European Semiconductor Industry Association

POSITION PAPER

Water Resilience Strategy

Brussels, 26 February 2025

Introduction

The European semiconductor industry stands at the forefront of technological innovation and sustainable manufacturing practices. As the European Union develops its Water Resilience Strategy, it is crucial to consider both the industry's substantial existing commitments to water stewardship and its unique requirements as a strategic sector. The semiconductor manufacturing process demands ultra-pure water while simultaneously presenting opportunities for advanced water management and recycling technologies. This position paper outlines the European semiconductor industry's current achievements in water conservation and provides recommendations for a comprehensive EU water policy that supports both environmental sustainability and industrial competitiveness.

Our industry has already made significant strides in water management, implementing sophisticated recycling systems and efficiency measures that demonstrate our commitment to environmental stewardship. However, to maintain Europe's position in the global semiconductor market while meeting ambitious sustainability goals, we need a supportive and well-designed regulatory framework. This paper presents our vision for a balanced approach that promotes water resilience while ensuring the continued growth and innovation of Europe's semiconductor sector.

I. Existing efforts of the semiconductor industry related to water

- The European semiconductor industry has demonstrated a substantial commitment to water sustainability through significant investments in advanced water recycling and reuse technologies, implementing sophisticated closed-loop water systems that enable multiple cycles of water reuse within production facilities and mitigate the need for external water supply and generation of wastewater.
- Semiconductor manufacturers have achieved measurable improvements in water efficiency through systematic process optimization and equipment upgrades, successfully reducing water-intensive operations while maintaining high production quality standards.

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ESIA is an industry association under the umbrella of
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- Companies across the industry have integrated comprehensive water stewardship principles into their corporate sustainability strategies, establishing concrete targets for water consumption reduction and efficiency improvements.

II. Industry needs and recommendations on the Water Resilience Strategy

- The EU should establish a coordinated regulatory framework that acknowledges and supports the semiconductor industry's existing water conservation investments while providing clear guidelines for future sustainability targets.
- Policy measures should prioritize incentives and support mechanisms for companies investing in advanced water recycling technologies and infrastructure, recognizing the substantial capital requirements of these systems.
- The Water Resilience Strategy should incorporate flexibility mechanisms that account for the specialized water quality requirements of semiconductor manufacturing while maintaining strong environmental standards.
- EU water policy should promote research and innovation in water-efficient manufacturing technologies through dedicated funding programs and public-private partnerships.
- The strategy should ensure reliable access to high-quality water resources for semiconductor facilities, given the industry's strategic importance to European technological sovereignty and economic competitiveness.

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ABOUT ESIA

The European Semiconductor Industry Association (ESIA) is the voice of the semiconductor industry in Europe. Its mission is to represent and promote the common interests of the Europe-based semiconductor industry towards the European institutions and stakeholders in order to ensure a sustainable business environment and foster its global competitiveness. As a provider of key enabling technologies, the industry creates innovative solutions for industrial development, contributing to economic growth and responding to major societal challenges. Being ranked as one of the most R&D-intensive sectors by the European Commission, the European semiconductor ecosystem supports approx. 200.000 jobs directly and up to 1.000.000 jobs indirectly in systems, applications and services in Europe. Overall, micro- and nano-electronics enable the generation of at least 10% of GDP in Europe and the world.