The key elements to achieve effective, efficient and sustainable water services

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Beijing 30-31 October 2005

Structure of Presentation

- The challenges facing China
- Meeting these challenges
  - Through sound policies
  - On the ground
- Key elements for success based on experience around the world
- The UK and Chile
- Benchmarking
- Summary

The Challenges

- Water resources to meet
  - Growing urbanisation
  - Rural population needs
- Safe drinking water
- Sanitation for all without adding to pollution
- Cleaning up the industrial water environment
- Planning, financing and delivering the above in a sustainable way

Meeting these Challenges

- Meeting these challenges requires many things, including high quality management, the best technology, and cost effective systems, but for this to happen
- Best international practice indicates that there are some key elements which need to be in place

Key elements for success

- Sound transparent policies with clarity on responsibilities
- Separation between those responsible for policy, regulation and delivery
- Independent regulators
- Public participation and transparency
- Integrated planning and tariff fixing
- Full cost recovery
- Performance measures in benchmarking scheme with periodic reviews of tenure

Separation between Policy, Regulation and Delivery

- Government's role is policy and generally governments are poor at managing operations
- Independent regulation brings objectivity and transparency
- The separation of delivery allows the employment of good operational managers, whether public or private who can concentrate on providing an efficient and effective service

Independent Regulation

- A regulator is required to implement policies and enforce regulations
  - In a wholly objective way
  - Without political interference
- A regulator has to achieve the trust of
  - The general public
  - The water services providers
  - Investors
- This is not possible without
  - Absolute integrity
  - Complete autonomy
  - Free access to independent media
  - Ability to report fully and openly

Public Participation

- Public participation is essential
  - So that the people who pay understand the reasons for policies and why the services have to be paid for
  - So that consumers are conscious of the need for water conservation
  - To ensure transparency where poor practice and results can not be hidden – thus helping to develop good performance and customer service

Planning and Tariff Setting

- A need for an integrated planning process which determines
  - Increased access to water servicesfor next period
  - Water quality improvements for next period
  - Other consumer service targets for period
  - Management efficiency targets for period
  - Level of investment for period including that required on refurbishment of assets
  - Water service charges for period
- This should be a transparent process with public participation

Full-cost recovery

- The cost of water services has to be recovered through a combination of charges and subsidies
- Full-cost recovery should include not only operational costs but also provision for asset maintenance and replacement
- Subsidies are often necessary for the construction of new assets but have been shown to be unreliable in covering ongoing costs, with the resultant decay of service and systems
- Operational subsidies are often unfocussed and benefit the 'rich' who use more water

Example

- Ukraine
  - Prior to Soviet Union – full cost recovery
  - Whilst part of the Soviet Union – cost recovery through charges only 2% (part of property rent) - consumption tripled and neglect of infrastructure
  - Post Soviet Union – utility charges now high proportion of disposal income to pay for refurbishment

Comparative Performance

- Performance Measures and Benchmarking
  - Part of important transparency
  - Has been shown (eg in the UK and the Netherlands) to give great stimulus to improved performance
  - No local authority or water service provider likes to be bottom of the 'football' league
- Have shown to
  - Improve performance of the public sector
  - Provide the framework for getting good results from the private sector

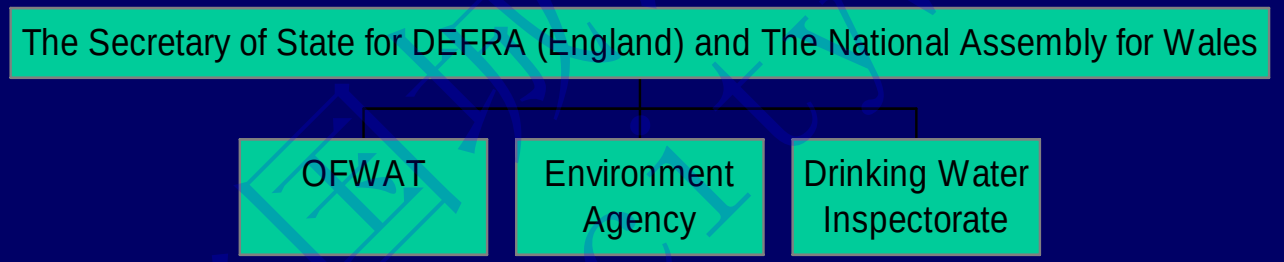
Licensing and Contracts

- Licences, whether public or private, should be for specified periods of time with renewal depending on performance
- Licence here is used in a generic form and includes
  - A licence as specified in, for example, UK law
  - A PPP contract
  - An internal municipal contract
  - Management performance contract
- Period reviews based on performance against published targets avoids complacency

The Examples of the UK and Chile

- The motivation for countries to move to full-privatisation is largely due to the successes in the UK and Chile
- In the UK (England and Wales) privatisation has brought the necessary investment in improvements to meet EU standards and vital investment in an ageing infrastructure
- Privatisation forced transparency and integrated periodic planning to achieve the required investment in water services

Water Regulation



OFWAT (The Office of Water Services) - The Economic Regulator

- Role is to ensure that the water companies give consumers a good-quality, efficient service at a fair price
- OFWAT has to protect consumers' interests, but at the same time ensure that the water companies are able to finance the required improvement programmes
- Costs around 3.5 rmb per consumer per year

OFWAT continued

- OFWAT
  - Sets price limits
  - Promotes economy and efficiency
  - Protects consumers
  - Operates a guaranteed standards scheme
  - Sets and audits leakage targets
- OFWAT also compares company performance using performance measures and benchmarking

Drinking Water Inspectorate

- Operates in England and Wales
  - in checking that water 'undertakers' are complying with regulations
  - in taking enforcement action as necessary
  - investigating incidents and prosecuting if warranted
  - in investigating consumer complaints
  - advice to Local Authorities on regulation of private water supplies
- Cost 0.4 rmb per consumer per year

The Environment Agency

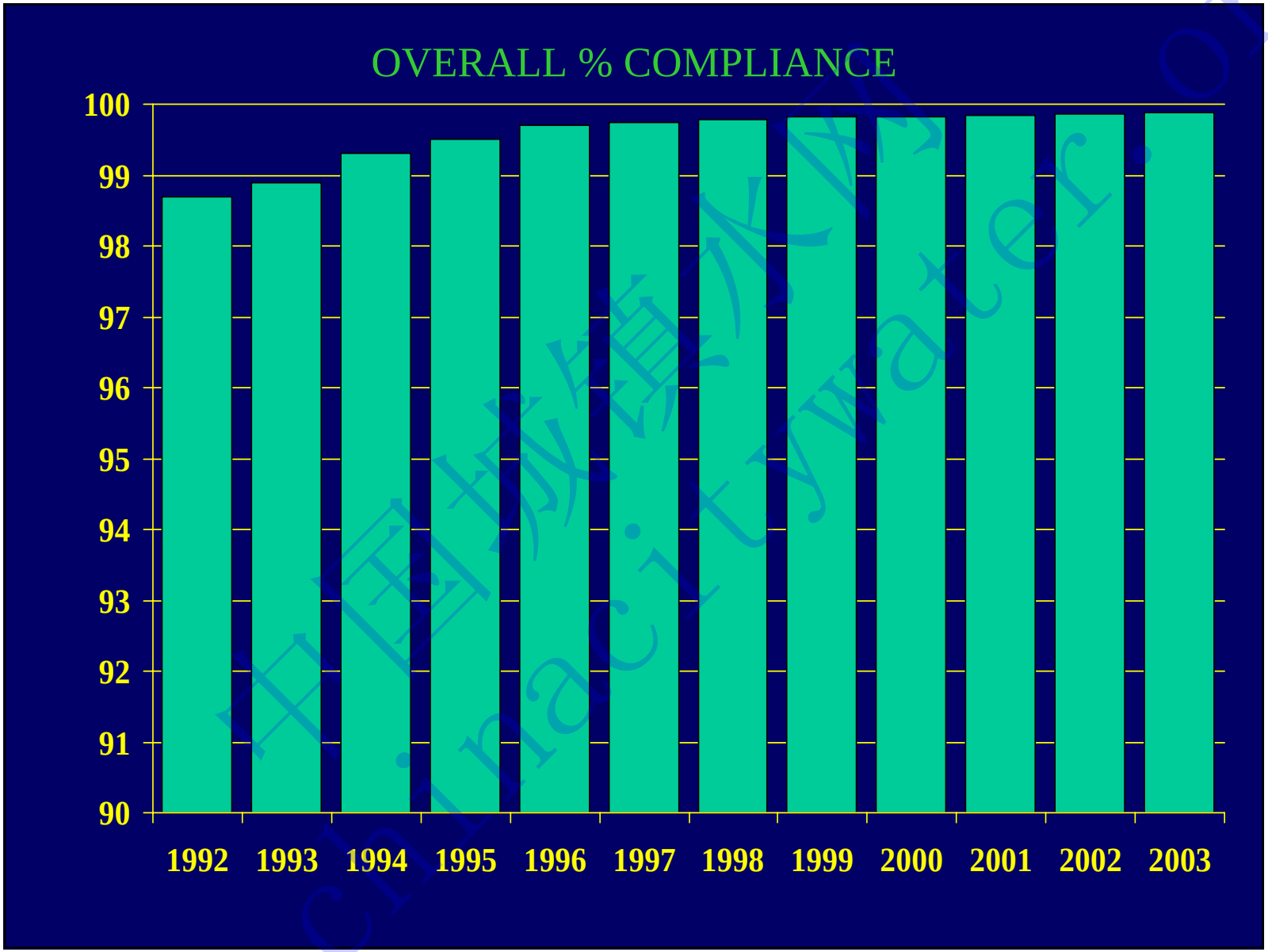
- Responsible for all aspects of environment
- On water it controls
  - Abstractions from all water sources
  - Discharges to the water environment
- Water companies are required to submit water resource plans to the EA
  - The plans show how companies will manage supply and demand over the next 25 years
  - The plans are reviewed annually

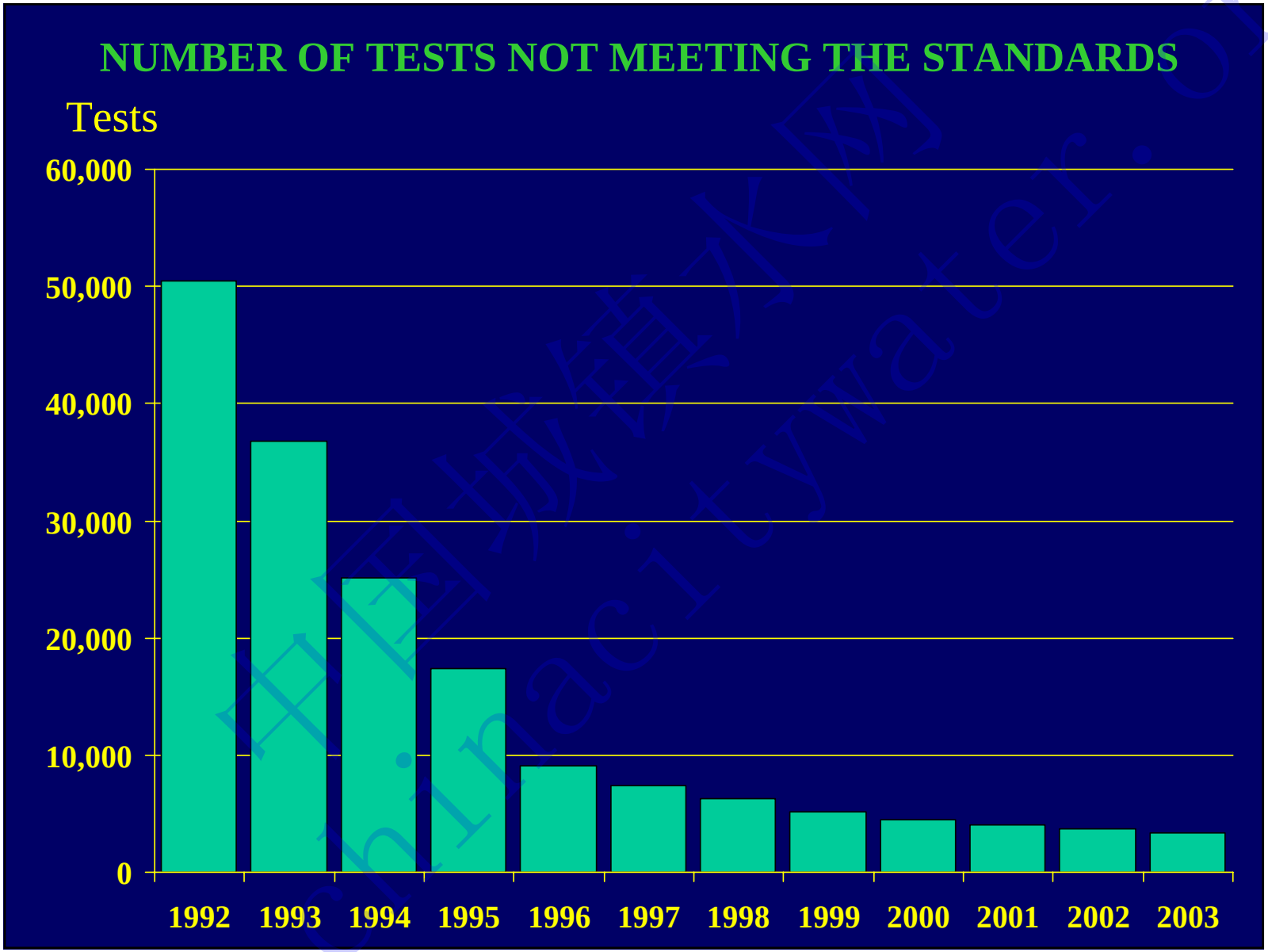
Periodic Planning Process

- The periodic planning process
  - Every five years
  - An iterative process
  - Considers ambitions
  - Determines realistic steps for progress
- A formal and transparent process
  - Government – considers range of objectives
  - Good consultation with consumers – costs and benefits
  - Co-operation between regulators and water utilities in working up details
  - Government finalises objectives – regulators implement the programmes and monitor performance

Success in England and Wales

- The approach has resulted in the necessary investment to fund
  - The necessary improvements to meet higher drinking water quality standards
  - The required improvements to the water environment both on rivers and coastlines
  - The refurbishment of previously neglected distribution systems




NUMBER OF TESTS NOT MEETING THE STANDARDS
Tests
60,000
50,000
40,000
30,000
20,000
10,000
0
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003

Success Continued

- Similar success in achieving water environment objectives
- £50 billion (around 750 billion rmb) investment programme (1990-2005) for 50 million people
- Prices have risen by around 30% in real terms but it is estimated that, without efficiency savings, prices would have had to increase by a further 40%
- In my view the excellent results have been achieved through
  - The strong and transparent regulatory system, and
  - Private sector driven efficiencies in the context of comparative competition through benchmarking and league tables

Chile

- The Government decided that
  - Privatisation was necessary to achieve the desired improvement in utility performance
  - But that it needed to establish strong and independent regulation first
- The Regulator
  - Was given greater powers
  - Its funding was changed to a levy on water companies
- Privatisation would take place
  - By sale of equity to large private investors, and
  - Through the Stock Market

Privatisation

- Government retained 35% of the equity and created veto powers on conveyance of assets
- Later, with a change of government, the from of privatisation was changed to concession contracts with the assets remaining in government ownership
- The privatisation programme has raised $1 billion capital for investment in the systems

The Regulator

- Regulation is modelled on OFWAT in the UK with similar powers and autonomy, including
  - Tariff setting
  - Monitoring of development plans, drinking water quality and other service standards
  - Resolving disputes between companies and consumers
- However, it does a lot more including
  - Monitoring concession contracts
  - Establishing and monitoring compliance with technical standards
  - Control of discharges to the water environment

Social Policy

- Priority given to access for the poor
  - Between 1987-1995 half of all new connections for poor in urban areas
  - Municipalities fund extensions to distribution systems
  - Poor people can pay for their access charge in up to 60 instalments
- Subsidies on water bills
  - Means test – register of people eligible for subsidy
  - Consumers receive full normal bill
  - Bill taken to Local Authority where consumers pay their agreed amount with the remainder paid by LA

Achievements

- Number of water supply connections increased by 66% over the period 1986 and 1997 with emphasis on the poor
- Leakage levels were reduced from 40% to 20%
- Number of pipe bursts per kilometre of water main reduced by 40%.
- Number of employees per 1000 water supply connections reduced from 2.45 to 1.76, a reduction of 28%.

Benchmarking

- Word often used now to refer to comparative performance measure
- True benchmarking is comparing an operation with 'best in class', item by item, so that improvements can be made – this is a management tool
- The terms metric and process benchmarking used to differentiate between league tables and the management tool respectively
- A regulator should publish comparative performance to stimulate improvements

Benchmarking

- In practice the high-level measures, used for metric benchmarking, and the many more more-detailed ones used for process benchmarking, can be considered as a continuum
- There is a hierarchy of measures covering both types of benchmarking
- IWA has published valuable books on performance measures for water and wastewater

Starting – keep it simple

- In establishing a performance measurement system, it is necessary to select a few high level measures based on ***key policy objectives***
  - Start with some key measures eg
    - Treatment works throughput
    - Quantity of water billed
    - Revenue collection
    - Basic drinking water quality
    - Asset condition – number of bursts
  - Concentrate on consistent and reliable data
  - Experience will identify need for the next level of information

A hypothetical example

Suppose the objectives are

1. To improve revenue collection
2. To increase water supplies by
    1. Increasing input through works and
    2. reducing leakage
3. To achieve higher efficiency in operations

Objective 1 would be assisted by a performance measure on non-revenue water

Objective 2 would require measures of total water leaving works and total metered water

Objective 3 would need a number of measures including total operating costs and the number of staff per 1000 consumer connections

Beware of pitfalls

- Cost savings can be made by ‘cutting corners’ and not meeting water quality requirements
- So always necessary to have audited water quality measures to ensure that safe water is being delivered
- Benchmarking needs to be managed by an independent regulator to ensure consistent and reliable data

Summary

- There are some key elements for success
- Success in the UK and Chile achieved by meeting these key requirements
- There is a need for an independent regulator to set up and manage these key elements
- Metric benchmarking, as one element, is an important tool in meeting objectives and driving efficiency
- I finish by repeating the key elements

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