OECD Expert Meeting on “Sustainable Financing for Affordable Water Services: From Theory to Practice”

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Water...a critical issue for the 21st Century

- Quality concerns
  - (Crypto, Giardia, E-Coli)
- Water scarcity
- Aging & inadequate infrastructure
- Urban growth
- Development of rural areas
- Competition for capital
A truly global issue

- Serious outbreaks of water-borne illness in Ireland.
- Water reservoirs at <10% of capacity in Australia.
- Stressed urban facilities.
- Explosion of mega-cities from Mexico to Malaysia.
- Rapid growth of resorts from Croatia to Dubai.
- Even potential desalination plants in the UK!
The debate on *Macro vs Micro Solutions?*

Centralized System

Decentralized Vision
Centralized Treatment

- For most of the last century, this was the only viable approach to safe, dependable & cost-effective water
- Technology & economics favored the large, central plant & limited its availability to urban centers
- Pipe-in-the-ground became the most significant cost
- Off-grid development was discouraged, impractical & very costly
- Scarcity & reuse issues not easily addressed
The decentralized option

- Today, new technologies enable safe, reliable & cost-effective decentralized options
- More emphasis on “plant” rather then “pipe”
- Urban & rural regions can now have the same level of water quality
- On-site water reuse is now practical & affordable
- Greater accountability for water use & abuse
Real World Experience

- Today, new technologies offer safe, reliable solutions:
  - Absolute barriers to pathogenic organisms
  - On-site recycling of wastewater in both urban & off-grid applications
  - Affordable desalination
- Globally, both centralized & decentralized solutions demonstrate the responsible water management is achievable:
  - Non-potable reuse proven for >20 years in New England
  - Even possible to recycle to potable quality as in Singapore
- Technology is not an obstacle
We need both centralized & decentralized solutions to solve our global issues:

- For large urban areas, where municipally managed recycling is possible, the centralized option may be preferred.
- For extra-urban, for low-impact urban infill or for many industrial applications, on-site, decentralized water management is the preferred option.
- The issues are political & administrative, not technical.
Policy Drivers

- To achieve the most effective balance between centralized & decentralized options, we need:

  ✓ Strong government policies encouraging water reuse
  ✓ Clear regulations and standards on reuse water quality
    - Multiple & absolute barriers
    - Specific water quality characteristics, quality assurance protocols, etc.
  ✓ Effective financial recognition of the beneficial impact which on-site solutions have on the overall cost of providing water to a community
GE exploring water efficiency goals & metrics

- Pilot program identifying top water users across GE
- Water Efficiency Council
- Setting a water reduction goal & metric – Dec ‘07
- Hope to work with governments, NGOs & others
Summary

- Both centralized & decentralized solutions are required
- The real issue is how we manage this increasingly scarce resource in our developed & developing regions
- Today, technology enables effective water management & reuse in both centralized & decentralized options
- In many cases, however, on-site, decentralized treatment is significantly more cost-effective
- The real issue lies in enacting strong water management policy & in providing the regulations & standards that enable communities & industries to pursue the two options