THE ECONOMIC CASE FOR BOOSTING SUPPLY RESILIENCE

£40 billion
The predicted cost of relying on emergency options such as road and ship tankers over the next 30 years.

£21 billion
The corresponding cost of building resilience over the next 30 years.

ACTION IS NEEDED TO ASSURE LONG-TERM SUPPLY

1. IMPROVE INFRASTRUCTURE
   through a national transfer network in England and new infrastructure, such as reservoirs and water re-use systems.

2. HALVE LEAKAGE
   20% of mains water currently lost each day

   1,400 M l
   Saved each day

3. REDUCE DEMAND
   from 141 litres per person per day to 118.

   ▼ 118 litres
Why focus on public water supply

- One in five surface water bodies and a third of groundwater bodies in England are under pressure due to water abstraction.
- About half of the freshwater abstracted in England is for public water supply.
- Managing public demand and creating resources to supply water even in periods of drought will also ensure that more water is available to accommodate the need of other sectors and the environment.
Capacity needed to cope with different droughts

- Currently not all companies are resilient to the “worst historic drought”, approximately a drought with 1% annual chance to occur.
- All regions would be in deficit during such drought by 2050.

![Maps showing additional capacity needed for different drought scenarios](image)

- Low population, Medium climate
- High population, High climate

Additional capacity needed (ML/day):
- 0 - 500
- 500 - 1000
- 1000 - 1500
- 1500 - 2000
- 2000 - 2500
Capacity needed to increase resilience

- 3,000 Ml/day are needed to maintain 1% resilience – running to stand still - whilst 4,000 M/day would increase the resilience to 0.2%.
The case for increasing resilience

- Building additional resilience to drought (£18 - £21 billion) is less costly than providing water during an emergency (£25 - £40 billion).

- The Commission recommended that government ensures additional supply and demand reduction of at least 4,000 Ml/day, roughly corresponding to resilience to extreme drought (0.2%).
Cost effectiveness of a twin-track approach

- The costs of providing resilience through business-as-usual demand and leakage policies are higher than the costs of a “twin track” approach.

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**Chart:**

- **Severe Drought - Low population and medium climate**
- **Extreme Drought - Low population and medium climate**
- **Severe Drought - High population and high climate**
- **Extreme Drought - High population and high climate**

**Legend:**
- **Costs of increasing resilience assuming business as usual demand and leakage**
- **Costs of increasing resilience assuming 50% leakage and widespread smart metering**
Recommended package

- Thus recommended a twin-track demand and supply package that breaks down 4,000 M/l day needed into:
  - 1,400 Ml/day from leakage reduction
  - 1,300 Ml/day from demand management and
  - 1,300 Ml/day from new infrastructure.
Leakage reduction costs and benefits

- About 20% of water put into the system is lost through leakage.
- Reducing leakage is costly but provides wider benefits, improving reliability and customer attitudes to reducing consumption.
- Costs are highly uncertain, especially for the greatest reduction.
- A clear target should incentivise technological innovation, which in turn should drive down costs.
Leakage recommendation

- Halving leakage by 2050 (grey line) is ambitious target but should be achievable if Defra provides consistent direction to the industry.
- It will be down to Ofwat to agree 5 year commitments for each company as part of the regulatory cycle.
Metering and efficiency

- There is a good case for enabling more widespread smart metering by the 2030s.
- Companies outside water stressed areas can currently only introduce meters in limited circumstances.
- Defra should enable all companies to implement compulsory metering and consider systematic roll out of smart meters as a first step in a concerted campaign to improve efficiency.
Impact on per capita consumption

• Recommendation based on daily consumption reducing to 118 litres per person per day by 2050 (grey line).
• This is 8 l/p/day less than WRMP14, considered “business as usual” (orange line).
• It is in line with Water UK’s “extended” scenario (green line).
Additional supply infrastructure

• Even with very ambitious demand management and leakage reduction, 1,300 ML/day of additional supply infrastructure would be needed as early as the 2030s.

• The best approach is likely to involve a combination of infrastructure options and the industry is well placed to determine the exact mix.

• The exception is water transfers. A more connected network increases resilience of the system because creates redundancy and increases optionality around further supply options.

• Despite this, transfers currently only make up a small proportion of total supply (about 4%).

• However, there are also risks, for example transfers can enable invasive species to spread, so options need to be considered on a case by case basis.

• The Commission recommended that Ofwat facilitates the delivery of 1,300 ML/day by the 2030s, maximising the potential for transfers.
Next steps

• The government will respond formally but initial indications are broadly favourable.

• Water companies have now submitted business plans and some amended water resources management plans.

• Need to look at the revised plans, but ambitions for overall drought resilience appear to have increased.

• Pleased that Water UK has taken up the challenge on leakage, but long term commitment will be needed.

• National modelling is being considered by the Environment Agency which should update and improve the strategic picture of needs, build capacity among regulators and help ensure consistent understanding.