

amsterdam

smart

city

Amsterdam Smart City

June 2010

Ger Baron

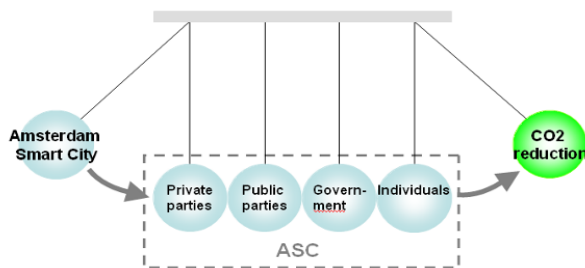
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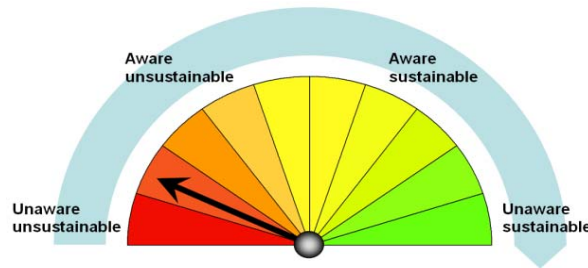


Amsterdam Smart City is a unique collaboration between the inhabitants of Amsterdam, businesses and governments in order to illustrate how energy can be saved, now and in the future

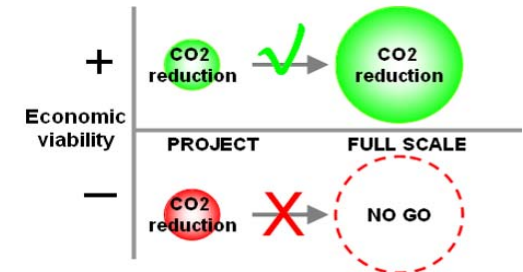
Collective effort



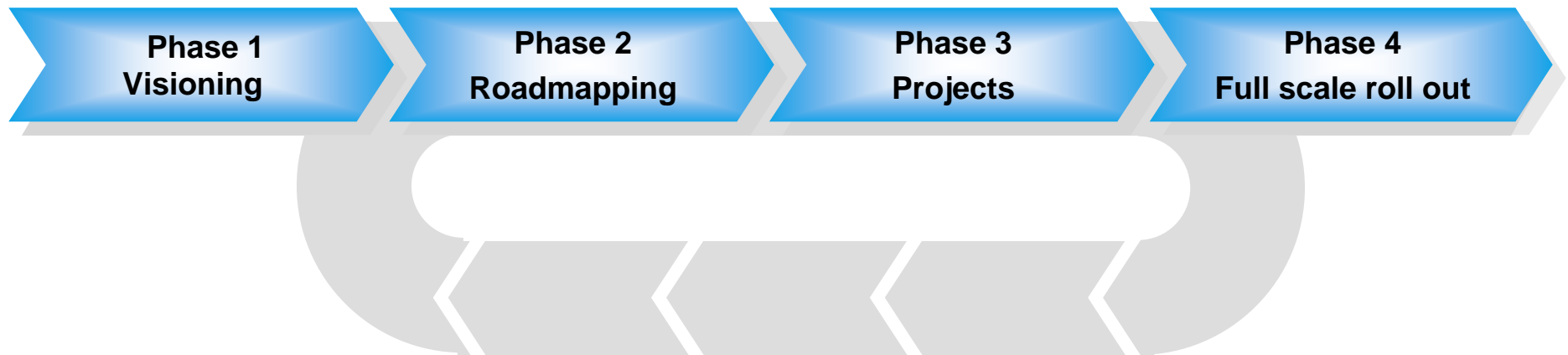
Tech push / demand pull



Economic viability



ASC follows a clearly structured pathway of continuously selecting, developing and scaling the concepts with the best (CO2) Value Cases



Visioning & Strategy

- Develop Vision & Strategy
- Define business case, principles and technical architecture
- Determine approach

Concept Development

- Pre-select initiatives on feasibility, costs and CO2 reduction potential
- Contact and organize partners
- Develop program plan and legal framework (incl. governance model)

Value Delivery

- Develop project / comms plans and business cases
- Secure funding from partners
- Execute projects and monitor business case realization
- Integrate projects into INDE*

Strategy = Execution

- Evaluate and select successful initiatives and partners
- Communicate results
- Support (tenders for) full scale implementation and leverage with other offerings

together with partners, continuously initiates new projects. Relevant partners are realization



What does ASC contribute?

- Bringing partners together
- Offer a platform for sustainable innovative initiatives
- Communication ASC broad (congresses, website, flyers etc)
- Coordinate communication of the subprojects
- Overall program management
- Link TNO to the subprojects
- Give access to expertise (Alliander/AIM)



What do partners contribute?

- Execute project management own subproject
- Financial responsibility own subproject
- Communication own subproject
- Deliver report on progress
- Ensure showcases
- Sign partner agreement
- Ensure TNO verifies research set up
- Share research results to ensure scientific research results
- Set up CO2 value case



SUSTAINABLE LIVING - GEUZENVELD

In the Geuzenveld neighborhood, 500 in-home energy-feedback displays will be connected to a smart meter to change consumer behavior

PROJECT DESCRIPTION

- Implementation of 500 Smart Meters
- Testing of different energy feedback displays, tracking the behavioral change and energy savings
- Optimisation of participation of end users

RESULTS

- After large infrastructural works smart meters are currently being implemented
- Functional tests (meter to display) are currently executed
- Program to maximize end user participation is developed





West
Orange

Het project WestOrange heeft tot doel aan te tonen welke energiebesparing en CO₂-reductie huishoudens kunnen realiseren middels het installeren van een slimme meter en een Energiedisplay. Hiervoor worden 500 huishoudens in Amsterdam geselecteerd binnen complexen van de woningbouwcorporaties Ymere en FarWest. Dit project is een samenwerkingsverband tussen onderstaande partijen.



SUSTAINABLE LIVING - WEST ORANGE

In the West Orange project, 500 in-home energy-feedback displays will be connected to a smart meter and control of the central heating

ENERGY MANAGEMENT TEST (DISPLAY)

- Direct meaningful feedback
- Consumers 'target themselves' (previous year as baseline)
- Stand alone, wireless touch screen, connected to internet

OUTCOME - FACTUAL

- Expected average savings: power 9% & gas 14%

OUTCOME - BEHAVIORAL

- More efficient use of household devices
- Switching off and lowering heating
- Substitution of household devices

Het Energiedisplay is draadloos verbonden met de slimme meter, waardoor verbruiksdata op het Energiedisplay beschikbaar komt. Op het Energiedisplay ziet de gebruiker zijn huidige verbruik en kan hij streefwaarden invoeren om een besparing te realiseren. Het verkregen inzicht moet leiden tot gedragsverandering bij de gebruiker die resulteert in energiebesparing



SUSTAINABLE WORKING - ITO TOWER

By gathering, analyzing and visualizing energy consumption for end-users, the modern and prestigious ITO Tower will become even more energy-efficient

PROJECT DESCRIPTION

- Gain insight in energy usage at new build offices
- Reduce energy usage by implementation of energy saving scheme's
- Increase the awareness among employees

RESULTS

- 360 smart plugs installed that are recording energy usage at plug level
- Original energy usage recorded ; energy saving scheme's will be implemented shortly
- Scan on lighting situation to start pilot with low energy lighting solutions
- Later: Sub-metering per floor
- Involve and enhance employees
- Accenture's Smart Building solution





SUSTAINABLE PUBLIC SPACE - CLIMATE STREET

The Climate street pilot is a holistic concept for urban shopping streets, targeting all aspects: hardware in the public space, logistics in the street and the interiors of shop/bar/restaurant owners

PROJECT DESCRIPTION

- Initiated by 140 SME's
- Focus on energy saving and behavior
- Combination of collective effort and individual approach
- Both in public space and within the shops

INITIATIVES

- Centralised logistics to diminish traffic
- Waste collection with electrical vehicles
- Dimming of public lighting
- Sustainable tramstops
- Energy scans
- Smart Meter & Energy feedback
- Smart plugs

RESULTS

- > 50% of SME's moved to sustainable waste concept
- Successful pilot Smart Plugs
- Dimming of public lighting resulted in 10% energy saving, people in the street did not notice the change
- Roll out of 25 Smart Meter & Energy displays
- Energy Scan will be introduced in september





XXXX Port of Amsterdam



SUSTAINABLE MOBILITY – SHIP TO GRID

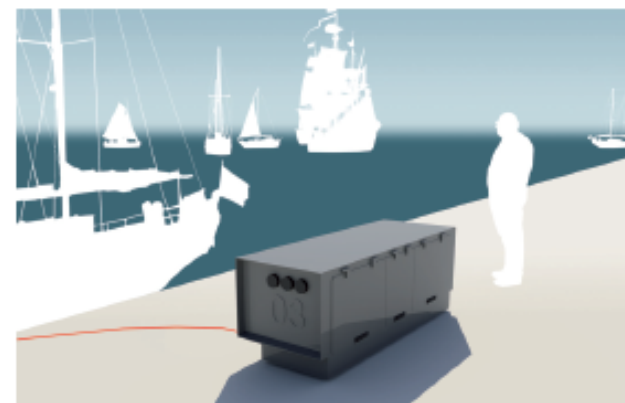
160 Shore power connections will be rolled out saving vast amounts of CO₂ emissions, noise and air pollution

PROJECT DESCRIPTION

- Ship to grid for cruise and river transport in order to
- Reduce noise from diesel generators
- Port of Amsterdam issues ban on diesel generators
- Improve air quality in the harbor
- Reduce CO₂ emissions

RESULTS

- From August realization of 139 connections for shippers (63A) and 21 connections for river cruisers (400A)



am smart erdam
city



Windenergie in Amsterdam Noord

Waai mee met de voordelen!

Wind energy in Amsterdam North
Blow along with the benefits!

Onze
Amsterdam
Noord
Energie

STICHTING
DOEN

NATIONALE
POSTCODE
LOTERIJ



SUSTAINABLE LIVING - "ONZE ENERGIE"

Collective Financing of 7 Windmills

Collective financing should break the barrier of high investment costs for consumers to produce their own energy (or invest in energy efficiency)

PROJECT DESCRIPTION

- "Onze Energie" (Our Energy) is a concept of collective financing of 7 windmills (€ 30 mln) with the ambition to have 20% of the Amsterdam population become member of this cooperation
- Members pay € 50 membership fee which is paid back in less than three years
- Windmills online between 6-8 years, after that consumers generate their own electricity at cost-price +, prices will not change
- First 6-8 years collective procurement of renewable energy at price below market average
- Members collective own the cooperation and have a democratic say (one vote per member) in the strategy, increasing adoption and acceptance



10 primary schools will compete on energy efficiency program results, comparing performance through an online portal

PROJECT DESCRIPTION

- Allander will provide an online portal to 10 schools with which they can compare energy saving performance and share tips and tricks
- The match will be rolled out based on Allander's fun and educational "De Bliksems" (The Lightnings) program, specifically upgraded to include the portal for this project
- Primary schools are an interesting and valuable group. Thousands of children can be reached in educating them about the importance of energy efficiency, taking their experiences with them to relatives and friends
- Amsterdam Smart City is reviewing options for cooperation with an existing program of the City of Amsterdam, focused on improving the energy performance and air climate of some 80 primary schools





SUSTAINABLE LIVING - ENERGY MANAGEMENT

250 customers in the Haarlem region will test an energy management system free of charge for four months

PROJECT DESCRIPTION

- Testing of smart plugs within 250 households
- Users get better insight in their energy usage (at appliance level) and get the possibility to implement energy saving schemes to start saving energy
- Objective of the project is to research and determine the most effective proposition for energy management systems

RESULTS

- Sets are delivered to the households, trial period of four months has started
- First enthusiastic feedback "I finally know what my appliances use" obtained





SUSTAINABLE WORKING – MONUMENTAL BUILDINGS

By supporting several monumental buildings in Amsterdam to become more carbon-efficient, the complexity of this important target group is exposed and analyzed

AMSTERDAM IS THE CITY OF MONUMENTAL BUILDINGS

CHARACTERISTICS

- Adjustments to monuments are complex and often not allowed
- Public monuments attract a lot of visitors
- (Public) monuments serve as models

CURRENT POSSIBILITIES

- Energy scans & management scans
- Energy monitoring systems
- LED-Lighting
- Insulation
- Small scale Combined Heat & Power
- Creating awareness among users and visitors

GOALS

- Learn from all sustainable possibilities
- Analyze effects of CO₂ reduction concepts on the behavior of users and visitors
- Develop blue print "Sustainable Monuments"

de
groene
bocht





SUSTAINABLE MOBILITY - ULTRA FAST CHARGING

Testing and use of new technologies that allow quick charging (20 minutes) of electrical vehicle batteries



The municipality of Amsterdam is implementing an extensive public charging network to stimulate electric transport. Ultra fast charging is a promising technology to accelerate the use of electric vehicles. Amsterdam Electric is initiating pilot projects to demonstrate this technology in cooperation with end-users.

PROJECT DESCRIPTION

- Test innovative ultrafast charging technology to recharge electrical vehicles in ± 20 minutes
- Impact on energy network and battery testing
- Testing fast charging electric urban distribution

RESULTS

- Partnership between city of Amsterdam, grid operator, end user and technology provider established
- Implementation pilot project expected second half 2010

TWEETS



Delicious: smart cities:
<http://bit.ly/dD0wdl> [Research]



Six Sigma Makes Its Way to the
 Contact Center | Virtual Predictive ...

[> MORE TWEETS](#)

TIP OF THE WEEK



Less CO2 emission with public transport

[> MORE TIPS](#)

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- ▶ The World's Smartest Cities

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