1 CO_2 emission per unit of value added

Definition and scope
Carbon dioxide (here after, CO_2) emissions per unit value added is an indicator computed as ratio between CO_2 emissions from fuel combustion and the value added of associated economic activities. The indicator can be computed for the whole economy (total CO_2 emissions/GDP) or for specific sectors, notably the manufacturing sector (CO_2 emissions from manufacturing industries per manufacturing value added (MVA). CO_2 emissions per unit of GDP are expressed in kilograms of CO_2 per USD constant 2010 PPP GDP. CO_2 emissions from manufacturing industries per unit of MVA are measured in kilogram of CO_2 equivalent per unit of MVA in constant 2010 USD (as per UN SDG Excel datasets). The latter is given.

This is the single indicator for Target 9.4 (By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities) under SDG 9.

More
https://unstats.un.org/sdgs/metadata/files/Metadata-09-04-01.docx

Factsheet rationale

Carbon emissions per unit of value added is a universal indicator for measuring the impact of industrial production on the environment. It captures the intensity of energy use, energy efficiency of production technology and most importantly use of fossil fuels to some extent. As stated rationale by SDG: The indicator CO_2 emissions per unit of value added represents the amount of emissions from fuel combustion produced by an economic activity, per unit of economic output. When computed for the whole economy, it combines effects of the average carbon intensity of the energy mix (linked to the shares of the various fossil fuels in the total); of the structure of an economy (linked to the relative weight of more or less energy-intensive sectors); of the average efficiency in the use of energy when computed for the manufacturing sector (CO_2 emissions from fuel combustion per unit of manufacturing value added), it measures the carbon intensity of the manufacturing economic output, and its trends resulting from changes in the average carbon intensity of the energy mix used, in the structure of the manufacturing sector, in the energy efficiency of production technologies in each sub-sector, and in the economic value of the various outputs. Manufacturing industries are generally improving their emission intensity as countries move to higher levels of industrialization, but it should be noted that emission intensities can also be reduced through structural changes and product diversification in manufacturing. It is estimated that CO_2 emissions account for around 80% of all GHG emissions from the manufacturing processes.

Current situation and progress in the Mediterranean region

The majority of the Mediterranean countries show very little improvements in terms of CO_2 emissions, ranging from 0.1 to 1.04 Kg of CO_2 per unit of US$ MVA (manufacturing value added) in 2017. Albania, Libya and Syria have the highest values (2.6, 2.4 and 1.4, respectively) of CO_2 emissions.

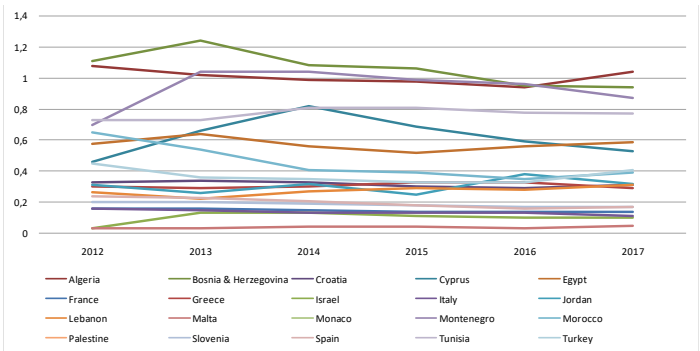
Sources
1: UN SDG

Links
https://unstats.un.org/sdgs/indicators/database/
(http://databank.worldbank.org/data/reports.aspx?source=2&series=EN.ATM.CO2E.KD.GD&country)

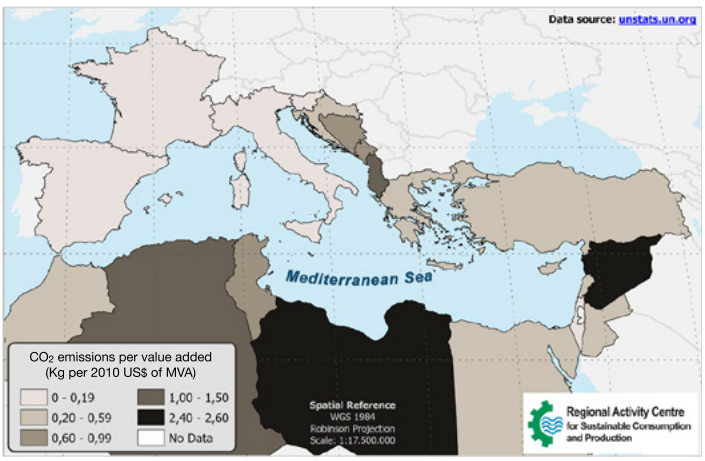
Key message

CO_2 emissions tend to remain stable in the majority of the Mediterranean countries with little improvement.

CO_2 emissions per unit of value added (2012-2017) trends



CO_2 emissions per unit of manufacturing value added (2017)



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