CIVITAS
Sustainable and smart mobility for all
2030

CIVITAS indicators

Non-fossil share of energy demand (ENG_DC_ES)

DOMAIN

Transport	Environment	**Energy**	Society	Economy

TOPIC	**Decarbonisation**	
IMPACT	**Transport non-fossil energy demand** *Reducing the fossil energy demanded for mobility*	**ENG_DC**

Category

Key indicator	Supplementary indicator	State indicator

CONTEXT AND RELEVANCE

Transport activity is a source of pollution and greenhouse gas emissions. Emissions are a consequence of energy use, and their volume depends on two main elements: the amount of energy used, and the sources of the energy used. Improving the sustainability of urban transport implies that either the amount of energy used is reduced or that the role of renewable energy is increased, or both.

This indicator is the share of non-fossil energy out of total energy demanded for transport. **It is a relevant indicator when the policy action is aimed at increasing the role of non-fossil energy used for mobility and transport. A successful action is reflected in a HIGHER value of the indicator.**

It should be noted that **this indicator provides a partial measure of the non-fossil energy demanded** as it does not cover domestic recharge of electric vehicles.

DESCRIPTION

The indicator is the ratio between the demand for non-fossil fuels and the demand of energy for transport for all relevant sources in the pilot area. Being a share, the indicator is **dimensionless**.

- Gasoline, Diesel, Biodiesel, Bioethanol, LPG: 1000 litres
- CNG, Biomethane, Hydrogen: 1000 kilograms
- Electricity: 1000 Kwh

METHOD OF CALCULATION AND INPUTS

The indicator is calculated within the supporting tool building on a set of inputs. If the indicator ENG_EF_ED1 is computed, it provides the inputs required.

Method 1

Energy supplied collected from refuelling stations and energy operators

Significance: **0.50**

METHOD OF CALCULATION

Using Method 1, the indicator is computed (**within the supporting tool**) according to the following steps:

- **Conversion of the energy demand of different sources into a common unit of measurement**. (see equation below)
- **Calculation of the indicator** (see equation below)**.**

INPUTS

The following information should be coded in the supporting tool to compute the indicator:

a) **The amount of energy demanded in a given period** (e.g. one month, one quarter, one year) for each fuel type. The fuel types to be considered are the followings (required unit of measurement in parenthesis):

- **Gasoline (litres)**

- **Diesel (litres)**
- **Biodiesel (litres)**
- **Bioethanol (litres)**
- **LPG (kg)**
- **CNG (kg)**
- **Biomethane (kg)**
- **Hydrogen (kg)**
- **Electricity (kWh)**

If some of these fuel types are not relevant in the experiment area (e.g., there are not refuelling stations for biofuels or hydrogen) **they are excluded from the indicator** and from the data collection.

The energy demanded for transport can be obtained according to alternative methods. See the factsheets of the indicator ENG_EF_ED1 and ENG_EF_ED2.

The experiment would result in a modification of the amount of non-fossil fuel energy demanded.

EQUATIONS

Within the supporting tool, the amount of energy demand for each fuel type is converted in the common unit of tonnes of oil equivalent (toe), according to the following equation.

$$EqEngSupl^{e} = EngSupl^{e} * ConvFact^{e}$$

Where:

$EngSupl^{e}$ = amount of energy of fuel type *e* demanded in the monitored period

$ConvFact^{e}$ = conversion factor from the unit of fuel type *e* to tonnes of oil equivalent

The indicator is computed on the converted amount of energy according to the equation:

$$NoFosEngSh = \frac{\sum_{e \in NoFos} EqEngSupl^{e}}{\sum_{e} EqEngSupl^{e}}$$

Where the subset of fuel types “NoFos” includes:

- Biodiesel
- Bioethanol
- Biomethane
- Hydrogen
- Electricity

ALTERNATIVE INDICATORS

This indicator measures the share of non-fossil energy in the total energy demand for transport, offering insight into the progress of mobility **decarbonization**.

Alternative indicator **ENG_EF_EE** assesses instead **energy efficiency**—that is, the ratio of energy demand to transport activity.