

Abstract

This study evaluates biodiversity impacts across 44 facilities operated by 10 major

The research results demonstrates how Taiwan's semiconductor industry can achieve





Acknowlegments

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This proposed biodiversity footprint assessment of Taiwan's semiconductor manufacturing industry provides both quantitative metrics and a replicable framework for environmental management. Despite the semiconductor manufacturing industry's biodiversity impact having grown by 18.2% (2020-2023), TSMC has demonstrated effective decoupling of economic growth from biodiversity loss, implementing advanced technologies that have improved environmental efficiency. This study will further develop Nature-Positive Pathways and implement AR3T (Avoid, Reduce, Restore, Regenerate, Transform), focusing on energy transition, water recycling, and process innovations - establishing science-based targets that support both ecological sustainability and Taiwan's competitive position in the global semiconductor market.

Results

Conclusion





