

# Potential Impacts of Vertical Separation

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**10<sup>th</sup> Feb 2011**

# Future Challenges

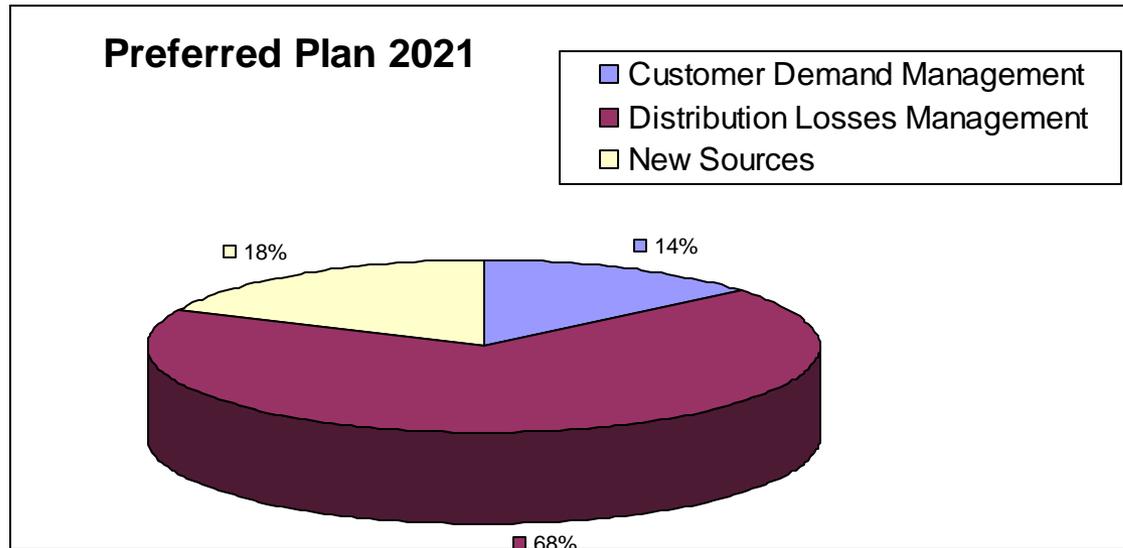
- Climate change and population growth
  - ONS forecast population growth of over 20% by 2030, and over 40% in the Bristol Water supply area
  - Water resources planning will become increasingly important
- Water quality pressures
  - Lead in water supply is likely to become an issue of increasing concern post 2013
- Rising consumer expectations
  - The drive to become 'smart' – making the best use of the huge improvements in information technology
- Structure of Industry could have a big impact on how we meet these challenges

# Water Resources Planning

- Matching supply and demand over a 25-year time horizon
  - Range of options available
    - Demand Management (Water efficiency)
    - Supply pipe leakage
    - Metering policy
    - Leakage management
    - Treatment Works process losses
    - Raw Water distribution losses
    - New Sources of Water
  - Water Resource plan balances the costs and benefits of all these options to obtain the most cost beneficial plan
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- Diagram illustrating the classification of water resource options:
- Retail**: Demand Management (Water efficiency), Supply pipe leakage, Metering policy
  - Distribution**: Leakage management
  - Treatment**: Treatment Works process losses, Raw Water distribution losses
  - Resources**: New Sources of Water

# Water Resource Planning

- Optimal plan involved a wide range of activities



- Overall cost of plan would have been much higher based on a narrower strategy
  - New sources only - NPV cost £180m greater for Bristol (1.1m people)

# Water Resource Planning

- What if business were vertically disaggregated?
  - Optimal solution would be very difficult to achieve
- Clear analogy with difficulty South East England water companies have in optimising cross border transfers to minimise overall cost of matching supply and demand in the South East
- Discussion of regional system operators has emerged as a method to address optimising resources between geographical areas – vertical separation may result in a greater potential increase in costs

# Water Quality

- DWI (& WHO) approach to managing water quality is to develop integrated water safety plans that assess risk from source to tap
- Such plans are more difficult to undertake in a vertically separated industry
- Management of lead. Options include:
  - Orthophosphate dosing (treatment – but negative impact of phosphorus in waste water)
  - Replacement of lead CPs (Distribution)
  - Replacement of lead SPs (Retail/Distribution?)
  - Replacement of customer plumbing (Retail)
- Integrated approach will be least cost

# Smart Metering

- A meter that could inform a Company that there was a leak on a supply pipe immediately could allow a significant reduction in leakage – this is a significant benefit where water resources are an issue
- Estimated costs and benefits
  - Annualised cost of meter £11
  - Reduced meter reading and call handling costs £4
  - Marginal cost of water saved £1
  - Value of additional headroom (source deferral) £8

# Smart Metering

- Impact of vertical separation

|                   | <b>Cost</b> | <b>Benefits</b> | <b>Viable</b> |
|-------------------|-------------|-----------------|---------------|
| Retail            | 11          | 4               | No            |
| Distribution      | 11          | 1               | No            |
| Resources         | 11          | 8               | No            |
| <b>Integrated</b> | <b>11</b>   | <b>13</b>       | <b>Yes</b>    |

- Although meter is overall cost-beneficial – it will not be implemented in a disaggregated industry without an external imposed requirement
- Could the market solve this issue? – UK energy sector suggests that this does not happen in practice

# Conclusions

- Three key challenges identified for water industry over next 20 years
- For each of these, vertical separation will make identification and implementation of optimal solutions more difficult
- Evidence from other industries shows market solutions to 'correct' for vertical separation may well be ineffective
- Energy markets show Regulatory/Government action may be required to try and reintroduce benefits of integration