Environment Agency

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Water Neutrality: An improved and expanded water resources management definition

Science summary SC080033/SS1

A new report by the Environment Agency explains how to set water efficiency targets for new housing developments planned in the UK, with the aim of becoming 'water neutral' if possible.

Water neutrality is an important but relatively new concept for managing the demand for water. The UK Government plans to have three million new homes built by 2020, but some areas are already experiencing 'water stress' and will see more constraints on their water resources with future demand in parts of England and Wales (especially the South East).

Water neutrality aims for total demand for water to be the same after a new development is built as it was before. That is, new demand for water should be offset in an existing community by making existing homes and buildings in the area more water efficient.

This study considers the broader issues associated with the concept of water neutrality and provides:

- An assessment of what aspects of water supply and demand should be considered in water neutrality.
- A hydrological context for water neutrality.
- An understanding of the spatial and temporal dynamics of achieving neutrality.
- A basis for establishing when water neutrality is an appropriate aim.

Water neutrality will normally focus on the management of public water supplies, and should aim to reduce water consumption in households and buildings. However, it may sometimes be appropriate to consider other types of water abstraction in water neutrality calculations, including leaks and repairs.

Water neutrality analysis is best done at the water resource zone (WRZ) level, using water company data for the annual average or critical period planning scenarios used in water resource planning.

The analysis should take account of uncertainty associated with activities to manage demand. Long-term monitoring of supply and demand is necessary to establish whether initiatives have been effective in reducing demand.

The primary aim of water neutrality is to reduce demand for water in new and existing households and buildings. Therefore, targets should be set to achieve this goal. Achieving full water neutrality is an aspiration, and it may not be possible to set such a high target for all new development. 'Drivers' and 'constraints' will define the appropriate level of neutrality. Drivers are likely to include environmental factors, political or social will, climate change mitigation, and cost-effectiveness. Constraints are likely to include the relative size of the developments, consumption rates in existing ones and predicted consumption in new ones.

This report outlines a method for quantifying these drivers and constraints, to set a neutrality target for a new development in percentage terms. This method could be used as a tool to assess plans to manage water on new developments.

This summary relates to information from Science Project SC080033 reported in detail in the following output(s):

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