

NACE Rev. 2 Proposals for Changes

In response to Eurostat's invitation for consultation on the review of the Statistical Classification of Economic Activities, NACE Rev. 2 (Regulation EC 1893/2006) sent on 13 May 2019.

Submitted proposals would:

- add a turnover of some EUR 73 billion to engineering activities in the European Union classified under the main engineering category (NACE 71.12);
- highlight the turnover of EUR 60 billion in the European Union for engineering development that is classified without details under a NACE 72.19 (Other research and experimental development on natural sciences and engineering) sub-category.

SUMMARY

1. Proposed NACE 71.12 sub-category modification (words in capitals added)

“WATER SUPPLY, WASTE WATER TREATMENT, STRUCTURAL ENGINEERING, OFFSHORE & ONSHORE MARINE ENGINEERING, HEALTH & safety to “project elaboration ...” and to consulting activities for project elaboration ...”

Rationale

Several major areas of engineering activity (in CAPITALS) are missing.

Impact

The EU28 annual turnover increased by the proposed changes is 1% of infrastructure demand, including renovation and maintenance, amounting to EUR 1.2 billion.

2. Proposed NACE 71.12 category inclusion – project supervision

“project supervision activities for:

- industrial plant projects involving civil engineering, hydraulic engineering, traffic engineering
- water management projects
- projects realisation relative to WATER SUPPLY, WASTE WATER TREATMENT, electrical & electronic engineering, mining engineering, chemical engineering, STRUCTURAL ENGINEERING, OFFSHORE & ONSHORE MARINE ENGINEERING, mechanical, industrial & systems engineering, HEALTH & safety engineering”

Rationale

Project supervision is a major area of engineering activity.

Impact

Approximately 1% of the investment in construction, including renovation and maintenance, is spent on project supervision so the EU annual turnover for project supervision is EUR 1.3 billion

3. Proposed NACE 71.12 category inclusion – integrated engineering

“integrated engineering activities for design-build & turnkey projects and other forms of integrated project delivery in the construction, manufacturing, mining, & agriculture sectors”

Rationale

The issue that “other industries having output of the primary products” where “engineering services are internalized in units from other industries” has been recognised by national statistics agencies for many years. The proposal aims to ensure that all engineering-related activity for all integrated projects is classified under NACE 71.12.

Impact

In the EU28, some 50% of all new build and renovation infrastructure construction projects and 10% of building construction projects are carried out under design-build or turnkey contractual arrangements. This corresponds to an investment of EUR 275 billion of which 8% (EUR 22 billion) corresponds to the increase in annual turnover for NACE 71.12 activities.

4. Proposed NACE 71.12 category inclusions - engineering design

“engineering design activities for:

- manufacturing processes & production
- the marine & costal environment
- nature-based infrastructure

building information modelling & related systems implementation & operation for buildings, civil engineering works & industrial plant”

Rationale

The rationale for each of the inclusion proposal builds upon NACE 71.12 in the context of:

- the important engineering design activities in manufacturing and proposals to create a set of “aligned design activities” for NACE 74.10;
- marine and coastal activities, the so-called “blue” activities covered in part by NACE 03.2 (Aquaculture) relating to “techniques designed to increase the production of”;

- nature-based built environment activities covered in part by NACE 81 (Services to buildings and landscape activities) relating to the “design of landscape plans and/or the construction (i.e. installation) of walkways, retaining walls, decks, fences, ponds, and similar structures”.

a) *Engineering design activities in manufacturing*

The proposed NACE 71.12 category inclusion “engineering design activities for manufacturing processes & production” recognises that engineering design activities are a core component of many manufacturing activities.

b) *Marine and coastal engineering design activities*

NACE 71.12 services are a core component of the blue economy. It is therefore proposed to include “engineering design activities for the marine & coastal environment” as a NACE 71.12 category, with corresponding exclusions elsewhere, if necessary.

c) *Nature-based engineering design activities*

Engineering activities for nature-based solutions (NBS) need to be classified under NACE 71.12 because:

- these activities are already an important sector of economic activity;
- classifications will be incorporated into vital global programmes such as urban modelling (e.g., activity classifications for use with urban metabolism and climate-change carbon stocktaking);
- NACE 81 (services to buildings and landscape activities) only alludes to NBS activities that have a narrow focus;
- the on-going extensive digitalisation of built environment sector value chain, of engineering activities in general and of engineering design activities in particular, will at some stage impact NBS.

d) *Aligned digital design categories*

The inclusion of a NACE 71.12 category “building information modelling and related systems implementation & operation for buildings, civil engineering works & industrial plant” would allow the specialised issues related to the supply of digital-enabled design services in key areas of construction and manufacturing to be recognised.

Impact

Estimates for the EU28 annual turnover that would be classified under the various proposed NACE 71.12 category inclusions are:

- manufacturing processes & production engineering design: EUR 5 billion
- marine & coastal environment engineering design: EUR 30 billion
- nature-based infrastructure engineering design: EUR 8 billion

- building information modelling: EUR 1.2 billion.

5. Proposed NACE 71.12 category inclusions – prefabricated module construction

“engineering & engineering design of prefabricated prefinished volumetric construction modules”

Rationale

Missing from the manufacture - construction value chain for construction using prefabricated modules are key engineering design activities as well as the integrated engineering activities.

The proposal for a NACE 71.12 sub-category inclusion “engineering & engineering design for prefabricated prefinished volumetric construction modules” rectifies the anomaly and provides a coherent treatment of integrated engineering services.

Impact

Given that 1% of the EU28’s buildings other than dwellings are constructed using prefabricated modules, an annual turnover of EUR 1.1 billion would be classified under the proposed subcategory.

5. Proposed NACE 71.12 category inclusions – environmental engineering

“environmental engineering:

- site engineering
- noise abatement engineering
- health & safety engineering
- resource management engineering”

together with proposed NACE 74.90 exclusions:

- environmental site engineering, see 71.12
- environmental noise abatement engineering, see 71.12
- environmental health and safety engineering, see 71.12
- environmental resource management engineering, see 71.12”

Rationale

An adequate accounting of environmental goods and services by activity requires direct measures of primary and secondary production, especially for environmental engineering activity

This situation persists because the NACE 74.20 sub-category “environmental consulting” is undefined and not directly related to product classifications. This is in spite of the fact that engineering-based environmental services are classified outside NACE according to a product class or category that corresponds to a major engineering discipline. The proposal therefore is to

classify the treatment of environmental engineering in NACE 71.12 (with the corresponding exclusions in NACE 74.90 categories) according to the main engineering disciplines as follows: site engineering; noise abatement engineering; health and safety engineering; resource management engineering.

Impact

For the EU28, the introduction of the four environmental engineering categories into NACE 71.12 means that the annual NACE 71.12 turnover is increased by EUR 3.0 billion.

5. Proposed NACE 72 class and category inclusions – experimental development on engineering

Change the title of class 72.19 to “Other research and experimental development on natural sciences n.e.c.”

NACE 72 class inclusion - 72.12 (Research and engineering development on engineering)

NACE 72.12 category inclusions - “experimental development” listing sub-categories corresponding to the current NACE sub-categories and including the additional proposed NACE 71.12 categories, to give:

“This class includes experimental development on engineering:

- elaboration of projects using equipment
- geophysical, geologic and seismic surveying - geodetic surveying
- project supervision
- integrated engineering
- manufacturing processes & production design
- building information modelling and related systems
- marine & costal environment design
- built environment ecosystems design
- prefabricated prefinished volumetric construction”

“experimental development” redefined to include an application/implementation phase by including the phrase “the application of physical laws and principles”.

Rationale

In the case of engineering activities, national account estimates, and indeed estimates in many other contexts, would be improved considerably if classes replaced the current NACE 72.19 categories, thereby mirroring NACE 72.11 (Research and experimental development on biotechnology).

First, it is proposed to add a new class (say NACE 72.12) that replaces the NACE 72.19 sub-category “research and development on engineering and technology” and to include in NACE

72.12 categories that mirror the current NACE 72.12 categories as well as the additional NACE 71.12 categories proposed above.

Second, the proposed new class and category inclusions to reinforce the need for a proposed adjustment of the definition of “experimental development” to include “the application of physical laws and principles”.

Impact

Adding a NACE class 72.12 (Research and engineering development on engineering) with its category and sub-categories does not change the annual NACE 72 turnover. However, EUR 60 billion would be classified under the proposed class NACE 72.12.

6. NACE 09.90 – digitalised drilling, tunnelling, inspection, surveying, etc

NACE currently presents a complicated classification of location dependent (e.g., underground, seabed, underwater, aerial) inspection-type activities (e.g., drilling, tunnelling, diving inspection, surveying, and manipulation).

Proposals are needed for a more coherent classification of the various activities operating different locations, and for their closely related larger scale operations such as tunnelling and bore-hole drilling.

This is especially important for engineering activities as these are assuming greater importance in NACE 09.90 activities owing to the increased digitalisation of equipment and processes, notably in the construction, mining and agriculture sectors.

In particular, various activities that were traditionally carried out by operators are increasingly consolidated and integrated into integrated “one-stop shop” engineering services that are supplied to operators of survey, drilling, tunnelling, and manipulation equipment.

Reclassification should aim to encourage the reporting of secondary production. However, given that several classes other than NACE 09.90 would be affected, detailed proposals will not be made.

7. Summary of overall impact

The proposals would add EUR 72.8 billion to engineering activities classified under NACE 71.12.

The proposed NACE 72,12 (Research and engineering development on engineering) class would clearly identify the annual turnover of EUR 60 billion for engineering development that is currently subsumed under NACE 72.19 (Other research and experimental development on natural sciences and engineering).