

2023 EPEA data collection

National Expenditure on Environmental Protection: estimates by CEPA

Eurostat note

August 2023

1. Background

NEEP is derived in a way that avoids double counting and makes the sum comparable with standard national accounts' aggregates such as gross domestic product (GDP) or gross national income (GNI). For this reason the intermediate consumption of environmental protection services by corporations specialist producers and general government producers of environmental production (EP) service (P2_EPS.1 and P2_EPS.2) are deducted from the sum of uses in NEEP calculation. The ratio is that intermediate consumption of EP services by specialist producers is also included in the expenditure of other units purchasing EP services from specialist producers, i.e. the sum of the uses of EP services.

As highlighted also in document on EPEA progress report presented at the 2023 MESA WG, the exclusion of P2_EPS to avoid double counting is uncontroversial and works perfectly when NEEP (for total economy of by institutional sector) is calculated for all CEPA domains.

However when calculating NEEP by CEPA, some additional considerations are necessary. The point has been raised also by FR and BE during the validation process.

This document is focused on NEEP calculation by CEPA and on how Eurostat intends to estimate the values of intermediate consumption of EP services by producers of EP services to avoid double counting in the automatic calculation of NEEP by CEPA.

2. Double counting for NEEP by CEPA

P2_EPS is needed to prevent double counting in the calculation of national expenditure on environmental protection (NEEP). Indeed, as highlighted in the [EPEA handbook - 2017 edition](#) (pages 61-62), P2_EPS should be deducted from P2_EPS_EXT for NEEP calculation both for total economy and by institutional sector.

The EPEA handbook refers only to NEEP calculation for total CEPA.

The improvements done in the last years and, in particular the recent [Commission delegated regulation 2022/125](#) that introduced the same mandatory reporting in terms of CEPA coverage and breakdown for all institutional sectors, allow to go for a calculation of NEEP aggregate also by CEPA domains. This would be a relevant step in terms of information available for the users and also of strengthening of the internal coherence of the account.

For this reason in the EPEA questionnaire for 2022 data collection, the calculation of NEEP by CEPA (for total economy and also by institutional sector) has been introduced.

P2_EPS is by definition the intermediate consumption of EP services for the production of EP services, and it is clear that when we consider P2_EPS referred to total CEPA, it includes the intermediate consumption of all CEPA services (CEPA1, CEPA 2, CEPA 3, CEPA 4, CEPA 5, CEPA 6 and CEPA 7-9) for the production of all CEPA services (CEPA1, CEPA 2, CEPA 3, CEPA 4, CEPA 5, CEPA 6 and CEPA 7-9).

And it is also clear that for calculation of NEEP for total CEPA, P2_EPS for total CEPA has to be deducted.

Stated this, during the 2022 DC validation process emerged the need to clarify the following point: **what should be exactly deducted to avoid double counting in NEEP calculation by CEPA?**

To avoid double counting in NEEP calculation for a specific CEPA_i it should be deducted the intermediate consumption of CEPA_i for the production of all EP services (CEPA 1, CEPA 2, CEPA 3, CEPA 4, CEPA 5, CEPA 6, CEPA 7-9).

E.g. to calculate the NEEP for CEPA 1 we need to subtract the intermediate consumption of CEPA 1 consumed by producers of all EP services given that it is already included in the expenditure of other units purchasing CEPA 1 services.

NEEP CEPA 1:

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Uses of CEPA 1 services:

(+) Final consumption of CEPA 1 (General Government and Households)

Intermediate consumption of CEPA 1 for all production (P2_EPS_EXT) –
Intermediate consumption of CEPA 1 for production of all EP services

(+) GFCF for production of CEPA 1 services

(+) Transfer for CEPA 1 services (not a counterpart of previous items)

(+) Financing to and (-) financing from the rest of the world related to CEPA 1

This information is not readily available in the EPEA questionnaire. The only information available is the sum of intermediate consumption of EP services for the production of EP services, that is P2_EPS for Total CEPA. This total represent the constraint and the point is how to distribute this total in order to have the value of CEPA 1 intermediate consumption for the production of all EP services, CEPA 2 intermediate consumption for the production of all EP services, etc....

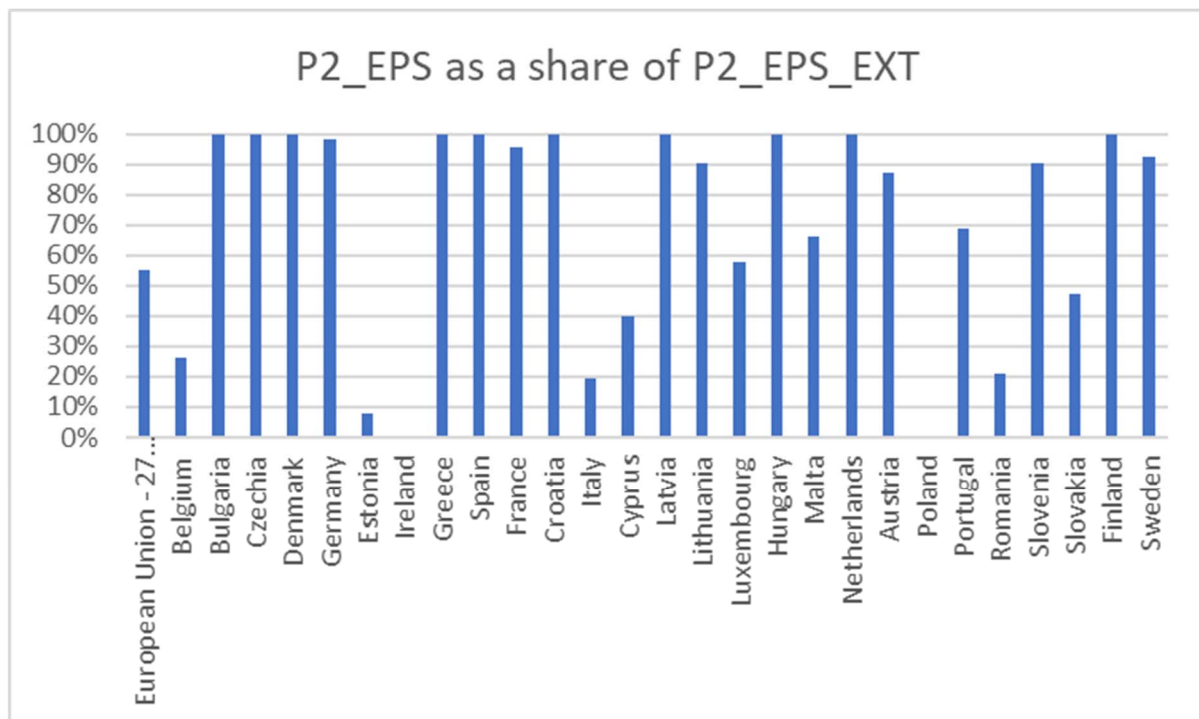
Estimates for corporation as specialist and secondary producers (Table 2):

The simplest way to estimate the intermediate consumption of CEPA_i for the production of all EP services, is:

- calculate the share of P2.EPS - TOTCEPA on P2_EPS_EXT - TOTCEPA
- apply the share to each P2_EPS_EXT_CEPA_i to estimate the intermediate consumption of CEPA_i for the production of all EP services

The assumption is that the intermediate consumption of all EP services for the EP producers is distributed across CEPA in the same way as P2_EPS_EXT (which includes the intermediate consumption of EP services by specialist and secondary producers for all their production, EP and not EP).

The more P2_EPS figures for TOTAL CEPA are close to P2_EPS_EXT figures for TOTAL CEPA, the higher will be the level of accuracy of the estimation. As it can be seen in the figure below, P2_EPS is close or equal to P2_EPS_EXT for most of the EU countries (with the exception of BE, IT, PT and RO). This should be a consequence of the fact that most EU countries cover no or very little secondary producers in table 2.



EXAMPLE:

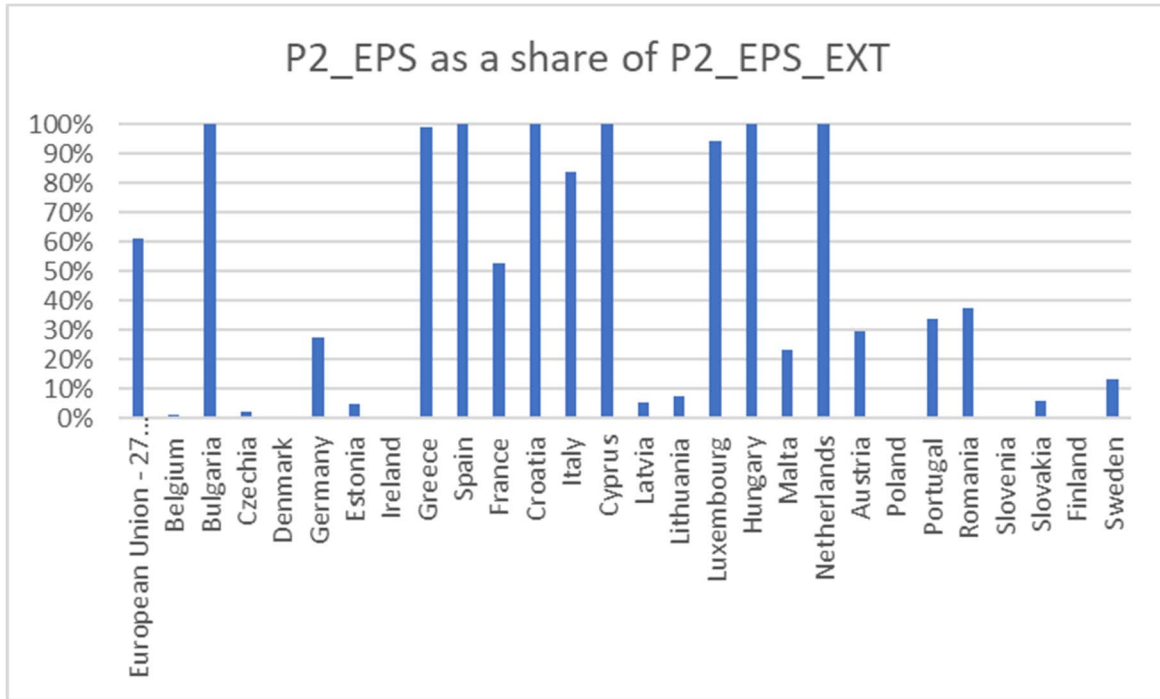
	year	CEPA 1	CEPA 2	CEPA 3	CEPA 4	CEPA 5	CEPA 6	CEPA 7+8+9	Total
(P2_EPS.2) Intermediate consumption of EP services	2018	16.2	179	593.1	47.8	96.3	8.1	32.9	973.6
(P2_EPS_EXT.2) Total intermediate consumption of EP services (for production of EP services and for other production)	2018	107.8	893.7	1,157.4	132	718.3	138.2	405.8	3553.3
SHARE of P2_EPS – TOT CEPA on P2_EPS_EXT – TOT CEPA									0.27

- SHARE of P2_EPS – TOT CEPA on P2_EPS_EXT – TOT CEPA: **0.27**
- Estimates of the intermediate consumption (P2) of CEPA_i for the production of all EP services (to be used in NEEP calculation by CEPA to avoid double counting):

Year	P2 CEPA 1 for production of EP services	P2 CEPA 2 for production of EP services	P2 CEPA 3 for production of EP services 3	P2 CEPA 4 for production of EP services 4	P2 CEPA 5 for production of EP services 5	P2 CEPA 6 for production of EP services 6	P2 CEPA 7-9 for production of EP services	Total
2018	0.27*107.8 = 29.5	0.27*893.7 = 244.9	0.27*1157.4 = 317.1	0.27*132 = 36.2	0.27*718.3 = 196.8	0.27*138.2 = 37.9	0.27*405.8 = 111.2	973.6

Estimates for General Government (Table 1):

The same approach as the one described above for Corporations as specialized and secondary producers can be applied to general government units reported in table 1. We are aware that for General Government there are several cases in which the values for P2_EPS tot CEPA are different from P2_EPS_EXT and consequently the distribution by CEPA of P2_EPS_EXT is much more influenced by non EP producers. However we consider that, based on data available, this can be considered as a first proxy to estimate NEEP by CEPA.



Corporations (others) (Table 3)

No estimation is needed, given that for these corporations the ancillary output estimated as sum of costs already excludes the intermediate consumption of EP (see also EPEA Handbook, page 62).

3. EPEA questionnaire 2023

Eurostat consider that the methodology described above allows to provide, on the basis of the available information, first estimates of NEEP by CEPA.

Eurostat will introduce (in the EPEA questionnaire 2023) the estimates for the intermediate consumption of CEP*A*_i for the production of all EP services in the automatic calculation of NEEP by CEPA (by institutional sector and for total economy). The estimates will be used to calculate NEEP EU aggregates.

Countries can choose to confirm the result of the calculation of NEEP by CEPA following the methodology described above (and consequently have them also disseminated) or to have their own estimates included in Table 7 and related subtables by CEPA and institutional sector.

Obviously the estimates by CEPA will not have any impact on the automatic calculation of NEEP for TOTAL CEPA.