Implementing Renewable Energy in a City

Experiences from the SiREN project

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managenergy workshop 1 July 2002

SiREN Overview

- Accompanying Measure, EESD programme
- 8 partners from 4 EU countries
  - AEA+Innova+Ecoazioni
  - LEA
  - Amerlis+University of Lisbon
  - Novem+Dialogic
- Four participatory workshops in Lisbon, Spoleto, Deventer and Leicester
- Feb. 2001 to Aug. 2002

SiREN Objectives

- Promoting RES and RET in sustainable urban development
- Fostering the application of new technology solutions (R&D project results) at urban level
- Identifying non-technical barriers for RES/T
- Raising awareness and facilitating acceptance
- Activating joint/concerted actions and promoting participatory processes for innovation

Technologies considered

City	Field	Technologies Selected
LISBON	Solar Energy	➢ Thermo Photovoltaic System ➢ Passive Cooling in Buildings ➢ A new high efficient solar collector for desiccative and evaporative cooling ➢ Solar rental scheme
SPOLETO	Solar Energy	➢ Dissemination of CHP technologies in Irish voluntary and charitable hospitals ➢ Pilot Project for Photovoltaic, Energetic and Bio-Housing retrieval in scientific high school Umbertide (PG), Italy ➢ Passive Cooling in Buildings ➢ Thermo Photovoltaic System ➢ Solar cells along the road
LEISTER	Solar Energy Transport Renewable Energy	➢ Development of lightweight lead-acid batteries (LWLB) for electrical and conventional vehicles ➢ 'Solar Rental Scheme' ➢ Passive Solar Design ➢ Ashton Green – Sustainable housing development ➢ Arable biomass renewable energy
DEVENTER	Solar Energy Transport Renewable Energy	➢ Development of lightweight lead-acid batteries (LWLB) for electrical and conventional vehicles ➢ Local Traffic Performance Design strategy and instrument (LTP) ➢ Solar cells along the road ➢ Heat from Asphalt

Reasons for early involvement

… of different “actors”:

- Better use of available expertise
- Better understanding
- Better opportunities for co-determination / influencing (strategic) development
- Better acceptance / less resistance to change
- More effective innovation

Scenarios in SiREN

In SiREN we use scenarios as tools …

- to help think about future RE strategies (implementation & dedicated development)
- to determine a preferred future (a “wish” vision)
- to reflect different visions of a future situation
- to demarcate the ‘playing field’ of the likely future

Local RE application scenarios

Design / lay-out area
Traffic / infrastructure
Local quality
(Renewable) energy
ICT

Market

Design / lay-out area
Traffic / infrastructure
Local quality
(Renewable) energy
ICT

1.

2.

DIY

Let others do it

Design / lay-out area
Traffic / infrastructure
Local quality
(Renewable) energy
ICT

4.

3.

Design / lay-out area
Traffic / infrastructure
Local quality
(Renewable) energy
ICT

Gov't

SiREN

Scenarios for integration of Renewables in a European Cities Network

Renewable energy
In Keizerslanden (Deventer, NL)

SCENARIOS FOR 2020

Downloadable:
www.dialogic.nl/keizerslanden

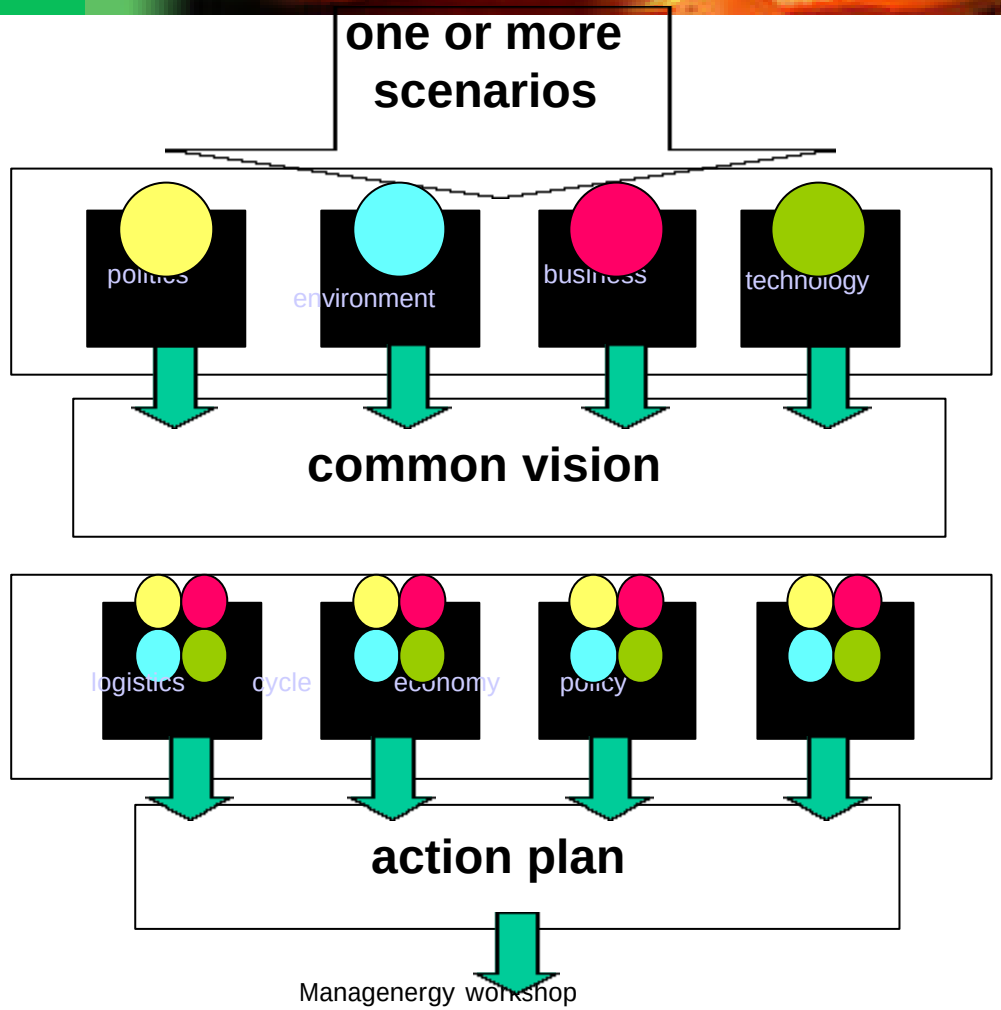
Dialogic (Utrecht, NL)
www.dialogic.nl
Rob Bilderbeek
Hilde de Groot
Frank Bongers
Rens Vandeberg
Novem (Utrecht, NL)
www.novem.nl
Albert Jansen
Remco Hoogma
Klaartje Arntzen
Suzan Reitsma

EASW: using scenarios interactively

scenarios

vision development
4 role groups

idea generation
4 theme groups



Vision building

4 role groups (6 to 8 people each):

- citizens
- decision makers, politicians
- technical experts
- business sector

Each role groups articulates their own future vision

Insight in barriers, success factors for RES/T implementation

Plenary discussions on visions in detail

Voting: preferred elements of vision

Establishing a commonly shared future vision

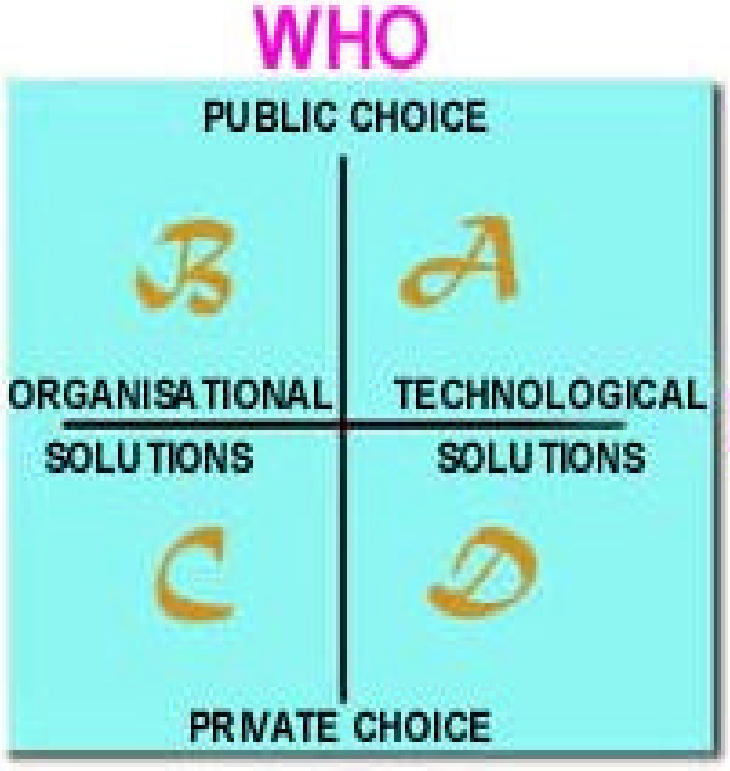
Generating ideas

- In theme groups (on RE technologies, traffic, building, facilities)
- Identifying how to realise the common vision
- Each group prepares the presentation of their ‘top 5’ list of ideas

Plenary:

- Presentation of each group’s ‘top 5’ ideas
- Voting on the overall ‘best 5’ ideas

Towards action



Closing discussion

On:

- *WHO* will take the initiative?
- *HOW* to do it (which direction to go)?

SiREN Experiences

Action plan for Spoleto:

- Application of CHP technology in a hospital
- Pilot project for PV, energetic and bio-housing in a highschool
- Other interest: solar cells along the road, passive cooling in buildings

Action plan for Deventer

- Feasibility study for pilot project heat from asphalt
- Application of Local Traffic Performance design strategy and instrument in local area
- Other interest: horizontal wind mills on roofs and PV foil on buildings

SiREN Experiences

Action plan for Leicester:

- Commitment from farmers and municipality for pilot project biomass plant
- Application of battery management system for electric bus
- Other interests: solar rental scheme, passive solar lighting, sustainable housing development

Action plan for Lisbon:

- Interest in solar rental scheme, solar cells along the road, passive cooling in buildings

SiREN replicability

- SiREN is a replicable experience
- User friendly CD-Rom presenting the methodology and providing practical guidelines
- Useful for:
  - local bodies interested in creating consensus for new technology solutions to be introduced at local level
  - technology providers or R&D organisations interested in disseminating/promoting their RE solution
  - energy agencies and other bodies interested in supporting innovation and implementation

More: http://www.clikkers.it/html/sirensviluppo