
ENERGY EFFICIENCY PROGRESS AND ENERGY EFFICIENCY POLICIES FOR INDUSTRY IN EUROPE

Presentation at the **sEnergies Webinar: Vast Energy Efficiency and Renewable Energy Potentials within Industry in all EU countries**



ODYSSEE-MURE

Wolfgang Eichhammer

Fraunhofer Institute for Systems and Innovation Research ISI, Karlsruhe, Germany
and

Utrecht University, Netherlands

17 March 2022



OVERVIEW

- A brief introduction to Fraunhofer
- The European ODYSSEE-MURE project for Energy Efficiency Indicators and Policies
- Development of industrial energy efficiency
- Outlook: Energy Efficiency and Decarbonisation

The Fraunhofer-Gesellschaft at a Glance

The Fraunhofer-Gesellschaft undertakes applied research of direct utility to private and public enterprise and of wide benefit to society.

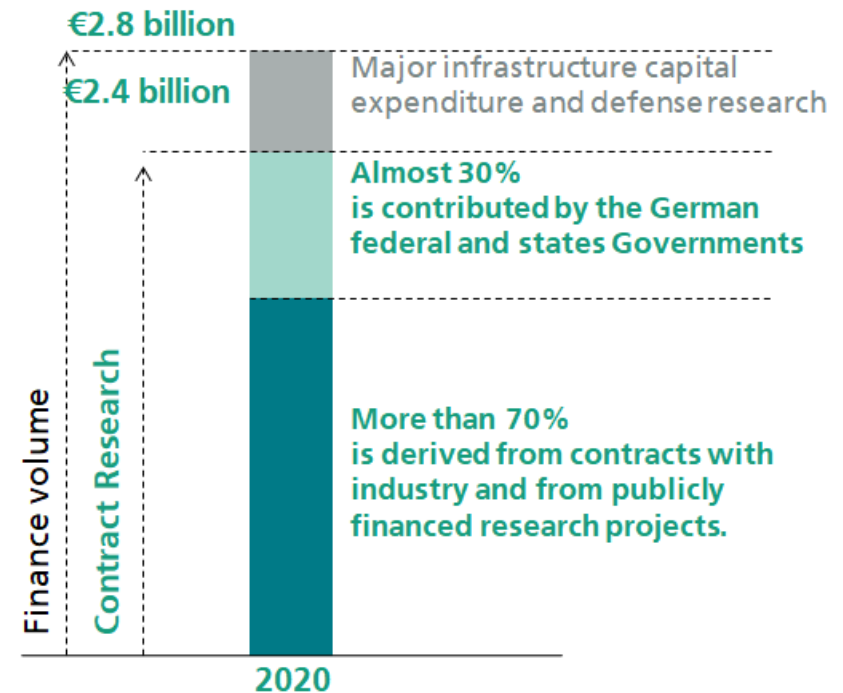


29,000 staff



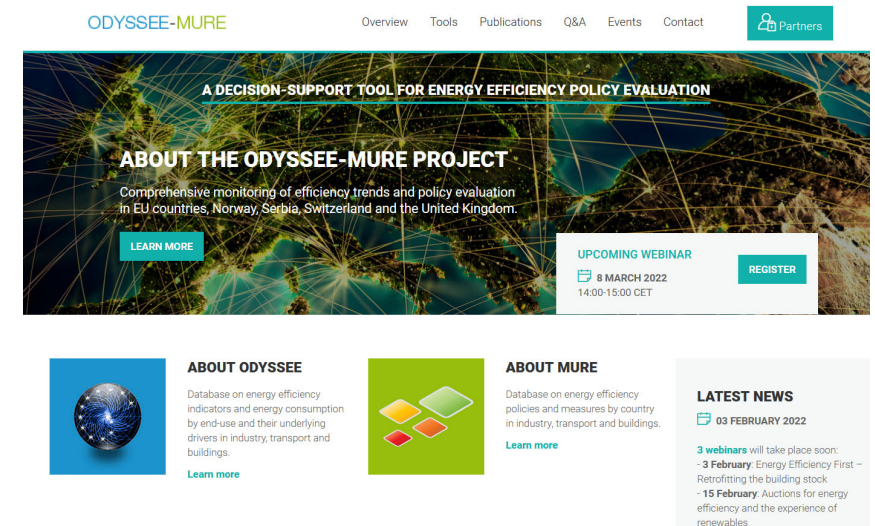
75 institutes and research units

Main locations ●
Other locations ○

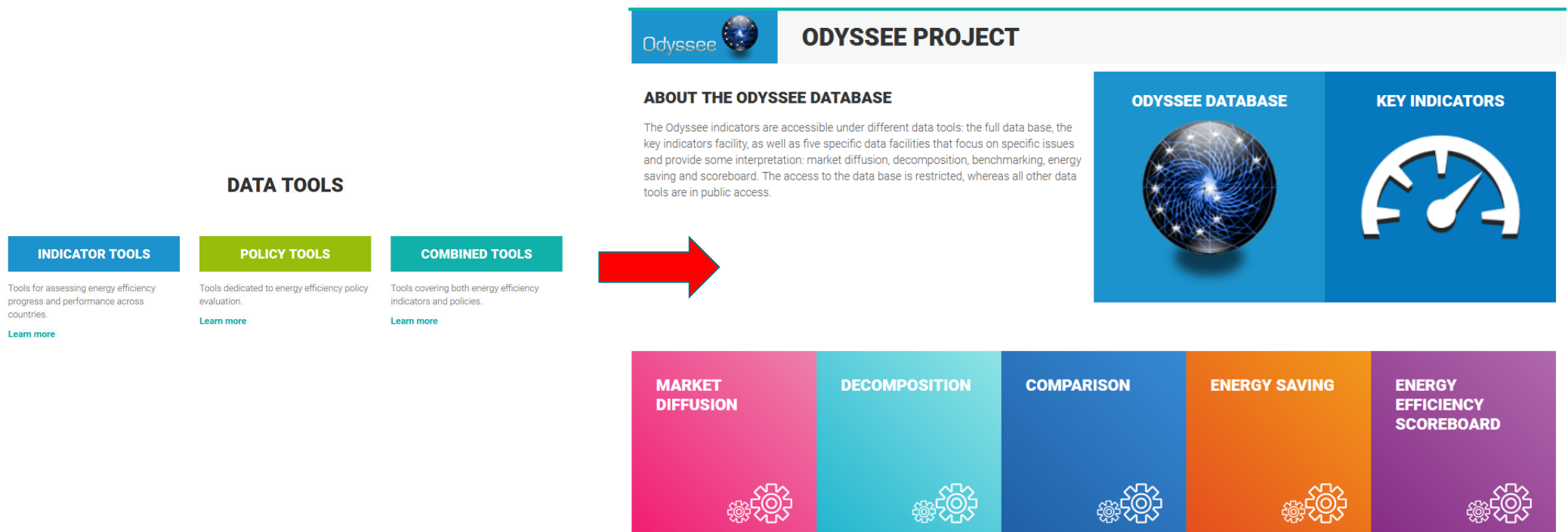


BACKGROUND: ODYSSEE-MURE PROJECT ON ENERGY EFFICIENCY (EE)

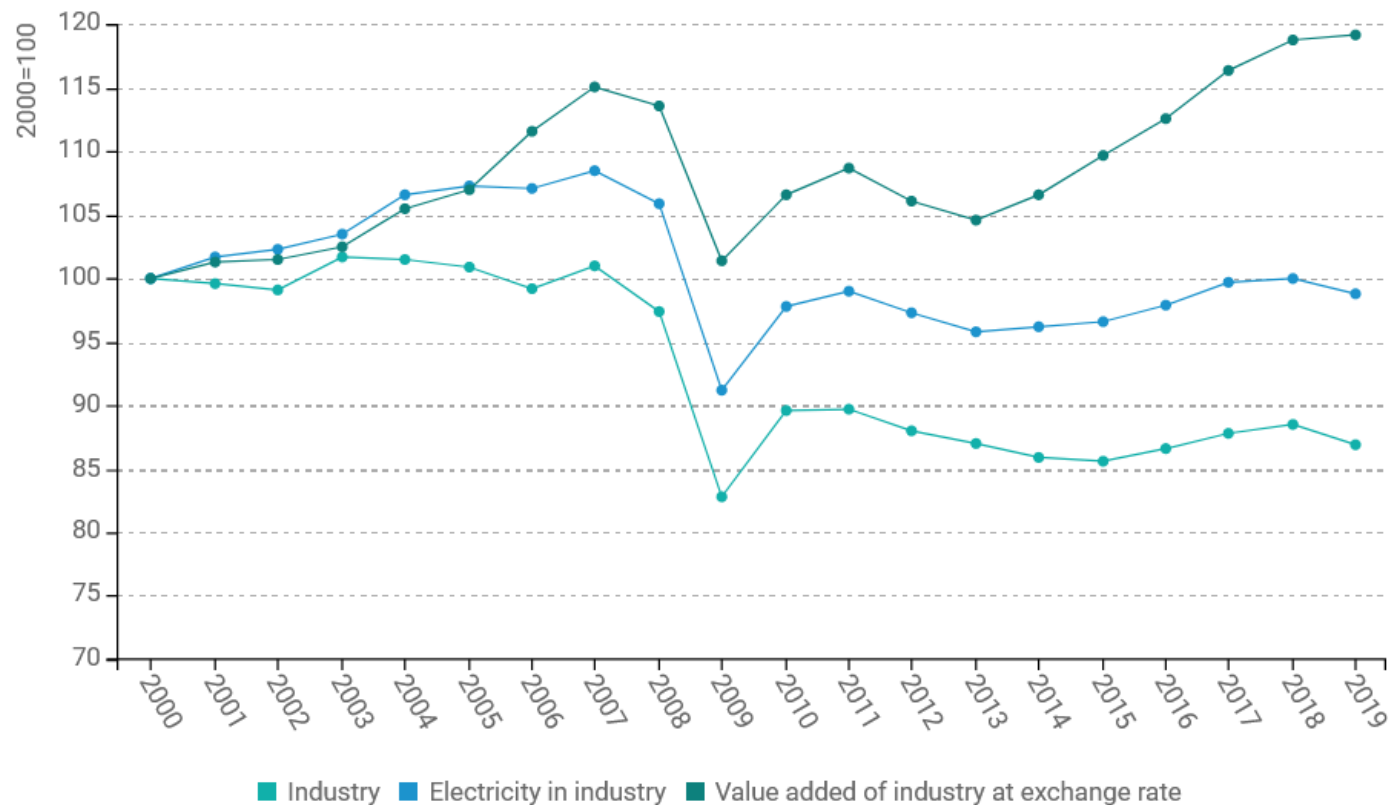
- 27 EU countries (+UK, Norway, Switzerland, Serbia) represented by **energy efficiency agencies**
- **2 complementary databases:**
ODYSSEE on EE Indicators (200 EEIs)
MURE on EE Policies (2500 national EE policies)
- **Decentralised data collection**
➡ legitimacy of the results
- **Exchange** on methodologies, analyses through seminars gathering 60 experts
- **Harmonised data collection** allowing data going « beyond the energy balance », rapid updating (- one year), quality check
- Benchmark through adjustments for national circumstances
- Dissemination: sectoral and country profiles, national reports, policy briefs, webinars
- Communication tools (12 **facilities** for end-users , **single website** <http://www.odyssee-mure.eu/>).



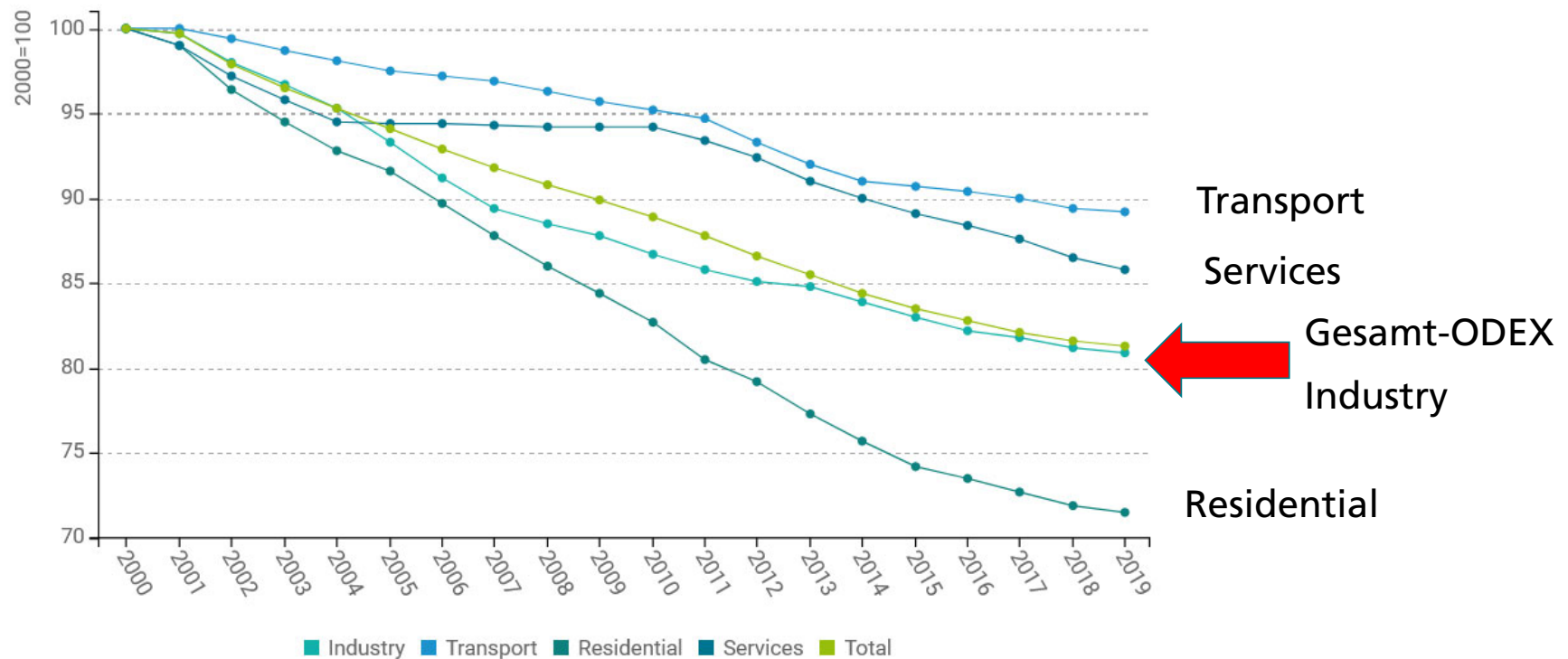
ODYSSEE-MURE: ANALYTICAL FACILITIES



ENERGY DEMAND AND ACTIVITY IN INDUSTRY (2000 = 100)

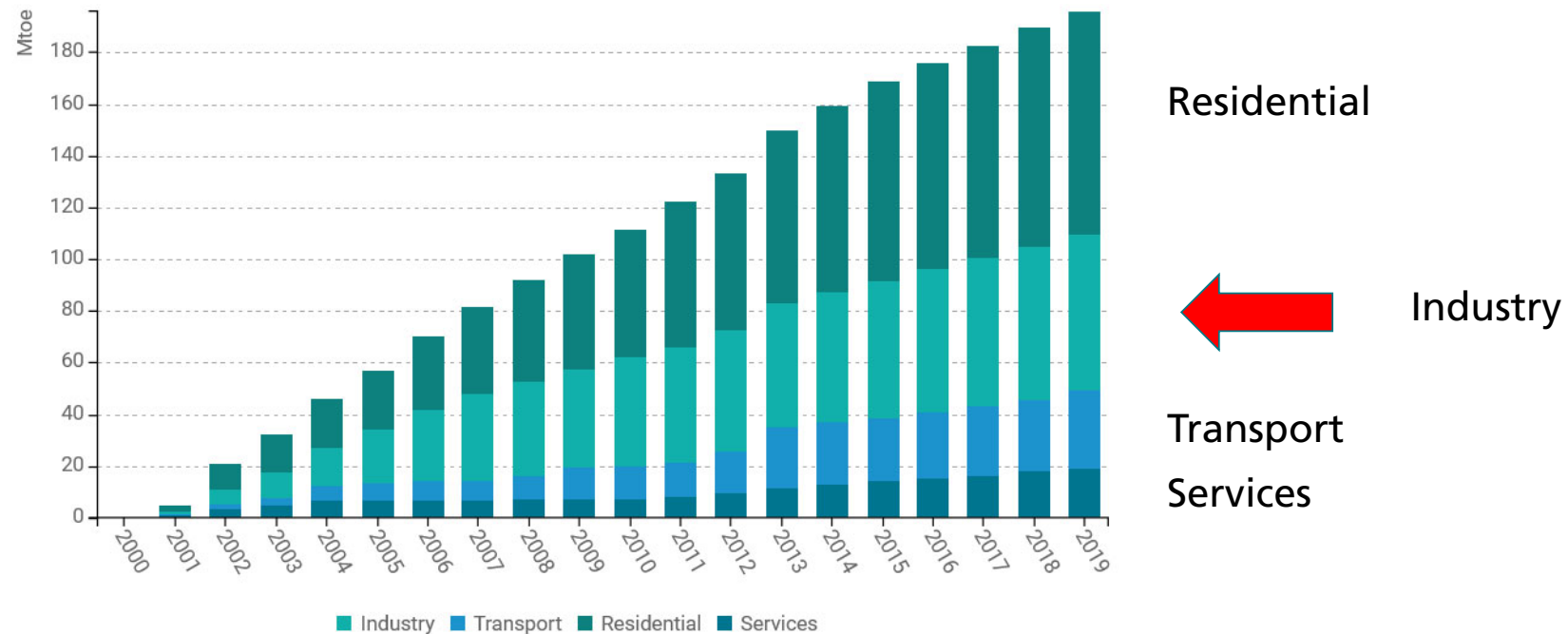


ENERGY EFFICIENCY TRENDS OF FINAL CONSUMERS (EU) - ODEX



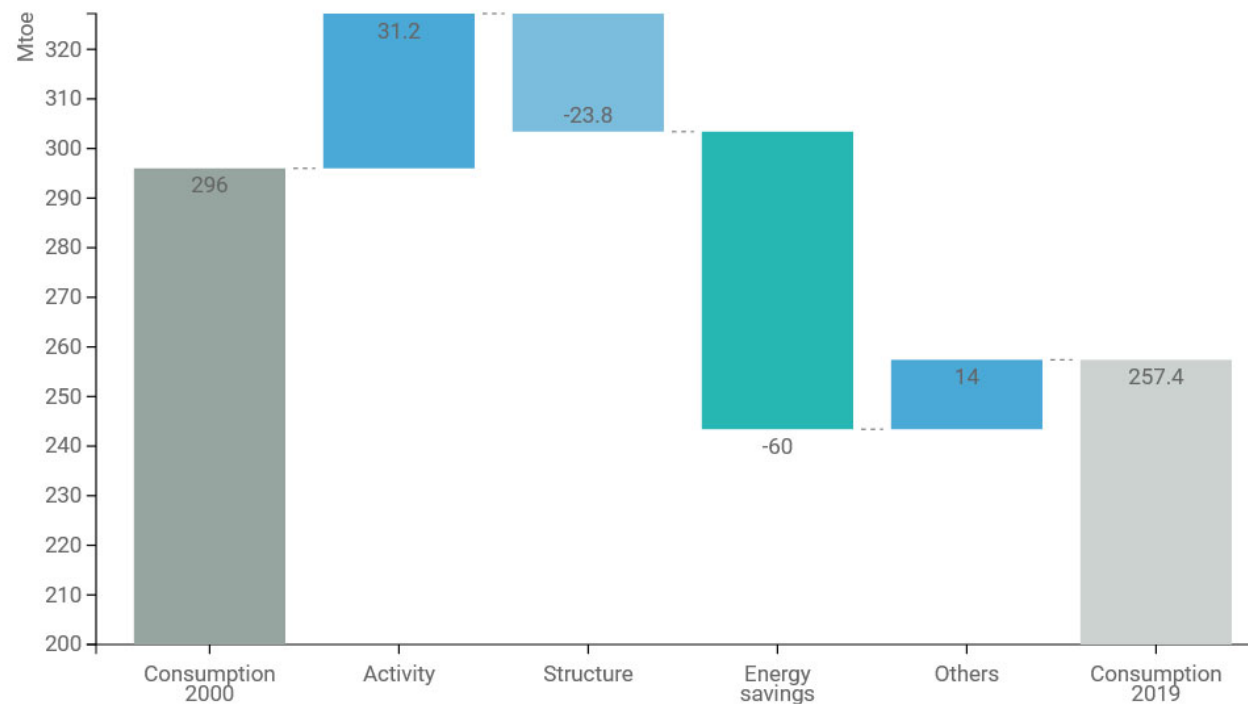
ENERGY SAVINGS (EU)

Energy savings in the EU

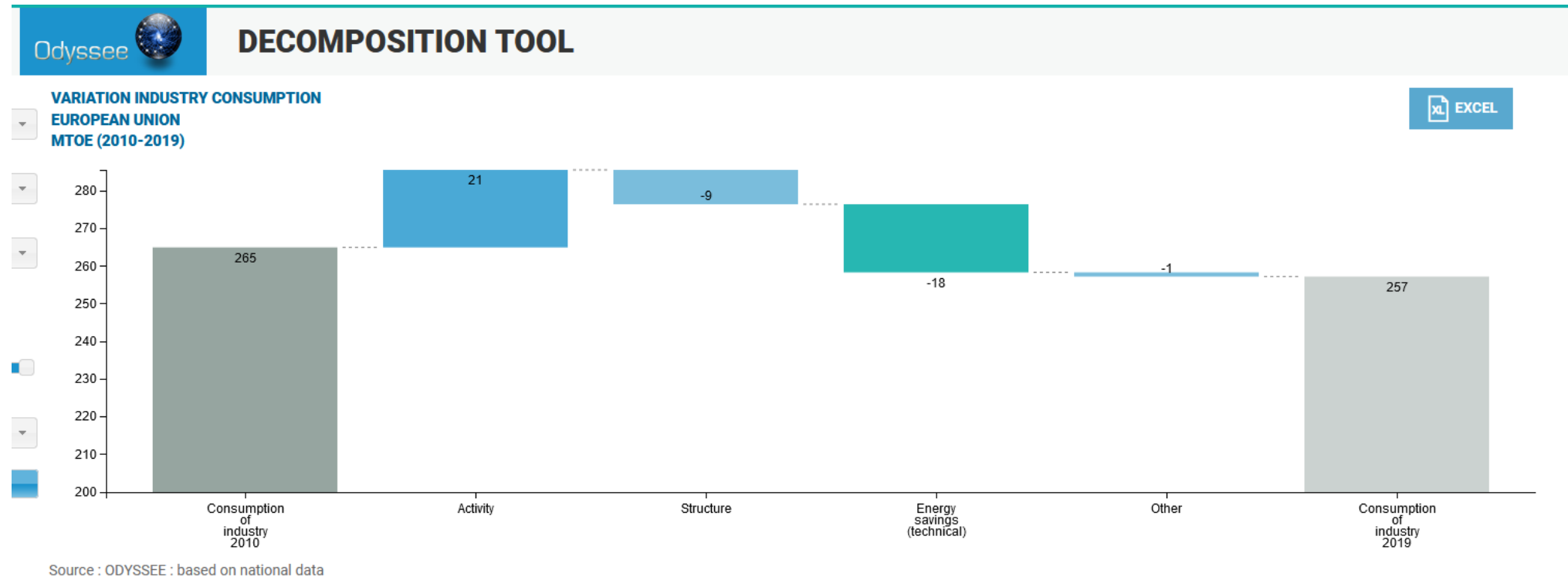


DRIVERS OF ENERGY CONSUMPTION VARIATION IN INDUSTRY AT EU LEVEL 2000-2019

Drivers of energy consumption variation in industry at EU level

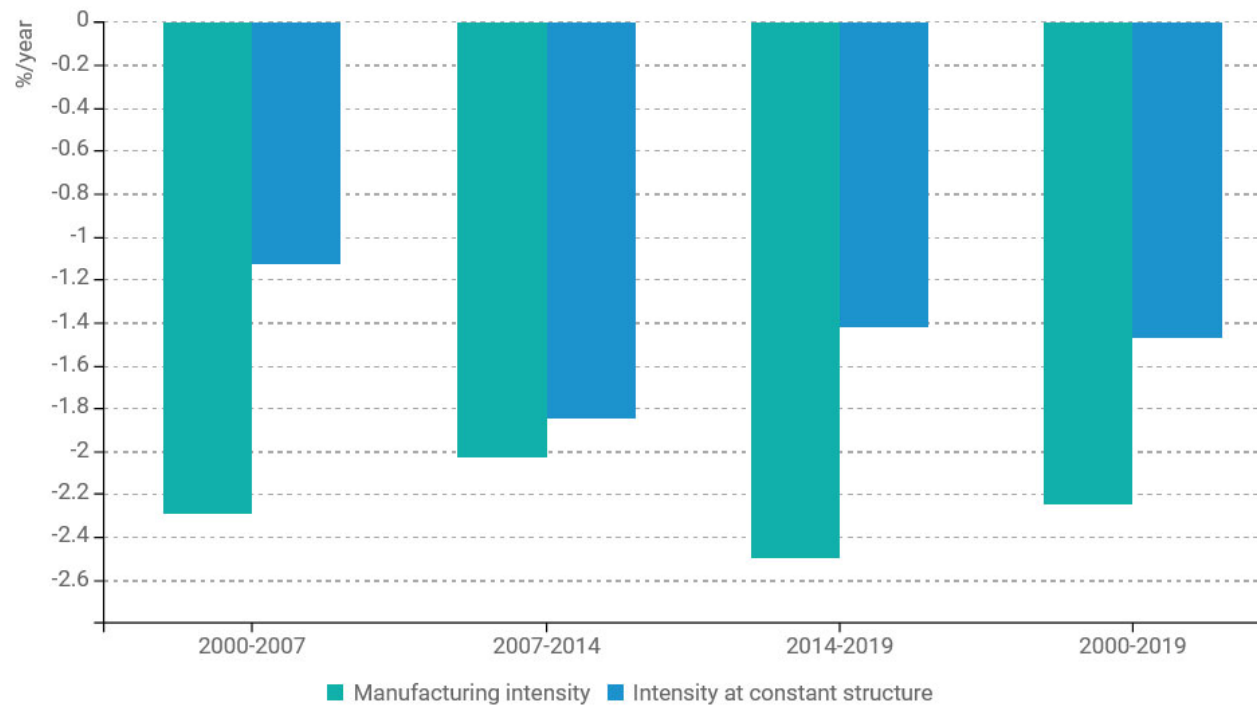


DRIVERS OF ENERGY CONSUMPTION VARIATION IN INDUSTRY AT EU LEVEL 2010-2019

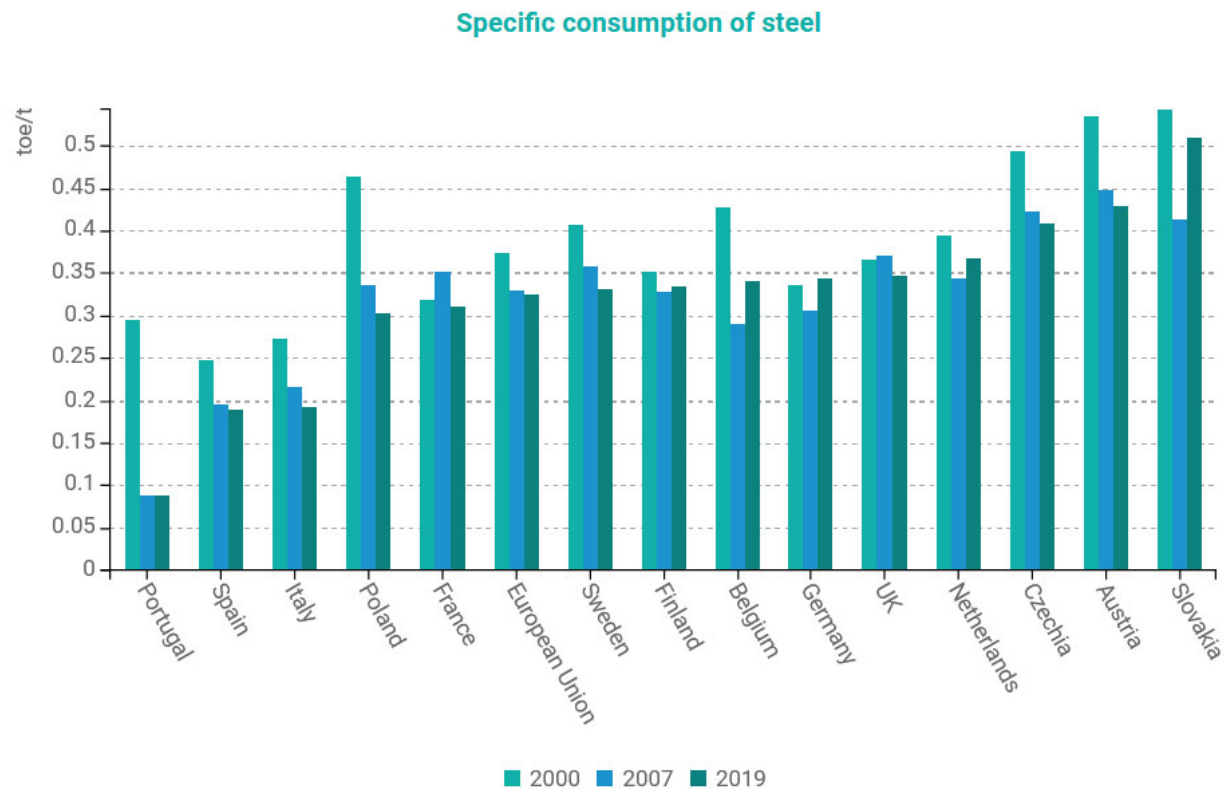


IMPACT OF STRUCTURAL CHANGES ON INDUSTRY INTENSITY

Intensity trends and structural changes in manufacturing (EU)

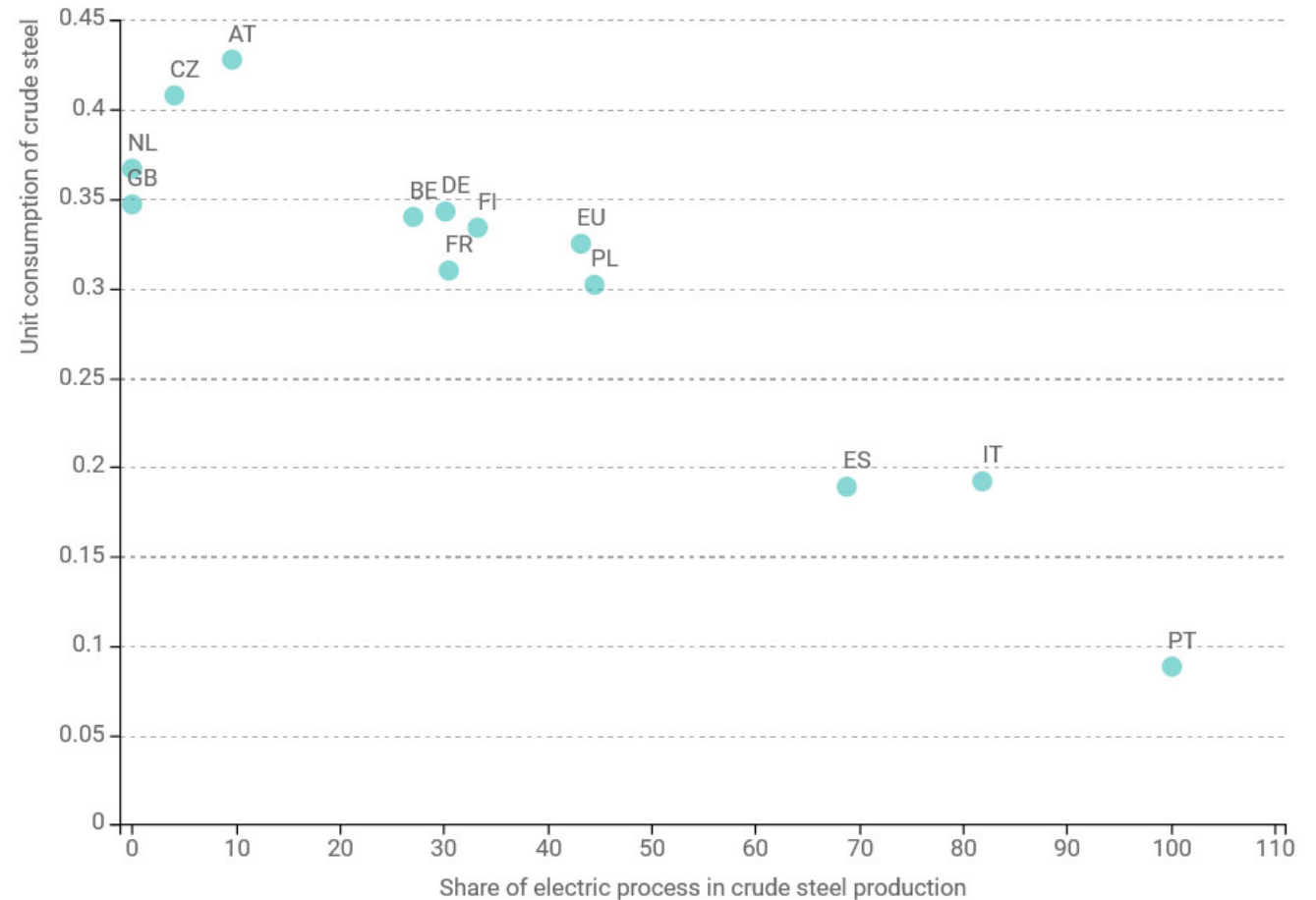


A SHORT VIEW TO STEEL INDUSTRY

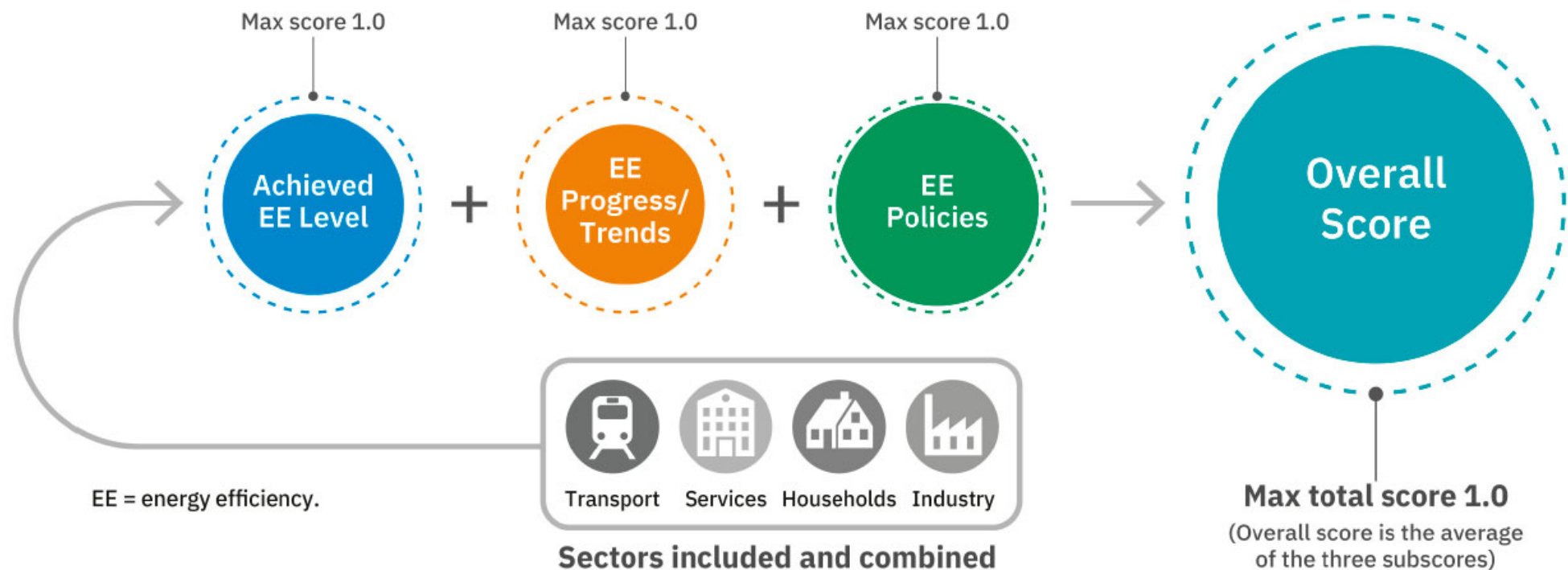


A SHORT VIEW TO STEEL INDUSTRY

Specific energy consumption of crude steel (2019)



ODYSSEE-MURE ENERGY EFFICIENCY SCOREBOARD



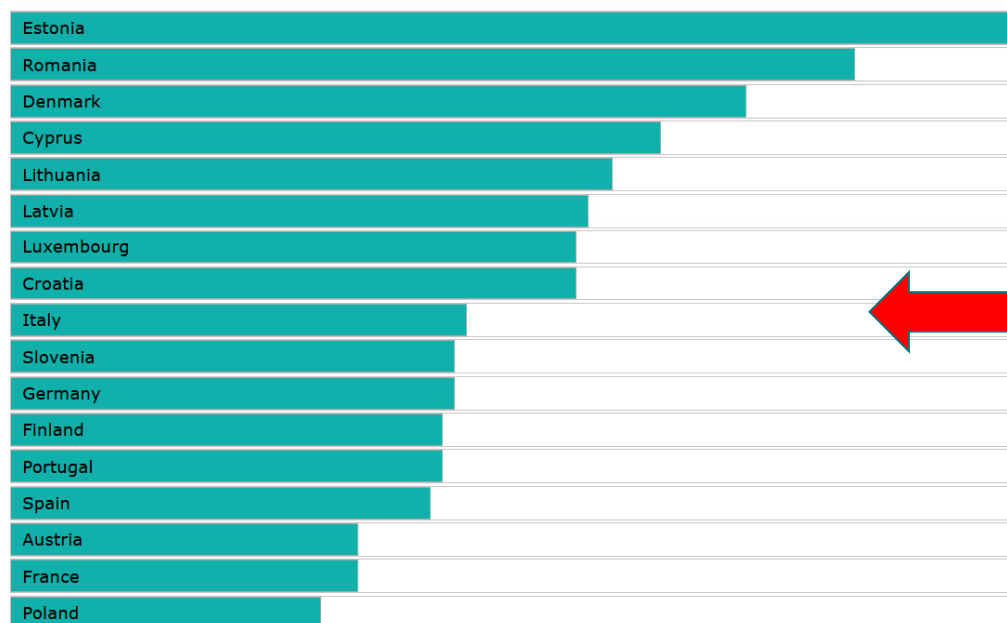
ODYSSEE-MURE ENERGY EFFICIENCY SCOREBOARD INDUSTRY / INDUSTRIAL EE POLICIES

INDUSTRY: OVERALL ENERGY EFFICIENCY SCORE

The overall energy efficiency score is obtained as an average of the three scores obtained for "energy efficiency level", "energy efficiency prog policies" (i.e. one third weighting).

IMPACTS FOR INDUSTRY

[SEE RANKING](#)



Country	Measures	Types	2020 (PJ)
Austria	Domestic Environmental Support, UFI	Financial	1.87
	Voluntary energy audits for small and medium enterprises (SME)	Financial, Information/training	0.41
	Obligatory energy audits for large companies	Mandatory information	2.07
Belgium	Wallonia - Voluntary agreements with industry	Others	17.80
	Flanders - Voluntary agreements in energy intensive industry	Others	45.26
	Wallonia - Subsidies for energy saving investments in industry (excluding buildings)	Financial	0.13
Bulgaria	Financing of projects for energy saving technologies and RES by Operational Programme "Innovation and Competitiveness" 2014-2020	Financial	1.25
Croatia	High-efficiency cogeneration in industry	Others	0.53
Czechia	Operational Programme Enterprise and Innovation for Competitiveness 2014 - 2020 (part industry)	Financial	7.68
	ENERG Programme (part industry)	Financial	0.02
	Alternative measures for increasing energy efficiency in Czech industry and in municipalities and regions	Others, Information/training	0.20
Denmark	Energy Savings Fund (part industry)	Financial	1.40
	Support for construction in the Czech Republic relating to EE improvement and environmental protection in line with the strategy EU 2020 for smart, sustainable and inclusive growth (part industry)	Financial	0.10
	Renewable energy for production processes	Financial	16.00

OUTLOOK

ENERGY EFFICIENCY VERSUS DECARBONISATION?

- Reaching the limits of Energy Efficiency in industry?
 - Newly designed processes which exist since centuries (cement...)
 - Material efficiency and material substitution
- Hydrogen Economy
 - Carbon Contracts for Difference / Climate Protection Contracts
- ETS signals for energy efficiency?
- Renewables: strong cost drop versus impacts

CONTACT

Wolfgang EICHHAMMER

Head Competence Centre Energy Policy and Energy Markets
Fraunhofer Institute for Systems and Innovation Research ISI
Breslauer Strasse 48 | 76139 Karlsruhe | Germany

Phone +49 721 6809-158 | Fax +49 721 6809-272

mailto: wolfgang.eichhammer@isi.fraunhofer.de

<http://www.isi.fraunhofer.de>

Twitter: @FraunhoferISI

and

Utrecht University
Copernicus Institute of Sustainable Development
Princetonlaan 8a
3584 CS UTRECHT
The Netherlands
Email: w.a.eichhammer@uu.nl