

Sustainability - A Scottish Water Perspective

Royal Academy of Engineering
Visiting Professors Scheme
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Scottish Water as a business

- Set up April 2002
- 4th largest water utility in the UK
- 2.5 billion litres of water a day to 5m customers and 136,000 businesses
- Top 12 business in Scotland by turnover
- Employ 4,500 people
- Single largest dam owner UK (299 reservoirs)
- 4th largest transport fleet in Scotland (2,100 vehicles)
- In top 5 energy consumers in Scotland
- £1.8bn programme: currently one third of Scotland's engineering construction

Why was Scottish Water set up?

- **Harmonised prices and service**
- **More efficient OPEX and CAPEX**
- **Ability to prioritise investment across Scotland**
- **Better VFM for customers**

Targets set for Scottish Water 2002-2006

- Reduce OPEX by 40% (£150m savings)
- Deliver £2.3bn of outputs for £1.8bn (£500m savings)
- Improve service to customers
- Contribute to sustainable development

How have we approached the challenge?

- **Set up Asset Management in a novel model**
- **Created a unique partnership for the development and delivery of the Capital Programme**
- **Huge change programme across all activities**

Asset Management



- **Central to philosophy creation of Asset Life cycles for all assets**
- **Driven by customer value**
- **Based on current and future beneficial use of asset (20 years)**

Scottish Water Solutions



- **Joint Venture with eight companies**
- **Pain / Gain mechanism at programme level encourages partnership working**
- **Significant reduction in non value add overheads**
- **No claims / risk management**

Legal Obligation

- Scottish Water established by Water Industry (Scotland) Act 2002
- Section 51 states:
“ Scottish Water must, in exercising its functions, act in the way best calculated to contribute to the achievement of sustainable development.”

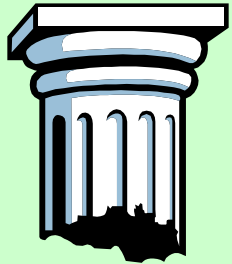


Managing Sustainable Development in Scottish Water

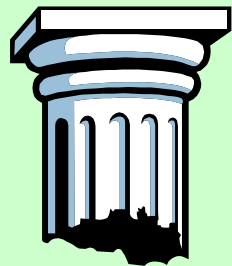


- **Sustainable Development Advisory Group chaired by Professor Paul Jowitt to promote and review progress**
- **Cross business membership of Group**
- **External Members from Scottish Natural Heritage, WWF Scotland, Water Customer Consultation Panels**

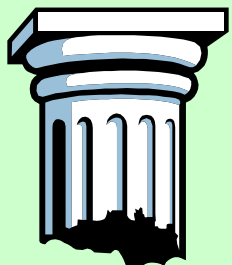
3 Pillars of Sustainable Development



• **Environment**



• **Economy**



• **Society**

+ prudent use of
natural resources

- **Scottish Water must consider all 3 in its business activities and in its engineering designs**
- **Challenge is to translate objectives and priorities into workable policies and engineering solutions**

Scottish Water's 10 Policy Commitments

Economic Progress

Communication

Staff

**Water
resources**

Stewardship



**Public
health**

Partnerships

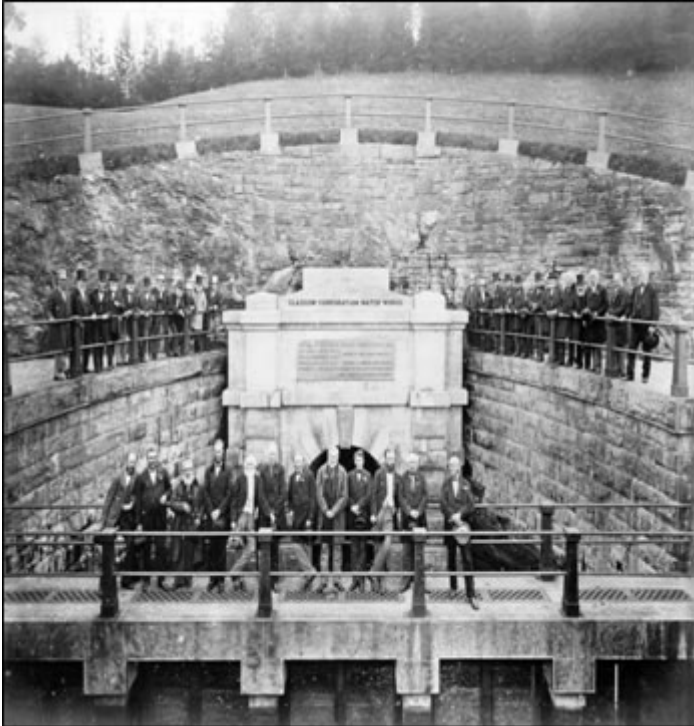
**10 Key Commitments
linked to Action Plan**

Energy

Resources

Environment

Impact on Engineering



- Holistic view required
- Better understanding of the impact and risk
- Build 'em high and big - gone
- Need to move to BPEO (Best Practical Engineering Option)

Challenges

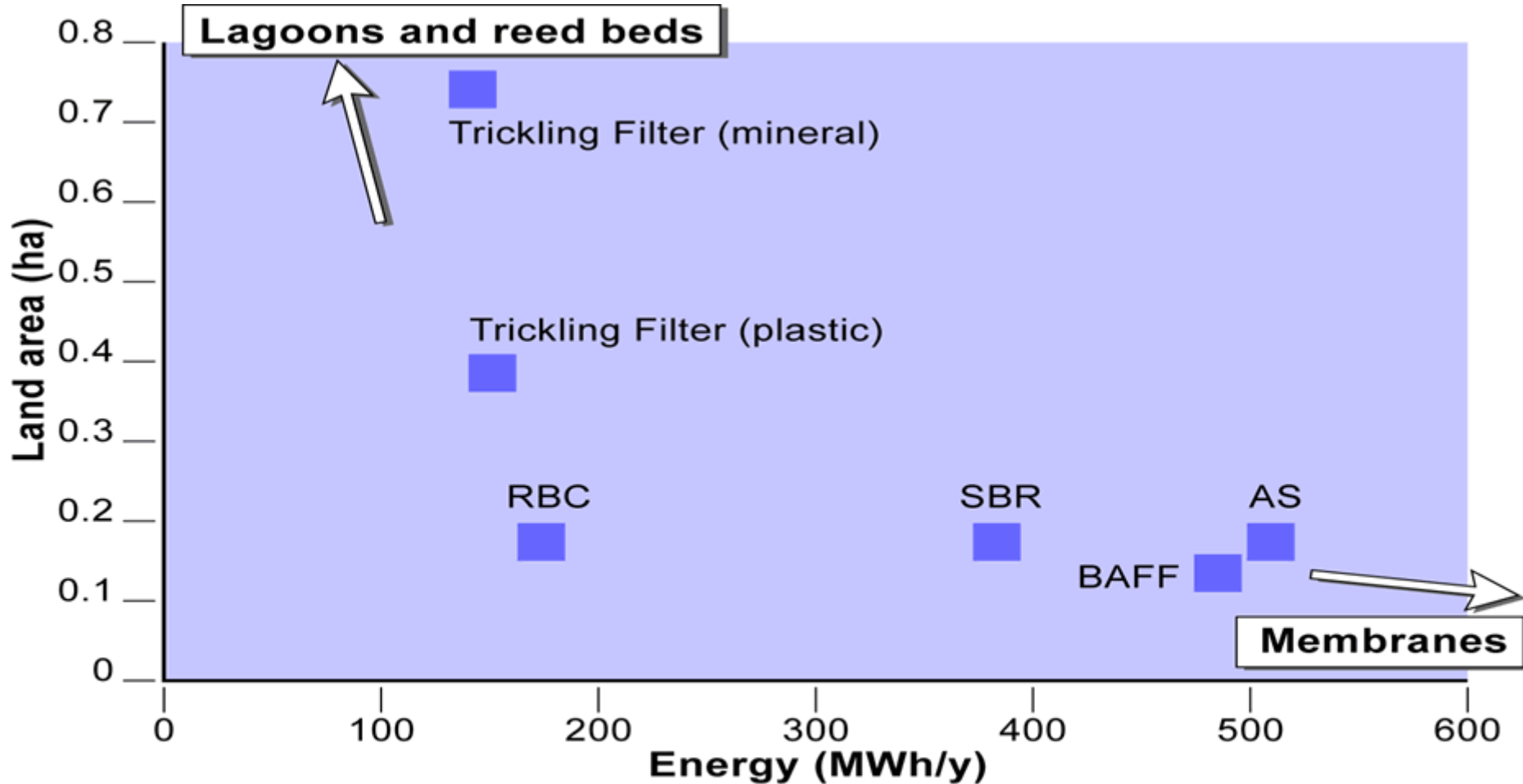


- **Environmental agenda driving up costs to customers - creates affordability issues**
- **Regulation does not reflect sustainability - CAPEX / OPEX not NPV**
- **Demand management difficult to get across**
- **Climate Change - most people don't believe it's happening**

Challenges

- **Legislation drives in the wrong direction**
- **Bathing Water Directive etc etc**
- **Fish are becoming more important than people - is this right?**
- **THE BALANCE BETWEEN REGULATION / SUSTAINABILITY AND AFFORDABILITY OUT OF BALANCE**

Best practicable sustainable option tool



UKWIR Report: "Tightening WwTW Emission Standards",
 Based on WwTW treating 12,700 pe to 10m g/l SS, 5m g/l BOD, 1m g/l Am m N

What skills do Engineers need for the future?



- **Commercial skills**
- **Risk Management**
- **Understanding sustainability**
- **People / Partnering skills**

Commercial Skills



- **Clear understanding of how modern business works**
- **Impact of regulation**
- **Asset life cycle**
- **Far better forecasting of time and money**

Risk Management



- Move from ‘build’ yourself out of risk to ‘think’ yourself out of risk
- Whole range of emerging risks e.g planning, sustainability, appropriate assets
- Ability to develop and manage risk mitigation plans



- Recognition of the stakeholder issues
- Understanding of the interplay of conflicting issues

People / Partnering Skills

- Different from relationship building
- Sharing common objectives
- Working in multifunctional teams
- Communication across/up/down partnering organisation and stakeholders
- Management skills are about people not technical issues

**And off course we need first class
engineering skills**

Summary



- **The world is changing rapidly**
- **Stakeholder 'rights' are becoming increasingly essential to manage**
- **A new set of skills are essential - not optional**