of energy demand and supply

- **Control systems**
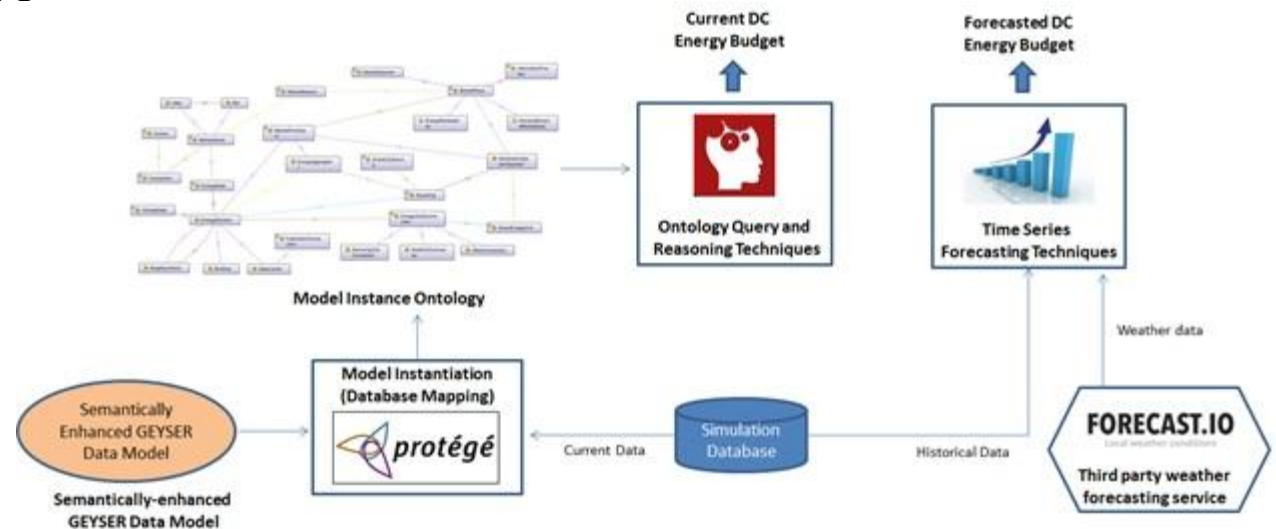
Weather forecasts and energy prices forecasts for optimizing data centers / Energy optimizer system design for data centers University of Cluj-Napoca, http://www.geyser-project.eu/

Recommendations

- Before collecting and publishing open data, make your objective explicit. What is the most likely usage scenario?
  - Design, planning and realization
  - Decision support
  - Energy management
- The biggest gains come from using data with advanced reasoning techniques (e.g., agent based systems, big data analytics and modular optimizer systems).
- Also consider using Open Standards or publishing as Linked Open Data.