

Potentials and challenges: Digitalisation for resource efficiency

A report for the Federal Ministry for Economic Affairs and Climate Action



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Ways to enhance resource efficiency and circularity



Source: Neligan et al. (2021)

Potential: 1 Percent of industrial value added

Industry, weighted with turnover

Savings (last 5 years), in %



Savings potential, in %

Source: Neligan et al. (2021); Basis: IW-Zukunftspanel (2020), own calculations; extrapolation based on BGR (2019)

Digitalisation: Enabler for resource efficiency

in percent of companies by material savings success, total



Typification of companies by degree of digitalisation in resource efficiency measures, in percent of companies by material savings success in the last 5 years: total: industry + industrial services providers Source: Neligan et al. (2021); Basis: IW Zukunftspanel (2020), own calculations

Why use digitalisation for resource efficiency?

Top-3 advantages according to a company survey, ranking



Source: Neligan et al. (2021); Basis: IW-Zukunftspanel (2020), own calculations

Resource efficiency: small steps towards more digitalisation

Digital tools, only "to a large extent" in percent of companies by sector



Only companies with digitalised resource efficiency measures Quelle: Neligan et al. (2021); Basis: IW-Zukunftspanel (2020), own calculations

Lack of complete solutions, retrofittability + financial strength

Challenges, in percent of companies by sector



Totally applicable
Rather applicable

Source: Neligan et al. (2021); Basis: IW-Zukunftspanel (2020), own calculations

Linking, knowledge transfer, infrastructure + competences

7 Goals - Recommendations for policy action

Drittmittelfinanziert Expertisen



IW-Gutachten

Digitalisierung als Enabler für Ressourceneffizienz in Unternehmen

Studie im Auftrag des Bundesministertums für Wirtschaft und Energie - Hauptbericht Institut der deutschen Wirtschaft / IW Consult / WIK-Consult

Auftraggeber: Bundesministerium für Wictschaft und Energie Fachreferat (V84 / Referat XC4

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Expansion of network infrastructure + Risk minimisation of digitalisation

Resource efficiency through circularity + value creation networks

Strengthening of the topic: Digitalisation for resource efficiency

Information: Benefits of digitalisation for resource efficiency

Promotion: Advanced digital technologies

Promotion: Digital business models for resource efficiency

Support: Comprehensive digital solutions

Quelle: Neligan et al. (2021)



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