How can streamSAVE support industrial stakeholders to achieve energy savings?

Diedert Debusscher, European Copper Institute

This project has received funding from the Horizon 2020 programme under grant agreement n°890147. The content of this presentation reflects only the author's view. The European Commission is not responsible for any use that may be made of the information it contains.

Methodology

- Calculation of total final energy savings
  - including indicative values based on statistical data
- Calculation of impact on Member State's energy consumption
- Overview of costs related to the action
  - investment costs, operational costs (variable & fixed), revenues
- Calculation of greenhouse gas reduction

Heat Recovery in Industry

- Reuse excess heat
  - back into the same process
  - into another on-site application
  - into a district heating grid
- Benefits for industry
  - identify energy streams
  - normalize measured data
  - reduce waste heat into environment
  - reduce fuel input and energy cost

Building Automation and Control Systems

- Installing or upgrading BACS
  - residential and non-residential
  - 5 types of end-use (heating, cooling, hot water, ventilation and lighting)
  - 3 European climate regions
- Benefits for industry
  - energy savings
  - detection and diagnosis of inefficient operation
  - increased comfort and convenience for building inhabitants/users

Industrial & Commercial Refrigeration

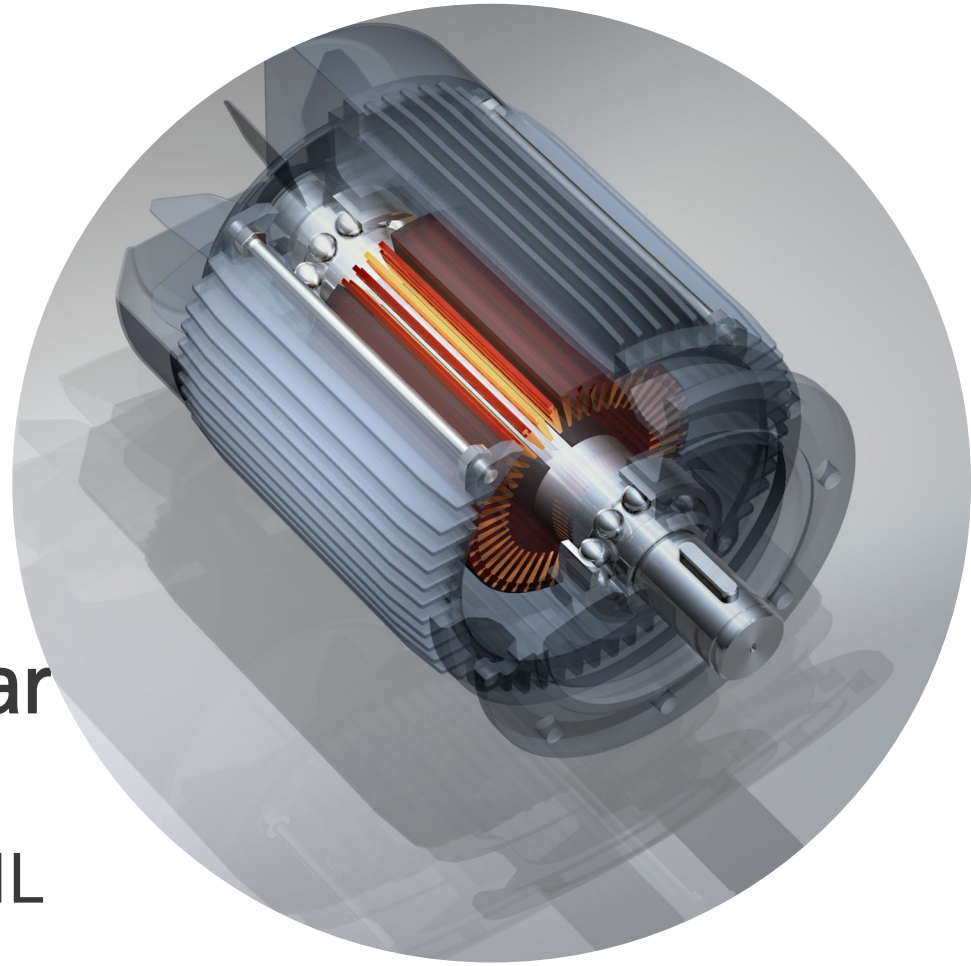
- Replacement of old, electrically operated compression refrigeration units with more efficient equipment
  - water- or air-chilled
  - based on Seasonal Performance Ratio
- Benefits for industry
  - uniform methodology to calculate savings
  - incl. how to identify the baseline to be considered

Electric Vehicles

- Fuel switching between conventional and electric vehicles
  - different types of vehicles (cars, vans, buses, trucks)
  - different fuel options (including hybrid)
  - higher conversion efficiency + switch to (increasingly decarbonized) electricity
- Benefits for industry
  - policy framework supportive of accelerating electrification of corporate fleets

Anticipated Motor Replacement

- Replacement of existing motors
  - low (≤IE2) to higher efficiency (≥IE3)
  - before the end of their lifetime
  - in industry & tertiary
- **Total saving opportunity: 100TWh/year**
  - 55 average gas fired power plants
  - close to the electricity consumption of NL
  - 30% of natural gas import from Russia
  - 25 Mton CO2e



Benefits for industry

- Supportive policy framework
  - Member States can use uniform methodology to calculate savings, incl. indicative values and baseline calculations
  - they get support in designing dedicated and effective policy measures targeting ‘overlooked’ energy saving opportunities
- Lower energy consumption, costs and greenhouse gas emissions
  - tools to report realized versus expected savings

How can industry help?

- Challenge of data collection
  - discrepancies between countries
  - lack of recent data at national levels

streamSAVE Training Module

The Training Module is available on the streamSAVE platform

It provides online calculation templates for all developed bottom-up calculation methodologies, including:

- indicative calculation values
- data on costs
- estimations of GHG emission reduction

Register here:

https://streamsave.flexx.camp/signup-0818ml

Thank you

Get in touch for more information!

Project coordinator - Nele Renders, VITO

All project reports will be available for download on the streamSAVE website www.streamsave.eu

Email the project at contact@streamsave.eu

Follow the project on LinkedIn @streamSAVEH2020

Follow the project on Twitter @stream_save

Project Partners

vito

ISR

circe

Cu European Copper Institute Copper Alliance

SEVEn

AUSTRIAN ENERGY AGENCY

Jožef Stefan Institute

IEECP
INSTITUTE FOR EUROPEAN ENERGY AND CLIMATE POLICY

LIETUVOS ENERGETIKOS AGENTŪRA

ΚΑΠΕ CRES

ADEME
Agence de l'Environnement et de la Maîtrise de l'Energie

LGi
sustainable innovation

enterprise europe network

An SME perspective

Die Senatorin für Wirtschaft, Arbeit und Europa
Freie Hansestadt Bremen
BAB Die Förderbank
STARTHAUS Bremen & Bremerhaven
Die Denkfabrik
RKW Bremen
enterprise europe network

Let's talk about ressource efficiency

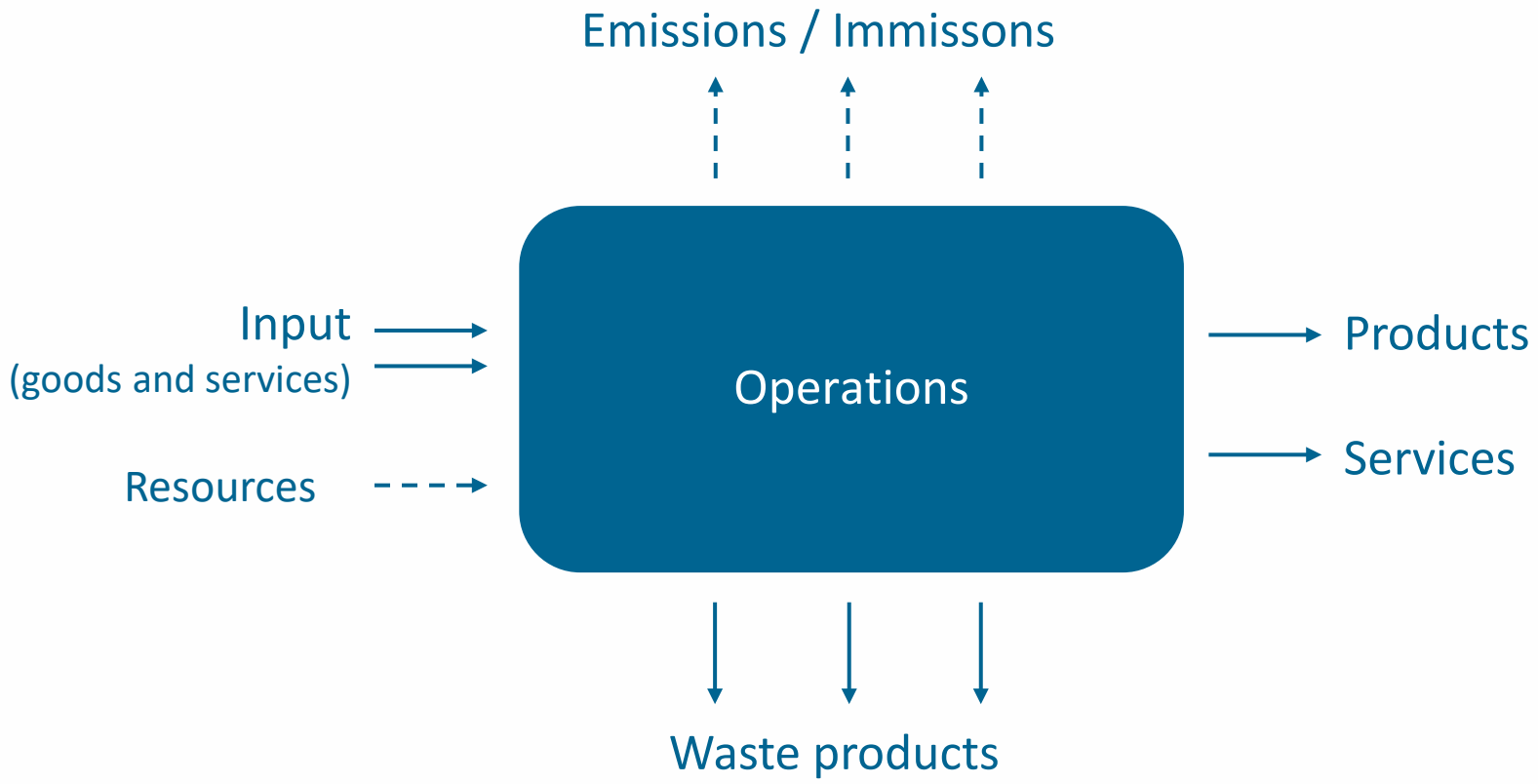


Image: own illustration, source: GHG-Protocol

Challenges for the enterprises

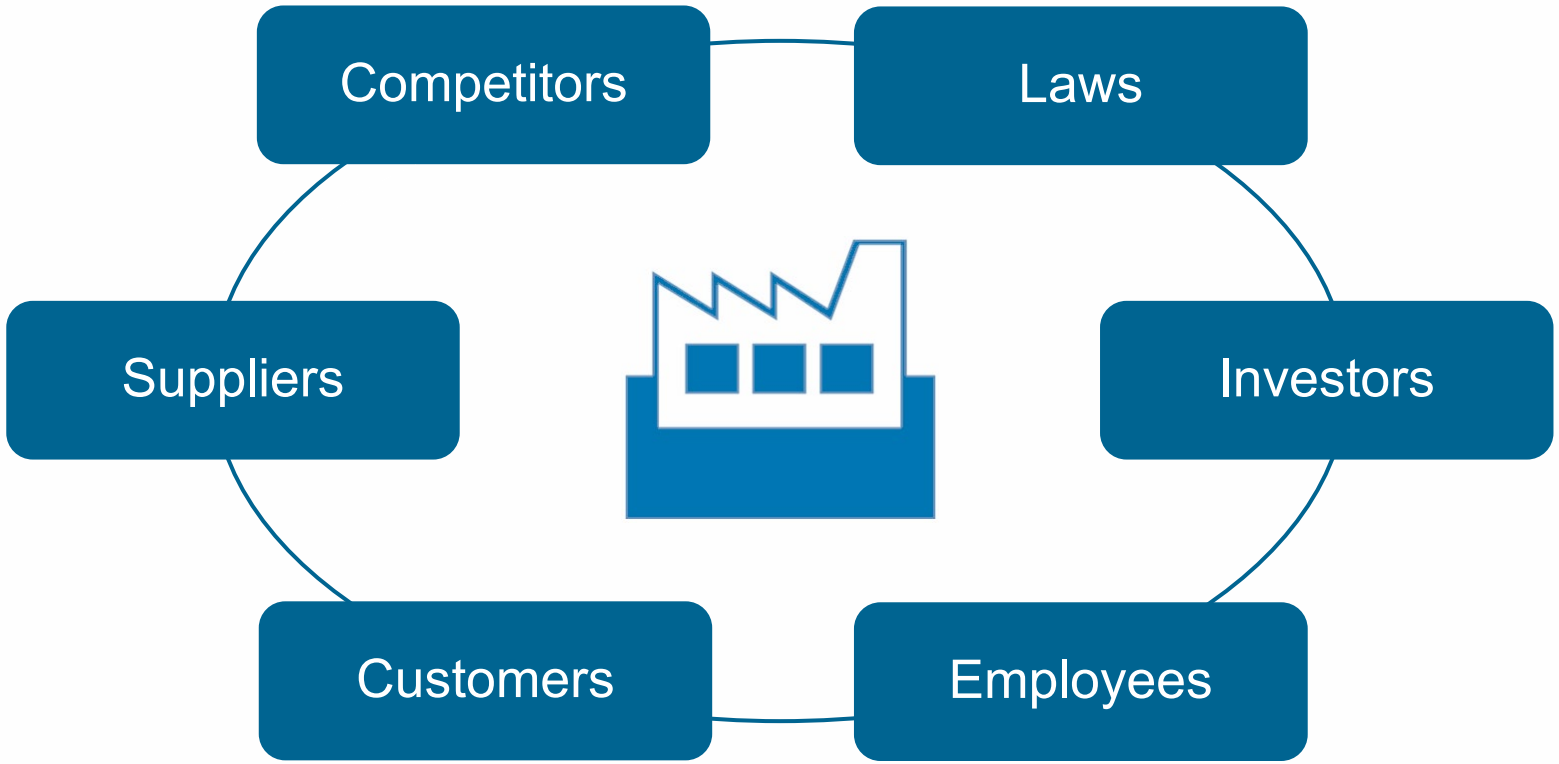
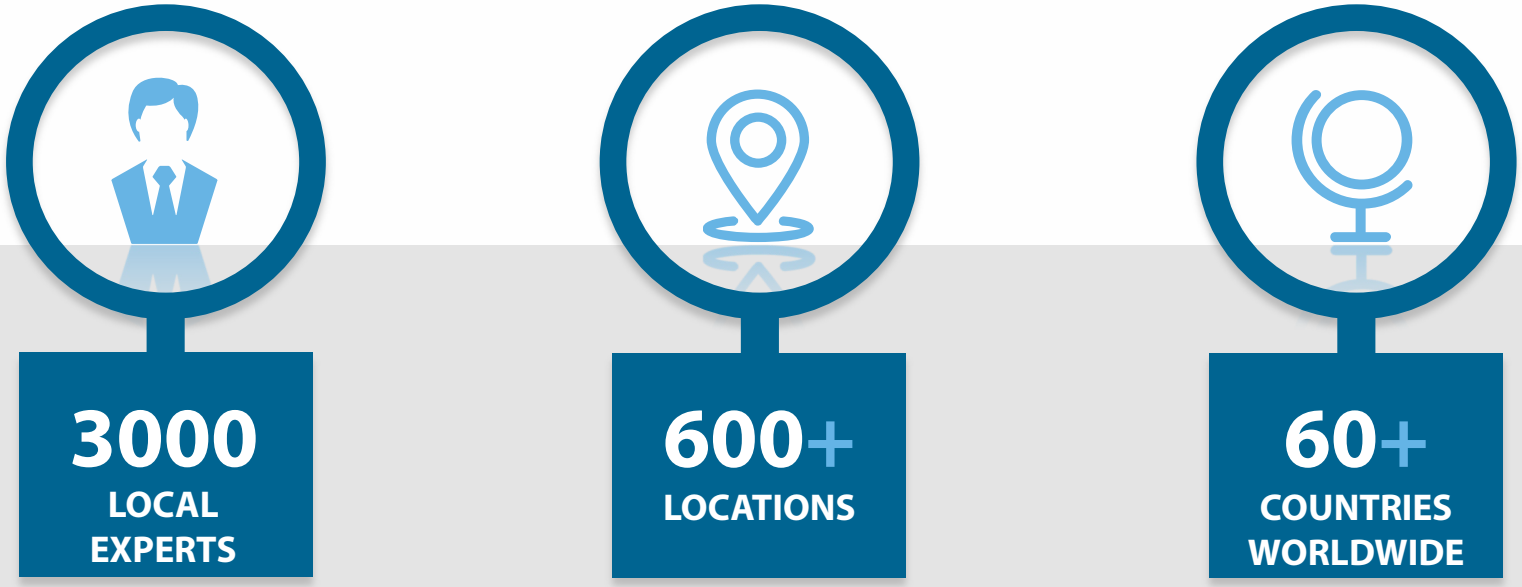


Image: own illustration

Limiting factors

Image: „20 Jahre Regionalbüro Bielefeld“, Effizienz-Agentur NRW, 05/12/22

Enterprise Europe Network



We combine international **expertise** with local knowledge to help you bring your **innovations** to new **markets**.

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Freie Hansestadt Bremen
BAB Die Förderbank
STARTHAUS Bremen & Bremerhaven
Die Denkfabrik
RKW Bremen
enterprise europe network

Contact:

Wilko Brahms

RKW Bremen GmbH
Martinistraße 68
28195 Bremen
Tel.: +49 421 / 323464 33
brahms@rkw-bremen.de

www.een-bremen.de

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RKW Bremen
enterprise europe network

Hannover Messe

Horizon2020 Project StreamSAVE

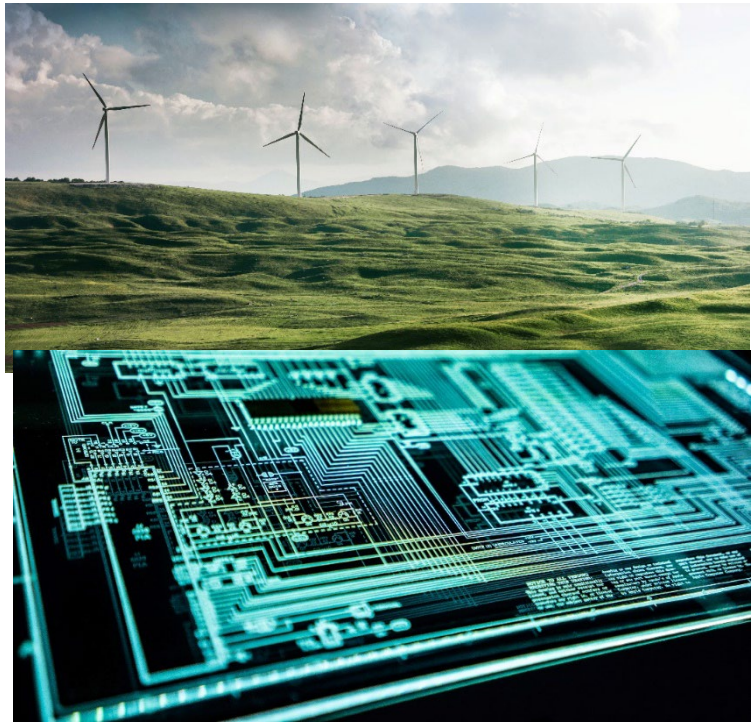
Cesare Dunker – Policy Officer

European Commission, DG GROW,
Digital Transformation of Industry

European Industrial Strategy – focus areas

Strengthening Single Market Resilience

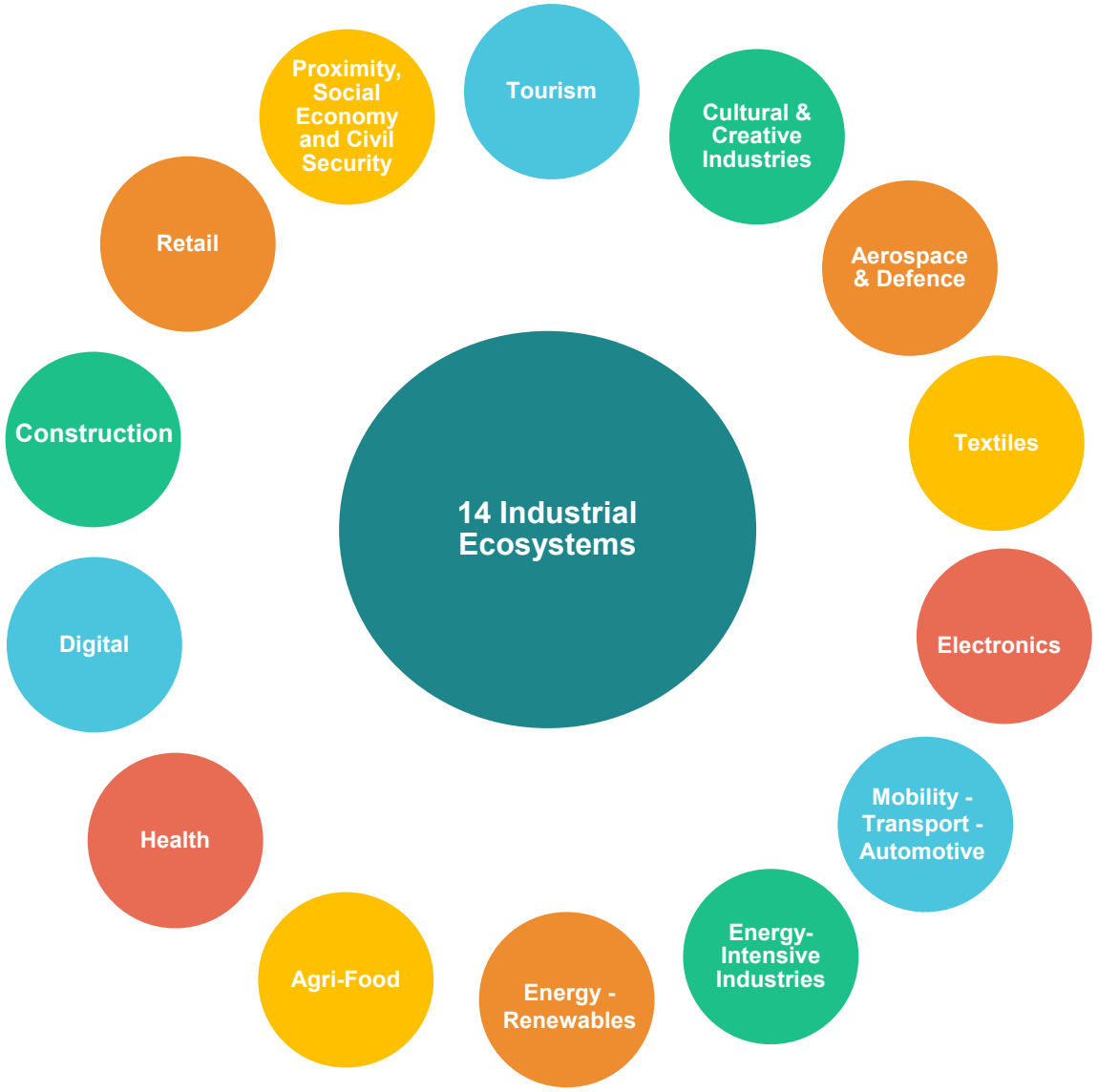
Dealing with the EU's strategic dependencies



Accelerating the digital and green transitions

European Commission

European Industrial Ecosystems



Actions

Transition Pathways

- Co-creation with stakeholders

Industrial Forum

- Economic Analysis
- Transition Pathways
- Strategic Dependencies
- Cross-border investment
- Advanced Manufacturing

Manufacturing

- Cross cutting ecosystem

European Commission

Green Deal Industrial Plan

Aim: boost the clean tech competitiveness and build the industrial capacity for the clean technologies that make up the European Green Deal.

Based on **four pillars** which will simplify, accelerate and align incentives to preserve competitiveness and attractiveness of the EU as an investment location for industry and manufacturing, acting on all fundamental factors.

The proposal is made up of key actions for industrial competitiveness:

- Net-Zero Industry Act
- Critical Raw Materials Act

Industrial Forum's Task Force on Advanced Manufacturing

Members

Curators: Orgalim, CECIMO

DIGITALEUROPE
Vanguard Initiative
EuropaBio
AeroSpace & Defence Industries
European Automobile Manufacturers
European Trade Union Confederation
WindEurope
VTT
European Clusters Alliance
Eurochambers
IndustriAll
CITEVE
Dansk Industri
European Welding Federation
DIGITALSME
EFFRA
EIT – Maufacturing

Austria
Denmark
Hungary
Ireland
Italy
Malta
Portugal

GROW, CNECT, RTD, JRC,
JUST, NEAR, ENER, SG, REGIO, DEFIS, EAC

Mandate

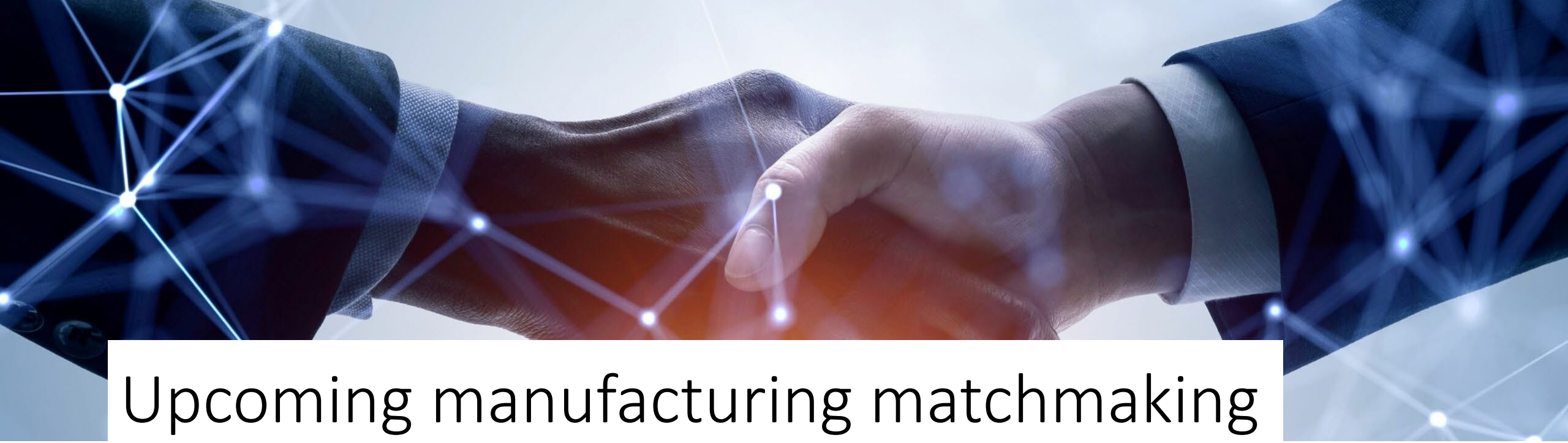
Establish a blueprint for accelerating the development and uptake of advanced manufacturing

Provide a platform for structured dialogue between Commission, MS, NGOs and industry on advanced manufacturing

Report expected to be published in late-April

Recommendations
36 recommendations, in 7 areas

- Lever on AM for green transition
- Enable access to capital
- Increase supply chain resilience
- Strengthen Single Market & Standardisation
- Facilitate data opportunities
- Address skills shortage
- Strengthen evidential foundations



Upcoming manufacturing matchmaking

The European Commission, together with DIGITAL SME, are co-organizing a matchmaking dedicated for manufacturers who deploy sustainable manufacturing practices and/or provide sustainable manufacturing solutions.

Thank you

European Commission

ifiec europe
international federation of industrial energy consumers

Industrial Energy Consumers views on energy efficiency

Peter Claes
President

Hannover Messe - Horizon2020 project streamSAVE - Workshop

REPRESENTATION

- 13 National Member Federations
- 15 energy intensive sectors
- 500 + companies
- 3 Expert Working Parties
- 581 TwH - EIIs consume 20% of all electricity
- 2.5 million people in direct employment
- €1.3 trillion Total production value for EIIs in 2015

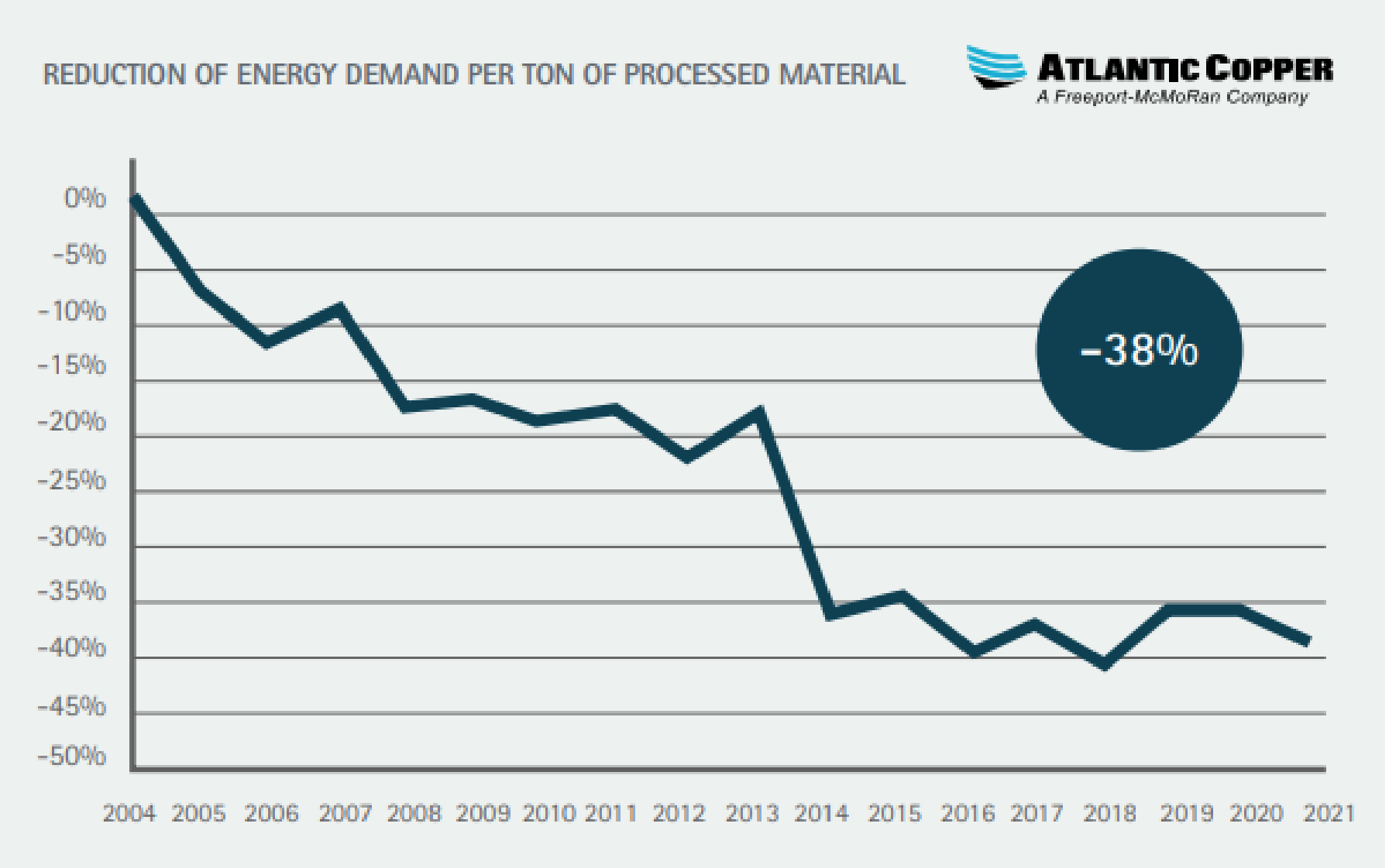
MISSION STATEMENT

IFIEC Europe´s mission is to anticipate and to respond to the evolving requirements of those sectors by proposing policies that allow realistically priced energy to be available. This will allow them to continue to improve energy efficiency and environmental performance whilst ensuring international competitiveness both in Europe and throughout the world.

Energy Efficiency – importance for industry

- Energy efficiency is part of industry's DNA
  - Energy cost is among top-3 of production costs for most sectors
  - Energy efficiency is essential for competitiveness AND sustainability

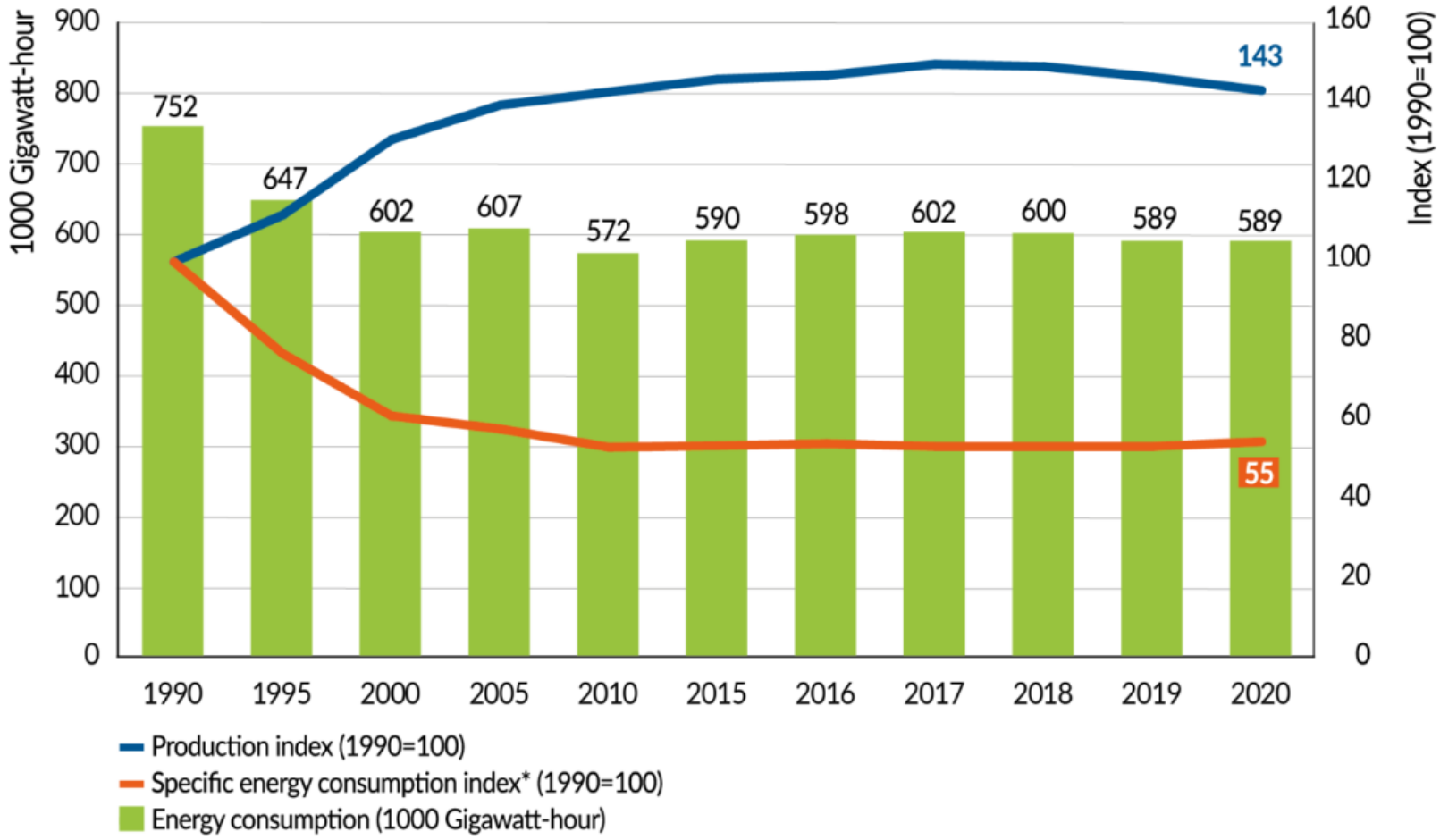
Energy Efficiency – Industry's track record - 2 examples (1)



ifiec europe
international federation of industrial energy consumers

Energy Efficiency – Industry's track record - 2 examples (2)

Efficient use of energy in the EU27 chemical industry



Source: Eurostat
*Specific energy consumption index is calculated as (energy consumption index/production index), (1990=100)

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international federation of industrial energy consumers

Energy Efficiency – challenges for the future

- Progress is not linear but asymptotic

- Increasing challenges
  - Technical feasibility
  - Economic aspects

- Further progress
  - ✓ Incremental increases
  - ✓ Technology leaps

Energy Efficiency – Policy recommendations

- ✓ Leave room and time for innovation / technological progress
- ✓ Competition is the major driver
- ✓ Coherent policy is needed (e.g. intermittency vs. efficiency)

Introduction

Nele Renders, VITO/EnergyVille

Enhance energy efficiency in the Green Deal Industrial Plan via streamlined savings calculations

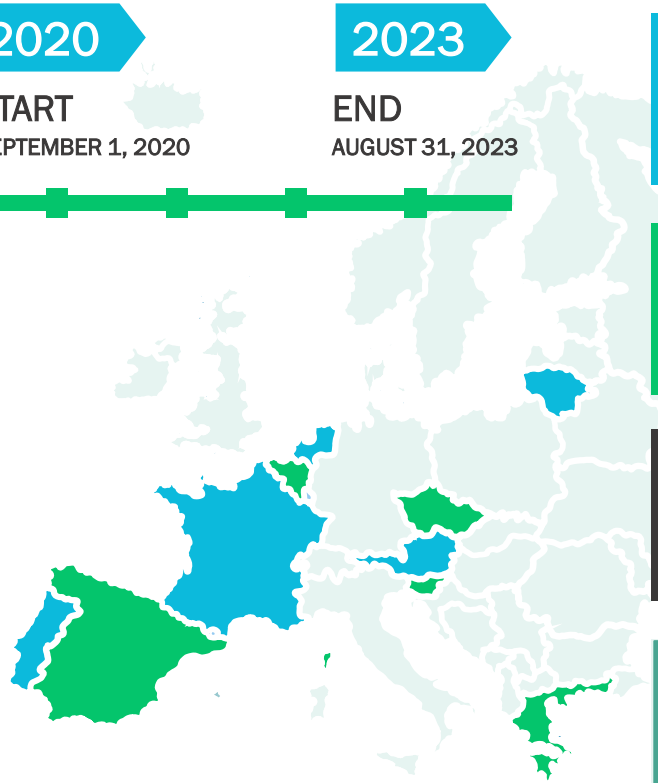
Energy 4.0 Conference Stage
Energy Security, Climate Neutrality, Digitalization of the Energy Transition
17th April 2023 – 09:45

This project has received funding from the Horizon 2020 programme under grant agreement n°890147. The content of this presentation reflects only the author's view. The European Commission is not responsible for any use that may be made of the information it contains.

Who are we?

2020
START
SEPTEMBER 1, 2020

2023
END
AUGUST 31, 2023



COORDINATOR

vito, EnergyVille

12 PARTNERS
10 COUNTRIES

RESEARCH & POLICY INSTITUTIONS

vito, IEECP (Institute for European Energy and Climate Policy), ISR, circe, Jožef Stefan Institute

ENERGY AGENCIES OR RELATED

AUSTRIAN ENERGY AGENCY, ADEME (Agence de l'Environnement et de la Maîtrise de l'Energie), ΚΑΠΕ CRES, LIETUVOS ENERGETIKOS AGENTŪRA, SEVEn7

CONNECTORS TO MARKET & TECHNOLOGY ACTORS

Cu European Copper Institute Copper Alliance, LGi sustainable innovation

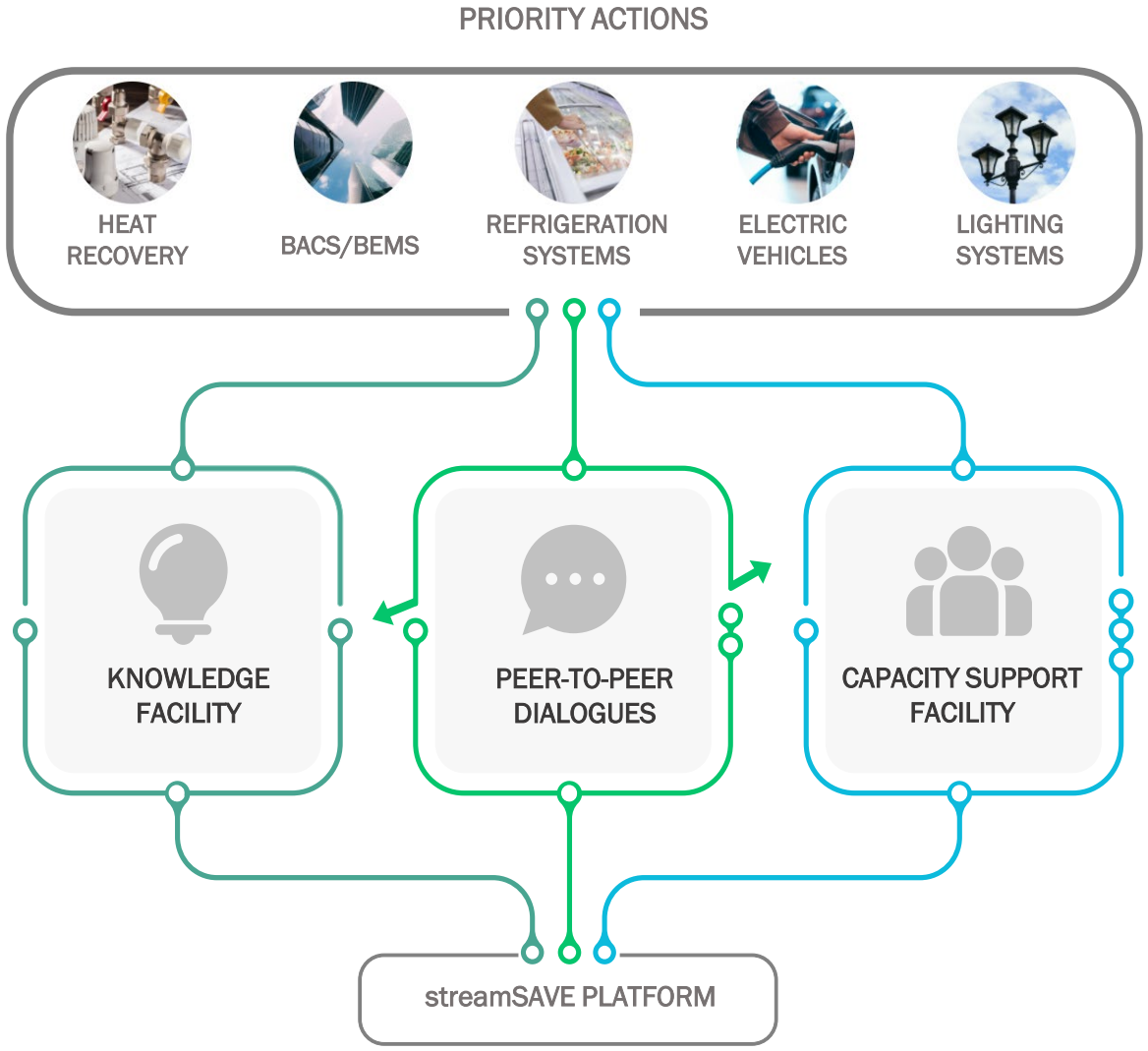
What do we aim for?

- Building capacity among public authorities on Article 3 & Article 7 of the Energy Efficiency Directive:

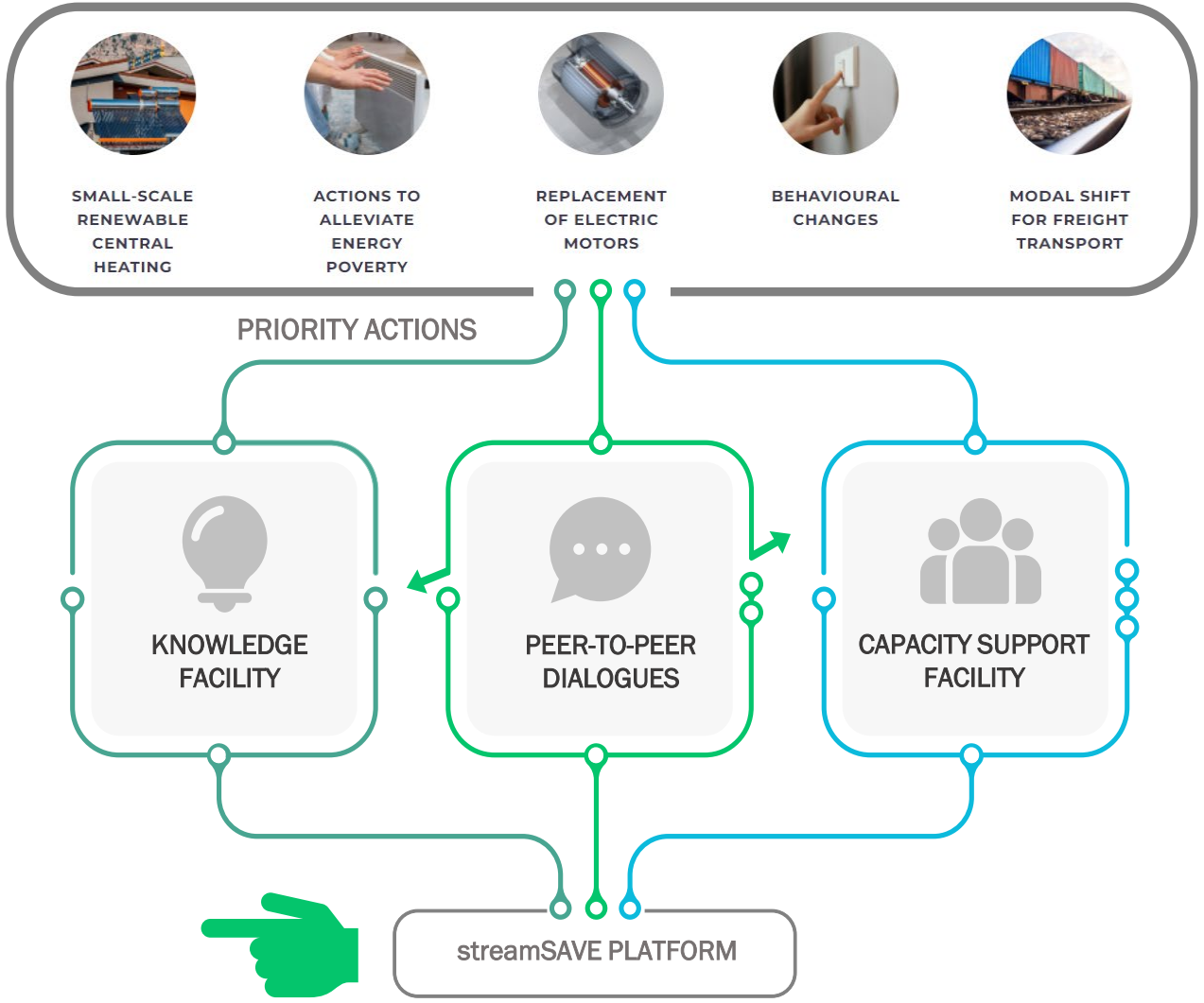
  streamSAVE will build capacity through the creation of an open dialogue that will focus on streamlining calculation methodologies to estimate bottom-up savings and cost effectiveness of technical energy savings actions. The project will target priority actions i.e., new actions with high energy saving potential and considered as a priority issue by national public authorities.

- Address additional efforts in EU Member States in realizing energy savings by 2030 under Article 3 & Article 7 of EED.

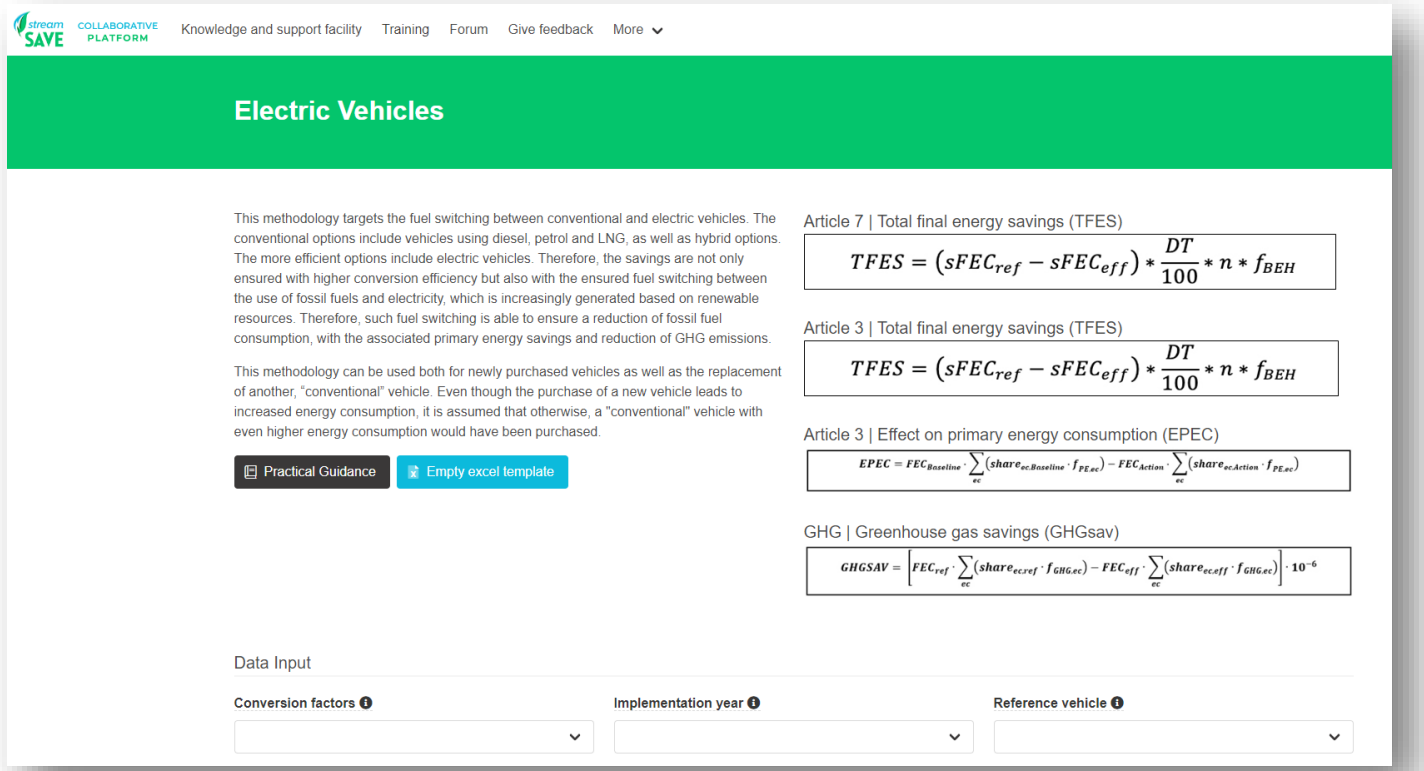
How do we realize these objectives?

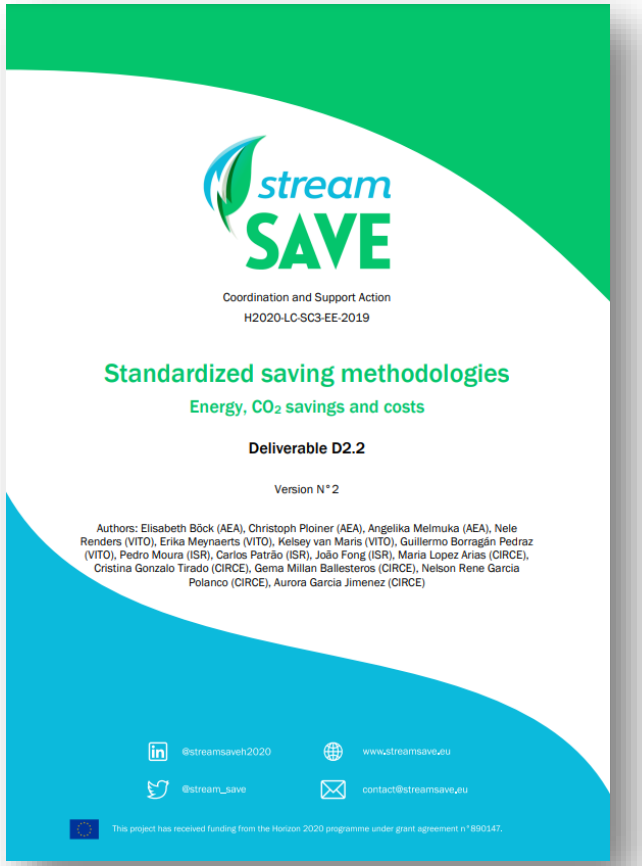


How do we realize these objectives?



streamSAVE guidance & platform





Register for methodologies in detail:
https://streamsave.flexx.camp/signup-0818ml

Thank you

Get in touch for more information!

Project coordinator - Nele Renders, VITO

All project reports will be available for download on the streamSAVE website www.streamsave.eu

Email the project at contact@streamsave.eu

Follow the project on LinkedIn @streamSAVEH2020

Follow the project on Twitter @stream_save

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On behalf of:
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Opportunities and Challenges of energy and material efficiency from the perspective of German SMEs

Wei Min Wang
VDI Zentrum Ressourceneffizienz GmbH

Hannover-Messe 2023
Hannover, 17.04.2023

VDI Zentrum Ressourceneffizienz

On behalf of:
Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection
of the Federal Republic of Germany

The Association of German Engineers (VDI)

140.000 Members **VDI e. V.** 12.000 Volunteers

12 VDI- Specialist societies

Education

© VDI/Thomas Ernsting

approx. 200 new/revised VDI guidelines per year

© Jorma Borg/www.pixelio.de

VDI-Group

Innovation promotion | Technology consultancy | Media | Training & Qualification

VDI Centre for resource efficiency (VDI ZRE)

- Competence centre for demand-oriented provision of technical resource efficiency knowledge for SMEs
- Focus on resource efficiency in industrial practice through connection to the VDI
- Setting standards by developing VDI guidelines on resource efficiency in cooperation with VDI e. V.

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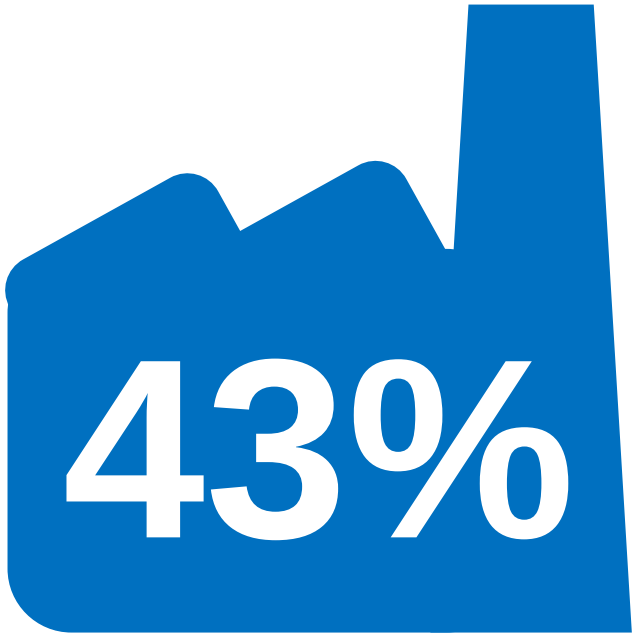
Drivers for energy and material efficiency

Growing public awareness and regulations



…of the cost in manufacturing companies are cause by energy and material consumption*

Volatile gobal resource markets and supply chains

*Source: Statistisches Bundesamt (2019), Numbers for the year 2017

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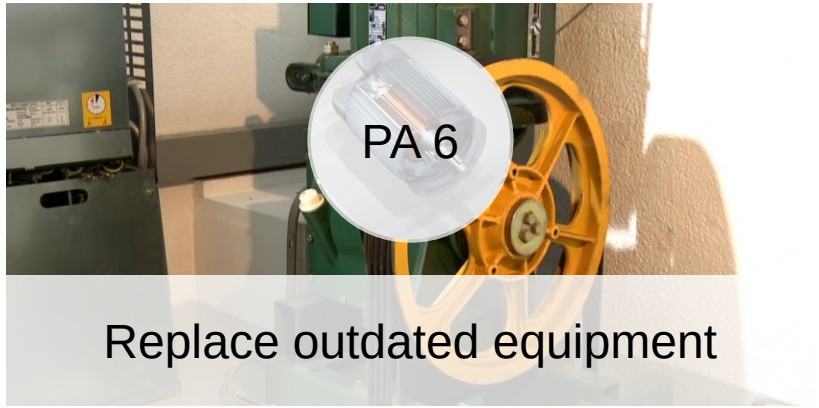
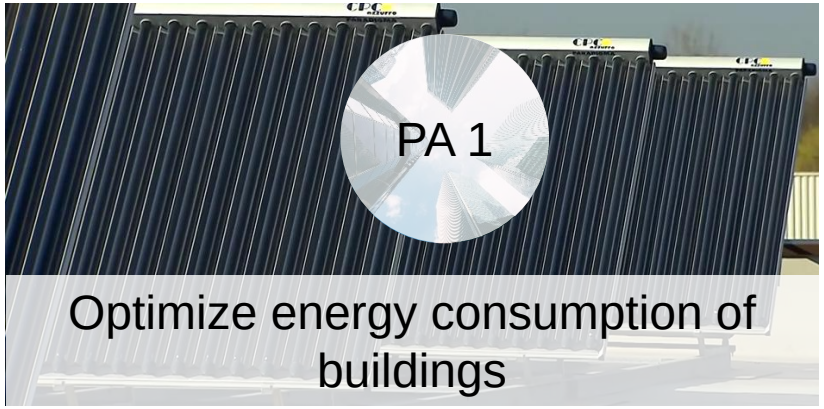
What do SMEs do to save energy?

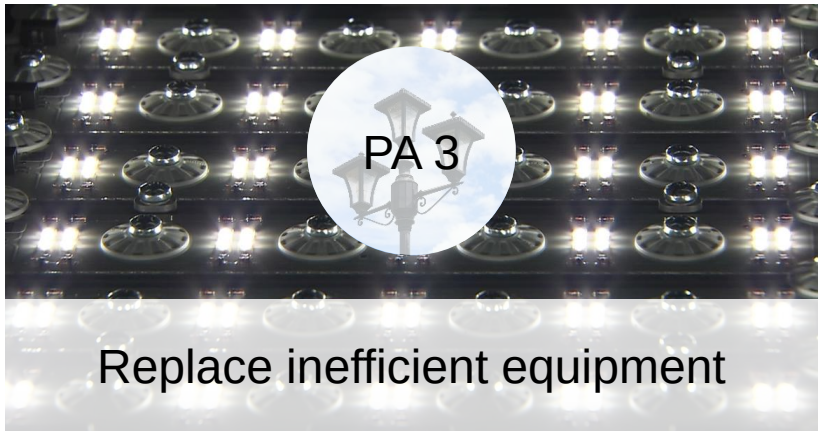


Replace outdated equipment



Optimize energy consumption of buildings

Use renewable energy sources

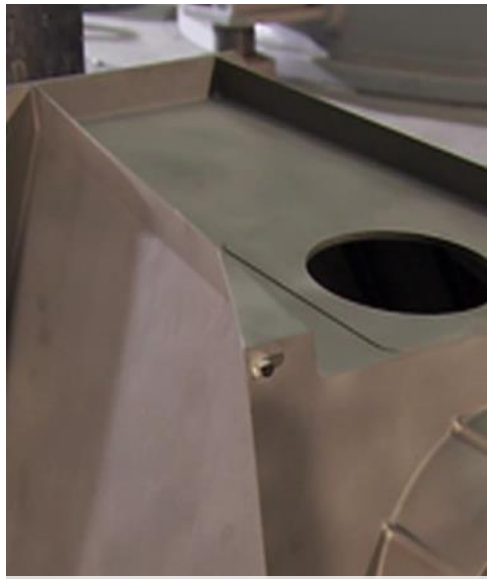
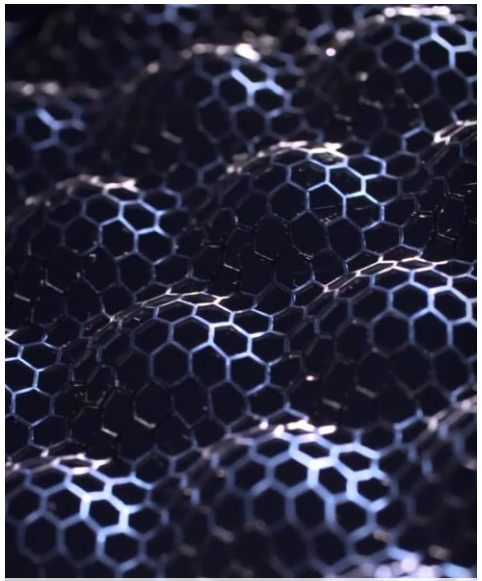


Replace inefficient equipment

Recover waste heat

Optimize use of renewable energy

Leverage through process innovation, digitization and industry 4.0

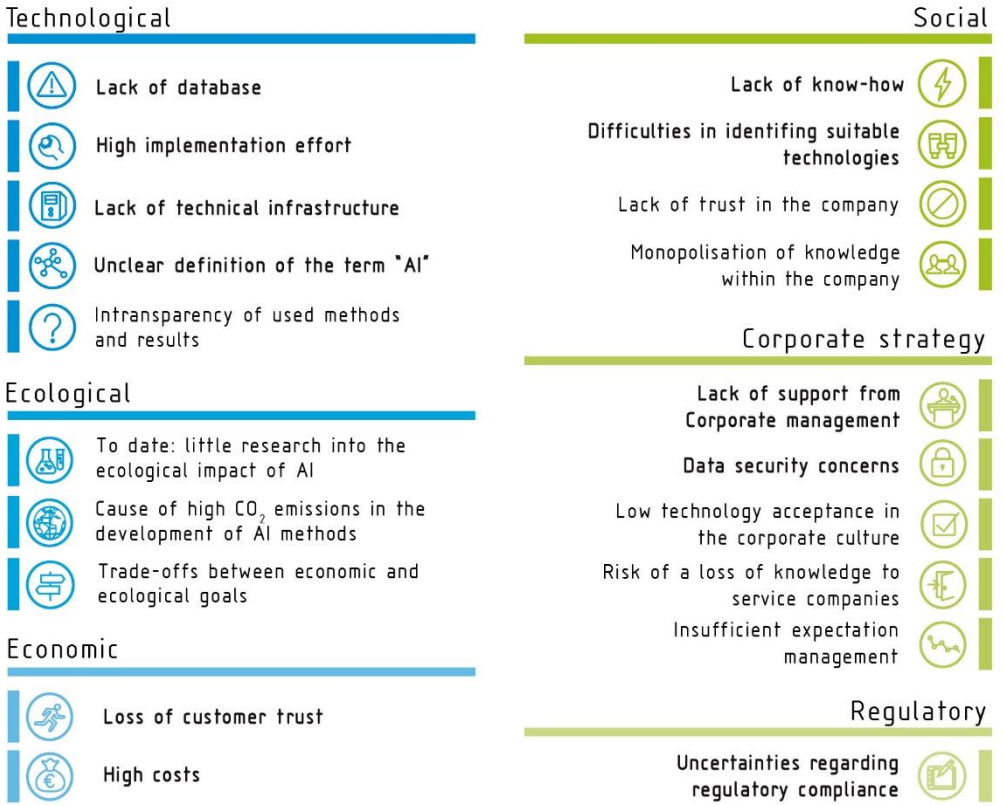
SMEs expect up to 25%* increase in resource efficiency through digitization and industry 4.0

*Source: VDI ZRE, Resource Efficiency through Industry 4.0 – Potential for SMEs in the Manufacturing Sector, 2017

Challenges for SMEs

KNOW-HOW
TIME
FUNDING
REGULATIONS

Challenges for AI application*



*Source: : VDI ZRE, Potentials of weak artificial intelligence for operational resource efficiency, 2021

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Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection
of the Federal Republic of Germany

What SMEs need

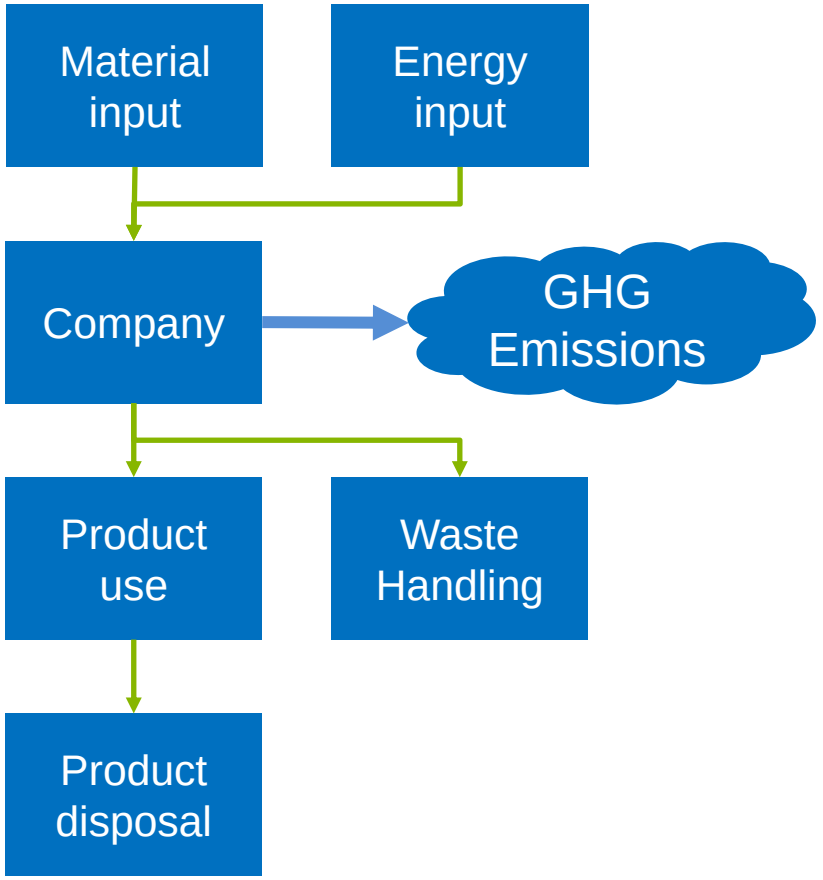
CLARITY
STRATEGY
REGULATION
BASIC KNOWLEDGE
FUNDING
IMPULSE

ESTEM-Project

- Standardized method to determine the effect of resource efficiency measures and their impact on greenhouse gas emissions
  - Based on 10 questions
  - Considers Scope 1-3 emissions
- Decision-making aid for the allocation of funding (for funding and project executing agencies)
- User-friendly for companies despite the complexity of the topic

- Guideline and excel-tool available:

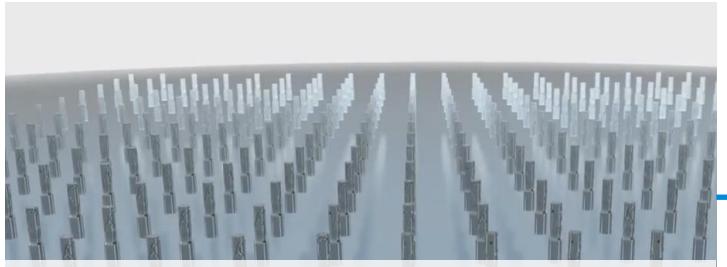
www.ressource-deutschland.de/service/estem/



Digital applications for increasing resource efficiency in circular production processes - DigiRess

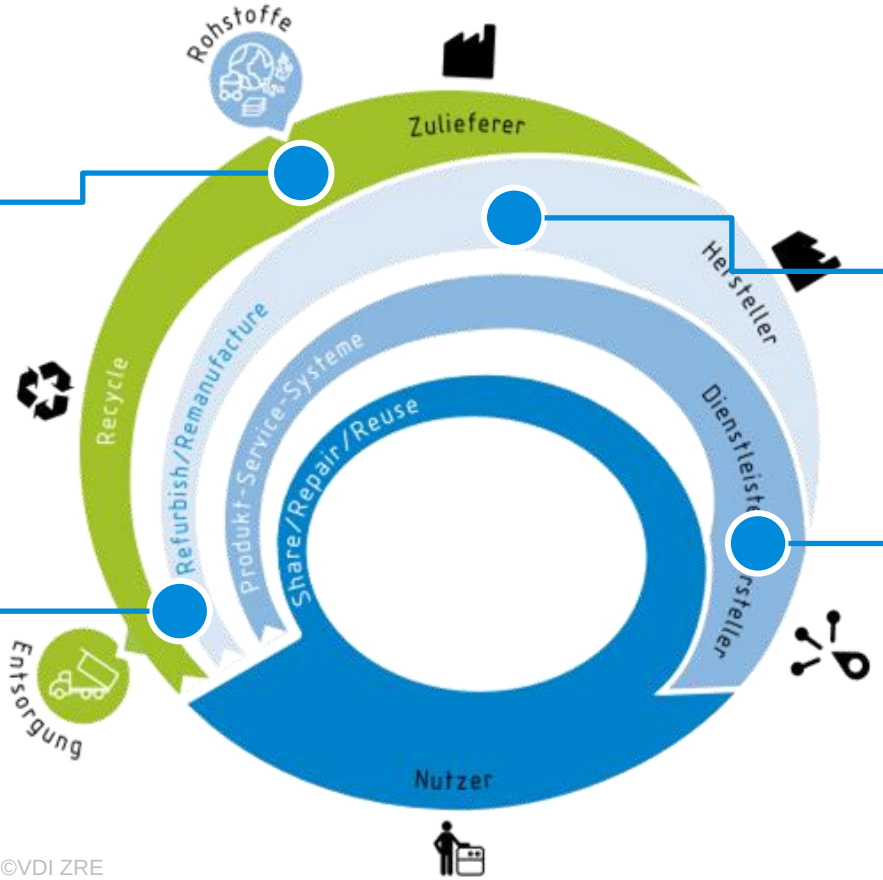
- Funding program of the Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection
- Focus on SMEs and practical solutions
- Funding priorities:
  - Digital optimization of production processes
  - Digital optimization of product design
  - Digital business models for resource-efficient and circular value creation
- Planned from 2022 – 2024 (but funding exhausted after three calls)

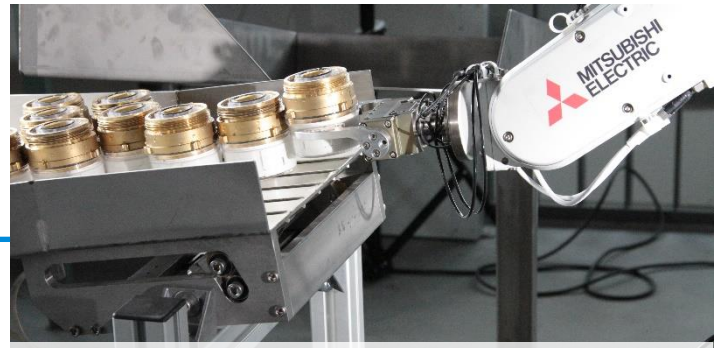
Outlook – Circular economy, AI & Co.



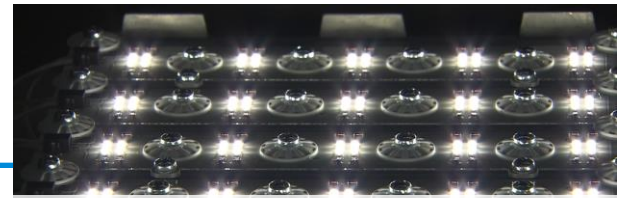
Enable and optimize reuse of secondary materials

Optimize Design





Enable reuse and remanufacturing



Enable innovative circular business models

VDI Zentrum Ressourceneffizienz

On behalf of:
Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection
of the Federal Republic of Germany

Thank you for your attention!

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Bülowstraße 78
10783 Berlin

Wei Min Wang
Phone: +49 30 27 59 506-659
E-mail: wang@vdi.de

www.ressource-deutschland.de
https://www.youtube.com/c/Ressource-deutschlandDe

Industry Energy Efficiency Workshop Session

hosted by the H2020 streamSave project

17 – 21 APRIL 2023

HANNOVER MESSE

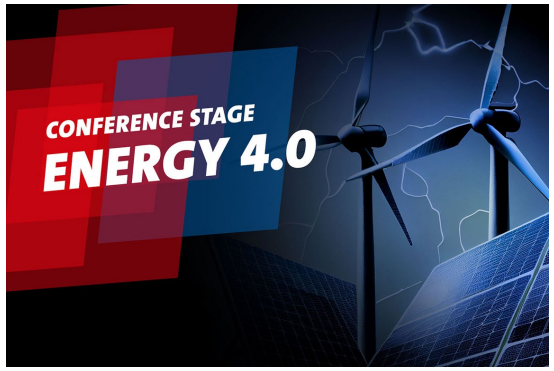
stream SAVE

Expert Panel

Hannover Messe, Energy 4.0 stage

17th Apr 2024 , 09:30 – 11:00 (CEST)

moderated by Tomas Jezdinsky (ECI)



This project has received funding from the Horizon 2020 programme under grant agreement n°890147. The content of this presentation reflects only the author's view. The European Commission is not responsible for any use that may be made of the information it contains.

Outline of our joint session

The call to enhance energy efficiency in the Green Deal Industrial Plan via streamlined savings calculations.

- Rebuilding Europe's energy security prioritizes energy efficiency in industry support programs, such as the Green Deal Industrial Plan.
- This workshop explores how simplified and streamlined energy savings calculations, H2020 project streamSAVE can help set the right priorities,
- With experts from the European Commission, competence centres and industry to broaden & explore the challenges and opportunities for implementing energy-saving measures
- The role of industry actors in achieving improved energy and resource efficiency. How can companies benefit? A how can they contribute to improving the credibility of energy-saving measures through metering and big data?

Agenda of our joint session

Time slot	Topic	Speaker & Affiliation
09:30 – 09:35	Welcome address	Tomas Jezdinsky, ECI
09:35 - 09:45	Keynote intro from the European Commission (DG GROW)	Cesare Dunker, DG GROW Unit G3
09:45 - 09:55	Introduction to streamSAVE project - streamlining energy savings calculations	Nele Renders, VITO/EnergyVille on behalf of streamSAVE
09:55 - 10:05	How can streamSAVE support industrial stakeholders to achieve energy savings?	Diedert Debusscher, European Copper Institute on behalf of streamSAVE
10:05 - 10:15	An industry outlook – energy intensive industries	Peter CLAES, IFIEC
10:15 - 10:25	Opportunities and Challenges of energy and material efficiency from the perspective of German SMEs	Wei Min Wang Researcher Digitalization & Industry 4.0 VDI Zentrum Ressourceneffizienz
10:25 - 10:35	An SME perspective	Wilko Brahms Sustainability consultant for the Enterprise Europe Network, RKW Bremen GmbH
10:35 - 10:55	Panel discussion and Q&A	Tomas Jezdinsky (Moderation), ECI
10:55 - 11:00	Conclusions and Wrap up	