

# Engineers Ireland

Cork Region  
Annual Seminar

## Engineering Water Services Reform

Rochestown Park Hotel, Cork, 20<sup>th</sup> March 2013

# **Engineering Water Services Reform**

**Municipal Market Changes: Opportunities and challenges –  
An international contractor's perspective**

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# Introduction

- Irish Water sole responsibility for water services provision in the state.
- Replacing 34 Local Authorities
- Changes for all stakeholders
  - Local Authorities
  - Suppliers – Contractors and Consulting Engineers
  - Customers – meter installation and payment
- View from Contractor
  - Local presence and track record
  - International scope

# Content

- Overview of Veolia Water
- Brief description of Irish Contracting Market
- Overview of PPP contractual models around the world
- Examples of services provided to large water authorities worldwide

Hopefully:

- NOT a party political broadcast for Veolia Water
- Will present a fair and balanced view



# Veolia Environnement



Provides the entire range of environmental solutions

## WATER

Provision of Water Services  
**€12.1 billion**

## ENERGY SERVICES

Energy optimization  
**€7.5 billion**

## WASTE MANAGEMENT

Waste management and resource recovery  
**€9.3 billion**

## TRANSPORTATION

**€8 billion\***

**2011 Revenue : 34.8 bn euro Headcount : 317,034**

\*Revenue generated by Veolia Transdev



# Veolia in Ireland



IRELAND

## WATER

€33 million,  
140 employees

## ENERGY SERVICES

€76 million,  
411 employees

## WASTE MANAGEMENT

€20 million,  
39 employees

## TRANSPORTATION

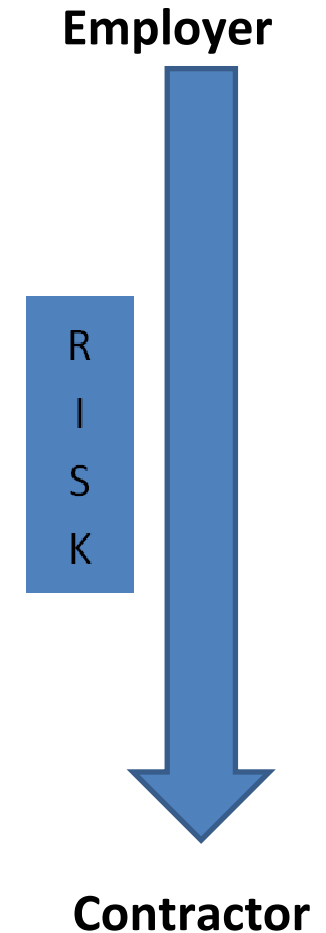
€49 million,  
292 employees

**2011 Revenue : 178m Euro Headcount : 926**

# Irish Contractor Market

## Evolution of Irish Water Services Market

- MF1 contracts – Consultant designed, Contractor built, Employer Operated
  - High Claims, conservative design
- Design Build Contracts – Contractor DB, Employer Operated
  - Lower claims, operating risk remains with Employer
  - GCC Contracts move more risk to Contractor
- DBO Contracts – Output responsibility to Contractor, Operations informs Design



# Waste Water Breakdown

CLASS OF AGGLOMERATION	NUMBER	TOTAL POPULATION EQUIVALENT (P.E.)	% OF TOTAL POPULATION EQUIVALENT (P.E.)
500 to 1,000 p.e.	188	132,804	2.3
From 1,001 to 1,999 p.e.	125	190,491	3.3
From 2,000 to 10,000 p.e.	113	543,500	9.3
From 10,001 to 15,000 p.e.	19	240,307	4.1
From 15,001 to 50,000 p.e.	25	604,739	10.4
From 50,001 to 150,000 p.e.	10	930,321	15.9
150,001 p.e. and above	2	3,193,333	54.7
<b>Total</b>	<b>482</b>	<b>5,835,495</b>	<b>100</b>



## Irish Market

- Approximately 65 DBO contracts between water and wastewater
- Large number of sewage plants above 10,000 PE under DBO contract
- Most large water treatment plants still under LA operation
- 5 or 6 significant DBO contractors in the market
- Extremely competitive market in DB and DBO contracts currently

# IPPP Contracts

- Irish Water – potential for increased project scope
  - Geographically (across LA lines)
    - Fragmentation of existing DBO Contracts
    - Bundling of small plants around larger existing DBO plants
  - Scope of services
    - Underground assets
- Acknowledged level of investment required over next 10 years
- IPPP Contracts
  - Attractive to Water utilities
  - Bring in international expertise
  - Access to financing capability
  - Risk Management

## IPPP Contracts

- An IPPP is a cooperation between public and private parties involving the establishment of a mixed capital entity which performs contracts.
- Two methods
  - Capital held jointly by the Public and the private partner and awarding a contract to this newly founded public-private entity.
  - Participation of a private partner in an existing publicly owned company which obtained contracts by direct award in the past.

## Contractual PPP Forms

- European Commission communication (2008)
  - Public procurement applied to IPPPs
  - Enhance legal certainty
  - Assuage concerns regarding the participation of private partners in IPPP.

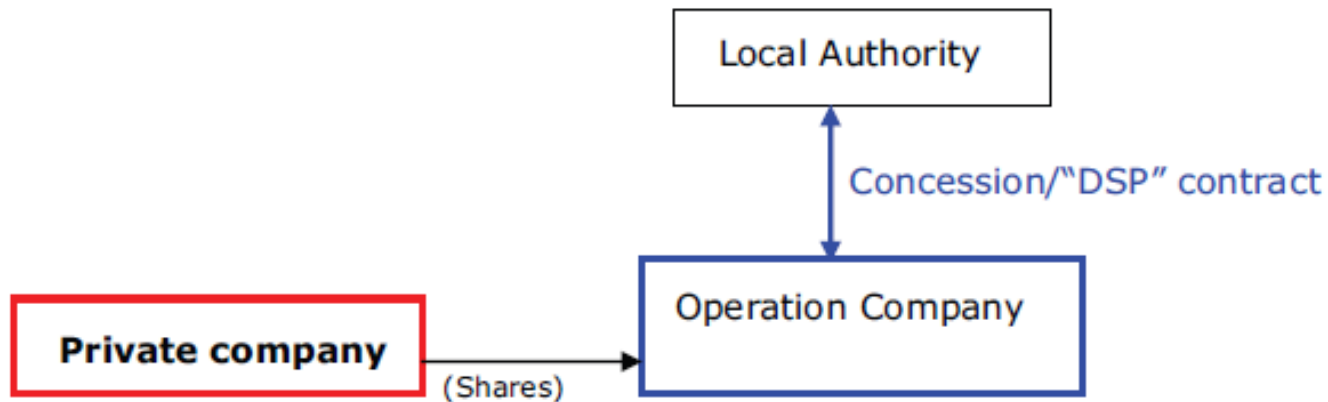
## Veolia Water IPPP forms

- Concession Contract
- DBO Contract / O&M Contract
- BOT/PFI Contract

# Concession Contract

## Concession "DSP<sup>3</sup>" Contract

### Contractual Scheme

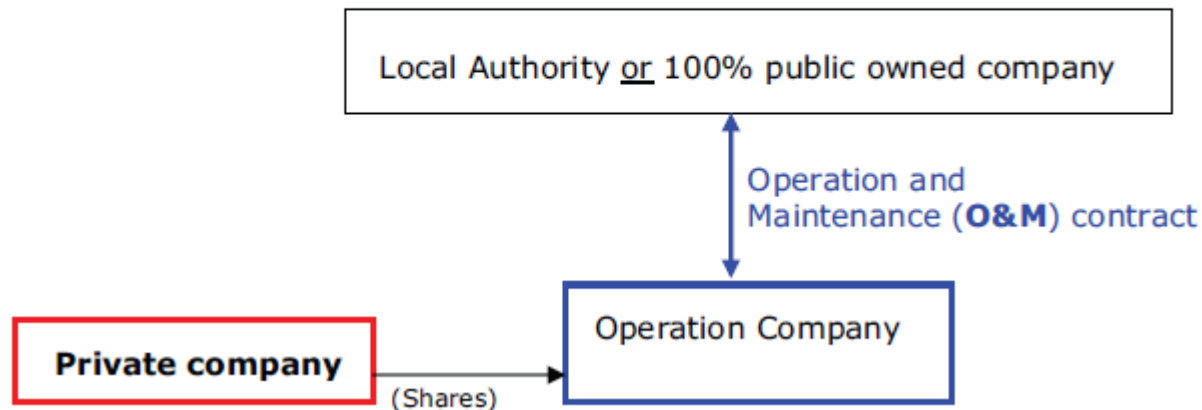


- Private company provides operational services in Operation Company.
- May include Sewerage, Potable Water
- Includes metering, invoicing, **collection** to fund services
- Tariffs set by LA, money goes to Operation Company
- Differing levels of investment required by Operation Company
- France, Spain, Italy, Romania, Gabon

# DBO/O&M Contract

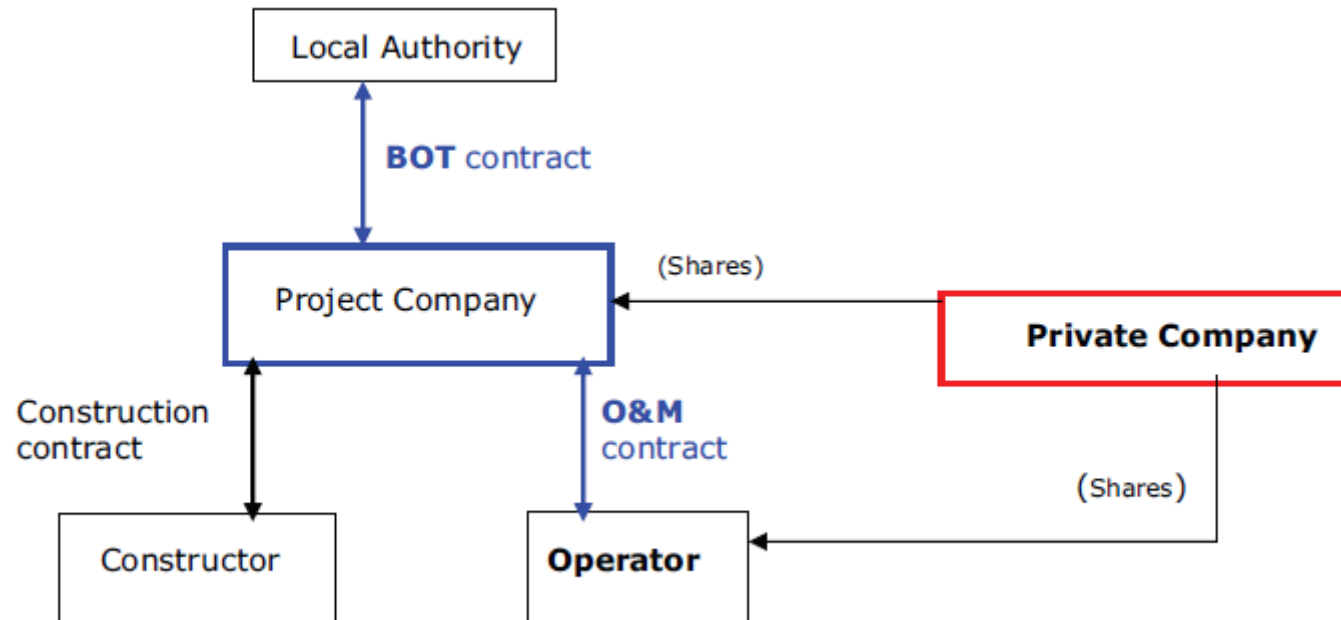
## Operation and Maintenance (O&M) Contract

### Contractual Scheme



- Private company provides operational services in Operation Company.
- May include Sewerage, Potable Water
- May Include metering, invoicing, collection but monies retained by LA
- Operation Company has defined fees and levels of investment required set out in O&M Contract
- Ireland, USA, Germany ,Spain

# BOT Contract



- Complicated corporate structure
- Financing required – minimum size project to be feasible
- Project Omega in Northern Ireland, Belgium, Holland

# Example of Veolia Water O&M Contract Treatment and Distribution



# SEDIF

## Syndicat des Eaux d'Ile-de-France

- Founded in 1923 to produce and deliver drinking water
- SEDIF today :
  - Covers 144 cities located on the outskirts of Paris
  - Supplies 4 million customers (almost 40% of Ile de France)
  - Produces 270 millions m<sup>3</sup>/yr (800 000 m<sup>3</sup> distributed/day)
- Main Assets :
  - 3 water treatment plants (Choisy, Marne, Mery-sur-Oise)
  - 48 relay plants
  - 8 700 kilometres of pipes

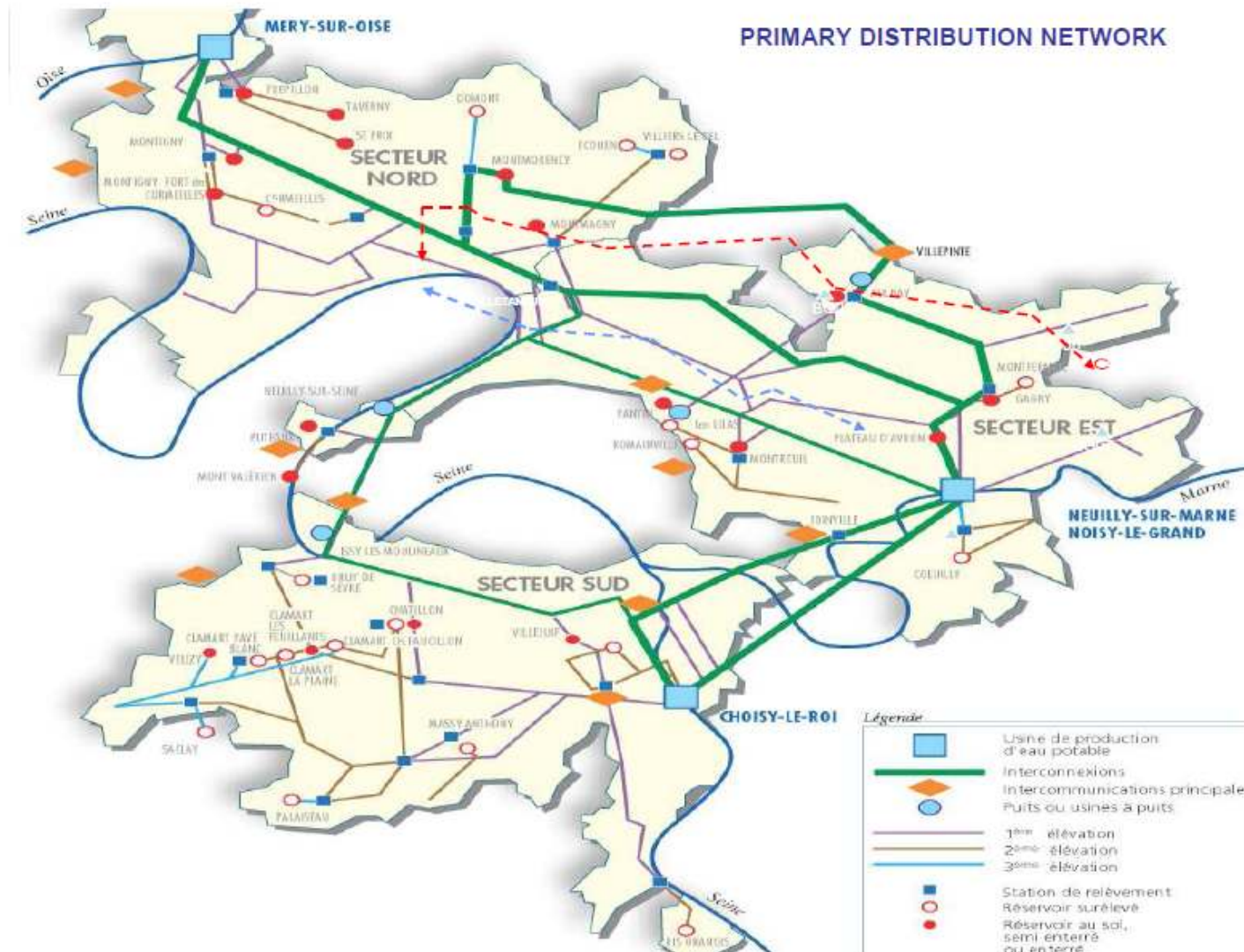


# Veolia & SEDIF

- The third party operating contract with V eolia Water is set to end in 2010 (Dec. 31<sup>st</sup>)
- Operator in charge of :
  - Production and distribution
  - Monitoring and maintenance
  - Controlling water quality
  - Customer service



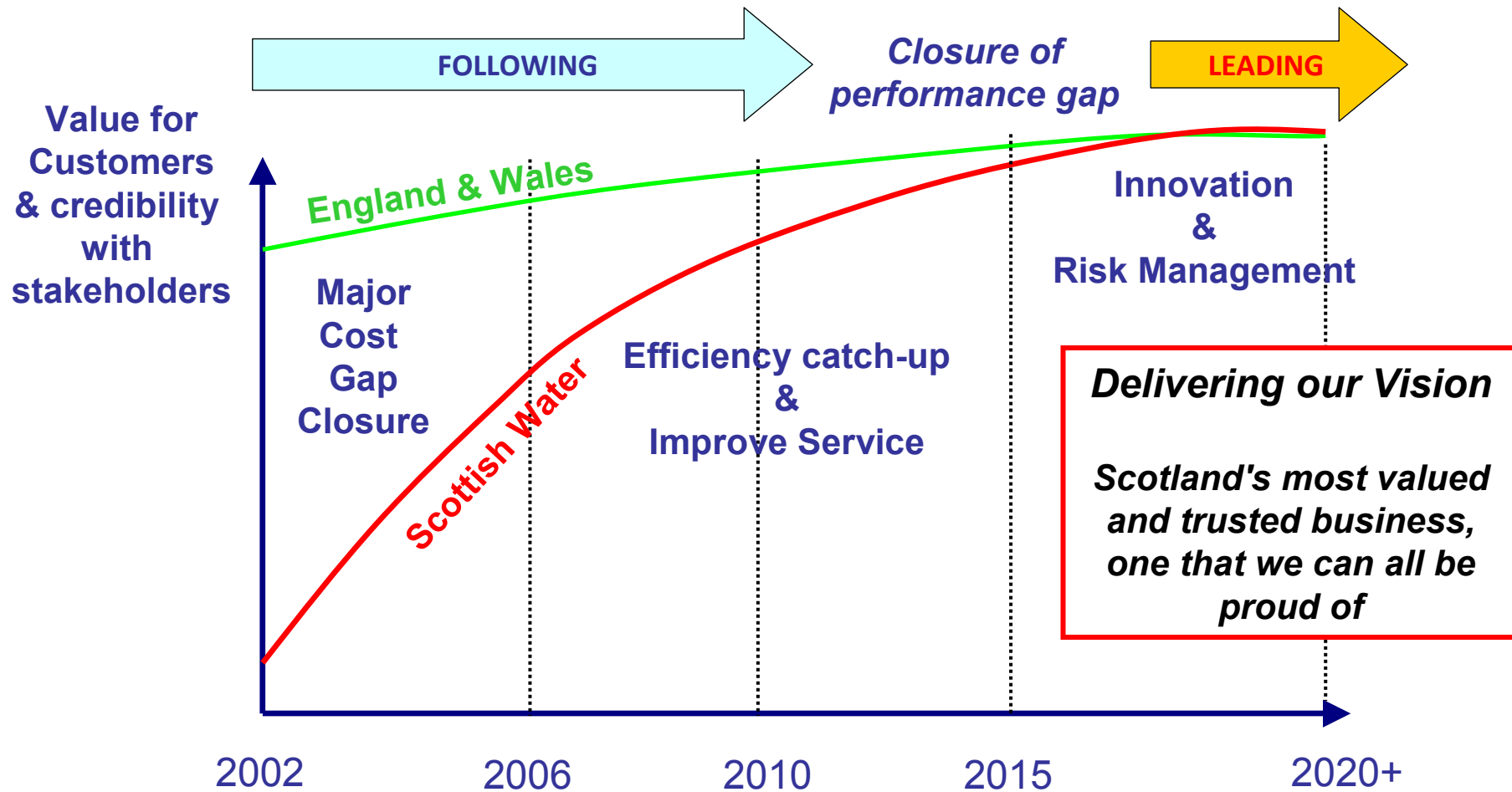
# SEDIF ASSETS



# Scottish Water

- Founded in 2002 by the merger of 4 separate water authorities
- 2.2 million customers
- 2.3 Billion litres of potable water per day
- 1 billion litres of wastewater treated
- Since 2002, has made 40% operational savings
- Water cheaper than England and Wales average
- Significant outsourced O&M and capital delivery

# The Drivers for Innovation for Scottish Water Scottish Water's Journey to the Frontier



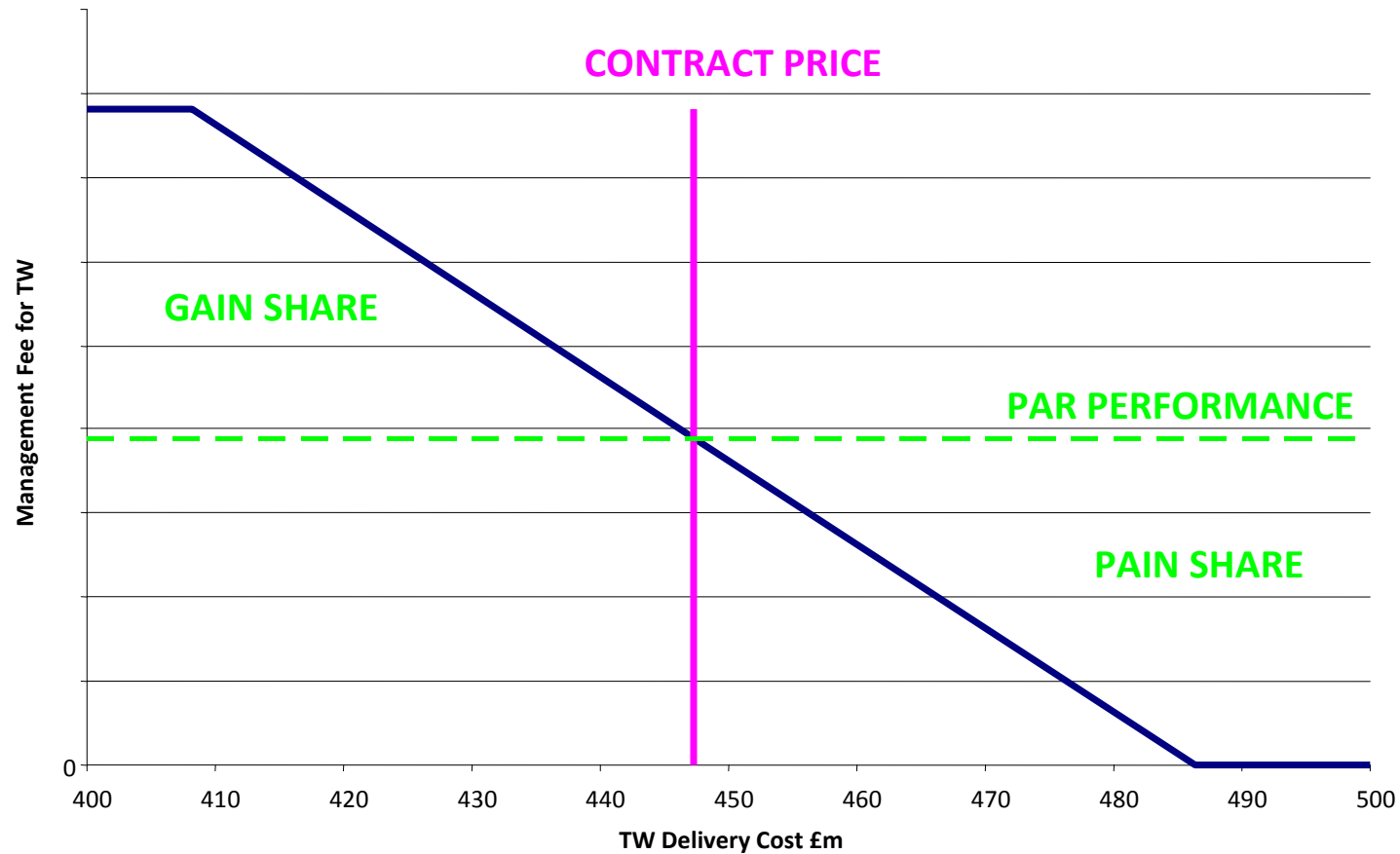


# Capital Delivery Innovation – Scottish water Solutions

- **Joint Venture**

- Parties: Scottish Water (51%), Veolia Water (20%) (Operations), Jacobs (15%)(Design), Laing (15%) (Construction)
- 2010 through 2015
- Delivering £500 million in capital upgrades covering 280 projects (foul and clean water)
- Provides Capital delivery for Scottish Water by Contractor who is incentivised to procure best value
- 80% of project value out-sourced
- 20% of project value – self delivery by VW/Jacobs/Laing
- Consortium is incentivised to improve procurement systems, modular design, standard products, process innovation etc
- Consortium has lessons learned:
  - Operational improvements of plants can minimise capital investment
  - Collaborative working and Core Teams/Tiger Teams produce savings

# Capital Delivery Innovation – Pain/Gain Share Arrangement



# Massachusetts Water

## Resource Authority

- Provide wholesale water services for 61 communities
- Established in 1984
- 2.5 million people served
- Water and Sewerage
- Operates its own utilities
- Manages its own construction projects

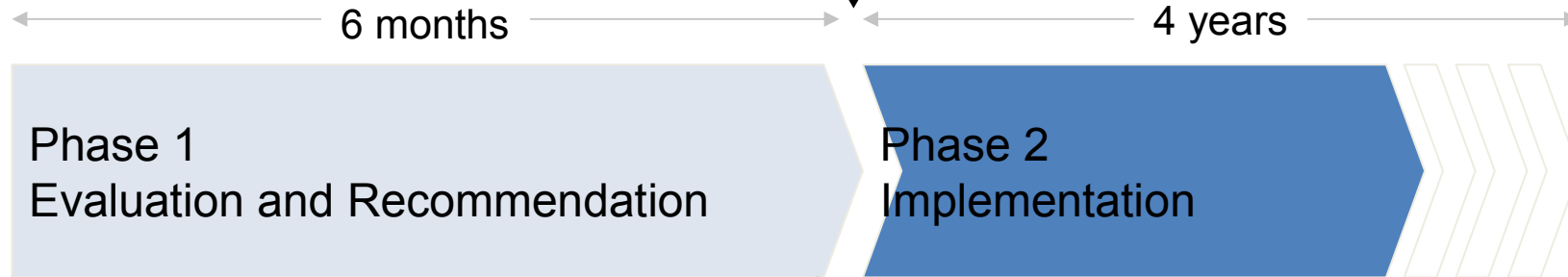


# New York Operations Optimisation

- NY currently spends roughly \$1.2 billion annually on operations and maintenance and aims to achieve \$100 to \$200 million in annual savings through the program
- The success of this program requires the help of the unions that represent the nearly 6,000 employees involved in Water and Waste Water services
- Veolia Water hired to develop recommendations to streamline workflows, boost productivity, identify opportunities for efficiency gains, and keep future water rate increases as low as possible.
- The Veolia team includes McKinsey & Company and ARCADIS, both serving as subcontractors.

# New York Operational Excellence

April 2012



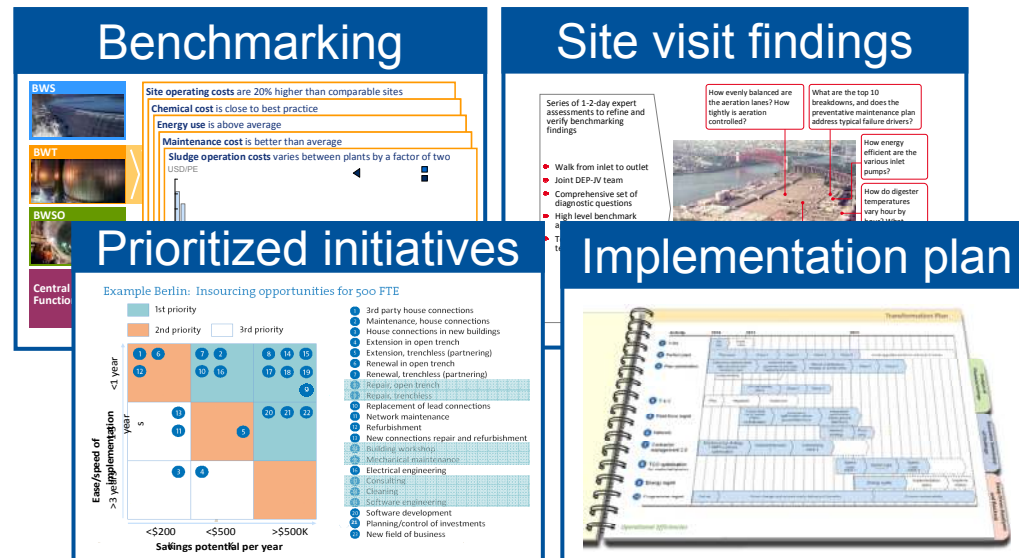
**Phase 1**  
Evaluation and Recommendation

**Phase 2**  
Implementation

Goal of Phase 1 is to identify initiatives that

- Reduce cost by ~\$100-200m annually
- Improve or maintain DEP's service quality
- Are actionable and ready to be implemented in Phase 2
- Are genuinely owned by DEP, with the organization aligned and committed to implementation in Phase 2

Key deliverables for Phase 1 include:



**Benchmarking**

- Site operating costs are 20% higher than comparable sites
- Chemical cost is close to best practice
- Energy use is above average
- Maintenance cost is better than average
- Sludge operation costs varies between plants by a factor of two

**Site visit findings**

- Series of 1-2-day expert assignments to refine and verify benchmarking findings
- How evenly balanced are the aeration lanes? How tightly is aeration controlled?
- What are the top 10 breakdowns, and does the preventative maintenance plan address typical failure drivers?
- How energy efficient are the various inlet pumps?
- How do digester temperatures vary hour by hour?
- Walk from inlet to outlet
- Joint DEP-JV team
- Comprehensive set of diagnostic questions
- High level benchmark

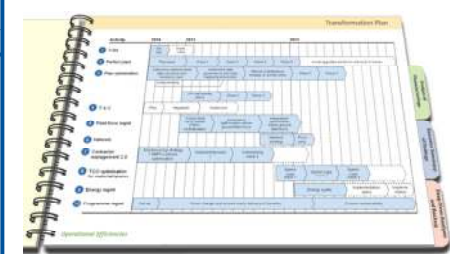
**Prioritized initiatives**

Example Berlin: Insourcing opportunities for 500 FTE

Year/Speed of Implementation	<\$200	<\$500	>\$500K
<1 year	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50	51, 52, 53, 54, 55, 56, 57, 58, 59, 60
1-3 year	61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100	101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150	151, 152, 153, 154, 155, 156, 157, 158, 159, 160
>3 year	161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200	201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250	251, 252, 253, 254, 255, 256, 257, 258, 259, 260

- 3rd party house connections
- Maintenance, house connections
- House connections in new buildings
- Extension in open trench
- Extension, trenchless (partnering)
- Renewal in open trench
- Renewal, trenchless (partnering)
- Repair, open trench
- Repair, trenchless
- Replacement of lead connections
- Network maintenance
- Refurbishment
- New connections repair and refurbishment
- Building workshop
- Mechanical maintenance
- Electrical engineering
- Consulting
- Cleaning
- Software engineering
- Software development
- Planning/control of investments
- New field of business

**Implementation plan**



## Summary

- Contractors see IW establishment as potential opportunity in Irish market
- Opportunity depends on level of outsourced services required by IW
- Globally – spectrum of services - from Concessions to Optimisation services
- Level depends on economic and political decisions
- In Irish market, significant expertise is found amongst Contractors – Full DBO
- Given level of investment needed, we see opportunities to grow within the market

# THANK YOU