The biggest challenge of our era is climate change. How people experience the physical impacts largely depends on how well we manage we manage water. That means:

* In flood – when there is too much water
* In drought – when there is not enough
* And when water is polluted.

Of these three, I am most concerned about water resources. But to grip the existential risk of supply and demand we will need to ask the public to do two things:

* Save water, and
* Pay more for it.

Getting people to make these changes means we must also discuss water quality - because we cannot ask for public cooperation unless the water sector can prove it is cleaning up its act.

The Environment Agency’s National Framework for Water Resources showed that by 2050: the amount of water available in England could be reduced by 10 to 15 percent, and some rivers could have between 50 and 80 percent less water during the summer.

Climate change and population growth mean the need for significant action grows every year. This risk is more acute in some areas than others: the South-East is already the driest part of the country. As more people choose to move there, we face difficult questions about the distribution of national resources.

2022 was the warmest year on record. During the 40-degree heatwave, demand for water increased by up to 50 percent and this led to short-term supply issues. If significant action is not prioritised, by 2050 around 4,000 million extra litres of water will be needed every day.

There are reasons to be optimistic. Since the early 2000s, Statutory Water Resources Management plans have helped us save over 300 million litres a day, despite seeing population rise by over 6.5 million during that time.

Also, water companies’ Water Resources Management Plans show ambitions to maintain supplies in extreme 1 in 500-year drought events by 2040. This is before the need for emergency measures such as rota cuts or standpipes.

I am also grateful for the water companies’ collaboration with the Environment Agency as part of the National Drought Group. But the pace of change now requires much more significant long-term investment to increase supply and reduce demand.

Everyone has a role: water companies, government, farmers, regulators, and the public. All must work together.

Water companies must:

1. Invest in capacity

The last reservoir opened in England, Carsington in Derbyshire, was in 1991 and the next one, Havant Thicket, isn’t planned to open until 2029. I grant that some others have been expanded in the meanwhile, but nevertheless this 38-year gap has left us more exposed to heatwaves and population growth. We also need to invest in transfers of water between regions of the country.

I’m glad that the Environment Agency is part of the Regulators’ Alliance for Progressing Infrastructure Development, set up in 2019, to improve regulation and help the sector respond to long term water resources challenges.

I am delighted that the draft plans for expenditure in AMP8 are significantly more ambitious in terms of the action and ambition required. I am aware that there are challenges around supply chains. We will work together with government and the sector to find solutions, but I am clear that the need for significantly more investment is pressing and absolutely necessary.

1. Accelerate action to reduce leakage

Water companies in England lost an average of 2,923.8 million litres of water a day in 2021-22, over a trillion litres over the year. Sorting this involves better management, preventative engineering, and the increased use of technology to spot leaks faster.

1. Regain the public’s trust.

We need people to change their habits. This is notoriously difficult.

The government is clear that if we want to ask the public to act, water companies must first get a grip on leakage. But, to meet future resource pressures, people need to reduce their water use by 33 litres a day – from 143 litres per day to 110.

England’s population is forecast to be around 67 million by 2050. 67 million people reducing average water usage down to 110 litres per person per day would save approximately 2,211 million litres of water per day. Roughly half of the 4,000 mega litres needed by 2050.

Water companies can help by imposing hosepipe bans earlier in hot, dry years. It’s essential that people reduce their water use and make water efficient decisions. Hosepipe bans make savings and also alert more people to the fact that water is a limited and precious commodity.

Water companies can also make metering, preferably smart-metering, compulsory where possible. Metering is proven to make people pay more attention to the amount of water they use. In the Environmental Improvement Plan the government has committed to increased smart metering for households and businesses through accelerated investment between 2020 and 2030. At the same time, families must be protected from unexpectedly large increases in bills.

The government also has a key role to play and has committed that it will promote using water wisely with mandatory water efficiency labelling of products like dishwashers and showers.

People could be encouraged to harvest rainfall. For individuals this could mean having a water butt in the garden or improving drainage. Last summer supplies of water butts in Cornwall ran out in days after South West Water made the excellent move of offering free water butts.

For farmers, it means improving farming practices, including irrigation and, where appropriate, building more on-site reservoirs. As we look to increase resilience, nature-based solutions can help deliver wider benefits across catchments. Farmers have a big role in delivering this. The wider agri-food industry should do more to help farmers with on-site expenditure for the types of behaviours their customers would like to see.

Regulators must also improve.

Ofwat can allow bill increases, while ensuring the economically vulnerable are shielded from the cost-of-living crisis with strong social tariff protection. But bill increases are necessary for the infrastructure we need.

Yesterday’s announcement that Ofwat will now require companies to take account of environmental performance when deciding whether to pay dividends is also a good step.

The Environment Agency should be much clearer about how we are managing abstraction to balance multiple, current needs with the protection of nature. We also need to modernise regulation and, where appropriate, carry a big stick.

We will continue to pursue large criminal fines in the courts. We are also very encouraged by possible changes affecting our ability to levy penalties, as opposed to fines set by the courts. This would bring us more in line with the penalties which Ofwat can impose and include a massive increase from the current level of £250,000 as well as hypothecating the proceeds - as indicated by the Chancellor.

Our largest ever criminal regulatory investigation is currently underway. We are seeking to determine the extent of any non-compliance of environmental permit conditions. All wastewater treatment works are in scope and more than 2,200 sites are being scrutinised. But water companies don’t need to wait for us to conclude this investigation. They need to sort this now.

The biggest challenge facing the water environment today is supply and demand, but without public action to save water and pay more for it, we are all lost at sea. Restoring trust is vital. Water companies can rebuild trust. To do so they must:

1. Stop defending the indefensible
2. Start fixing the problems (for one: resolve leakage)
3. Be transparent
4. Be much more careful with executive salaries and bonusses
5. Improve compliance.

For the Environment Agency’s part, as a regulator we will be fair and recognise good performance. I commit to personally celebrating good work when I see it, including in the next Environmental Performance Assessment.

Today, the political will exists to implement change. We must capitalise on this moment to drive action that will better protect England’s water resources. The water sector must prove to the public that it is up to the considerable challenges ahead.