Τρίτη, 18 Μαΐου 2021

Θεόδωρος Δημ. Τερζόπουλος
Χημικός Μηχανικός MSc-Μηχανικός Αερίου CEng
Πρόεδρος της Επιτροπής Φυσικού Αερίου, ΒιοCH_4 & H_2

ΙΝΣΤΙΤΟΥΤΟ ΕΝΕΡΓΕΙΑΣ
ΝΟΤΙΟΑΝΑΤΟΛΙΚΗΣ ΕΥΡΩΠΗΣ

ΚΑΝΟΝΙΣΜΟΣ (ΕΕ) 2020/852 ΤΟΥ ΕΥΡΩΠΑΪΚΟΥ ΚΟΙΝΟΒΟΥΛΙΟΥ ΚΑΙ ΤΟΥ ΣΥΜΒΟΥΛΙΟΥ της 18ης Ιουνίου 2020.

- Θέσπιση πλαισίου για τη διευκόλυνση των βιώσιμων επενδύσεων (EU TAXONOMY)
- κατ' εξουσιοδότηση πράξη του Απριλίου 2021 ©

Παρουσίαση στην Επιτροπή Φυσικού Αερίου, ΒιοCH_4 & H_2 του ΙΕΝΕ

Εισαγωγή: Θέσπιση πλαισίου για τη διευκόλυνση των βιώσιμων επενδύσεων (EU taxonomy)

- Το πλαίσιο ψηφίστηκε από το Ευρωπαϊκό Κοινοβούλιο τον Ιούνιο 2020 με τίτλο: ΚΑΝΟΝΙΣΜΟΣ (ΕΕ) 2020/852
- Τι αφορά το πλαίσιο διευκόλυνσης των βιώσιμων επενδύσεων της ΕΕ;

  Αποτελεί ένα σύστημα ταξινόμησης των επενδύσεων, το οποίο:

  - περιέχει κατάλογο περιβαλλοντικά βιώσιμων οικονομικών δραστηριοτήτων και
  - προσανατολίζει τις επενδύσεις προς την κατεύθυνση της βιωσιμότητας όπως προσδιορίζεται από τους όρους της Ευρωπαϊκής Πράσινης Συμφωνίας.

  Συγκεκριμένα:

  - παρέχει σε εταιρείες, επενδυτές και υπεύθυνους χάραξης πολιτικής, τους ορισμούς για τον χαρακτηρισμό των οικονομικών δραστηριοτήτων ως περιβαλλοντικά βιώσιμων,
  - δημιουργεί ασφάλεια για τους επενδυτές,
  - βοηθά τις εταιρείες να σχεδιάσουν τη μετάβαση στο νέο ενεργειακό μοντέλο

Η Κατ' Εξουσιοδότηση Πράξη (Delegated Act) της 23/04/2021

Η κατ' εξουσιοδότηση πράξη καθορίζει τα **τεχνικά κριτήρια ελέγχου** προκειμένου να θεωρείται ότι οι οικονομικές δραστηριότητες :

- συμβάλλουν ουσιαστικά στη μείωση της κλιματικής αλλαγής και
- δεν προκαλούν *Σημαντική Βλάβη (No Significant Harm)* σε οποιονδήποτε από τους άλλους σχετικούς περιβαλλοντικούς στόχους που έχει θέσει η ΕΕ

Η κατ' εξουσιοδότηση πράξη θα εγκριθεί το αργότερο έως τον Σεπτέμβριο 2021 από το Ευρωπαϊκό Κοινοβούλιο.

Θα ακολουθήσει η έγκριση 6 τροποποιητικών (amendments) κατ' εξουσιοδότηση πράξεων οι οποίες θα στοχεύουν στη διασφάλιση ότι οι χρηματοοικονομικές εταιρείες, π.χ. σύμβουλοι, διαχειριστές περιουσιακών στοιχείων ή ασφαλιστές, θα περιλαμβάνουν τη συμβατότητα των επενδυτικών συμβουλών και συμφωνιών με τους πελάτες τους με τους όρους βιωσιμότητας των επενδύσεων που περιλαμβάνονται στην Οδηγία 852 και την κατ΄εξουσιοδότηση πράξη της 23/04/2021.

Το όλο πακέτο θα τεθεί σε εφαρμογή τον Οκτώβριο 2022.

Η κατ' εξουσιοδότηση πράξη δεν έχει ακόμη μεταφραστεί στα ελληνικά, συνεπώς στην παρουσίαση που ακολουθεί, τα αποσπάσματα είναι στην αγγλική γλώσσα.

Τομείς δραστηριοτήτων εντός του πεδίου ενδιαφέροντος της Επιτροπής Φυσικού Αερίου, Βιομεθανίου & Υδρογόνου του ΙΕΝΕ

3.10. Manufacture of hydrogen

Manufacture of hydrogen and hydrogen-based synthetic fuels.

Technical screening criteria

The activity complies with the *life cycle GHG emissions savings* requirement of 73.4 % for hydrogen [resulting in 3 $tCO_2eq/tH2$] and 70% for hydrogen-based synthetic fuels relative to a fossil fuel comparator of 94g CO_2e/MJ in analogy to the approach set out in Article 25(2) of and Annex V to Directive (EU) 2018/2001 of the European Parliament and of the Council.

Life cycle GHG emissions savings are **calculated** using the methodology referred to in Article 28(5) of Directive (EU) 2018/2001 or, alternatively, using ISO 14067:2018 or ISO 14064-1:2018. Quantified life-cycle GHG emission savings are **verified** in line with Article 30 of Directive (EU) 2018/2001 where applicable, or by an independent third party.

Where the CO_2 that would otherwise be emitted from the manufacturing process is captured for the purpose of underground storage, the CO_2 is transported and stored underground, in accordance with the technical screening criteria set out in Sections 5.11 and 5.12, respectively, of this Annex.

Τομείς δραστηριοτήτων εντός του πεδίου ενδιαφέροντος της Επιτροπής Φυσικού Αερίου, Βιομεθανίου & Υδρογόνου του ΙΕΝΕ

4.7. Electricity generation from gaseous and liquid fuels

Construction or operation of electricity generation facilities that produce electricity using gaseous and liquid fuels (of fossil, renewable or bio-based origin).
This activity does not include electricity generation from the exclusive use of biogas and bio-liquid fuels (see Section 4.8 of this Annex).

Technical screening criteria

1. *Life-cycle GHG emissions* from the generation of electricity using gaseous and liquid fuels are lower than 100g CO_2e/kWh.
Life-cycle GHG emissions are **calculated** based on project-specific data, where available, using Commission Recommendation 2013/179/EU or, alternatively, using ISO 14067:2018 or ISO 14064-1:2018. Quantified *life-cycle GHG emissions* are **verified** by an independent third party.
2. Where facilities incorporate *any form of abatement* (including carbon capture or use of decarbonised fuels) that abatement activity complies with the criteria set out in the relevant Section of this Annex, where applicable.

Where the CO_2 that would otherwise be emitted from the electricity generation process is captured for the purpose of underground storage, the CO_2 is transported and stored underground, in accordance with the technical screening criteria set out in Sections 5.11 and 5.12 of this Annex.3. The activity meets either of the following criteria:
(a) at construction, measurement equipment for monitoring of physical emissions, such as methane leakage is installed or a leak detection and repair program is introduced;
(b) at operation, physical measurement of emissions are reported and leak is eliminated.

4. Where the activity blends gaseous or liquid fuels with biofuels (gaseous or liquid), the agricultural biomass used for the production of the biofuels complies with the criteria laid down in Article 29, paragraphs 2 to 5, of Directive (EU) 2018/2001 while forest biomass complies with the criteria laid down in Article 29, paragraphs 6 and 7, of that Directive.

Τομείς δραστηριοτήτων εντός του πεδίου ενδιαφέροντος της Επιτροπής Φυσικού Αερίου, Βιομεθανίου & Υδρογόνου του ΙΕΝΕ

4.8. Electricity generation from bioenergy

Description of the activity

Construction and operation of electricity generation installations that produce electricity exclusively from biomass, biogas and biofuels, excluding electricity generation from blending of fossil fuels with biofuels (see Section 4.7 of this Annex).

Technical screening criteria

1. Agricultural biomass used in the activity complies with the criteria laid down in Article 29, paragraphs 2 to 5, of Directive (EU) 2018/2001. Forest biomass used in the activity complies with the criteria laid down in Article 29, paragraphs 6 and 7, of that Directive.
2. **The greenhouse gas emission savings from the use of biomass are at least 80 %** in relation to the GHG saving methodology and the relative fossil fuel comparator set out in Annex VI to Directive (EU) 2018/2001.
3. Where the installations rely on anaerobic digestion of organic material, the production of the digestate meets the criteria in Sections 5.6 and criteria 1 and 2 of Section 5.7 of this Annex, as applicable.
4. Points 1 and 2 do not apply to electricity generation installations with a total rated thermal input below 2 MW and using gaseous biomass fuels.
5. For electricity generation installations with a total rated thermal input from 50 to 100 MW, the activity applies high-efficiency cogeneration technology, or, for electricity-only installations, the activity meets an energy efficiency level associated with the best available techniques (BAT-AEL) ranges set out in the best available techniques (BAT) conclusions for large combustion plants 141.
6. For electricity generation installations with a total rated thermal input above 100 MW, the activity complies with one or more of the following criteria:

(a) attains electrical efficiency of at least 36 %;

(b) applies highly efficient CHP (combined heat and power) technology as referred to in Directive 2012/27/EU of the EP and of the EC;

(c) uses carbon capture and storage technology. Where the CO_2 that would otherwise be emitted from the electricity generation process is captured for the purpose of underground storage, the CO_2 is transported and stored underground in accordance with the technical screening criteria set out in Sections 5.11 and 5.12, respectively, of this Annex. .

Τομείς δραστηριοτήτων εντός του πεδίου ενδιαφέροντος της Επιτροπής Φυσικού Αερίου, Βιομεθανίου & Υδρογόνου του ΙΕΝΕ

4.13. Manufacture of biogas and biofuels for use in transport

Description of the activity

Manufacture of biogas or biofuels for use in transport.

Technical screening criteria

1. Agricultural biomass used for the manufacture of biogas or biofuels for use in transport complies with the criteria laid down in Article 29, paragraphs 2 to 5, of Directive (EU) 2018/2001. Forest biomass used for the manufacture of biogas or biofuels for use in transport complies with the criteria laid down in Article 29, paragraphs 6 and 7, of that Directive.

Food-and feed crops are not used for the manufacture of biofuels for use in transport.

2. **The greenhouse gas emission savings from the manufacture of biofuels and biogas for use in transport are at least 65 %** in relation to the GHG saving methodology and the relative fossil fuel comparator set out in Annex V to Directive (EU) 2018/2001.

3. Where the manufacture of biogas relies on anaerobic digestion of organic material, the production of the digestate meets the criteria in Sections 5.6 and criteria 1 and 2 of Section 5.7 of this Annex, as applicable.

4. Where the CO_2 that otherwise would be emitted from the manufacturing process is captured for the purpose of underground storage, the CO_2 is transported and stored underground in accordance with the technical screening criteria set out in Sections 5.11 and 5.12 of this Annex.

Τομείς δραστηριοτήτων εντός του πεδίου ενδιαφέροντος της Επιτροπής Φυσικού Αερίου, Βιομεθανίου & Υδρογόνου του ΙΕΝΕ

4.14. Transmission and distribution networks for renewable and low-carbon gases

Description of the activity

Conversion, repurposing or retrofit of gas networks for the transmission and distribution of renewable and low-carbon gases.

Construction or operation of transmission and distribution pipelines dedicated to the transport of hydrogen or other low-carbon gases.

Technical screening criteria

1. The activity consists in one of the following:

(a) construction or operation of new transmission and distribution networks dedicated to hydrogen or other low-carbon gases;

(b) conversion/repurposing of existing natural gas networks to 100 % hydrogen;

(c) retrofit of gas transmission and distribution networks, where the main purpose is the integration of hydrogen and other low-carbon gases, including any gas transmission or distribution network activity, which enables the network to increase the blend of hydrogen or other low carbon gasses in the gas system;

2. The activity includes leak detection and repair of existing gas pipelines and other network elements to reduce methane leakage.

Τομείς δραστηριοτήτων εντός του πεδίου ενδιαφέροντος της Επιτροπής Φυσικού Αερίου, Βιομεθανίου & Υδρογόνου του ΙΕΝΕ

4.15. District heating/cooling distribution

Description of the activity

Construction, refurbishment and operation of pipelines and associated infrastructure for distribution of heating and cooling, ending at the sub-station or heat exchanger.

Technical screening criteria

The activity complies with one of the following criteria:

(a) for construction and operation of pipelines and associated infrastructure for distributing heating and cooling, the system meets the definition of ***efficient district heating and cooling systems*** laid down in Article 2, point 41, of Directive 2012/27/EU;

(b) for refurbishment of pipelines and associated infrastructure for distributing heating and cooling, the investment that makes the system meet the definition of ***efficient district heating or cooling*** laid down in Article 2, point 41, of Directive 2012/27/EU starts within a three year period as underpinned by a contractual obligation or an equivalent in case of operators in charge of both generation and the network;

(c) The activity is the following:

(i) modification to lower temperature regimes;

(ii) advanced pilot systems (control and energy management systems, Internet of Things)

*(41) '**efficient district heating and cooling**' means a district heating or cooling system using at least **50 % renewable energy**, **50 %** waste heat, **75 %** cogenerated heat **or 50 %** of a combination of such energy and heat;*

Τομείς δραστηριοτήτων εντός του πεδίου ενδιαφέροντος της Επιτροπής Φυσικού Αερίου, Βιομεθανίου & Υδρογόνου του ΙΕΝΕ

4.19. Cogeneration of heat/cool and power from gaseous and liquid fuels

Description of the activity

Construction and operation of combined heat/cool and power generation facilities using gaseous and liquid fuels (of fossil, renewable or bio-based origin). This activity does not include cogeneration of heat/cool and power from the exclusive use of biogas and bio-liquid fuels (see Section 4.20 of this Annex)

Technical screening criteria

1. The life-cycle GHG emissions from the co-generation of heat/cool and power162 from gaseous and liquid fuels are lower than 100gCO_2e per 1 kWh of energy output to the co-generation.

Life-cycle GHG emissions are calculated based on project-specific data, where available, using Commission Recommendation 2013/179/EU or, alternatively, using ISO 14067:2018 or ISO 14064-1:2018.

Quantified life-cycle GHG emissions are verified by an independent third party.

2. Where facilities incorporate any form of abatement (including carbon capture or use of decarbonised fuels) that abatement activity complies with the relevant Sections of this Annex, where applicable.

Where the CO_2 that would otherwise be emitted from the cogeneration process is captured for the purpose of underground storage, the CO_2 is transported and stored underground, in accordance with the technical screening criteria set out in Sections 5.11 and 5.12 of this Annex.

3. The activity meets either of the following criteria:

(a) at construction, measurement equipment for monitoring of physical emissions, such as methane leakage is installed or a leak detection and repair program is introduced;

(b) at operation, physical measurement of emissions are reported and leak is eliminated.

4. Where the activity blends gaseous or liquid fuels with biofuels (gaseous or liquid), the agricultural biomass used for the production of the biofuels complies with the criteria laid down in Article 29, paragraphs 2 to 5, of Directive (EU) 2018/2001 while forest biomass complies with the criteria laid down in Article 29, paragraphs 6 and 7, of that Directive.

Τομείς δραστηριοτήτων εντός του πεδίου ενδιαφέροντος της Επιτροπής Φυσικού Αερίου, Βιομεθανίου & Υδρογόνου του ΙΕΝΕ

4.20. Cogeneration of heat/cool and power from bioenergy

Description of the activity

Construction and operation of installations used for cogeneration of heat/cool and power exclusively from biomass, and excluding cogeneration from blending of fossil fuels with biofuels (see Section 4.19 of this Annex).

Technical screening criteria

1. Agricultural biomass used in the activity complies with the criteria laid down in Article 29, paragraphs 2 to 5, of Directive (EU) 2018/2001. Forest biomass used in the activity complies with the criteria laid down in Article 29, paragraphs 6 and 7 of that Directive.
2. The greenhouse gas emission savings from the use of biomass in cogeneration installations are at least 80 % in relation to the GHG emission saving methodology and fossil fuel comparator set out in Annex VI to Directive (EU) 2018/2001.
3. Where the cogeneration installations rely on anaerobic digestion of organic material, the production of the digestate meets the criteria in Sections 5.6 and criteria 1 and 2 of Section 5.7 of this Annex, as applicable.
4. Points 1 and 2 do not apply to cogeneration installations with a total rated thermal input below 2 MW and using gaseous biomass fuels.

Τομείς δραστηριοτήτων εντός του πεδίου ενδιαφέροντος της Επιτροπής Φυσικού Αερίου, Βιομεθανίου & Υδρογόνου του ΙΕΝΕ

4.23. Production of heat/cool from gaseous and liquid fuels

Description of the activity

Construction and operation of heat generation facilities that produce heat/cool using gaseous and liquid fuels (of fossil, renewable or bio-based origin). This activity does not include production of heat/cool from the exclusive use of biogas and bio-liquid fuels (see Section 4.24 of this Annex)

Technical screening criteria

1. The life-cycle GHG emissions from the generation of heat/cool using gaseous and liquid fuels are **lower than 100gCO_2e/kWh**.

Life-cycle GHG emissions are calculated based on project-specific data, where available, using Commission Recommendation 2013/179/EU or, alternatively, using ISO 14067:2018 or ISO 14064-1:2018.

Quantified life-cycle GHG emissions are verified by an independent third party.

2 Where facilities incorporate any form of abatement (including carbon capture or use of decarbonised fuels) that abatement activity complies with the relevant Sections of this Annex, where applicable.

Where the CO_2 that would otherwise be emitted from the electricity generation process is captured for the purpose of underground storage, the CO_2 is transported and stored underground, in accordance with the technical screening criteria set out in Sections 5.11 and 5.12 of this Annex.

3. The activity meets either of the following criteria:

(a) at construction, measurement equipment for monitoring physical emissions, such as methane leakage is installed or a leak detection and repair program is introduced;

b) at operation, physical measurement of emissions are reported and leak is eliminated.

4. Where the activity blends gaseous or liquid fuels with biofuels (gaseous or liquid), the agricultural biomass used for the production of the biofuels complies with the criteria laid down in Article 29, paragraphs 2 to 5, of Directive (EU) 2018/2001 while forest biomass complies with the criteria laid down in Article 29, paragraphs 6 and 7, of that Directive.

Τομείς δραστηριοτήτων εντός του πεδίου ενδιαφέροντος της Επιτροπής Φυσικού Αερίου, Βιομεθανίου & Υδρογόνου του ΙΕΝΕ

4.24. Production of heat/cool from bioenergy

Description of the activity

Construction and operation of facilities that produce heat/cool exclusively from biomass, and excluding production of heat/cool from blending of fossil fuels with biofuels (see Section 4.23 of this Annex.

Technical screening criteria

1. Agricultural biomass used in the activity for the production of heat and cool complies with the criteria laid down in Article 29, paragraphs 2 to 5, of Directive (EU) 2018/2001. Forest biomass used in the activity complies with the criteria laid down in Article 29, paragraphs 6 and 7, of that Directive.
2. The greenhouse gas emission savings from the use of biomass are at least 80 % in relation to the GHG emission saving methodology and relative fossil fuel comparator set out in Annex VI to Directive (EU) 2018/2001.
3. Where the installations rely on anaerobic digestion of organic material, the production of the digestate meets the criteria in Sections 5.6 and criteria 1 and 2 of Section 5.7 of this Annex, as applicable.
4. Points 1 and 2 do not apply to heat generation installations with a total rated thermal input below 2 MW and using gaseous biomass fuels.

Τομείς δραστηριοτήτων εντός του πεδίου ενδιαφέροντος της Επιτροπής Φυσικού Αερίου, Βιομεθανίου & Υδρογόνου του ΙΕΝΕ

4.26. Replacement of existing combined heat/cool and power facilities using solid or liquid fossil fuels or replacement of existing separate heat facilities using solid or liquid fossil fuels or replacement of existing separate power facilities using solid or liquid fossil fuels with high-efficiency combined heat/cool and power facilities using gaseous and liquid fuels

Description of the activity

Direct replacement of an existing combined heat/cool and power generation facility using solid or liquid fossil fuels with a high-efficiency combined heat/cool and power generation facility using gaseous (of fossil, renewable or bio-based origin) and liquid fuels (excluding oil and other refined products). Direct replacement of an existing separate heat/cool generation facility using solid or liquid fossil fuels with a high-efficiency combined heat/cool and power generation facility using gaseous (not exclusive to natural gas) and liquid fuels (excluding oil and other refined products).

Direct replacement of an existing separate power generation facility using solid or liquid fossil fuels with a high-efficiency combined heat/cool and power generation facility using gaseous (not exclusive to natural gas) and liquid fuels (excluding oil and other refined products).

Technical screening criteria

The activity meets the following criteria:

(a) the new facility replaces either a high emitting combined heat/cool and power generation facility that has at least the same heat and the same electrical capacities or a high emitting heat/cool generation facility that has at least the same heat capacity as the combined capacity of the new facility or a high emitting power generation facility that has at least the same power capacity as the combined capacity of the new facility. The high emitting facility is retired and the new facility is in operation by end of 2025;

(b) the replacement leads to a reduction in emissions of at least **50%** GHG per kWh of energy produced (combining heat, cool, electricity and mechanical energy output);

(c) the new facility demonstrates compatibility with co-firing of low carbon gaseous or liquid fuels;

(d) the direct GHG emissions of the new facility are lower than 270 gCO_2e per kWh of output energy (combining electrical, heating and cooling, and mechanical energy);

(e) there are no technological and economical low-carbon alternatives for the facility and the retired facility is located in one of the just transition regions.

Τομείς δραστηριοτήτων εντός του πεδίου ενδιαφέροντος της Επιτροπής Φυσικού Αερίου, Βιομεθανίου & Υδρογόνου του ΙΕΝΕ

4.27. Replacement of heating/cooling facilities using solid or liquid fossil fuels by heating/cooling facilities using gaseous and liquid fuels in efficient district heating and cooling

Description of the activity

Direct replacement of existing heating/cooling facilities using solid or liquid fossil fuels by efficient heating/cooling facilities using gaseous (of fossil, renewable or bio-based origin) and liquid fuels (excluding oil and other refined products), where the new facilities are connected to efficient district heating and cooling within the meaning of Article 2(41) of Directive 2012/27/EU.

An economic activity in this category is a transitional activity as referred to in Article 10(2) of Regulation (EU) 2020/852.

Technical screening criteria

The activity meets the following criteria:

(a) the new facility replaces the high emitting facility that has at least the same heat capacities. The replaced facility is retired and the new facility is in operation by end of 2025;

(b) the new facility demonstrates compatibility with co-firing of low carbon gaseous or liquid fuels;

(c) the direct GHG emissions of the new facility are **lower than 270 gCO_2e** per kWh of output energy (combining electrical, heating and cooling, and mechanical energy);

(d) the replacement should lead to a diminution of emissions of at **least 40%** greenhouse gas emissions per kWh of energy produced;

(e) there are no technological and economical low-carbon alternatives for the facility and the retired facility is located in one of the just transition regions.

Τομείς δραστηριοτήτων εντός του πεδίου ενδιαφέροντος της Επιτροπής Φυσικού Αερίου, Βιομεθανίου & Υδρογόνου του ΙΕΝΕ

4.27. Replacement of heating/cooling facilities using solid or liquid fossil fuels by heating/cooling facilities using gaseous and liquid fuels in efficient district heating and cooling

Description of the activity

Direct replacement of existing heating/cooling facilities using solid or liquid fossil fuels by efficient heating/cooling facilities using gaseous (of fossil, renewable or bio-based origin) and liquid fuels (excluding oil and other refined products), where the new facilities are connected to efficient district heating and cooling within the meaning of Article 2(41) of Directive 2012/27/EU.

An economic activity in this category is a transitional activity as referred to in Article 10(2) of Regulation (EU) 2020/852.

Technical screening criteria

The activity meets the following criteria:

(a) the new facility replaces the high emitting facility that has at least the same heat capacities. The replaced facility is retired and the new facility is in operation by end of 2025;

(b) the new facility demonstrates compatibility with co-firing of low carbon gaseous or liquid fuels;

(c) the direct GHG emissions of the new facility are **lower than 270 gCO_2e** per kWh of output energy (combining electrical, heating and cooling, and mechanical energy);

(d) the replacement should lead to a diminution of emissions of at **least 40%** greenhouse gas emissions per kWh of energy produced;

(e) there are no technological and economical low-carbon alternatives for the facility and the retired facility is located in one of the just transition regions.

Σας ευχαριστώ