

Model of regional climate change competitiveness

1. Model

Model regional climate change competitiveness (RCCCI) contains 6 sub-indexes (see Figure) and 89 indicators (see Table).

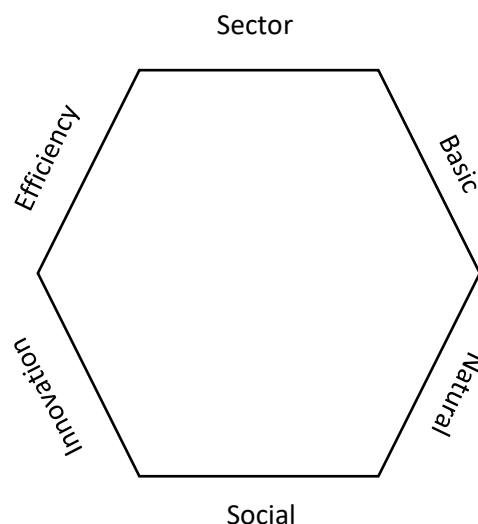


Table. Indicators including in model

Subindex	Pillars	Indicators	Reference Level
Basic	Institutions	Corruption Quality of government -index Regulatory quality	Region Region Country
	Macroeconomic stability	Harmonised Indices of Consumer Prices HICP Public debt -% of GDP Regional gross domestic product (PPS per inhabitant) Total natural resources rents (% of GDP)	Country Country Region Country
	Infrastructure	Motorways network Rail network Population connected to wastewater treatment plants Water use in the manufacturing industry Municipal waste by waste management operations	Region Region Country Country Country
	Education	Mean score in reading (PISA) Mean score in math (PISA) Mean score in science (PISA) Population by tertiary educational attainment level Number of universities in the 200 best in EU Public expenditure on education (excluding early childhood, share of public expenditure)	Country Country Country Country Region Country
	Institutions related to climate change	National climate policy Investment outlays on fixed assets for air and climate protection Local government bodies which have declared climate policy	Country Region Region
	Concentration of economic entities	Number of SME (50-249 employees) in region Number of enterprises in the mining and quarrying sector in the region	Region Region
	Natural	Water quality (bad)	Water bodies (km ²)
Air quality (good)		Air quality index	Country
Biodiversity		Common farmland bird index Natural grassland (km ²) Resource productivity Woodland cover (%)	Country Region Country Region

	Effectiveness in achieving climate goals	Greenhouse emission gap to 2030 ESD Target Renewable energy gap to RED trajectory Energy efficiency gap to FEC Coal phase out in long term climate policy	Country Country Country Country
Efficiency	Labor market efficiency	Employment rate of the age group 20-64 Unemployed in the youngest group (18-24) Average number of usual weekly hours of work Share of green jobs in the total number of jobs Person employed number in sensitive sectors (tourism, agriculture, energy)	Region Region Region Country Region
	Market size	Disposable income of private households/ per inhabitant Trade in Environmentally Related Goods	Region Country
	Economic emission intensity	Demand-based CO2 intensity Production-based CO2 intensity Consumption based CO2 emission Annual CO2 emission	Country Country Country Country
	Resource efficiency	Circular material use rate Resource productivity Domestic material consumption per inhabitant	Country Country Country
Innovation	Technological readiness	Household level of Internet access Internet purchases by individuals Enterprises having received orders online (at least 1%) - % of enterprises Employment in technology and knowledge-intensive sectors	Country Country Country Region
	Innovativeness	Human resources in science and technology Intramural R&D expenditure Eco-innovation index Product or process innovators Trademark application Innovative SMEs collaborating with others	Region Region Country Region Region Region
Sector	Agriculture	Agricultural Total Factor Productivity Index Organic crop area Water intensity of crop production Change in annual number of days with rainfall	Country Country Country Region
	Tourism	Number of establishments and bed-places Nights spent at tourist accommodation establishments Carbon emissions embodied in hotels, restaurants (production based emission)	Region Region Country
	Energy	Simplified energy balances (gross available energy) Electricity production capacities for renewables and wastes (Hydro, wind, solar, solid) Energy productivity Electricity production by autoproducers System Average Interruption Duration Index Residential Solar PV capacity	Country Country Country Country Country Country
	Transport	Greenhouse gas emissions in transport Newly registered electric cars in total registration Passengers of public transport (railway, maritime, air) Railway transport by maximum speed	Country Country Region Country
	Industry	Electricity and heat emission Emission from industrial process Production in environmental goods	Country Country Country
	Buildings	CO2 emissions from residential buildings and commercial and public services (% of total fuel combustion) Energy consumption (of space heating) in building (kWh/m2)	Country Country
Social	Social development	Happy Planet Index Human development Index	Country
	Awareness	Share of people treating climate change as a significant global problem	Country
	Attitude	Share of people taking individual action against climate change	Country
	Perceived quality of life	Life satisfaction indicator	Country
	Health	Number of hospital beds Life expectancy Premature deaths attributable to PM 2.5, NO 2 and O 3 exposure (do poprawy)	Region Region Country

	NGO power	Participation in voluntary activities (%) People employed in the TSE sector of total national employment (%)	Country Country
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2. Estimation of RCCCI value:

Value of subindex = sum of pillars / number of pillars

Index= sum (value of subindex * weight)

Weight depends on the Climate Change Performance Index for the region

CCPI level	Region- Very high CCPI	Region- High CCPI	Region- Medium CCPI	Region- Low CCPI	Region- Very Low CCPI
Basic	0,16	0,16	0,17	0,19	0,19
Natural	0,16	0,16	0,16	0,16	0,16
Efficiency	0,21	0,19	0,19	0,16	0,15
Innovation	0,19	0,19	0,15	0,15	0,15
Sector	0,15	0,15	0,17	0,18	0,19
Social	0,13	0,15	0,17	0,17	0,17
Sum	∑1	∑1	∑1	∑1	∑1