Towards a water-efficient Europe: can servicizing business models and policies help to promote grey-water recycling and rainwater harvesting at household level?

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“Servicizing” has been defined in the SPREE project as

“a transaction where value is provided through a combination of products and services, and where satisfaction of customer needs is achieved by selling functions of a product rather than the product per se, and/or by increasing the service component of the offer. Thus, each offer represents a continuum of products and services, which can be further servicized”.

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Servicizing and water

The SPREE project aims to establish servicizing systems that facilitate the transition from selling products to providing services in three sectors.

Website: www.spreeeproject.com
Servicizing in the Water Sector

- Water is not a conventional good or product
- Water is already servicized to a large extent in many regions in Europe and elsewhere (e.g. EU/OECD countries)
  - Water is not “consumed” like other resources
  - Water quality changes but the majority of water is “returned” to the system
Servicizing in the Water Sector

**NO SERVICIZING**
Household only receives water from a water supply/wastewater treatment system which it pays for, installs and maintains itself.

**FIRST LEVEL SERVICIZING**
Household only receives water services via a public or privately owned supply and treatment system serving multiple households.

**SECOND LEVEL SERVICIZING**
Household receives water via a public or privately owned supply system AND an alternative means of water supply/wastewater treatment is installed and maintained by others.

Household only receives water from a water supply/wastewater treatment system which it pays for and maintains itself but was installed by others.

Household only receives water from a water supply/wastewater treatment system that was installed and is maintained by others.
Decoupling in the Water Sector

• Economic decoupling in the water sector has occurred in some regions due to:
  
  – Improved efficiency of appliances
  – Improved efficiency by industry in response to regulation

• However, water can be further servicized... and further decoupling may be achieved through servicizing
Examples of servicizing in the water sector
Examples of servicizing in the water sector
SPREE case studies: household level grey-water recycling (GWR) and rainwater harvesting (RWH)
UK Case Study: Household survey area

Household survey data collected in the supply area of South East Water on attitudes to water etc
- +300 respondents
- Analysis on-going SE Water consumption data

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Survey

Respondents: home owners, majority own (outright or mortgage) a house with private garden, mature age group, about one third has or plans to install some water saving fitting
Response to GWR/RWH

Only between 10-13% of Respondents would definitely or probably consider installing a GWR or RWH system.
Response to GWR/RWH

However – when presented with a range of potential GWR and RWH servicized system options ~1/3 of respondents selected one of them.
Response to GWR/RWH

- Results suggest that there is some willingness from consumers to adopt GWR and RWH systems if
  - the right conditions exist, i.e. via servicizing
  - reduced payment for the system up-front, and maintenance of the system is taken care of.

- Hence servicizing may be key in promoting water-efficient systems
Agent Based Modelling (ABM)

- ABM based on survey and consumer choices indicates that uptake of GWR&RWH systems increases during the simulation period
- The level of servicizing (consumers asking for servicized options) also increases
- Supply Chain GDP increases for all scenarios
- Positive environmental outcomes:
  - *embedded carbon emissions decrease*
  - *amount of water consumed per consumer decreases*
Agent Based Modelling (ABM)

- Various policy combinations modelled which included regulations, incentives and information measures
- Results from policy scenarios informed a rigorous process of grouping policy instruments into ‘policy packages’ (basic, effective and viable)
Viable Policy Package: Water, UK

6. Implement universal water metering

7. Increased price of potable water and sewage

11. Stricter water abstraction limits for existing licensed users

16. New regulation/guidance
   - Public information campaigns for households to collect and use rainwater and recycle grey water, i.e. RWH & GWR systems

14. Clear and transparent bills and cost models for GWR, RWH and mains water

17. Additional funding for Local Authorities to deal with planning and enforcement of new regulation/guidance for GWR & RWH

8. Promoting GWR and RWH

9. Raising awareness about sustainability of water resources and GWR&RWH

10. Tax breaks to encourage the installation of GWR&RWH systems by consumers

13. Subsidies for low-income households to install GWR&RWH

2. Direct provision of funding to local authorities to install household-based GWR & RWH systems in all new social housing projects

1. Building regulations: new premises to include GWR

3. Building regulations: compulsory in new properties to include RWH
Key messages: Policy

- GWR is being considered by UK Water Companies
- But RWH considered less promising (periods of high demand)
- Decentralising is a potential issue
- Responsibility over maintenance and Health & Safety aspects still an issue even if financing is OK
- Solution: maintenance /servicizing for all GWR & RWH systems (regulation?) to ensure good working order and minimise H&S risks (e.g. cross-connections between GWR & RWH and mains pipes).

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Thank you!

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Any Questions?