Technical support for RES policy development and implementation.
Establishing technical requirements & facilitating the standardisation process for guarantees of origin on the basis of Dir (EU) 2018/2001

Task 1.3
Identification of the main challenges which currently exist in the management of guarantee of origin systems

Annex 1: Responses by expert stakeholders on the consultation of an initial draft of this document

FaStGO
Facilitating Standards for Guarantees of Origin

Table of Content

0. Introduction

0.1 Framework

The FaStGO project provides expert advice to the European Commission DG ENER, based on the terms of Reference N° ENER/C1/2019-517: "Technical support for RES policy development & implementation. Establishing technical requirements and facilitating the standardisation process for guarantees of origin on the basis of Dir (EU) 2018/2001."

This document processes the answers to the consultation conducted by the FaStGO project, on Task 1.3: "Identification of the challenges that currently exist in the management of GO systems".

A draft of the report on this subject was distributed for consultation to experts who work in areas that are related to GOs. Experts did not necessarily comment on all sections of this document and may have selected specific topics related to his area of expertise. Feedback was collected in the structure of an online questionnaire, with questions after each topic covered in the report. The consultation was open from 7th until 28th of February 2020.

There were 28 respondents, of which the following sixteen agreed to be named: 3Degrees Group Inc., BDEW Bundesverband der Energie- und Wasserwirtschaft (German Association of Energy and Water Industries), CargoX, Commerg Ltd, EKOenergy, Energinet Gas TSO, ENGIE, Finnish Forest Industries Federation, Fortum, Gas Networks Ireland, GRT gaz, Naturgy, NValue AG, Oeko Institut, UBA, Yélé Consulting.

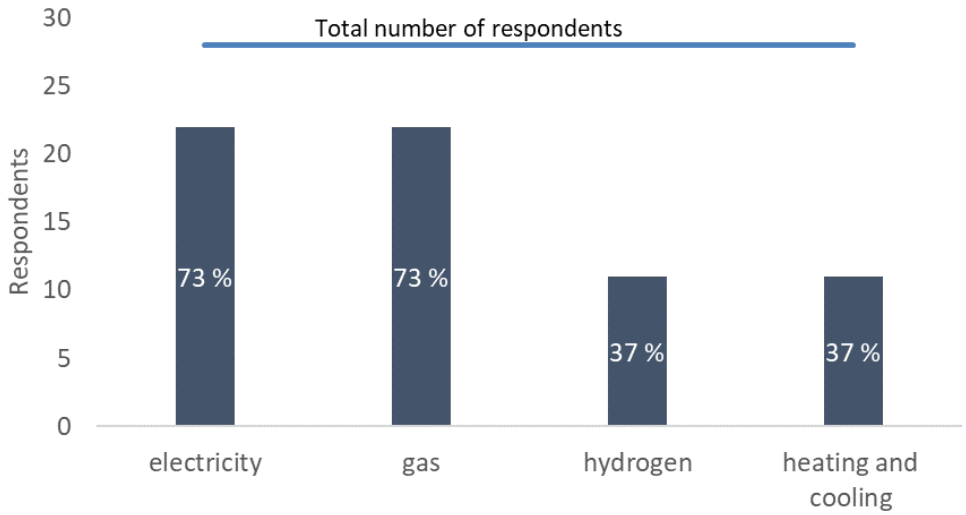
The below document lists the answers received through the online survey tool. The answers are presented following the original consulted text per topic.

0.2 Basic data with regards to the consultation respondents

The consultation respondents indicated they are active in the following sectors. They could indicate multiple values.

Sector of operation:

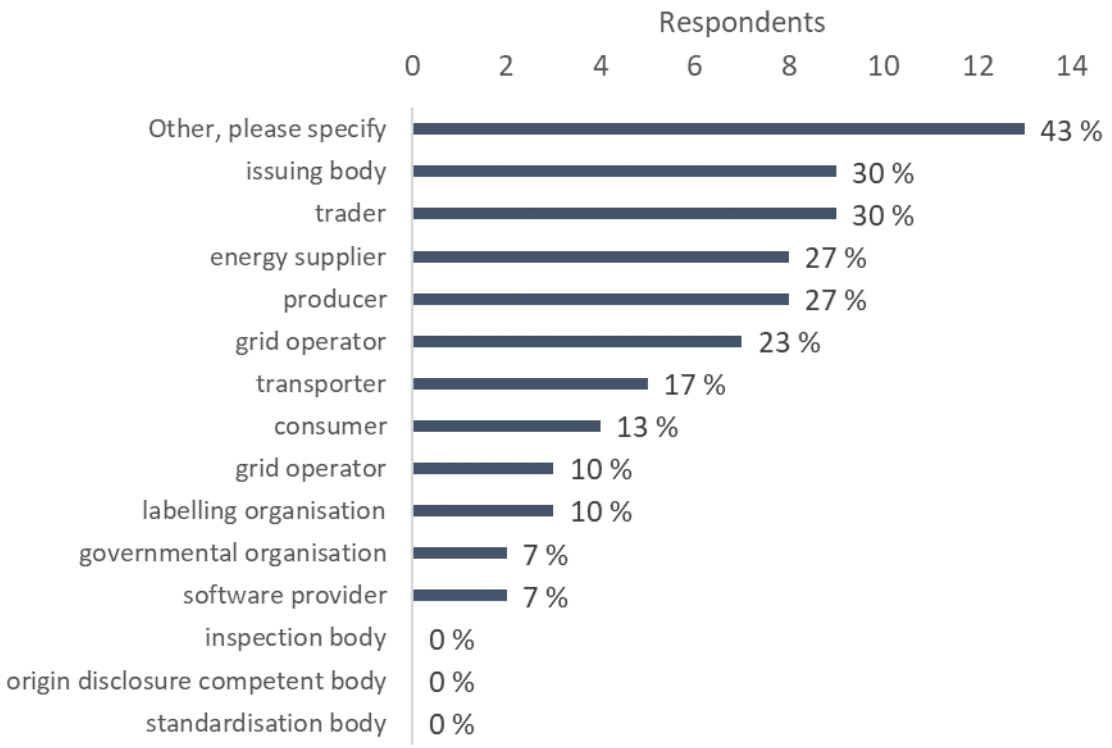
Number of respondents: 28, selected answers: 66



The consultation respondents indicated they are active in the following areas of operation. They could indicate multiple values.

Area of operation:

Number of respondents: 28, selected answers: 67



In addition, in a free text field, they indicated to be also active in the following areas of operation:

Additional area of operation of respondents
environmental NGO
Association
Strategist
research
producer and supplier of wind turbines and related services
drinking water abstraction and wastewater disposal
non-governmental organisations
lobbying organisation
research organisation
Market place/Broker/Prices Reports provider
Former Powernext, now Energy Consultant
Consultant / Service Provider

1. Design of Guarantees of Origin

1. Prevention of fraud in production data registration and audit of production devices

Text for consultation

Key to the credibility of a GO system is the **reliability of the data inscribed on the GO certificate itself.** Ensuring the reliability of this data requires a system that is well set up in the first instance, with accurate measurement infrastructure, secure data reporting systems, and transparent, accessible system information tools. Together, these requirements should assure delivery of the fundamental principle of a GO system – that one MWh of electricity production may receive one, and only one, reliable and accurate GO certificate that can be easily tracked by system operators as it is quickly and safely transferred between market participants.

When cases of misuse of the GO system do occur, such as a producer claiming to provide renewable power while feeding their production device with fossil fuel, they must be identified. When fraud is identified in a GO system, the legal procedures of the Member State can take corrective and punitive actions as appropriate. Identifying fraud requires clear and robust procedures.

a. The first layer of control is provided through clear procedures for production device registration, and/or the integration with other licencing and registration systems in the country (e.g. environmental licencing procedure, DSO/TSO registration in the grid access registry, …)
b. The second layer of control comes from the accurate work of the measurement body (See: Approved Measurement Body definition in EN16325 section 3).
c. The final layer of control comes from performing onsite inspections to check that the data provided in the earlier layers of control are not fraudulent. This includes both initial inspections of production devices at their time of registration, and ongoing "production inspections", that require checks on the correctness of submitted data against which GOs have been issued.

In order to keep costs manageable, any supervisory & inspection procedures should be set up efficiently and, where possible, integrated with existing inspection and verification procedures. A robust system for auditing production devices and production data can prevent fraud from happening, while also identifying any fraud that does take place. All operators of GO schemes are aware of the importance of inspections of production devices (PD), both through onsite verification and offsite documentation checks and integration with data from licencing authorities. The following experiences from different sectors can be taken into account.

Electricity:
Within the AIB, debates have taken place on how to balance the need for production audits and production device audits against the cost of such audits and the impact of this cost on overall GO system management costs. These debates revealed that the risks of fraud are different for different technologies and fuels, and in different countries. Therefore, the EECS Rules include guidance on how to secure the sought-for balance mentioned above.

For electricity, the rules allow issuing bodies to decide for themselves on the need for onsite inspections, while stating that such inspections are likely to be necessary in the

case of electricity production from biomass. However, in other cases, inspections may not be necessary. For instance, take hydropower stations in the mountains: here, fraudulent production of non-renewable electricity is unlikely, while e.g. environmental agencies have usually performed audits in licencing procedures and the meters are checked by the TSO/DSO, so there is not always a case for incurring audit costs, including significant the travel costs of reaching the plant. General requirements under the EECS Rules on production device inspections contain the list of elements that issuing bodies should check for accuracy against the registered data (EECS Rules art. E3.3.7, E3.3.11, E3.3.12 mention generic rules for all energy carriers. N5 is specifically for electricity)

The AIB has published Best Practice Recommendations for Production Device Inspections (https://www.aib-net.org/eecs/best-practice-recommendations). These recommendations include specifications on appointment and role of the inspector, and on the subjects to be covered in the inspection report (like energy flow diagram, including the location of meters involved in calculating the amount of GOs to be issued; brand, type, calibration certificate and seal date of all involved meters; confirmation of data in the GO application; …). One challenge is that in the past, such best practice recommendations were not enforceable across Europe as there was no higher authority requiring them to be followed. This has resulted in different practices in different countries on production device inspections. Unless EN16325 incorporates such best practice recommendations or at least requires compliance with their underlying principles, then the same challenge will persist.

Gas :

Gas generic:

Under the EECS gas scheme, production device inspections are mandatory (www.aib-net.org/eecs/eecr-rules). Other than this, the same principles on inspections apply for EECS gas scheme members as for EECS electricity mentioned above.

Biomethane:

ERGaR relies on natural gas TSOs and DSOs as its primary source of data on the injection of gas into the grid. In addition, ERGaR has a developed system of audits to ensure the credibility of the data used:

Initial audit:
All biogas and biomethane producing units must undergo initial audits in their home country to confirm that the units qualify as biomethane production facilities. Specified requirements on technical capability, equipment, processing potential of substrates and others are checked and verified by the auditor. The task of the initial audit is to document the technical capability and throughput capacity of the unit to produce biogas/biomethane. The information on the initial audit serves as a basis for registration as a production facility in the biomethane registry and such plant information is considered valid until technical adaptations are conducted in the production unit. In case of changes in technology, the audit must be repeated.

Production audit:
The composition and volume of the input material (for renewable gas – biomethane) production is reported by the producer, and no other information source is available for these data. The audit of the producers should be integrated into the GO scheme. The declarations by the producers are to be audited yearly. In case of reporting incorrect data, the already issued relevant GOs must be withdrawn and the issuance of GOs to the producer must be suspended.

Hydrogen:
CertifHy II elaborated a procedure for the audit of production devices, endorsed by the participants of the CertifHy II project. This is publicly available: https://www.certifhy.eu/images/media/files/CertifHy_2_deliverables/CertifHy_P0.2_Registration-of-Production-Device_V1-0_2019-03-11_endorsed.pdf

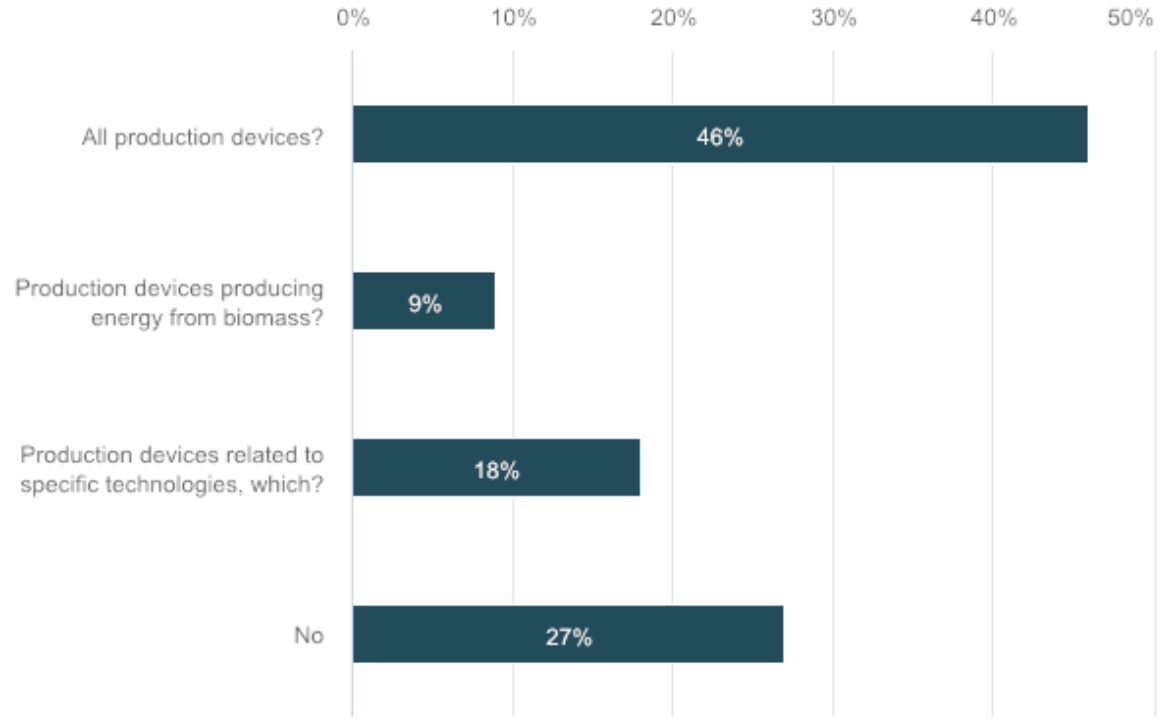
Heating and Cooling

For heating and cooling, the risk for fraud by falsifying the energy source may be greater than for any other energy carrier. Renewable energy sources with which heat is produced can often easily be replaced with non-renewable fuels. Inspection systems must take this into account, including as regards the frequency with which they are carried out. Issuing GOs for heating and cooling is not yet widespread. As an example, the GO system for heating and cooling in Flanders requires bi-annual inspections of production devices for heating and cooling (note that in Flanders GOs are only issued to heating and cooling devices with a thermal capacity above or equal to 300kW), whereas in the Netherlands an annual report on the feedstocks is required, set up by an external accountant.

Consultation questions and received answers

10. Do you feel an onsite production device inspection should be mandatory for:

Number of respondents: 11



	n	Percent
All production devices?	5	45,46%
Production devices producing energy from biomass?	1	9,09%
Production devices related to specific technologies, which?	2	18,18%

No	3	27,27%

Answers given into free text field

Option names	Text
Production devices related to specific technologies, which?	Biomass, synthetic gases
Production devices related to specific technologies, which?	Any new technology of specifically immature market

11. Please provide your reasoning

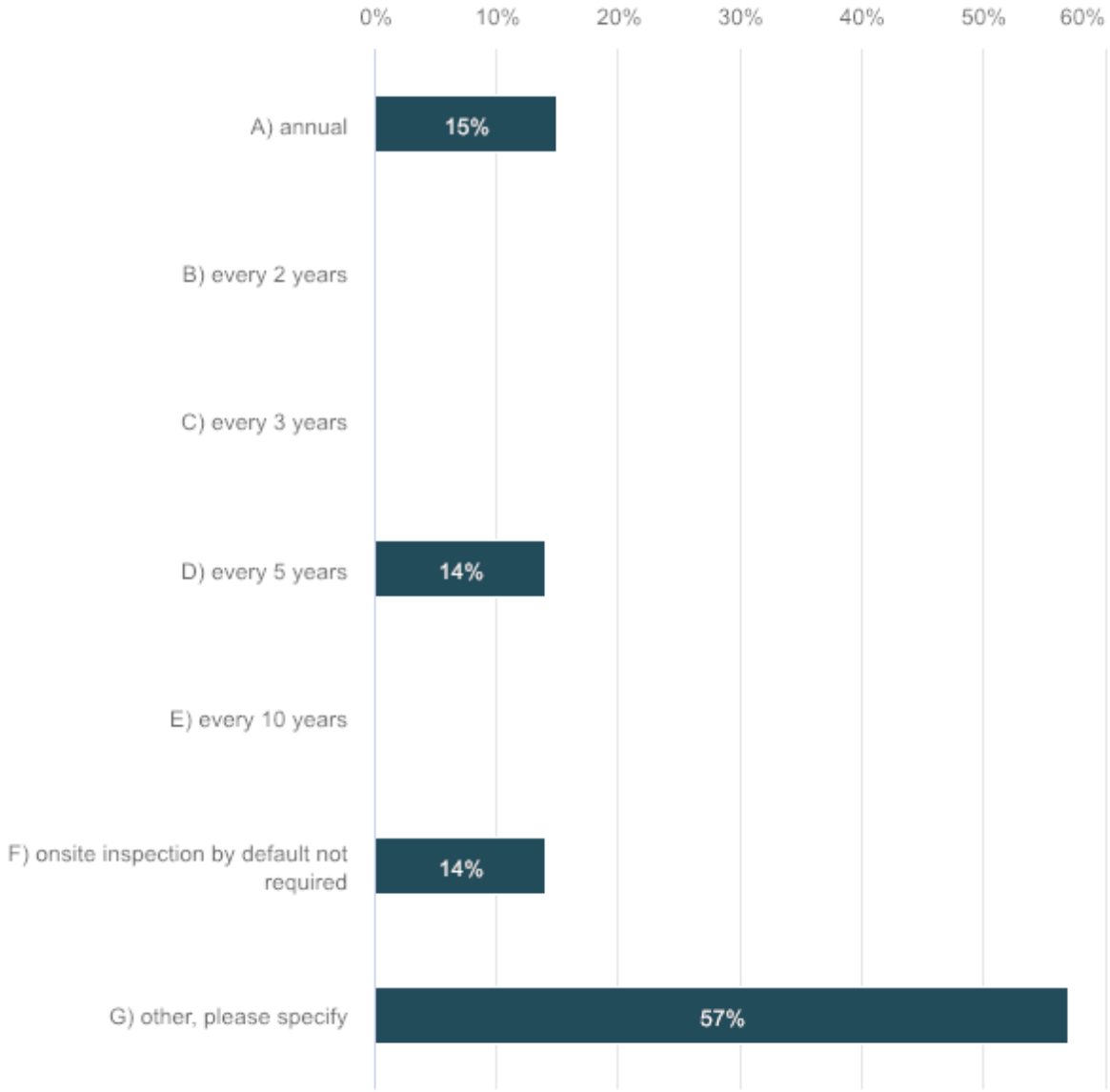
Number of respondents: 12

Responses
To be sure that the measurement is operational.
We should be able to trust the national legislation and its requirements for initial audit needs. There should be also ability to facilitate current mandatory inspection procedures in relation to ETS/ support schemes for eligible stations. Also only inaugural on-site inspection is required. The current 5 year interval for re-activation is reasonable enough and should be valid for all energy types.
To prevent fraud, all production devices should be subject to inspection. The possibility of fraud may be considered negligible at a solar or wind farm for example, but in certain circumstances, incentives may exist that lead to fraudulent behaviour.
Whereas the cost of mandatory onsite device inspections should be limited to the extent possible, periodic checks appear as necessary to avoid any risk of non-renewable energy sources or feedstocks being accounted for as renewable (including, for instance, dedicated energy crops in the case for biogas production). That being said, the existing validation systems should be relied on as much as possible to limit costs and ensure an overall efficiency. For electricity of course the primary source of data is the TSO or DSO, who has a clear duty to check the measured production. This also exists for most biomass plants, where the feedstocks will usually be looked at closely in the framework of the EU ETS emissions, and an ex-post check of the produced green electricity in that case against the energy from renewable and non-renewable feedstocks as verified under EU ETS would make more sense than designing something from scratch for the purpose of GO certification.
Audits should be based on the national legislation and its requirements for audit needs. There should be also possibility to make use of other mandatory inspection procedures today. The current five year interval for re-audits is valid for all energy types.
Risk of fraud exists for all the technologies, even if the number and frequency of inspections may differ between them. Inspections may differ depending on the purpose (e.g. initial audit to register installations vs periodic or random audits to check fraud). If the GO price is high (either for a specific technology or generalized), it's more evident that fraud is more attractive. Frequency of inspections might also differ depending on the size of installations.
The issuing bodies or the legislator of each member state should decide for themselves on the need for onsite inspections, while stating that such inspections are likely to be necessary in the case of electricity production from biomass. In other cases, inspections are not neces-sary. With the § 42 of HKRNDV, the German legislator has already specified requirements for prevention of fraud in the case of electricity production from biomass. These requirements are sufficient. Another fact is, that the proportion of issuing of GOs from biomass is very low compared to the entire domestic issuing of GOs in Germany.
An onsite production device inspection would help certify that the claimed origin of the energy is truly valid and would reduce the risk for possible fraud. In addition to biomass, electricity-based gases should also be audited as a matter of urgency, in particular to check the origin of the electricity.

Those technologies are currently mandatorily to be inspected within certain periods of time. The example of Italy shows the need for device inspections of biomass-sites.
Inspection this should be based on the national legislation and its requirements for audit needs. There should be also possibility to utilize other current mandatory inspection procedures (for example verification inspections related to ETS). The current five year interval for reinspection is valid for all energy types. Biomass power plants have no need for different treatment.
What is injected in the grid is what matters. The "upload". Before that, the energy shouldn't get a GO. This simplifies many counting, interpretation issues and costs, such as this production device. This will introduce an extra functional risk, and legal complications. Who is responsible for the well installation, functioning and maintenance of the device. An "Upload device" for grid injections could be needed if current metering isn't reliable.
New technologies and Immature markets are more likely to be the subject of fraud since their global understanding is worse that for others. Therefore more controls are necessary to ensure trust and foster their developments.

12. What frequency of onsite inspection at the site of the production device is relevant for each energy carrier?Electricity:

Number of respondents: 7



	n	Percent
A) annual	1	14,28%
B) every 2 years	0	0%
C) every 3 years	0	0%
D) every 5 years	1	14,29%
E) every 10 years	0	0%
F) onsite inspection by default not required	1	14,29%
G) other, please specify	4	57,14%

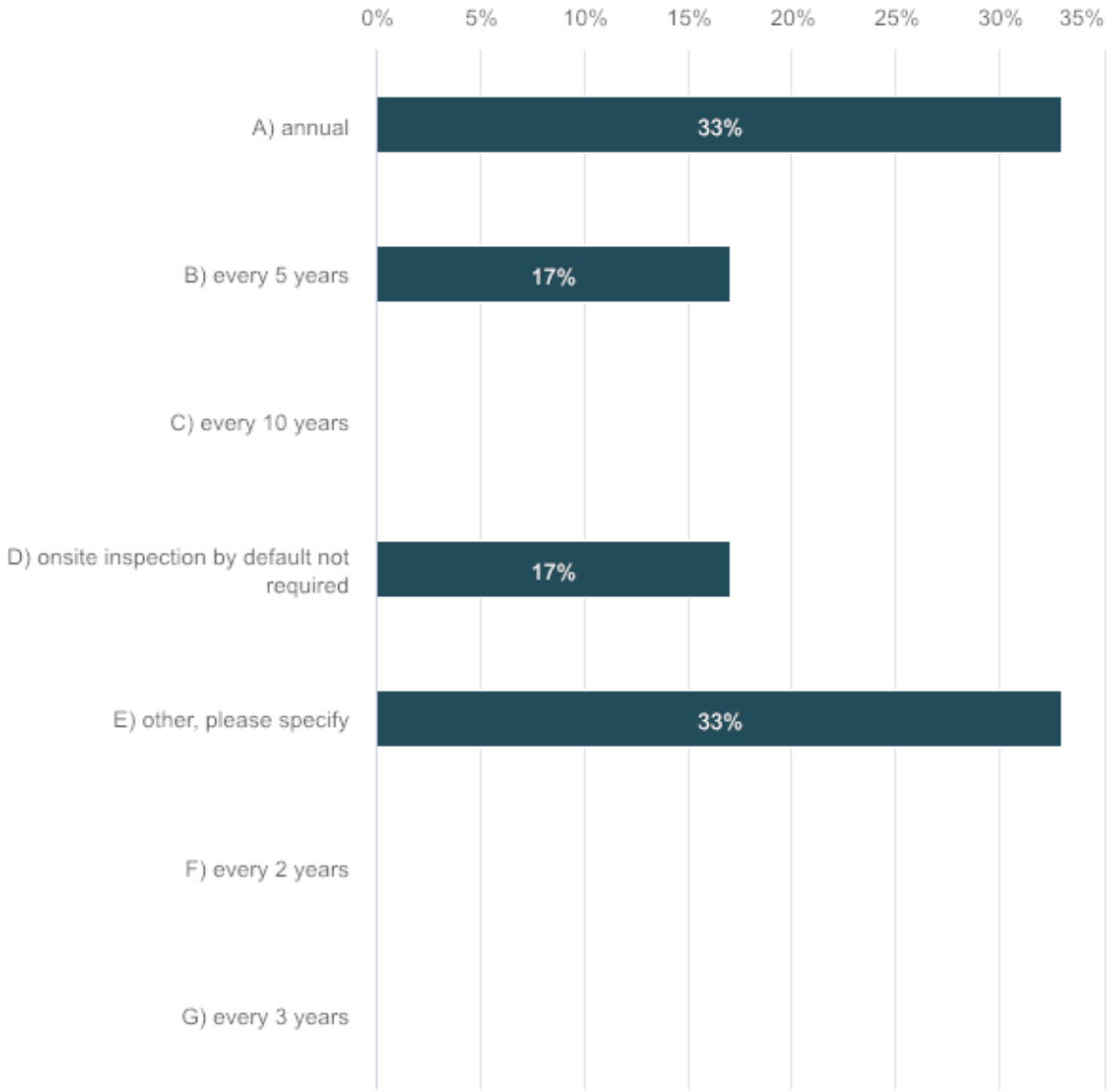
Answers given into free text field

Option names	Text

G) other, please specify	Depends on the device type. Wind and solar may be every 2 years while biomass generation annual
G) other, please specify	Random inspections
G) other, please specify	The issuing bodies or the legislator of each member state should decide for themselves on the need for onsite inspections, while stating that such inspections are likely to be necessary in the case of electricity production from biomass. In other cases, inspections are not neces-sary. With the § 42 of HKRNDV, the German legislator has already specified requirements for prevention of fraud in the case of electricity production from biomass. These requirements are sufficient. Another fact is, that the proportion of issuing of GOs from biomass is very low compared to the entire domestic issuing of GOs in Germany.
G) other, please specify	The Current 5 year activation cycle should be enough.

13. What frequency of onsite inspection at the site of the production device is relevant for each energy carrier?Gas:

Number of respondents: 6



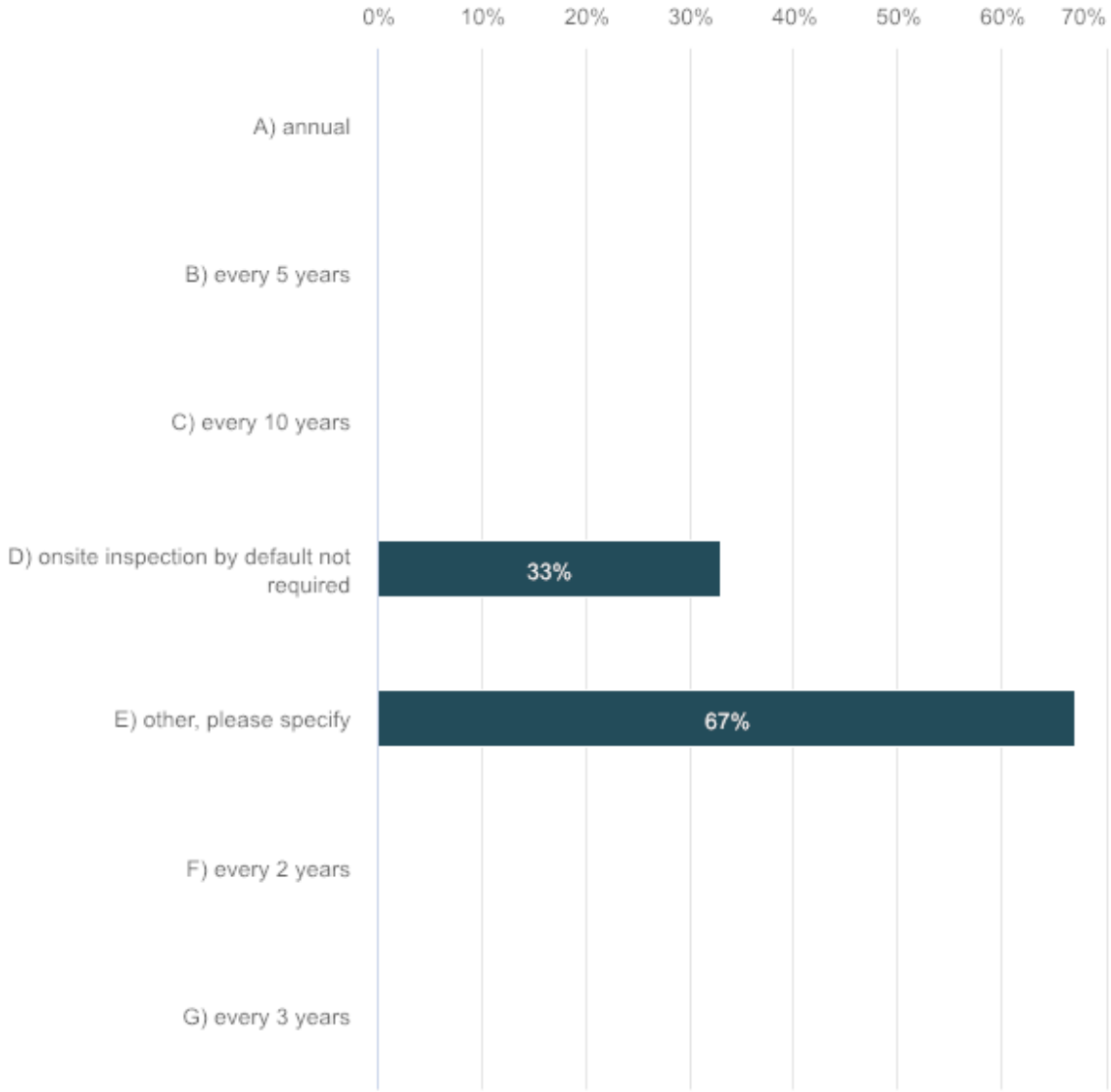
	n	Percent
A) annual	2	33,33%
B) every 5 years	1	16,67%
C) every 10 years	0	0%
D) onsite inspection by default not required	1	16,67%
E) other, please specify	2	33,33%
F) every 2 years	0	0%
G) every 3 years	0	0%

Answers given into free text field

Option names	Text
E) other, please specify	when you change the production device
E) other, please specify	Random inspections

14. What frequency of onsite inspection at the site of the production device is relevant for each energy carrier?Heating and Cooling:

Number of respondents: 3



	n	Percent
A) annual	0	0%
B) every 5 years	0	0%
C) every 10 years	0	0%
D) onsite inspection by default not required	1	33,33%
E) other, please specify	2	66,67%
F) every 2 years	0	0%
G) every 3 years	0	0%

Answers given into free text field

Option names	Text

E)	other, please specify	Random inspections

15. Please provide your reasoning

Number of respondents: 6

Responses
In Gas, production device are standardized. So, it is appropriate to verify that they are in function but not need to make too much control. It will be too costly for the biomethane Producer without being necessary.
As mentioned aboveenergy production units are usually also part of other schemes and the audits should be done in line with those procedures. No need to have onsite audits for different schemes. However if GoO would be only attribute required for on-site audit then inaugural and 5 year cycle should satisfy the need.
Dependant on the energy source for heating and cooling: if it is renewable gas then an annual inspection is required. If it is solar or wind electricity, then a lower frequency should be sufficient.
For biomass, a seasonal basis may be appropriate (cf. sugar cranes, crops), as the production of the feedstock is driven by the calendar or the rhythm of the harvests. In any case, minimizing cost and administrative burden should be part of the objective, whatever the frequency chosen.
The issuing bodies or the legislator of each member state should decide for themselves on the need for onsite inspections, while stating that such inspections are likely to be necessary in the case of electricity production from biomass. In other cases, inspections are not neces-sary. With the § 42 of HKRNDV, the German legislator has already specified requirements for prevention of fraud in the case of electricity production from biomass. These requirements are sufficient. Another fact is, that the proportion of issuing of GOs from biomass is very low compared to the entire domestic issuing of GOs in Germany.
An onsite production device inspection would help certify that the claimed origin of the energy is truly valid and would reduce the risk for possible fraud. In addition to biomass, electricity-based gases should also be audited as a matter of urgency, in particular to check the origin of the electricity.

16. What level of detail do you feel is required at an onsite production device inspection?

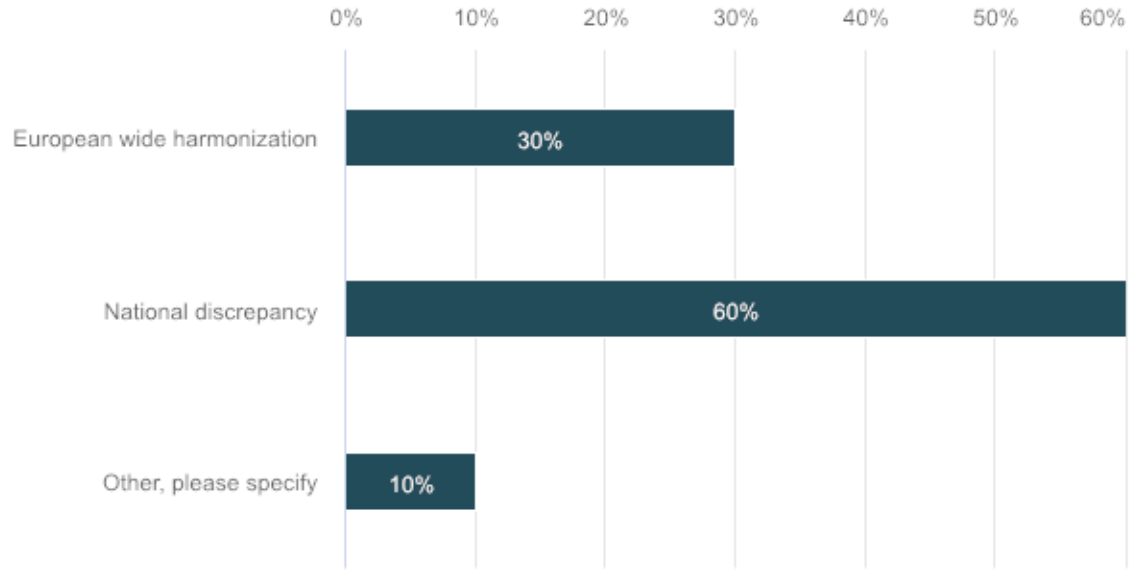
Number of respondents: 8

Responses
Only good measurement and security process in case of wrong measurement. For example, in gas the production device can be turn off if the gas quality is not the good one.
Technology, fuels (in case multifueled), metering arrangements. Basically based on information provided by GoO. However for example under EU ETS there is more specified information inspected and that should be usable for GoO issuance and audit purposes.
The entire production process, starting by capturing feedstock inputted all the way through the process up to network injection point needs to be covered
Current practice is feasible.
During the inspection, the veracity and sufficiency of the documentation provided during the registration of the installation should be checked, as well as the technical situation of the installation. Inspecting all the technical-economic aspects required. When the inspections is notified to the installation, it would be advisable to inform the owner if and what technical documentation will be required (e.g. hard copies) to speed up the process
It should consider at least the type of production technology, input or feedstock (i.e. biomass, electricity) for the production, plant capacity, verification of meters and output capacity and production rate, check whether the plant has received state support and if so, what kind of support. If GHG emissions are included on the guarantee of origin, they should be verified in the audit.
high detail Level

The current practice is feasible, all the information provided by GO.

17. Should there be European-wide harmonization on production device inspections and production data inspections, or should this be left to national legislation and discrepancy?

Number of respondents: 10



	n	Percent
European wide harmonization	3	30%
National discrepancy	6	60%
Other, please specify	1	10%

Answers given into free text field

Option names	Text
Other, please specify	EU framework, National specificities

18. Please provide your reasoning

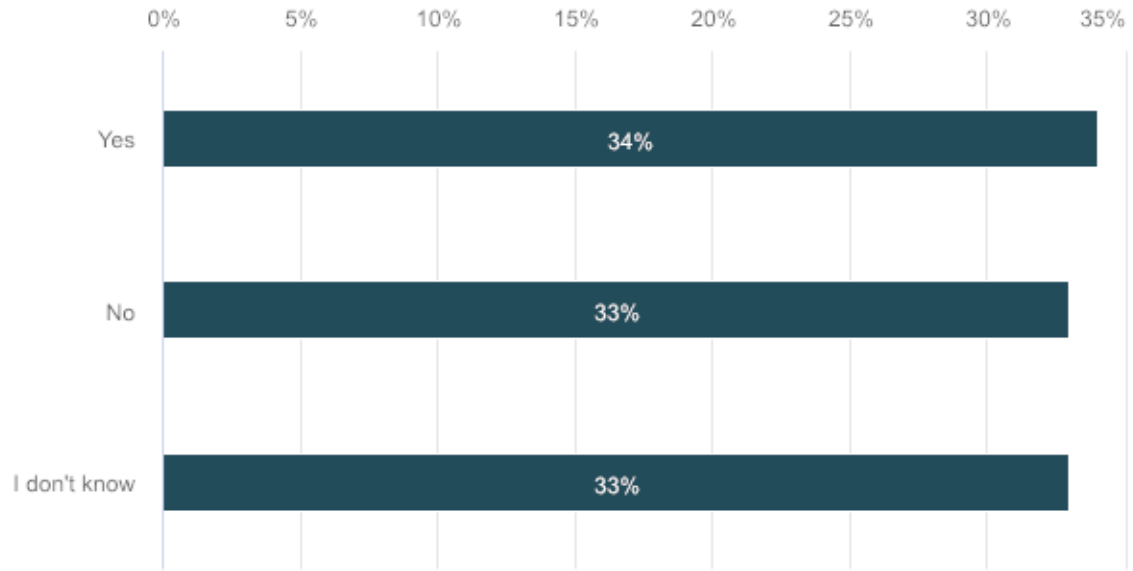
Number of respondents: 10

Responses
Depending on the specifity of each renewable gas production which is linked to the type of feedstocks used in each country.
No and Yes. Inspections should be in scope of national legislation but as we know, the requirements are set from EU level. Also the mandate for inspections is in Member State level.
Statkraft supports a European harmonization of principles to ensure confidence in the mechanisms behind GoOs. This might help us avoid misinterpretations such as between VREG and Sweden. Statkraft is of the opinion that the national implementation of these principles should be left to national authorities, to ensure that inspections are tailored to local conditions. Inefficient

inspections could result in higher administrative costs for both producers and national governments and should therefore be avoided.
All Member States are working to the same over-arching EU directives. Therefore the quality of renewables must be standardised if a MWh of renewables in one country is of the same environmental value across all M.S.'s
The production device inspections should be in scope of national legislation defined by the Member States.
Depending on the resources of Issuing Bodies (which might be regulated parties), number of national installations, geographical spread, etc.A national approach seems to be more appropriate. National issuing bodies' answer should prevail for this question.
Yes, in order to facilitate handling between Member States through equal standards.
There is a national auditing sytem in place which works sufficient and "AIB Best Practice Recommendations" provide a frame for common use.
The inspections should be in scope of national legislation defined by the Member States.
EU should ask for specific actions for emerging markets / Member states should set specific rules in accordance with local laws

19. With regards to the Best Practice Recommendations for Production Device Inspections published hereDo you endorse these recommendations?

Number of respondents: 6



	n	Percent
Yes	2	33,34%
No	2	33,33%
I don't know	2	33,33%

20. Do you have any comments with regards to these recommendations for inspections of electricity production devices?

Number of respondents: 5

Responses
To an extent, however as stated above the inspection should be kept light, feasible and in line with existing requirements nationally.
If electricity is being produced via biomass, then these recommendations require additional checks to be performed.
These recommendations accept numbers for electricity meters where TSOs/DSOs review the quality of the measurement equipment, but don't plan to rely on other verifications like the ones conducted under EU ETS for most biomass plants. In all likelihood feedstock counters used to establish the EU ETS data don't need a double check.
Inspections should be based on the Member State's legislation, because REDII is implemented by the Member States.
No comments

21. While they are written for electricity, a lot of the text could apply for gas or heating and cooling. What concepts, apart from adapting the terminology for "electricity" to "gas" and "heating and cooling", would need to be added in order to provide recommendations on best practice for gas production device inspections?

Number of respondents: 4

Responses
Additional checks on the production process are required: what feedstocks are required, what are the environmental impacts from the production process. How can the fuel be declared a 'renewable' unless an LCA is performed?
The type of raw material/input to produce renewable gas should be specified. This information is additional to the technology used to produce renewable gas (anaerobic digestion and upgrading, syngas, etc.)
NO – WE WOULD NEED MORE TIME TO COMMENT IF THESE RECOMMENDATIONS ARE FIT FOR GAS PRODUCTION DEVICES
In Germany a well-established audit standard for gaseous biomass already exists. The requirements for guarantees of origin according to Article 19 are rather lower. With regard to synthetic gases, there are also specifications for auditing, but these need to be better defined.

22. Please provide your reasoning

Number of respondents: 1

Responses
Wind, solar and tidal or wave generated electricity is a fixed generation process. Once it is inspected and certified, then there is minimal variance in the process over the lifetime of the plant. with other renewables, the process required additional auditing: the process can vary from week to week or from batch to batch.

23. Open Comments

Number of respondents: 6

Responses
I can state several issues noticed on Serbian electricity market and renewable energy with GO choice: 1) consumers would like to be informed on CO2 emmisions level achieved by using energy with GO,

2) consumers would like to make their green energy choice more visible, not only by using product labels, but also by incorporating evenutual labels or achievement reports in their branding campaigns, 3) the confidentiality of commercially sensitive information within Statement of Cancelation of GO could be adressed more
- Members states are adding too many country-specific rules (added bureaucracy) - There is no reason to only allow energy suppliers to make use of the GO database. Others, in particular energy consumers, should have access to the database too and should be allowed to cancel GOs to cover their energy consumption. (Let's open up instead of creating monopolies)
One of the main challenges that currently exist is the lack of communication between issuing bodies. The lack of understanding the RED/RED 2 directives and the weight it carried beyond the EECS standards. There is a huge lack of standardisation in terms of management that sometimes does not account for a just cross border transfer.
Lack of intrinsic value of certificates towards build up of new renewable capacity. Market behavior and lack of transparency. Regulatory silos when looking at cross sectoral usage --> transport.
2 main challenges are identified on a TSO point of view: 1. Biomethane GOs should be recognised without any ambiguity in order to used for ETS purposes. 2. TSOs, as well as DSOs, should be involved in order to help issuing bodies to secure the validity of GOs.
3Degrees Group, Inc. (“3Degrees”) appreciates this opportunity to provide comments to the European Commission and Association of Issuing Bodies (“AIB”) regarding its consultation on the Identification of the System Management Challenges for Guarantees of Origin. We are a leading provider of comprehensive, global clean energy and emission reduction services that enable organizations and individuals to transition toward a low-carbon economy.

2. GO Validity

Challenges with current 12 months GO lifetime: reduced market value for GOs issued close to expiry

Text for consultation

The directive 2009/28/EC limits the GO lifetime to 12 months from production: "Any use of a guarantee of origin shall take place within 12 months of production of the corresponding energy unit. A guarantee of origin shall be cancelled once it has been used."
In practice, this has been implemented with some variation between Member States, so that a GO expires 12 months after the end of the respective production period of the underlying physical energy. As the main use of GOs is for electricity disclosure within a calendar year, electricity suppliers have had to make at least 2 GO cancellations for a certain year, in order to avoid expiry of their GOs. Typically, the first cancellation is done before the year-end, to avoid the expiry of GOs issued for the beginning of the year production, and second before the deadline, which is typically the end of March the following year.

The strict 12 months expiry rule has forced marketplaces to define their GO products so that one year's production is divided into at least 2 separate categories of GOs with different market values, thus hampering the liquidity of the market.
Moreover, as the typical implementation of the disclosure regulation is such that for a given year X, only GOs issued for production during the same calendar year are accepted for supplier's disclosure reporting, the factual lifetime of GOs issued for the beginning of the year is longer than those issued for the last months of the year. This has also been reflected in the market prices of the corresponding GOs.

Another challenge is that sometimes administrative processes for issuing GOs take a significant amount of time. This can be the occasion of the first issuance which only takes place after a sometimes heavy administrative application process including files and inspection reports which might take months to be completed. It can also happen if an erroneous meter reading is spotted, resulting in the suspension of any GO issuance until the meter is replaced, re-inspected and the administrative tasks of both the producer and the issuing body are finalised to a satisfactory level in order to record the correct amount of GOs to be issued for the energy produced during the suspension. When a GO is issued many months after the production period, the tradeable period is significantly reduced, and with it, the price at which a producer can sell their GOs.

Challenges with the directive EU 2018/2001 12+6 months lifetime: multi-interpretability

In art.19.3 of REDII, the maximum lifetime of GOs was extended to 18 months: "*For the purposes of art 19.1 Guarantees of origin shall be valid for 12 months after the production of the relevant energy unit. Member States shall ensure that all guarantees of origin that have not been cancelled expire at the latest 18 months after the production of the energy unit. Member States shall include expired guarantees of origin in the calculation of their residual energy mix*."

- There is a tendency to interpret the 12-month validity in a way that a GO can be used for consumption periods ending 12 months after the end of the production period of the energy for which it was issued.
- It is not clear what would happen between the end of the validity period and before expiry when those are not on the same date.

- Could the GOs still be transferred or would they be locked to account holders' accounts?
- Could the GOs still be cancelled?

Note: In some countries, the existence of a GO on an account on the annual disclosure reporting deadline for electricity suppliers, is considered to be a cancellation (e.g. Spain). In most other countries an explicit cancellation action must take place.

- Timing of Residual Mix calculation could be jeopardised depending on the definition of the period during which cancellation is allowed and during which expiry can be determined. While double-counting must be avoided in the residual mix, in either interpretation, it is not recommended to postpone the residual mix calculation timing by 6 months, as that would cause suppliers' origin disclosures to relate to a period too far in the past. When a suppliers origin disclosure on their invoice relates to a period almost 2 years ago, some customers will question its relevance and even its credibility.

Interpretative option for solving the matter

The following principles are propsosed for a harmonised interpretation of the concepts of validity and expiry of GOs in relation with REDII art. 19.3.

Validity relates to consumption period to which the GO cancellation relates.

1. GO is valid for 12 months means: a GO can be used for consumption periods ending 12 months after the end of the production period of the energy for which it was issued

Expiry relates to the period during which GO transfer and cancellation can take place.

2. A GO can be traded and cancelled during a period of maximum 18 months after the production period of the GO.

Consistency measures are needed to reassure that a GO taken into account for a specific consumption year, is not already taken into account as "expired" in the residual mix.
Whether it is beneficial to enable transfer and cancellation for a longer time than the validity, is just the question.

Final cancellation date in relation to the preceding consumption year

The Risk here is that at the time of residual mix cancellation, it is not yet determined whether a GO issued for production in year X, will either:

a) Be cancelled for a targeted consumers consumption in year X, or
b) Be cancelled for consumption in year X+1, or
c) will expire and be absorbed into the residual mix.

This causes double counting risk, unless

a) the residual mix calculation is postponed, which is not recommended because of the impact on relevance and credibility.
b) An end date is set for the period during which cancellations are allowed for a disclosure year (= consumption year).

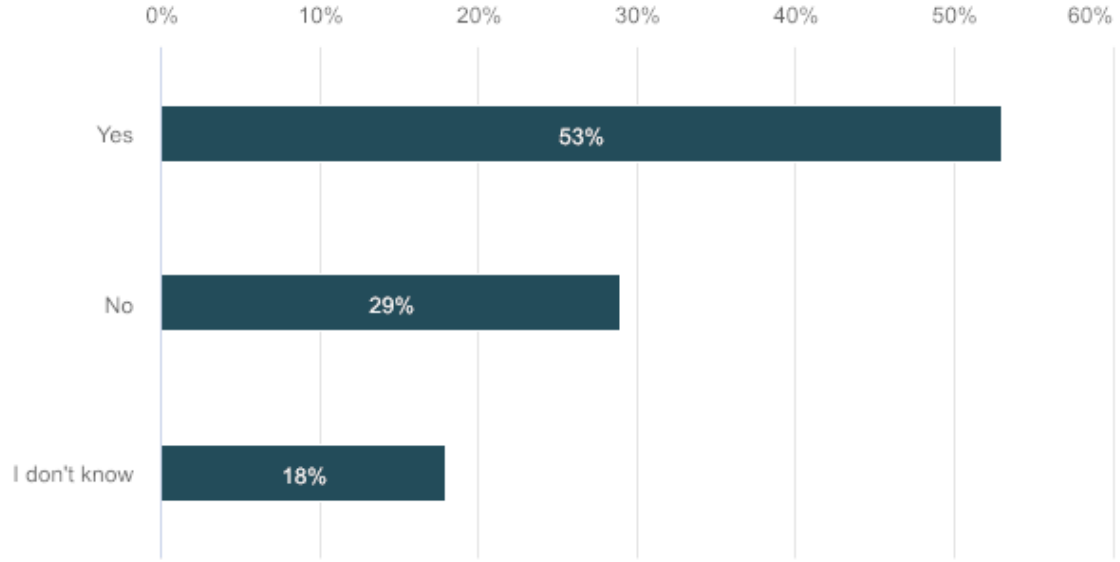
3. In addition to a rolling 12 month validity period for the consumption to which GO cancellation can be allocated, hence also an annual fixed end date is needed until when cancellations are allowed for a preceding consumption year.

In line with the RE-DIS[1] recommendations, it is advisable to set such end date for cancellations at 31st of March of the year following the year of consumption.

Questions for consultation and answers

24. Do you agree with the abovementioned interpretative proposal? (see text in the 3 boxes)

Number of respondents: 17



	n	Percent
Yes	9	52,94%
No	5	29,41%
I don't know	3	17,65%

25. Please provide your reasoning

Number of respondents: 12

Responses
From my understanding, a GO's validity will not changed or prolonged further than the aforementioned 12 months. The additional 6 months given are to transfer and cancel a GO for the retroactive 12month period. If a body issues a GO year X. It can then still meet the deadline of 31st of March (X+1). But if a body issues a GO in April Year X, then with the bylaws it already will miss out on the residual mix of 31st of March even though this technically is the following year of consumption. I believe the 12month validity and the definition of what it means should be clear and more concise.
I still consider it helpful for clarification towards consumers to have consistent production period and disclosure period.

[1] www.reliabledisclosure.org "Best Practice Recommendations"

The obviously unintended ambigouity of the RED2 formulation does not prevent a CEN standard or EECS to be more precise and restrictive. Thus, expiry (for RM calculation) could also take place earlier. Thus alternatives are: consistent production and disclosure period: GO for year X can be cancelled in year X+1 for disclosure of Year X; --> calculation of RM and publication of disclosure only in year X+2 ; --> time lag; possibly discrepancy between current marketing claim and "historic" disclosure data; however, high-interest products (GO based!) are communicated real-time/ex-ante anyway, GO for year X can be traded and cancelled up to 18 months, also for disclosure of year X+1: earlier disclosure, but no consistent production and disclosure period --> leakage of attributes; disclosure procedure even more abstract and "de-linked";
Only box 1 and 3 should be implemented as stated. The additional 6 months should be only for disclosure purposes on Competent body side. The argument about lesser value of GoOs are invalid as all market participants can choose their own approach and time of possible sales and purchases. The box 2 will fundamentally change the current market conditions as it would actually makes possible 3 different consumption year to be chosen from. From consumer point of view it is easiest to approach the “shortest” available choice given in directive. Therefore the proposal is to have current 12 months validity in force. There is also high need to harmonize the approach for disclosure end dates between market participants and additional 6 months should be read so that GoOs cannot be transferred after their validity between benefactors or domains.
As physical laws for electricity demand the grid is in balance, it means any electricity used should be produced at the same time. In order to follow the physical laws best, it would dictate a GoO use close to electricity use. Lengthening the validity from 12 to 18 months would not help the public’s perception and understanding of the GoO system. Lengthening the period of validity, might also create possibilities (for the opportunistic) to use GoOs in different years and for different fuel mix disclosures. i.e. the above is valid for GoOs of electricity. GoOs for gas are a different story. Gas can be stored and hence, GoO validity can (should) be differentiated to the commodity they are accounting for.
If a GO must be applied in the consumption mix within 12 months from the date of injection of that energy into a grid, then what is the point of allowing an additional 6 months for the 18 month.
Yes, we do. We think that this is the only possible/reasonable interpretation of the terms “validity” and “expiry”
1 and preferably 3 to lower double-counting risks are fine with us, while we do not think extending further to 18 months the possible use of GoOs would be beneficial: the maximum period between time of production and time of use is quite long already. One issue not mentioned anywhere though is where an operator makes a mistakes and cancels the wrong batch of GoOs for the wrong client: could swaps of cancelled GoOs or un-cancellations be allowed for a limited time to fix such mistakes?
NO COMMENTS. TOO COMPLICATED. WHAT IS THE VALUE?
Yes, except for the expiry date of March 31st of the following year. If GOs should expire, then it should be one year after the end of the production date. That would give industry the opportunity to use the GO only in a period 12 month after production, but they can audit the production volumes and cancelling the GO after the year of production for the year before.
The usage of the Go should be bound to the year of consumption. Otherwise it should be up to the national rules. Last possible cancellation date should be 18 months from creation of the energy.
These proposition seem only to be easing the comfort of suppliers to have to make one single cancellation per year. Why not. But such a change would be worth it if all CEN participants apply the change.
I agree the interpretation but do not endorse the EU text, as I feel that we should implement a more constrained system for mature markets (electricity)

26. What do you believe can be done with a GO during the period of its validity?

Number of respondents: 9

Responses
It can be transferred, cancelled, withdrawn, ex-domain cancelled etc
Validity can mean that it can be traded and cancelled.
Trading, Transfer and cancellation.
Traded or sold. Cancelled when the renewable energy is deemed to be consumed.
During the validity period, the GO, once issued should be freely traded, transferred and cancelled
Be traded and, eventually, used for disclosure of the energy origin. To issuing gas GO for gaseous biomass is not possible without an audit. So during the period of its validity maybe you cannot issue them.
We believe that those concepts of validity and expiry have not been thought through by KOM. We suggest not to think too much about it, but to be open to any national rules.
It is not very long anyway. The GO can be traded so that the market has the time to adjust flows of offer an demand. This period is necessary for optimising the continent's needs and intentions. A well functioning system needs this trading period.Hundreds of jobs also exist because of this validity period play-time.
Issue, trade, cancel

27. What, in your view, can be done with a GO during the period between the end of its validity (12m) and its expiry (18m)?

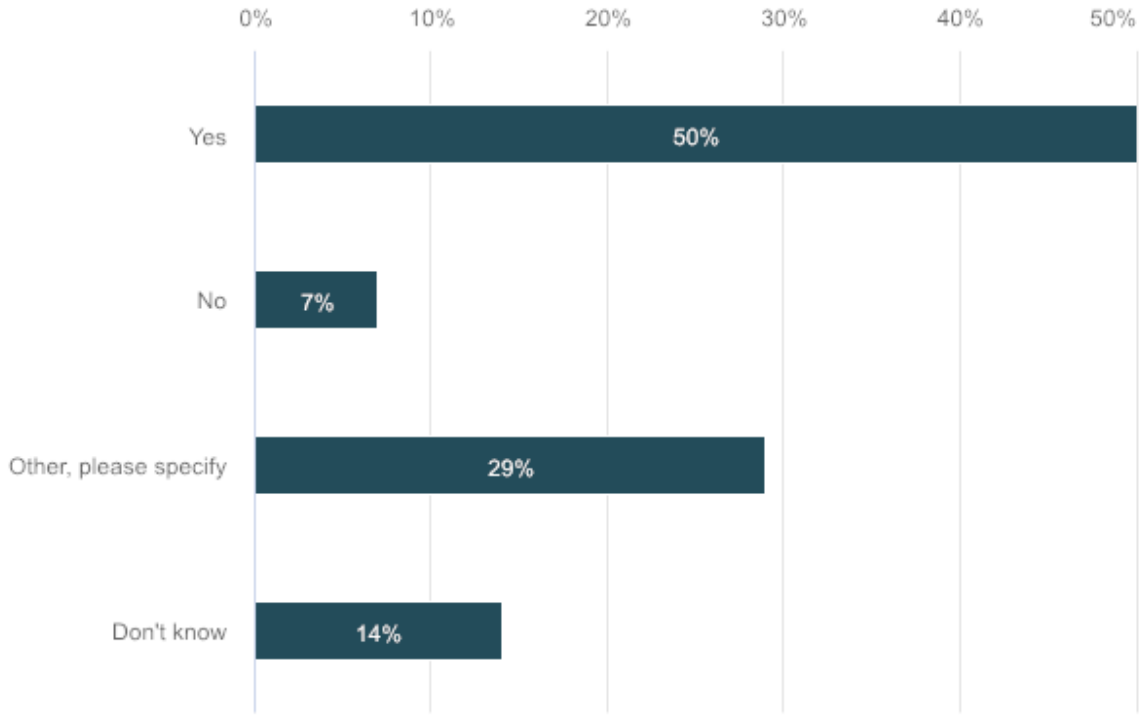
Number of respondents: 9

Responses
Be transferred and called for the period of its 12 month validity. This in my opinion is to help it any administrative lag that occurs within an administration.
Only cancellation from your own account to your own company, but there should not be additional 6 months on validity. This is actually problem only for some Member States and their disclosure and issuance timelines. Harmonization on Disclosure rules should make this problem unrelevant.
The wording suggests that it can be cancelled or traded.
We think that during the period between the end of the validity period and the end of the expiry period, the GO should be freely transferable between account holders and should be available for cancellation.
Since the purpose of a GoO cancellation is to prove renewable cancellation, we do not see why trading and cancellation would need to last longer than the useful life of a GoO, except for maybe correction purposes as suggested above.
Trade and cancelation up to the end date for cancellations (31st March in Spain currently). Cancelation should pair GOs with energy consumption within the period of validity.
During this period, in the case of gaseous biomass, mainly the calendar yearly verification (audit) and issuing of guarantees of origin should be carried out.
More trading: optimised offer and demand flows for a well functioning continental fuel mix. Standardisation of cancelling deadline: enough time for finalising books.

Issue, trade, cancel

28. Would you prefer the expiry to stay at 12 months (as is under 2009/28/EU), given the negative impacts mentioned?

Number of respondents: 14



	n	Percent
Yes	7	50%
No	1	7,14%
Other, please specify	4	28,57%
Don't know	2	14,29%

Answers given into free text field

Option names	Text
Other, please specify	To maintain the 12 months but be more specific. For example 12 month of a calendar year
Other, please specify	Please refer to the additional documetn that we uploaded
Other, please specify	For gas GO an expiry of 24 months would be better.
Other, please specify	it's worth changing only if all CEN participants apply the change.

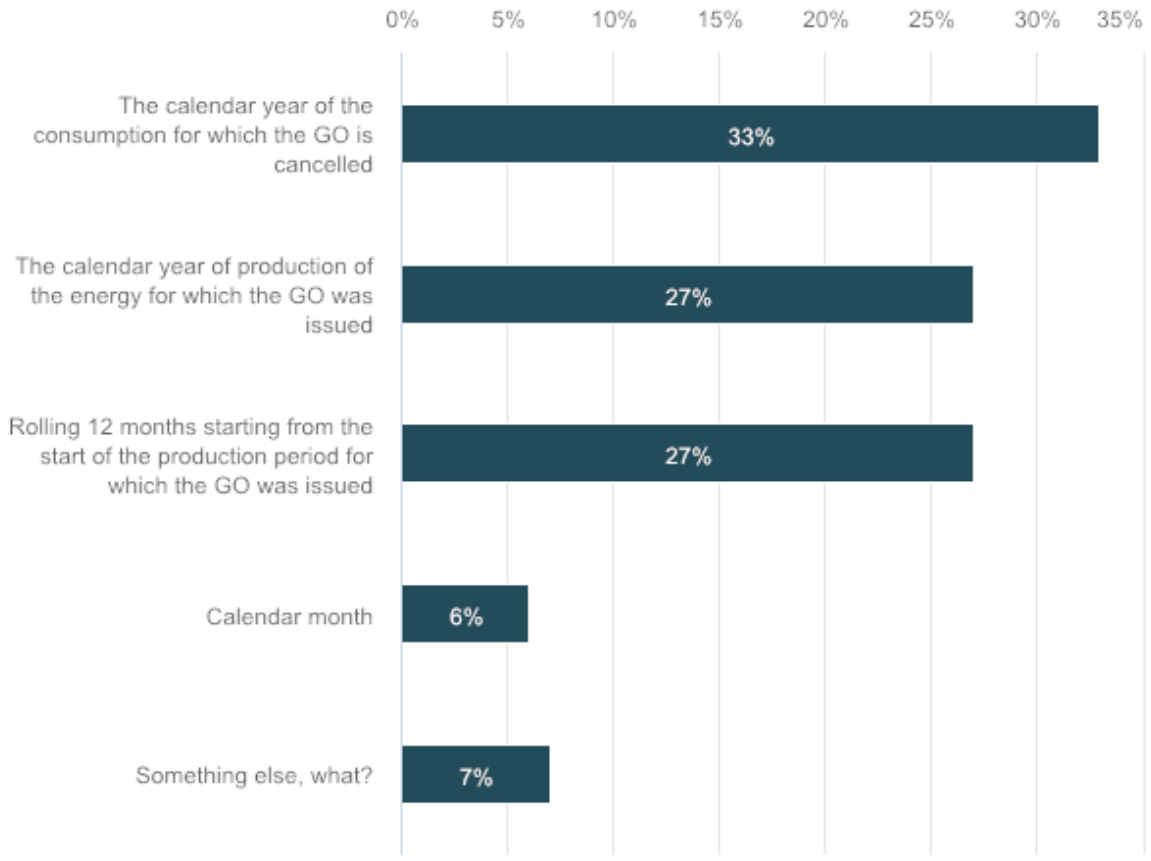
29. If yes, how would you interpret directive 2018/2001 note on expiry after 18 months?

Number of respondents: 5

Responses
it is a maximum rule --> can be interpreted more strictly by EECS and CEN
Only as a guidance for Disclosure competent bodies. Please see the slides from Henrik Dam, only for the disclosure purposes. Trading and transfer should be locked.
Does it suggest or imply that there is a different customer type for the 12 month period and the 18 month period?
Yes 12 months, and given the wording in the directive it's relatively clear that the additional 6 months are there only for housecleaning purposes.
As a last resort rule and / or for new plant registrations

30. In your view, for the most meaningful origin disclosure system, what should be the disclosure period (= period of consumption to which the GO cancellation relates)?

Number of respondents: 15



	n	Percent
The calendar year of the consumption for which the GO is cancelled	5	33,33%
The calendar year of production of the energy for which the GO was issued	4	26,66%

Rolling 12 months starting from the start of the production period for which the GO was issued	4	26,67%
Calendar month	1	6,67%
Something else, what?	1	6,67%

Answers given into free text field

Option names	Text
Something else, what?	Please see herein under

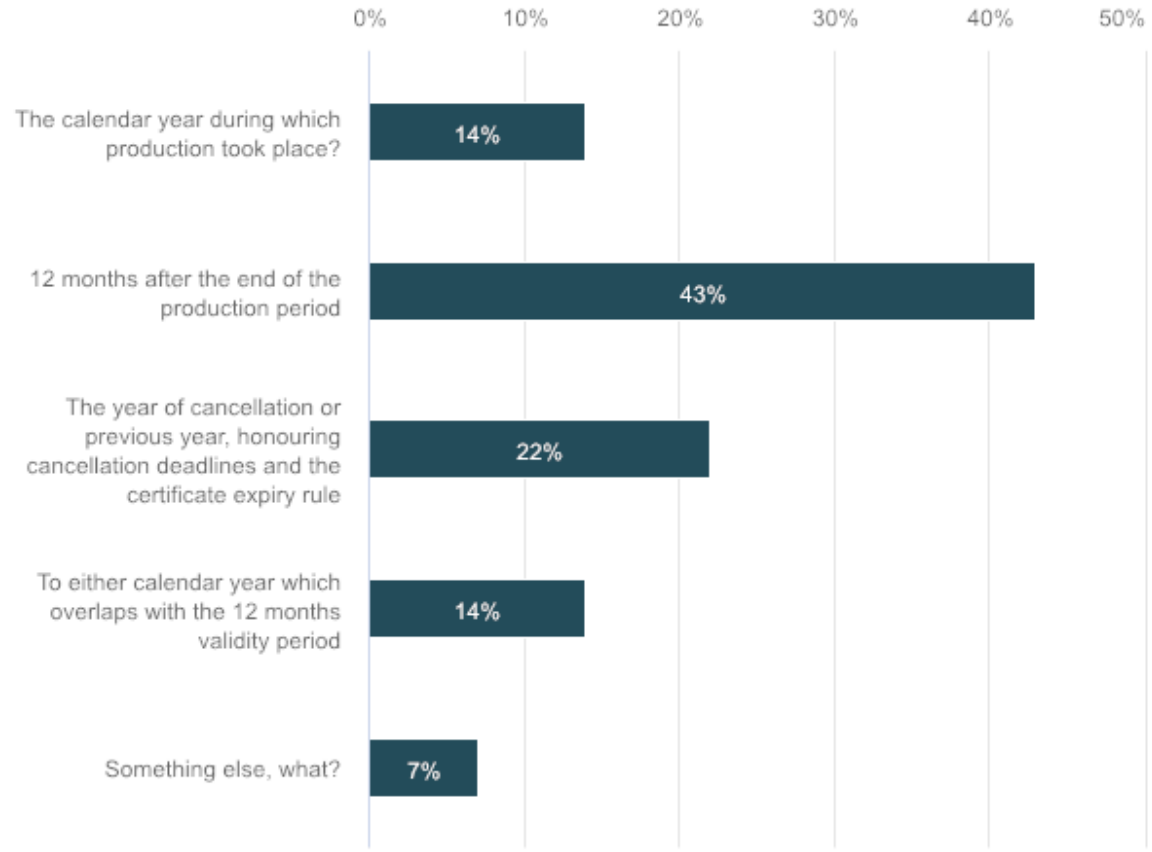
31. Please provide your reasoning

Number of respondents: 8

Responses
See first text box. It should also be considered which role GOs can play in the context of Recital 90 (real-time supply of RES for RFNBO production). A full decoupling of production and consumption period might prevent GOs from being a means of proof here.
Would make most reasonable and logical approach. That would also enable proper calculation of European mix which is based only for cancelled GoOs. Also erases the issue for short time limit between issuance and disclosure.
If energy is produced, injected and a GO issued in December 2019, then the consumption details may not be known by 31/12/2019
Before coming to this question, we are on the opinion that we have to address and analyse the exact wording of the directive – does it allow any solution different than the 12 months rolling? It seems that any other solution will be non-compliant wit the requirement for 12 months validity of each GO Otherwise, we think that the variants that make sense for the market are either 2, either 4
We advocate for a coherence in GO validity rules throughout Europe. In France, GO validity will be reduced to a month as of 2021. This will result in decreased market liquidity, and higher price volatility. It will also make trading GO with other European countries more complex.
Due to national law
Experience: every participant is only interested about the attributes of the producing device. The GO gives the choice to the Consumer. But it is a choice about the production. Logic: this is the only part that is renewable in the whole energy complex. Calendar year is restrictive enough to be reliable, and flexible enough to keep the system operationally realistic and playable. You will get more scepticism and criticism if you make it monthly due to the real production fuel mix during summer months in a country like France, for instance.
Calendar month disclosure would ensure that seasonality is taken into account and would improve the credibility of the GO system.

32. Considering the Directive 2018/2001 formulation on GO validity, would you consider GOs be valid when they are cancelled for proving the origin of the energy that is supplied during:

Number of respondents: 14



	n	Percent
The calendar year during which production took place?	2	14,28%
12 months after the end of the production period	6	42,86%
The year of cancellation or previous year, honouring cancellation deadlines and the certificate expiry rule	3	21,43%
To either calendar year which overlaps with the 12 months validity period	2	14,29%
Something else, what?	1	7,14%

Answers given into free text field

Option names	Text
Something else, what?	Please see herein udner

33. Please provide your reasoning

Number of respondents: 5

Responses
Points b, c and d includes same point. GoOs should be available for cancellation during their lifetime. They can be used for previous years mix if issuance is done in time (in practice this is not happening). On other hand these can be used for following year as the GoO is still valid. Once again the harmonization on disclosure rules is the key.
Unsure what the question is
Again, we think that the text of the Directive doesn't allow any other interpretation than the second variant. But if we ignore this for a moment, our opinion is that point 1 is the most appropriate manner.
We believe other options create difficulties in matching production to the demand disclosure period, or in the case of "the calendar year in which production took place" needlessly reduce the value of GoOs generated late in the year.
Anyway, in Spain, the issuance of GOs takes a significant amount of time. There is no certainty or assurance when the requestor will have its GOs registered. There are delays specially at the beginning of the year, with an important lag of time between the request and the final disposal. Ideally, GOs should be issued and cancelled with energy demand in real time, in order to improve customers' trustness on the GO system.

3. Simplified information on GOs for small capacities

Text for consultation

Challenge

REDII art. 19.7 specifies that *"Simplified information may be specified on GOs from installations of less than 50 kW".* If the definition of 'simplified information is not standardised between Member States, the import and export of such GOs could be hindered for technical reasons, creating a barrier for the international transfer of GOs from small installations. If GOs from installations of less than 50kW were harder to transfer internationally, they could be confined to their domestic markets, potentially reducing their price.

The type of production technology that is most frequently used in installations of less than 50 kW is currently solar photovoltaic devices. Depending on policy and market developments, the rollout of small devices could expand to other technologies.

Potential reasons for simplifying data on the GOs:

- To aggregate the issuing efforts for many small production devices, so that small producers are not put off by the effort of requesting GOs and a registrant can aggregate the application for issuance of GOs from a large number of devices;
- To avoid the administrative burden of too many sets of single certificate issuances per month;and
- To empower small producers to fully participate in renewable energy markets without facing the regulatory requirements placed on larger producers.

Example of parameters with simplified data on GOs issued for small devices

- Production period => a calendar year instead of 1 month;
- Identification of production device (name, ID, address) = postal code or province of the production device;
- The capacity of production device => category of capacities;
- Date operational => the year in which the production device became operational;
- …

Some parameters should not be simplified, either because of their value to consumers seeking to make conscious and informed choices about their energy consumption; or because they are needed to maintain system quality and avoid double counting. Parameters that should not be simplified:

- Energy source;
- Whether it relates to electricity, gas, heating or cooling;
- Type of installation;
- Date of issue;
- Country of issuance; and
- Unique identification number per certificate (in order to avoid double-counting).

A number of parameters could be left off single certificates from small installations, but included in a set of certificates with the same characteristics.

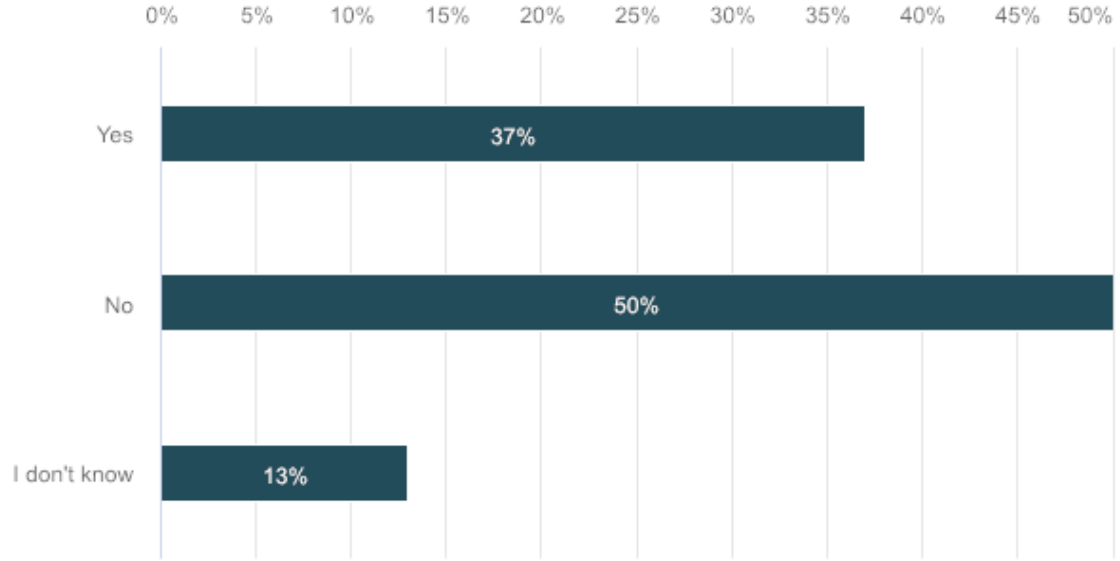
Potential solution

Include the reasons for simplifying data on GOs from small installations in CEN EN 16325, along with a specification of the data that GOs from small installations must include.

Questions for a survey to issuing bodies and answers

34. Questions for a survey to issuing bodies:Does simplifying the data on GOs from small installations (below 50 kW) assist the administration of your GO system as a whole?

Number of respondents: 8



	n	Percent
Yes	3	37,5%
No	4	50%
I don't know	1	12,5%

35. Please provide your reasoning and the likely benefits of doing so.

Number of respondents: 7

Responses
Simplifying should particularly mean to allow also small PV to participate at all. Very small plants might not even produce 1MWh per year --> no option at all to get a GO. Possible solutions: bulk processing for portfolios of plants (e.g. small PV in a certain region); I would not see the need for full standardisation as small PV probably has a specific value also for regional marketing rather than for a fully integrated pan-European market.
In general the issue is not on simplified data, but rather on metering point and validation of produced energy. Usually small scale assets are installed behind meter and the energy output flow is limited as small scale capacity is popular for self-consumers. This might not be relevant for overall GoO scheme, but this should be looked closer on disclosure legislation and calculation. Hidden RES volumes usually correspond to self-consumers as these amounts are not visible on national level. Therefore the challenge here is more on how to include small scale assets to disclosure calculations and make them available to claim green attributes from their installations.

Audits of small installations should be simpler, trusting to other administrative processes by national legislation in order to avoid too high costs.
There is no need for simplified information on GOs for small capacities. Otherwise, there should be simplifications for small capacities (e.g. photovoltaic devices) in the process of registration and issuing process of GOs. Simplified solutions should not only be provided for plant operators, but as well for representative service providers.
From our point of view this does not make sense for gaseous biomass and synthetic gases. Small installations of this technology in Germany are usually used for research and demonstration purposes.
There shouldn't be any simplification for anyone. The GO needs to be standard and fully informative. There are already too many GOs. No need to make it easier for more entrants. This is another example of political input that can hurt the whole profession/industry, like the auctioning of french GOs that destroyed the value chain and the asset valuation of many companies. A normal market would have smoothed the oversupplies instead of being crushed. Why should small installation have an administrative/operational advantage? The European GO market need to gain credibility. Facilitating the offer side again and again keeps harming it and its purpose. The need is to focus on helping countries to adopt Full Disclosure, lobby politicians to use this energy accounting tool and facilitate the demand for GOs. NOT THE OFFER. Why is Poland, the most polluting energy country not a massive net importer of GOs? Because only their producers see an incentive to join the scheme. This is failure.
It creates specific rules for different cases and increases complexity from operational (procedures), technical (data management) and business (liquidity) point of view ==> increases exposure to fraud risk In France, most of the small production is PV for self consumption under Feed in Tariff and should not need to be traded for the most part, but is still taken care of by auctions.

36. Which data fields would you simplify? How and why?

Number of respondents: 6

Responses
It's not only about the fields, it's about the costs. Small installations should be allowed to join without registration fee + it should be possible to link the GO system to smart meters and to already existing online systems to track production and consumption. Possibly there could be a separate database for such small installation. If possible one that is based on cooperation between as many countries as possible, rather than having a different database in each country.
production period --> up to one year name of the plant --> aggregation of several plants with given characteristics others also as proposed above
As stated above. The data currently is not issue from our point of view.
See our previous answer.
No simplification for the producers. It is a mistake. Please see above.
None, but I would facilitate access to this production by agregators if relevant.

4. Facilitate an EU wide Green Label and/or a premium market for renewable energy

Text for consultation

REDII Art. 19.13 requires the European Commission to *"present a report assessing options to establish an EU-wide green label with a view to promoting the use of renewable energy coming from new installations".*

In some countries, GOs are already used in combination with a label indicating that extra criteria have been met. One of these criteria is whether the buying of this GO contributes to additional renewable energy production (generally referred to as "additionality"), although actually unambiguously defining what is meant by additionality is not simple. EECS GOs, therefore, provide a data field that allows the providers of a label to demonstrate compliance with their criteria for the corresponding MWh.

Whether the above process could also work for any eventual EU-wide green label, or whether the proposals from the abovementioned assessment will require a change in the data architecture of GOs, is to be clarified.

Challenges on the GO operator side

1. Bring the role of any eventual EU-wide green label into the scope of CEN EN 16325, in order to
2. Define any extra data to be collected during production device registration and issuing of GO. This could possibly include aspects like:
    a. The mode of operation of plants or
    b. The grid situation of plants as it relates to the point of consumption, cf. REDII recital (90) on additionality of RFNBOs and
    c. The relationship between plant and consumer (this might be of higher relevance for GOs for heating and cooling as there is no pan-European heat grid) ;
3. Find a way to provide additional information to markets (and regulator/public institutions/…), either by having extra information on GOs or by providing transparent plant-specific data (in a production device database) as an official reference for additional criteria;
4. Determine whether extra data should be mentioned on the GO, and what data this should include;
5. work with the eventual operators of any EU-wide green label through the GO issuing process;
6. Ensure that the conversion between different energy types can be reflected by GO systems in such a way that relevant (e.g. additionality) aspects are being sufficiently documented.

Challenges for producers and traders

1. The difference in market value for GOs with and without any eventual EU-green label;
2. Properly understanding the magnitude of this difference (unless there is a push on issuing bodies to collect and publish GO transfer prices); or
3. The interaction between GO markets for "standard" renewable energy trading and regulation-driven markets (cf. RED2 recital 90 on RFNBOs).

Questions for consultation and answers

37. extra data should be added to the GO, on top of the requirements by art. 19.7 of REDII, for adding value for consumers? How will this benefit the consumer?

Number of respondents: 19

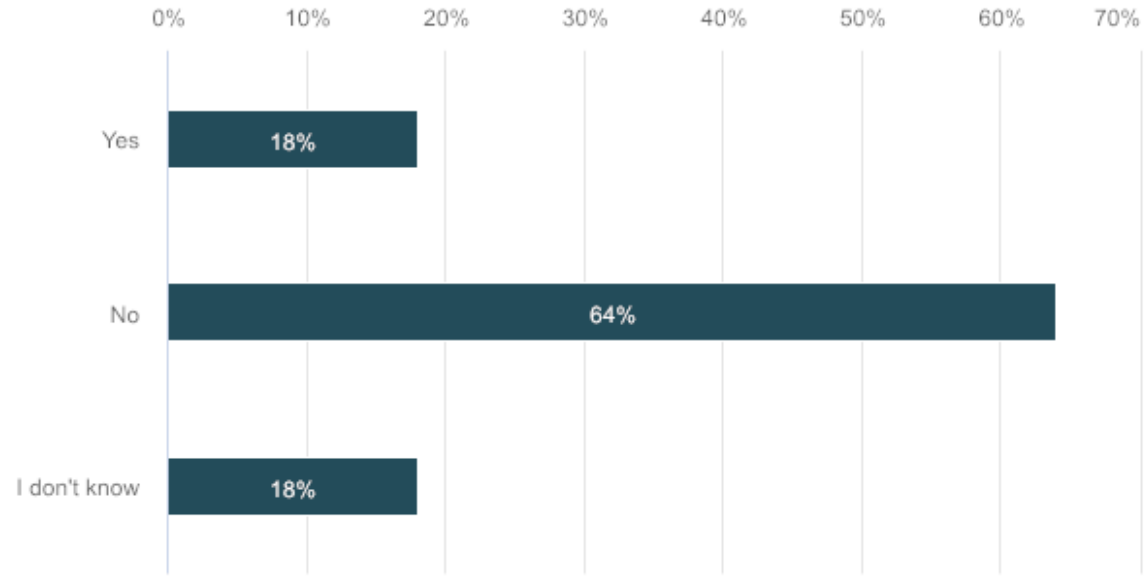
Responses
There is no need for something like that. The date of commissioning (of the production device) is already on the GO. And consumers use that! - Also: there are labels available in the EU, some created by market players, some created by NGOs. The EU has other and better things to do than to add another labelling system to the market. Instead the EU should strengthen existing civil society initiatives. (Please learn from the history: The EU has created with lots of taxpayers' money an EU Ecolabel for Tourism Accomodation, neglecting that European NGOs (FEE Network) had already the Green Key label. And also the tourism sector itself has very valuable labelling initiatives. Rather than making the same mistake in the energy sector, the Commission should analyze if the approach in the tourism sector was wise and efficient (spoiler: it likely wasn't)
allowing for Independend Criteria Schemes might be a silver bullet... besides that, a concept of "GO plus" has been discussed, which includes (besides new and unsupported) as characteristics that this MWh of RES production will officially NOT be counted towards existing EU RES targets. This might be particularly relevant in relation to recital 90. Thus, this might be worth an extra earmark.
The GHG emission of the production or a least, if the production respect or not RED II criteria. This information will help consumer to understand what he is consuming, to take a wiser/more informed decision and to use GO in ETS quota.
None, as GoO already holds all required information. However the aim of EU wide Green label is not yet clear or published. From our point of view only valid information to match this label is the commissioning date which is already part of GoO information. However it is more challenging to evaluate the possible value on other energy types. For example EU wide green label for gas might have large potential for consumers, but differentiation with information provided by GoO might not respond to this need. Most straight forward action still is to keep GoO referring only to consumed RES energy and leave all other aspects out of GoO scope.
GOs is a tracking system which should provide the basic facts. Additional data on the GOOs shouldn't be that of a label or any information that needs further verification. At the same time is important to ensure that information/data across all registries is harmonized; a transfer of a GoO from one registry to another should carry and keep the same information
Additional details on the verification/audit procedures complied with and the GHG value of the energy would add credibility to the 'product'
We believe that data demonstrating compliance with Environmental/Sustainability energy labels should be included on the GO. Some customers are willing to pay premium when the energy is sourced from power plants that meet certain sustainability criteria (for example biodiversity preservation) and having this data on the GO would improve transparency and prevent false environmental claims.
We could see the the following data fields in the GoO (to the extent that no excessive administrative burden is created): • Compliance with sustainability and GHG reduction criteria foreseen in RED II, creating a link with the "green label" - benefits for customer awareness and a basis for tax reliefs, for instance • Location of the installation at a sufficient granularity (region or city, not only country) to allow local valorization • For power generation Equipment, EIC code as assigned by a TSO or ENTSO-E – much better for unambiguous identification than name/age/capacity. • For CHP, power and heat efficiencies (to support emissions calculations).

• For biomass, % of non-RES feedstock in the installation • If we go for GoO conversion, e.g. through batteries or from renewable gas to renewable power, and if the registry design allows: link to the source GoO, and % loss. • Ownership or company operating GO as this could encourage actors to build and operate new RES production
Need to precise which gas is used: biomethane, renewable hydrogen, etc. Regarding biomethane, this mention should be sufficient to bring the evidence that it is a biomass with a 0 factor emission, and thus it can be valued for ETS compliance.
No extra data, GOs shall specify only data defined in REDII.
GO system should be designed to add value for consumers and to pull RES. Minimum information requirements contained in GOs established in the Directive 2018/2001 would facilitate the development of an EU Green Label for renewable energy. The most pressing issue is to harmonize the criteria to obtain the before mentioned EU wide green label. Then, a binary option based on such criteria (e.g. Compatibility of this GO with the requirements to obtain the EU Green Label – yes/no) might be added. As it's in the Directive, GOs from installations benefitting from national non-competitive support schemes shouldn't be issued to the producer and they should go to the residual mix. In Spain, GOs are used to label electricity and suppliers including GOs from legacy investments or supported installations that were massively subsidized by all consumers and citizens. The energy produced from the latter installations should be part of the energy mix of all consumers/suppliers.
There should be an optional possibility to provide extra data within the GOs. The aim of simple issuance, tradability and cancelling of GOs should be in the focus. Extra data on the GO could make the main difference to the amount of new build RES production in the future. In Germany, the addition of new plants is currently heavily dependent on legal support.
None, the GO already contains all data needed for a labeling process.
Sustainability information could be additionally indicated in the GO to promote the production and consumption of renewable and decarbonised gases. This information would also add a climate value for consumers willing to make a link between GOs and the EU ETS. The CEN CENELEC work on the revision of standard EN 16325 has just started and it is not clear yet if additional data has to be provided or not. However, one should investigate if the following data could be added: - the feedstock used for the gas production; - indication of compliance with sustainability criteria (as provided in paragraphs 2 to 7 of Article 29 of RED II); - value of GHG emissions savings (with a breakdown to different uses, e.g. transport, electricity, heating and cooling as defined in paragraph 10 of Article 29 of RED II). Please see more explanations and comments in the file attached (pp. 10-11)
None, a GO shall specify only data defined in REDII.
The question of labelling and premium markets will not only be relevant for electricity, but also for gas, including hydrogen, and heating and cooling. There is a link to the criteria set under Articles 25ff and with the future implementation of Recitals 87 and 90 on the need for additional generation for renewable energy used in the transport sector and sustainability criteria to be defined for RFNBO. See question 8. Related extra data should be added to the GO. This may include information on the type of production device for the production of renewable gases, its connection to the electricity system, and on the share of renewable energy and the CO2 emission factor of the electricity which was used (in contractual terms) for the production of the gas represented by the GO. All information needed for the implementation of the parts of the REDII mentioned in relation to RFNBOs must

be available as data on the GO for hydrogen, which which may be used as fuel directly or converted.
no added value. Only added confusion and complexity. GO is an accounting system. It works like money. AIB is SWIFT. It is sufficient The only interesting addition is the carbon information. Opening bridges for future developments.
CO2 emitted, especially in the case of Full Disclosure Origin of invesments (public, private) ==> to show if a plant was helped by private companies, citizens, collectivities
Further standardised granularity for disclosing time of issuance, i.e. down to the day (or hour), would be a valuable addition. A public stakeholder consultation process on this specific topic would be valuable to gather further feedback on what types of economic and environmental criteria might be useful to end-use consumers. There is a general trend toward renewable energy consumers demanding more specific, less generic GO products. Some renewable energy buyers are interested in matching their production and consumption more closely; having a more specific “timestamp” would facilitate this process.

38. Will extra data on the GO actually make any difference to the amount of new build RES production, and how can you substantiate this?

Number of respondents: 11



	n	Percent
Yes	2	18,18%
No	7	63,64%
I don't know	2	18,18%

39. Will extra data on the GO actually make any difference to the amount of new build RES production, and how can you substantiate this?

Number of respondents: 10

Responses
It won't
Depends obviously on the data, and on implementation of regulatory framework (markets driven by regulation, eg. for PtX)
Unlikely, as the claims can already be made with current characteristics of GoO. However in case larger rework is to be done and scope of GoO is changed, then it might be possible. General comments on the challenges for producers are not correct. The market value might have premium over current labels, but that is up to market to decide and not a challenge. Also the requirement to publish GO transfer prices does not answer to this problem or have any relevance for topic.
Unsure - depends on supply/demand economics and the requirements for subsidies going forward
EU wide green label is planned e.g. for new installations. This information is already today specified in the data of GO, which is the date on which the installation became operational.
Raise consumer awareness in order to require Gos from recent/new installations, also favouring installations without subsidies or participating from competitive support mechanisms. With the surge of competing renewable alternative sources and technologies, low-cost renewable electricity sourcing strategies based on GOs e.g. from legacy hydro undermine the value of procuring other renewable energy sources which might be more expensive. National issuing bodies should check the general perception and interpretation of consumers when being offered a green tariff underpinned with renewable GOs or when they are being told that a company is certifying its energy consumption based on 100% renewable/low carbon energy.
EU wide green label is planned e.g. for new installations. This information is already today specified in the data of GO, which is the commission date of a power plant (the date on which the installation became operational).
It will only bring more confusion and will give fuel for more criticism. Labels can be added separately and independently for extra information.But the CEN should focus on a general well functioning backbone GO system.
Extra data will enable consumers to have a better control on the energy they consume and data related to additionnality should be added. I do not endorse labels (national or EU) in general as they tend to create noise and complexity, risk of misunderstanding between the actual GOs and the label. They should be handled as an ICS, so label applies to the production and not the supplier offer. More work should be done on transparency of the GO market data to help consumers understand the data and ICS to make more educated choices for their energy purchases.
As consumers seek to increase the impact of their renewable energy purchasing, providing additional relevant data for each GO can support growth of impactful purchasing.

5. Storage – conversion – onsite consumption

Text for consultation

Challenge: simplifying complexity and clarifying ambiguity

How to manage the certification of energy that goes through a storage device is a matter that is frequently debated by GO system operators and market participants. For example, should an energy storage device be considered as a conversion device? Should energy that enters a storage device have its GO cancelled? Should energy that comes from a storage device have a GO issued, and if so, for what generation technology?

In general, the question is how to manage GO issuance and cancellation when the energy passes through a storage device? Can the same principles that apply to energy that does not go through storage apply to energy that does?

Proposed solution

A storage operator should function as any other energy supplier without their own source of generation. If they which to supply a particular energy product they need to procure the related GOs and either transfer them to the consumer for cancellation or cancel them on the consumer's behalf.

Two principles, both following from the phrasing in REDII art.1, together simplify the issue:

1) Only the cancellation of a GO determines whether consumed (or lost) energy is renewable.
2) Tradeable GOs can only be issued for energy that is placed on the market (see also challenge 13 Onsite consumption)

This results in the following guidelines:

Storage losses:

1. If produced renewable energy is stored 'behind the meter', before being placed on the grid => only issue GOs for the energy placed on the grid and made available to the market.

2. If energy is stored after being placed on the grid and made available to the market, the energy is no longer connected to the GO and =>

    a. the storage provider can freely decide to "green" storage losses by cancelling the amount of GOs equal to the amount of energy lost in storage. If the provider doesn't cancel GOs, the storage losses are considered to be non-renewable energy consumption.
    b. The storage provider doesn't HAVE TO cancel GOs and doesn't have to "green" their losses.

A storage operator is not consuming energy, just holding energy and causing some losses. The same goes for a distribution or transmission system operator: energy losses during distribution are considered as a type of consumption. The origin of this energy loss-consumption can be claimed as coming from RES, on condition that GOs are cancelled.

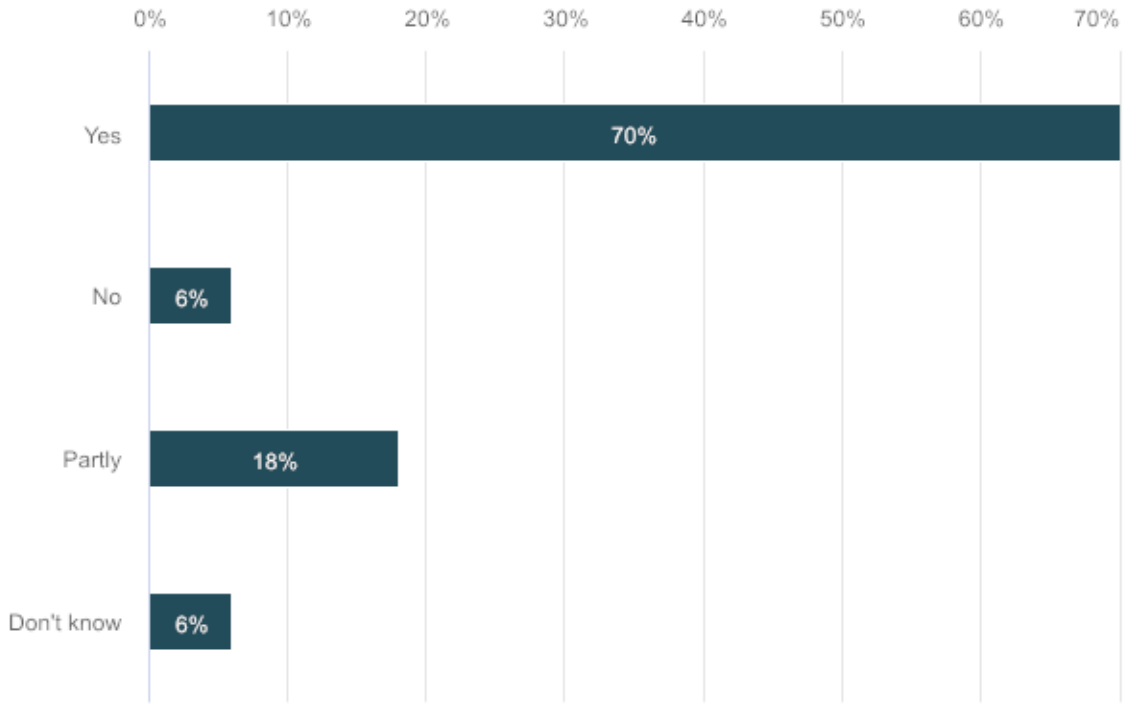
Energy Carrier Conversion:
Cancel GOs for the amount of input in an energy carrier conversion device, corresponding the measured energy input;
Issue GOs for measured output of the conversion device.
See also section 7 on Energy Carrier Conversion rules.

Onsite consumption
Proposed solution:
Stick to basic principles: Tradeable energy production from RES should receive tradeable GOs. In line with the general principles, the condition is that this doesn't cause double consumption of the same renewable attributes.

Questions for consultation and answers

40. Do you endorse the principle that "Only the cancellation of a GO determines whether consumed (or lost) energy is renewable."

Number of respondents: 17



	n	Percent
Yes	12	70,59%
No	1	5,88%
Partly	3	17,65%
Don't know	1	5,88%

41. Please provide reasoning

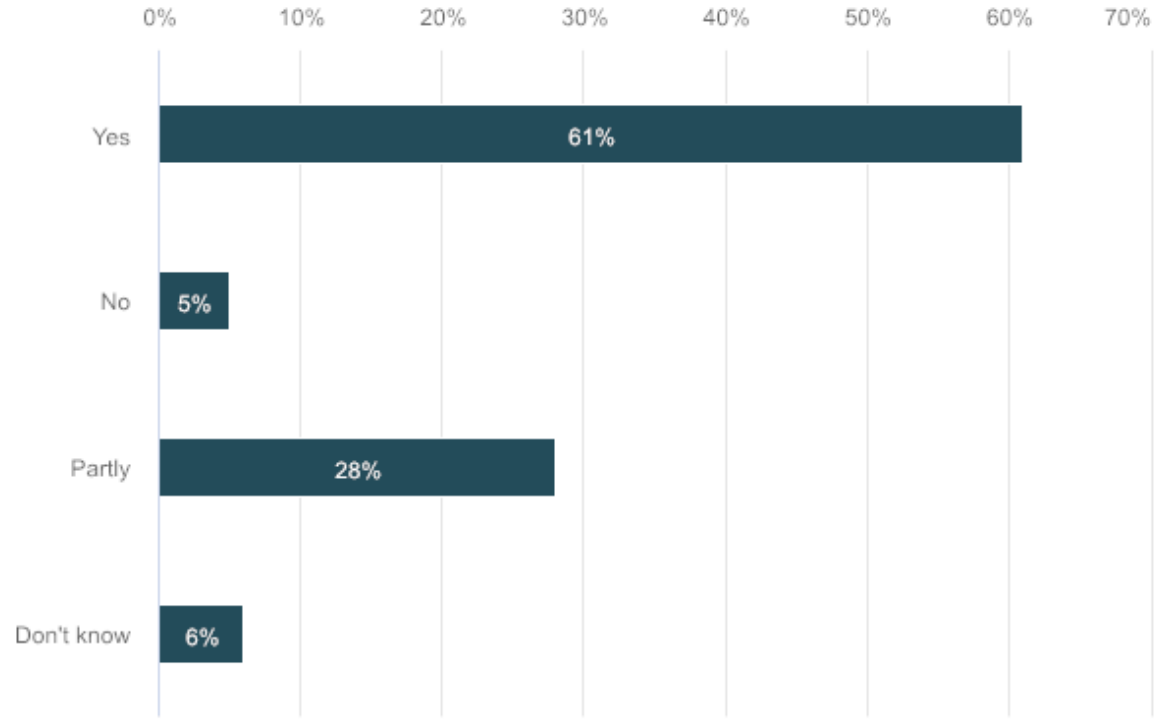
Number of respondents: 11

Responses
I think that a distinction between the characteristics of stored electricity volumes and the characteristics of the losses which are caused by the same storage should not be possible --> "fuel mix" of losses should accord to the fuel mix of stored electricity, just like for a "behind-the-meter" storage device.
This should be true in all accounts and cancellation of GO needs to based on metering data and measured up against net figures. This principle both applies to cases where battery storage is coupled up against a production device or consumption.
Yes, that would make most straight forward approach to handle also energy conversions. However this needs to be also inspected from process point of view but general principle can be supported if we are only looking energy consumed and energy created.
Yes. We are on the opinion that this should be the leading principle of the use of the guarantees of origin and the tracking of the renewable energy. Once the door is open for any exceptions of this principle, we are afraid that this will on erode the public trust in the whole system of tracking renewable energy via decoupled instruments and the GO schemes. Furthermore, it will further fragmentate the already relatively small and illiquid market.
In principle that should be the case, however it should be noted that there are some execptional cases where the GoO framework does not apply, for instance:(1) cases when the renewable feature bought by a government under a support scheme is passed without GoOs to end consumers that paid the support bill (cf. Germany) or (2) there are small installations not getting GoOs (some PV) and there should be a way to account for their energy somehow, maybe by bundling their production rather than issuing GoOs by plants. Moreover, should such a principle be retained, each Member State should be required to ensure that the scope of GO be wide enough not to leave any renewable energy aside (such as bioLNG for instance). The transition period shall be carefully managed, in order that all renewable energy can be correctly valorized before and after the corresponding GOs system is in place.
If the energy, e.g. gas, is flowing in a grid,TSOs, as well as DSOs, could help to secure the process by identifying on a daily basis the energy quantities allocated to a consumer corresponding to GOs supplied.
The residual mix should be taken into account to avoid requiring more GOs than needed, as it already contains renewable energy and it could be a substantial volumen. An average residual mix of the latest 2-3 years might be considered. Beyond that, the energy entering into a storage device should be covered by GOs, including the energy being effectively consumed/lost in the installation. If storage losses are not made green, the electricity turned back into the system should be lowered by an efficiency conversion factor. The same system applicable to power to gas installations should be used: The share of renewables in the output(s) is simply the share of renewable energy in all the energy inputs taken together, on an energy basis
BDEW endorses the principle for generators that are not subject to a supporting scheme. For example, in Germany for generators receiving subsidies, no GOs are issued. Lost energy (like storage or net losses) should always be exempt. Only the consumption of energy should be relevant.
No. Since GO have no function regarding the national target crediting under Article 3 RED II, renewable electricity in the case of electricity-based gases remains in the electricity sector. Under this principle, I cannot use renewable energy in the case of electricity-based gases by means of a GO. The renewable energy produced is therefore in reality used elsewhere. Only Proofs of Sustainability allow a shift of renewable energy from the electricity sector to the gas sector.
That would be most straight forward approach.
Yes. We agree that only the cancellation of a GO can substantiate whether consumed energy is renewable. This logic applies to consumed energy regardless of whether it passes through a

storage device; cancelling a GO should be the only way to make a legitimate claim to be consuming a MWh of renewable energy.

42. Do you endorse the principle that "Tradeable GOs can only be issued for energy that is placed on the market"

Number of respondents: 18



	n	Percent
Yes	11	61,11%
No	1	5,55%
Partly	5	27,78%
Don't know	1	5,56%

43. Please provide your reasoning

Number of respondents: 13

Responses
What is"market" in this context? What is the difference between tradeable and transferable? Market for energy can be an exchange, billateral and in all cases with various degree of open or closed. Is the market the grid? Again, its a matter of metering data and where the meter stands in relation to the storage device. If the the storage device is connected to the grid then par default GOs should be tradeable/transferable on basis of net figures that covers situations where storage is coupled with production device or is net consumer. If goos can be issued, so they should be tradeable/transferable, as long as the principle is kept that no double counting is possible. (The question is quite ambiguous.
Yes, however the use of terminology tradeable is misleading. General principle should be that all RES energy is entitled to receive GoOs as per RED II and usage of those GoOs should be

harmonized between member states via disclosure legislation what is the governing the use of GoOs.
GoOs should be issued for commercial electricity, both on networks such as IKN networks and electricity that is directly injected into the grid. It is then up to the consumer whether to cancel the GoOs for their own consumption (thus ratifying this consumption as green) or alternatively take the residual mix and sell the GoOs to the market. GoOs should always be issued for tracking purposes, whether they can be cancelled or used is a decision based on the national legislation. If they are not cancelled, consumption is not ratified green. General principle should be that all RES energy is entitled to receive GoOs as per RED II and usage of those GoOs should be harmonized between member states via disclosure legislation what is the governing the use of GoOs.
Yes. To put it very simply, we think that issuing GOs for energy that is lost between the production and the injection point or for energy that is consumed on site by the production device itself would be too complicated and difficult to manage and will probably outweigh the eventual benefits. Of course, this opinion is given without any specific information on the renewable energy that is not put on the market remain unaccounted for by the GO system, but we are rather inclined to think that this should not be a significant number.
With regards to self-consumption (on-site consumption) GOs should be issued but they should not be tradable and should be canceled immediately, in order to avoid that GOs are sold in order to green consumption elsewhere while the self-consumption is also considered green (double counting). Issuing of GOs is however important for instance, when a future conversion takes place (example electrolyser with RES production on the same site).
DG ENER, default principle: mandatory issuance for producers from RES that ask for it, be it electricity, H&C, or gas (including hydrogen). Legal framework of REDII: GO has no links to physical transfer. Further clarified in recital 55: GO can be "transferred, independently of the energy to which it relates, from one holder to another". GOs for trading are those, which are measured and settled and have no possibility for douple disclosure. Preventing douple disclosure should be defined via disclosure legislation.
Self-consumed energy shouldn't receive tradable GOs. We shouldn't forget that selfconsumption devices usually receive direct support (fiscal incentives, subsidies) or indirect subsidies (avoided network & policy costs for the non payment of variable terms).
In general, we agree. For self-generation and self-consumption there is no need for using GOs.
Yes , but just as long as the energy can be delivered to a third Party and is not onsite consumption.
We do not have a point of view regarding the questions that seem to apply more to electricity. On the gas side, System Operators (Transmission, Distribution, Storage) usually buy the gas and electricity they need for their process. They usually do not take in kind gas from the shippers. Instead, these costs are factored in the regulated tariffs paid by the shippers. Please see more comments on this issue in the file attached (pp.12-13)
Default principle: mandatory issuance for producers from RES that ask for it, be it electricity, H&C, or gas (including hydrogen). Legal framework of REDII: GO has no links to physical transfer (incl Mass balance system) as prescribed by art 27-30 in RED II. Further clarified in recital 55 : GO can be " transferred, independently of the energy to which it relates, from one holder to another. GOs for the market are those, which are measured and settled and have no possibility for double disclosure. Preventing double disclosure should be defined via disclosure legislation.
It opens the possibility of non tradeable GOs, which is unclear at the moment. On site consumption of one site production should be incentivized in order to limit the risk of arbitrage between consuming and selling to the market, which could lead to greenwashing.

3Degrees partially agrees with this statement. For renewable energy that is stored behind the meter and delivered via a shared grid, one GO must be used to substantiate the consumption of one MWh of renewable energy. Issuing GOs (without cancellation) for the renewable input and output of a storage device would result in double counting. In regard to onsite consumption, GOs should only be issued for electricity not claimed as renewable. GOs could theoretically be issued for generation consumed onsite, if the facility is grid-connected, and only if there is a process in place to ensure that only the purchaser of the GOs has the sole claim to be using this renewable energy.

6. Categorising different types of gases in the design of GO systems

Text for consultation

GO schemes are in operation for electricity and gas, and more recently, for hydrogen on a pilot basis.

Up to now, only GOs for electricity (and heating and cooling, albeit on a voluntary basis) were covered by the regulatory framework through REDI, while REDII (article 19) requires GOs to be used to guarantee the origin of all energy from renewable sources.

Furthermore, the REDII mentions in article 19.7, that the guarantee of origin shall specify *whether it relates to*

1) Electricity;
2) Gas, including hydrogen; or
3) Heating or cooling.

Note: Renewable energy can also be delivered through a liquid energy carrier, and gases are also traded in liquified form.

GO systems for different energy carriers have a lot in common: Indeed, in order to achieve their purpose, they all need to incorporate measures for:

- the avoidance of double counting;
- reliable data registration;
- designing procedures and allocating roles for measuring, auditing, registering, issuing, supervising transfer and cancellation; and
- supervising disclosure and expiry.

However, the GOs for the different energy carriers need to be clearly distinguished for three reasons:

1) Each energy carrier has a distinct use in the energy system, with distinct applications for the end consumers. Therefore, it must be ensured that GOs are only used to make a claim on the type of energy carrier for which they were issued. e.g. an Electricity GO must only be used to make a claim on the use of electricity; a renewable Gas GO must not be used to make a claim on the use of Hydrogen, etc.

2) The energy systems associated with each energy carrier have inherent technical differences, e.g. regarding:

- the definition of the energy distribution system across which GOs can be applied:
    - Electricity: EU electricity transmission and distribution systems, closed distribution systems, private grids and direct lines.
    - Gas: National gas transmission and distribution networks, as well as bulk distribution;
    - Hydrogen: Pipelines and bulk delivery systems
- the definition of the energy products across which GOs can be applied:
    - Electricity: GOs are applicable to the consumption of electricity in any form,
    - Gas: there are specific rules regarding the application of GOs across various gas products (natural gas, propane, butane) and forms of delivery (grid and bulk),

    - Hydrogen: while there are different product qualities, GOs can be applied across all volumes of hydrogen meeting the purity specification specified by the GO scheme (99,9%),
- Energy carrier production configurations and the amount of renewable energy produced by a production device
    - The production processes for Hydrogen are more diverse than those for electricity or renewable gas production, requiring robust approaches capable of handling all configurations (see CertifHy)
- Means of measurements and the applicable requirements are specific to each energy carrier
    - For Hydrogen, there are specific practices for determining the quantities produced and delivered
- The way cross-border exchanges are handled
    - Hydrogen GOs are already applied across borders over cross-border logistical systems (Benelux)

3) the applicable regulatory framework and market characteristics of each energy carrier differ as well:

- Electricity transport and distribution is subject to national regulation – harmonised through the European directive on the internal electricity market (2019/944). There are strict requirements on Member States to ensure the unbundling of roles and responsibilities on the supply of electricity and the operation of power grids. Heating and cooling are either consumed immediately at the place of production or are transported through a liquid material flowing through pipes. European legislation from directive 2018/2012 provides for a level of harmonisation here.
- Gas from renewable energy sources that is distributed over the natural gas network falls under strict regulations, through the European Gas Directive 2009/73. As with electricity, there are strict rules on unbundling between the roles of supply and grid operation. Gas from the natural gas grid is widely used in combustion applications (heating, engines, turbines, …), but also has applications in chemical industry processes.
- Methane, propane, butane, mixtures of gases, … can be transported in bulk. Regulations are not coming close to those from the European Directives for the internal markets for electricity and (natural) gas. Demand for GOs for gases transported in bulk has not yet revealed itself. However, liquified biomethane is established in a physical supply chain in some countries (e.g. Italy).
- Hydrogen is not regulated to the same extent as electricity and gas. There are currently no EU rules on the unbundling of roles on supply and distribution.

It is, therefore, clear that in addition to general rules that can be applied to all GOs, there will also need to be separate sets of specific arrangements for electricity, gas, hydrogen, and heating and cooling.

In particular, while (hydrocarbon) Gas and Hydrogen have in common that they are both gaseous energy forms, the analysis above shows that GOs for Gas and Hydrogen have the same reasons to be distinguished as GOs for Gas and Electricity:

1) The two forms of energy have distinct uses in the overall energy system They consist of a different product with a different value for end-users. For Gas, the exact chemical composition is not as relevant as for hydrogen, between a certain range of boundaries, as it is mostly used for combustion applications that convert into heating or mechanical energy. Hydrogen applications relate to its unique chemical composition.

2) They are associated with distinct energy sub-systems subject to different technical requirements and practices
3) They are covered by distinct regulatory frameworks.

Options for a basic structure of EN16325:

Based on the above reasoning, a section on generic requirements for GO systems will define and layout all the aspects that need to be addressed. Where there are differences between the four energy carriers, these will each be covered individually in a separate section dedicated to these differences.

For the gaseous energy carriers, however, there are differences of opinion concerning whether or not to further categorize the different types of gas into separate rule-sets.

Markets for methane and for hydrogen, being the main gases for discussion here, are essentially different. The different characteristics, in terms of use, market dynamics, means of supply and regulation, need to be considered in the design of a GO system for gas.
This brings up a few questions for GO systems design with regards to the description of roles, rules for measurement and inspection, and GO market development in relation to the physical gas market for each type of gas. Taking into account the abovementioned different characteristics, this comes down to a few options for the gas GO system(s):

1) Consider all gases using the same terminology and set of rules. Describe those in such a way that they are applicable for all types of gases and foresee room for differentiating different types of gases where the market requires it. While this enables the aggregation of roles related to different types of gases and correlated efficiency gains, it also acknowledges that there might continue to be distinct discussion fora for gas GO issuing bodies and gas GO traders using the same set of rules.
2) Design a separate set of rules for GOs of different types of gases. Enable essential differences between gas types to result in differently formulated rules for the different GO systems. Acknowledge that this might stimulate separately managed GO systems and might lead to higher system management costs from an overall viewpoint.
3) Other?

GOs bring the physical differences between methane and hydrogen markets to an abstract level. While physical markets may differ greatly per energy carrier, GO markets may differ less. While measurement requirements and expert discussion fora will probably be set up per physical energy carrier, it has yet to be decided whether GO standard texts need different phrasing for different types of gases. A question here is whether the management of hydrogen GOs, methane GOs and GOs for other gases requires, per definition, the additional overhead cost of setting up separately managed systems. System management cost needs to be balanced against the need for differentiation.

The proposal is to structure EN16325 on the following basic framework:

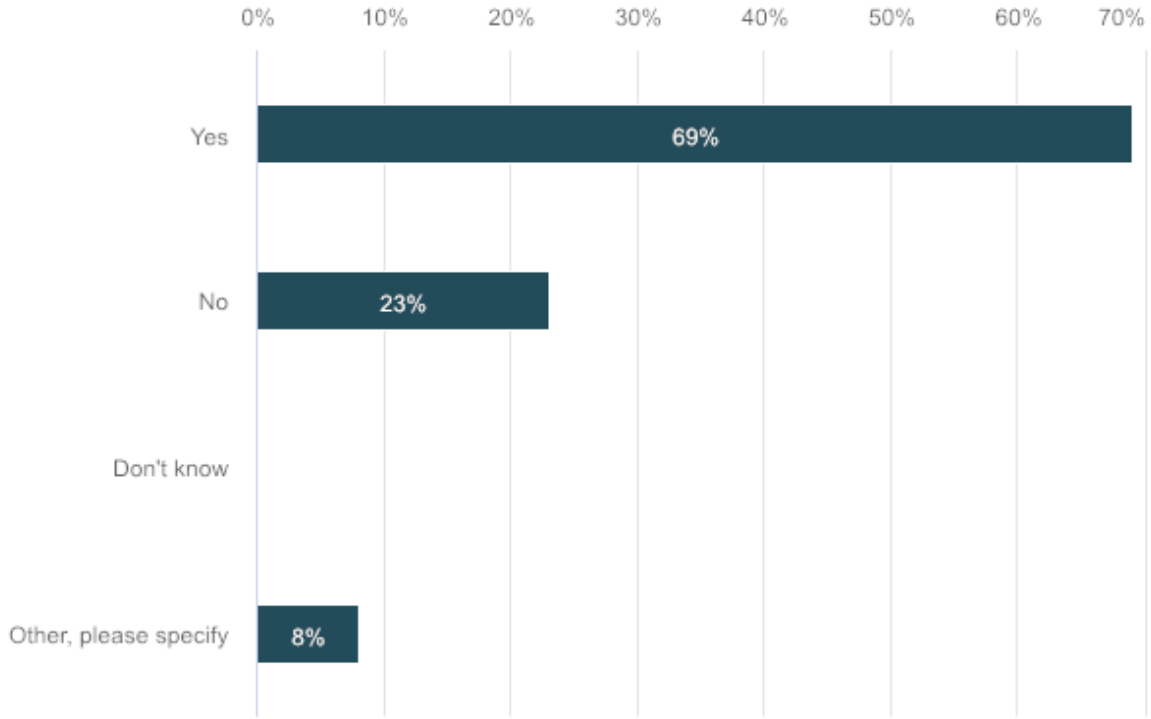
Chapter 1.Introduction
Chapter 2.Framework and scope
Chapter 3.Generic rules for guarantees of origin (Generic for all GOs)
Incl.rules for energy carrier conversion

Chapter 4.Energy carrier-specific rules
1.Electricity
2.Gaseous hydrocarbons
3.Hydrogen
4.Heating and Cooling

Questions for consultation and answers

44. Does this proposed structure work from your point of view?

Number of respondents: 13



	n	Percent
Yes	9	69,23%
No	3	23,08%
Don't know	0	0%
Other, please specify	1	7,69%

Answers given into free text field

Option names	Text
Other, please specify	Please see explanation below

45. Why/why not?

Number of respondents: 9

Responses

The structure proposal set out there as a basic framework seems relevant (cf. distinction btw electricity, gaseous hydrocarbons and hydrogen). It ought to be noted that any categorization should ensure that gases should be taken into account even if they are distributed in different ways (bulk or networks). Moreover, a GO system should be put in place for carbon neutral / decarbonized gases of non-renewable source, well differentiated but in parallel with the GOs systems for renewable gases ruled by RED II
The section gaseous hydrocarbons needs to be precised. Biomethane as well as hydrogen should be sections or sub-sections as such.
Renewable & decarbonised gases (hydrogen included) should be treated under the same chapter. They have similar and compatible uses in the energy system, in particular if these gases are blended. Energy subsystems are largely expected to be the same, in particular during the surge of renewable hydrogen production. Most power-to-gas projects recently announced would be connected to the natural gas grids. Hydrogen is fully compatible with existing natural gas grids made of polyethylene (e.g. in Spain 86% of the distribution grid is today made of polyethylene) and conventional equipment is today able to cope with blends of up to 20% (domestic heating equipment according to EHI in June 2019). The purity of hydrogen would have little or no impact in blends. Last but not least, it's expected that upcoming revision of the Gas Directive 2009/73 copes with decarbonised gases (mainly hydrogen) as it's being announced, including unbundling regime.
BDEW is not in favour of a separate set of rules or GOs for hydrogen. This would only work with a pure hydrogen infrastructure. The gas industry is planning to feed in increasing per-centages of hydrogen into the gas network and the gas-mix over the next few years. There-fore, it is not operational to distinguish between gaseous hydrocarbons and hydrogen. We support option 1 of the gas GO system because we believe that with a terminology and a set of rules which refers to all gases, the market has the best basis for a decarbonised gas system. However, we agree, that this system must leave room for differentiation. The Madrid Forum is currently working on a terminology that considers all gases. BDEW sup-ports the work and the approach presented by the European gas associations. The main tasks must be: • Ensure compatibility of GO among different energy carriers and cross-border • Develop a standard for GO for non-renewable low carbon gases • Consider compatibility with GO schemes a
YES. RECOMMEND THAT RULES AND CRITERIA FOR 1) NON-GRID TRANSPORT/DEVICES, CONVERSION FACTORS ON ENERGY CARRIER CONVERSION AND PRINCIPLES FOR GRID LOSSES ARE DEALT WITH IN GENERIC RULES
Yes, because each energy carrier has its own inherent characteristics, which make it unique and for which a proper regulatory framework and GO system is needed.
It seems it is too early to decide now on the structure of the EN16325. The work that will be done in the standardisation process will help us. For the time being we assume that the GOs for all new gases should be governed by the same rules whereas possible specificities could be reflected in the GO attributes (if needed). Thus, we suggest keeping the structure of the EN16325 reflecting Article 19(7) of REDII, i.e. -Electricity; -Gas, including hydrogen; -Heating or cooling. Herewith, we acknowledge that for the gas fuels there may be a need to differentiate between: gas injected and not injected into the network. However, this issue requires further assessment. Please see more comments on this issue in the file attached (pp.16-19)
The structure looks good. However, it should be clarified that compressed liquified gases are covered by the respective sections for gaseous energy.
Priority should be to foster the development for new energy carriers markets that need to fit the specific needs of producers, suppliers and consumers. It is too early to create generic rules.

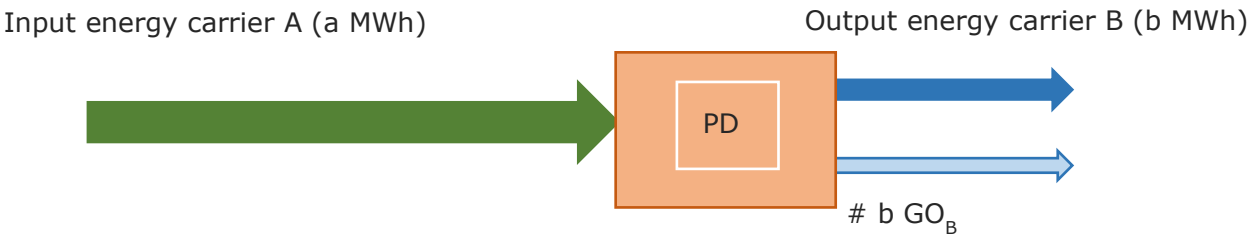
7. Energy Carrier conversion: Rules for GO issuing related to energy carrier conversion

Text for consultation

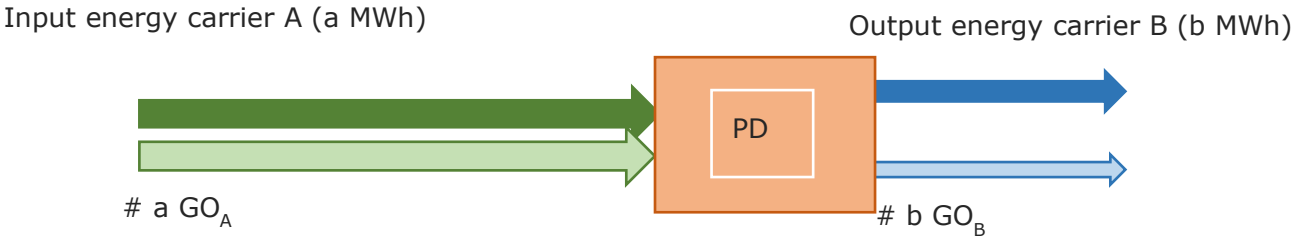
Challenge

Energy carrier conversion is the production of an energy carrier (e.g. hydrogen) from another energy carrier (e.g. electricity). Of all system management challenges, energy carrier conversion is the one pushed most by the REDII implementation deadline. It requires GO systems of different energy carriers to synchronise.

In order to allow claims of producers related to the origin of the resulting energy carrier, it requires the issuance of GOs, which can only be facilitated if an appropriate amount of GOs for the original energy carrier is cancelled. Also, this must be related to the physical conversion of the energy carrier. Rules are needed for handling GOs for multiple energy carriers, in relation to physical energy carrier conversion.



In an energy market where GOs exist for only one energy carrier B, the issuing of GO_B of energy carrier B (e.g. Electricity) is a logical process, relating to the energy source of the input energy carrier A (e.g. biogas)
When GOs exist for multiple energy carriers (A, B, …), a producer may also want to use GOs to prove the renewable origin of input energy carrier A (e.g. biomethane) which produces energy carriers B (e.g. electricity):



Here, it is essential to adopt a clear framework for governing this process (in order to prevent double-counting, misunderstanding, double perception, lack of trust,…).

Affected areas of GO system operation

Issuing of GOs, cancellation of GOs, conversion of energy carriers.

Potential directions for solving the matter

A set of basic consistent principles could be the following:

1) GOs are only issued for a physical energy carrier that is physically being generated.
2) GOs are only issued for the energy carrier that is mentioned on the GO.
3) The amount of energy input to the production device is measured, (or is determined by dividing the measured amount of output by the energetic efficiency of the production device PD.)

The amount of GO_B to be issued as a result of the energy carrier conversion is hence not equal to the amount of cancelled GO_A that proved the origin of the energy input to the energy carrier conversion.

4) An amount of GO_B is issued for the amount of measured net output of energy carrier B.
5) Rules for recording data on the newly issued GO_B need to be harmonised.
    a. As a basic implementation of GOs in the meaning of REDII art.19, there is no need for maintaining data from the full supply chain before the creation of energy carrier B. This would lead to the following guideline as a minimum requirement for sourcing the data to be recorded on GO_B:
        i. From GO_A :
            1. the energy source
            2. (in case the GO would be embedded in a bigger certificate😊 the purpose (= disclosure)
        ii. Cumulated from PD + GO_A: information related to the support received for the production or investment
        iii. From the converting production device "PD": the rest of the data fields on GO_B
        Of these data, the production period is the one that leaves the most room for discussion, as some might advocate that this lengthens the validity period of the claims that can be made with the original RES production.

(the EECS Rules nrs C3.2.2, C3.2.3, C3.5.6 facilitate the above-proposed rules)

    b. Depending on the degree of interlinking the requirements of REDII art. 19 GOs with the REDII art. 25-31 sustainability certificates, there may be a case for linking also the full data set of GO_A to GO_B. There are several ways to establish this.
        i. Copying all the data fields of GO_A on GO_B.
        ii. Provide 1 data field on GO_B that links to GO_A. This way all the information related to GO_A is accessible. While this is in terms of GO data structure the easiest solution, it calls for a thorough consideration on the pan-European IT systems architecture as described under challenge 20. Indeed, in the architecture of a GO registry per country, after export, the data behind the link to GO_A may no longer be available to the importing system operator.

(the EECS Rules nrs C3.5.7 and C3.5.8 initiate facilitating this addition)

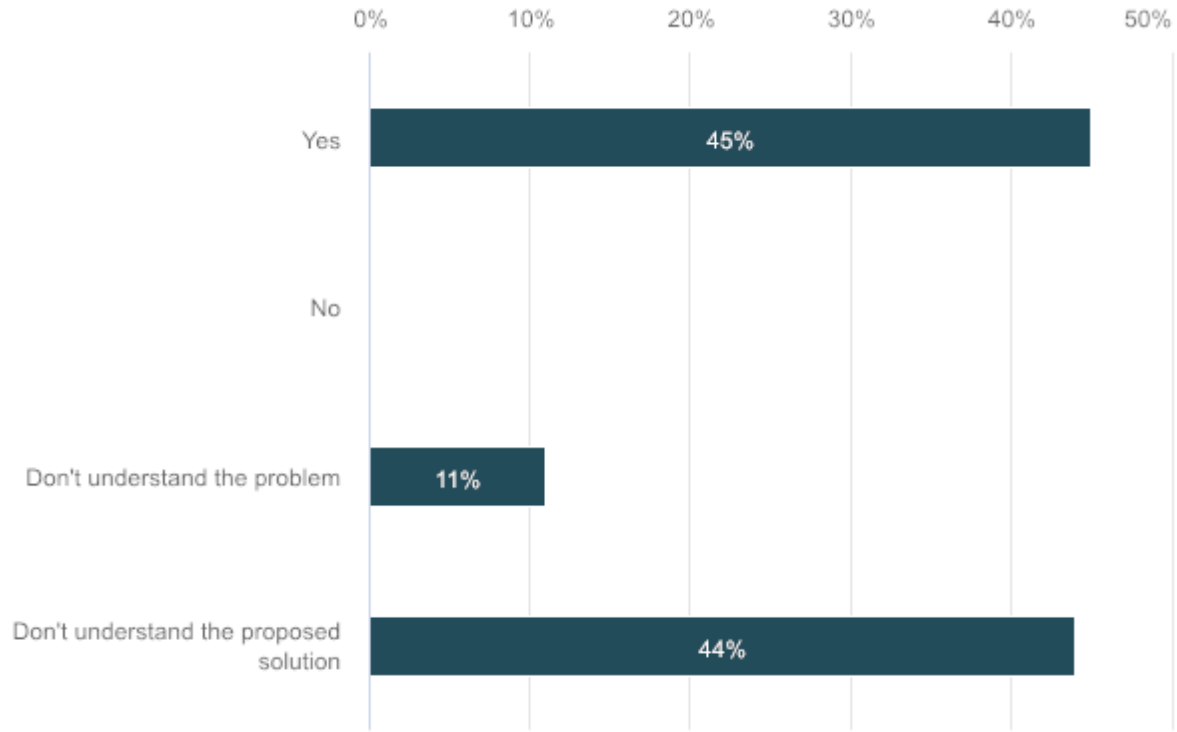
Further challenges in the rules for energy carrier conversion

Matching data formats of GOs from different scheme providers. (as elaborated in challenge nr 22)

Questions for consultation and answers

46. Do you endorse the above proposals?

Number of respondents: 9



	n	Percent
Yes	4	44,45%
No	0	0%
Don't understand the problem	1	11,11%
Don't understand the proposed solution	4	44,44%

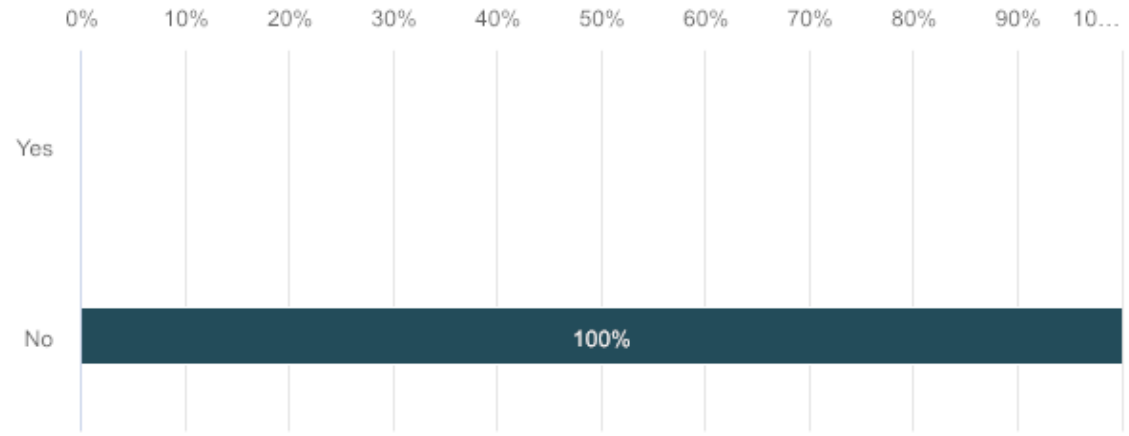
47. Please provide reasoning (if relevant)

Number of respondents: 3

Responses
Likely expected residual mix is also not being considered as part of the proposal. In many cases, it could represent a significant share of renewable energy contained in the input.
BDEW is currently in discussion with the German Ministry of Economic Affairs and Energy about the energy carrier conversion and the correlation with the GO-systems. But we agree, that it is essential to adopt a clear framework for governing energy carrier conversion.
YES ON 1-4. NO COMMENTS ON 5)

48. Do you have experience with similar methods? What are the experiences of the strengths and weaknesses of the method?

Number of respondents: 4



	n	Percent
Yes	0	0%
No	4	100%

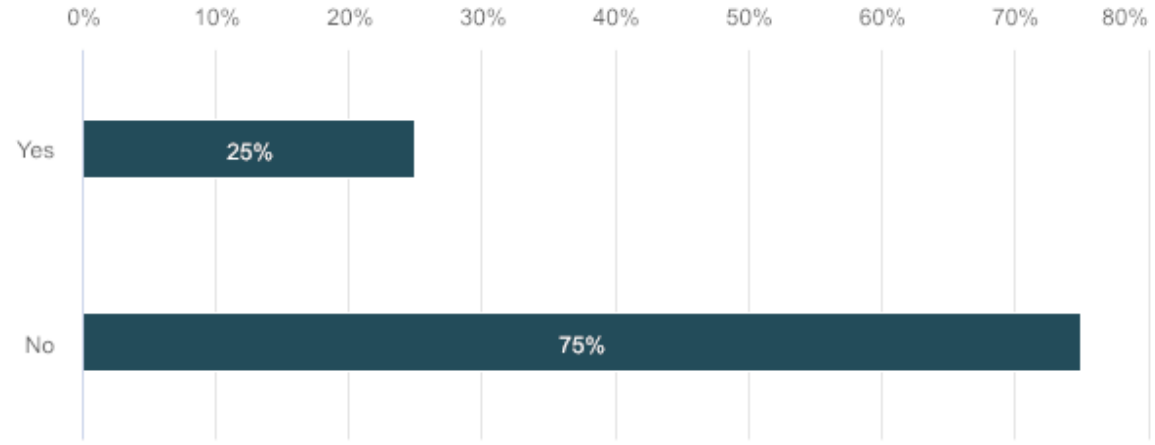
49. Open comments

Number of respondents: 1

Responses
In order to implement all intentions defined by REDII, including mandatory or voluntary sustainability criteria for renewable energy (in particular RFNBO), more information from GO_A should be maintained on GO_B. This should include the geographical origin and may include other items such as the CO2 emis-sion factor of the electricity which was used (in contractual terms). Option a) (basic implementation of GOs) is not sufficient for this purpose.

50. Have other methods for handling GOs in relation to energy carrier conversion yet been applied somewhere? Where do they differ?

Number of respondents: 4



	n	Percent
Yes	1	25%
No	3	75%

51. Open comments

Number of respondents: 2

Responses
The amount mentioned by the production device is the amount on which GOs are issued. We don't deduce the auxiliaries used in the production (such as propane, butane) from the quantity mentioned on the production device and on the GOs. We function in gross value and not net value of biomethane for GOs creation.
As a general rule, any system should guarantee that a unit of renewable energy is cancelled just once in one final use sector.

8. Determining the attributes of energy from production devices with multiple inputs and/or multiple outputs

Text for consultation

Challenge

While hydrogen is the energy carrier for which production from multiple energy inputs and/or co-production with other outputs is the most common, such a configuration is also encountered with the other energy carriers.

For instance

- Production of hydrogen by the plasma gasification of biomass involves two energy inputs: biomass and electricity
- In a klor-alkali process, hydrogen is co-produced with Chlorine and caustic soda
- The situation also occurs in the case of co-generation of power and heat by co-firing biomass with fossil energy
- Biomethane produced from biomass and heat falls in this case as well

Rules need to be defined for determining the amount of renewable energy produced by such processes when energy of renewable origin is used as an input. How the greenhouse gas intensity of the energy products is determined must also be defined.

Hydrogen

In CertifHy, the adopted approach for determining the amount of renewable product from a process using multiple energy sources is to consider that the share of renewables in the output(s) is simply the share of renewable energy in all the energy inputs taken together, on an energy basis. No difference is made between energy inputs in the form of an energy carrier, and energy inputs in the form of a feedstock - only energy content is considered.

Heating and Cooling

This question also arises when certifying energy sources for heating and cooling.
A general principle in heating and cooling with heat pump technology is that the energy source is the heating or cooling from the environment. Any energy (usually electricity) consumed by the heat pump, would be considered as auxiliary energy to the heating or cooling production. However, all energy inputs to the conversion process could be considered as well, in this case, both ambient heat and electricity, following the approach adopted by CertifHy.

Gas – Synthetic methane:

Synthetic methane is produced by Methanation: 2 H2+CO2 => CH4 +O2.
For synthetic methane to be considered biogas in accordance with RED II, both the hydrogen and the CO2 need to be of biological origin.

For synthetic methane to be considered a Renewable Transport Fuels of Non-Biological Origin (RFNBO), REDII requires only the energy content to be of renewable origin, i.e. the CO2 can be from any source.

Gas – biomethane

Renewable gas from biodigestion is produced through a chemical process, of which the input material is considered to be the energy source of biological origin. However, if a significant amount of heat or electricity for the reaction is brought from another source, or generated using gas or electricity, then the origin of that input should be considered as well.

Gas -generic

Under EECS, Multi-energy input is covered by EECS Rules section O6.3.2 and O6.4 for gas certificates.

Electricity

Co-generation of electricity and heat from e.g. coal and biomass is a relevant case of multi-energy input and output. Under EECS,

1. Multi-energy input is covered by EECS Rules section N 6.3.2 for electricity certificates.
2. High efficient cogeneration of electricity and heat is considered a specific type of guarantee of origin, related to the technology of production, instead of to the energy source, where the "useful heat" in the output is subject to strict criteria under the Energy Efficiency directive 2012/72/EU.

Questions for consultation and answers

52. How does your Member State deal with production devices with multiple inputs and multiple outputs?

Number of respondents: 5

Responses
The amount mentioned by the production device is the amount on which GOs are issued. We don't deduce the auxiliaries used in the production (such as propane, butane) from the quantity mentioned on the production device and on the GOs. We function in gross value and not net value of biomethane for GOs creation.
Principle is that GoOs are issued for the form of output. At the moment Electricity is the only form receiving GoOs in our Member State.
Please find the feedback of the German issuing body (HKNR respectively the German Environment Agency UBA).
FOR BIOMETHANE: BY POINT OF DEPARTURE MOST BIOMETHANE PLANTS ARE MULTIPLE INPUT IN TERMS OF MULTIPLE BIOMETHANE INPUT. THE DANISH SYSTEM USES A GROSS PRINCIPLE: GOS ARE ISSUED BASED ON BIOMETHANE PRODUCED AND METERED – IT DOES NOT DEDUCT ENERGY USED IN THE PRODUCTION PROCES. BOTH NET AND GROSS PRINCIPLES ARE POSSIBLE – WHAT IS IMPORTANT IS TO KNOW WHICH PRINCIPLE IS BEING USED BY ISSUING BODIES AND CORRECT CONVERSION FACTORS. BIOMETHANE PLANTS HAVE SINGLE OUTPUT.
In Germany, in the case of CHP, the electricity being generated from burning biomethane is injected into the power grid and marketed as gray electricity (without issuing a GO). However, CHP plants earn a premium for each unit of electricity produced and injected into the grid, which then counts to Germany's renewable energy goal. The heat produced from the chp plant is recognised as renewable, which means that usage obligations for the use of renewable heat can be fulfilled (without issuing a GO for the heat). Furthermore, this heat is valued with a lower primary energy factor.

In the case of synthetic methane produced with non-biogenic CO2 and hydrogen previously produced from renewable electricity, a GO for that synthetic methane could be issued but would not qualify for any sustainability criteria so far. That will change with RED II.

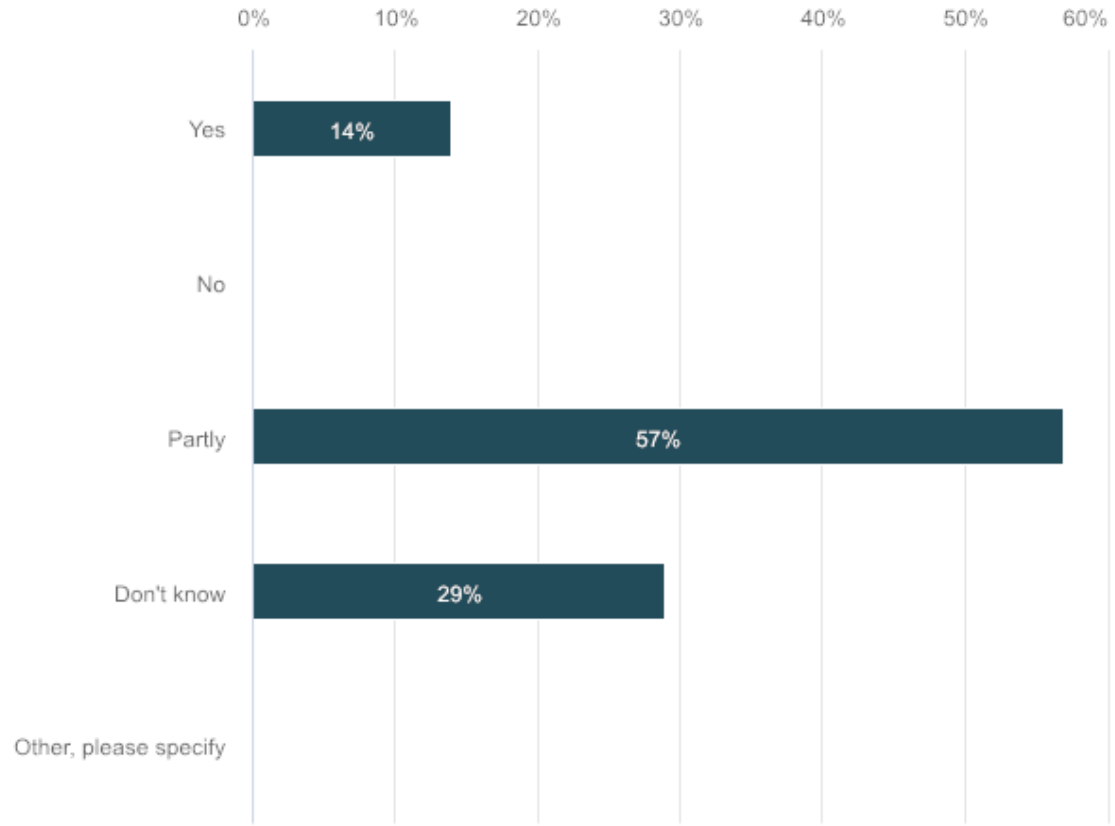
53. How would you advise allocating the origin of multiple outputs on the GO to the multiple inputs?

Number of respondents: 7

Responses
It is more appropriate if the GOs keep the mention of all the inputs used to produce the energy. It is the better way to give to the consumer a perfect information and avoid any fraud (selling GOs higher with only one part of the inputs because they are more valuable rather than the production is really made from all the inputs, valuable and less valuable).
As per above.
The proportion RES vs non-RES in the input mix should also be reflected in the output mix (whereas losses are taken into account). Example: If H2 is produced from 70% RES electricity and 30% nuclear, the resulting H2 should be considered to be 70% renewable. Hence, the approach adopted by CertifHy for determining the amount of RES product from multiple energy sources (i.e. based on the share of RES in the output(s) equals to the share of renewable energy on all the energy inputs, on an energy basis) seems relevant and adequate. The blockchain technology could be applied for such purposes.
The share of renewables in the output(s) is simply the share of renewable energy in all the energy inputs taken together, on an energy basis. To this extent, the residual mix should be considered part of the inputs, to avoid an excess of cancelation of GOs for the inputs (maybe an average of the last 2-3 years). All the involved attributes must be considered for the multiple inputs and/or multiple outputs: □ Model Energy input from which the energy has been produced by multiple inputs □ Model Energy output from which the energy has been produced by multiple outputs □ Start/end date of energy production □ Unique and correlative certificate identification number □ Information related to the recipient □ Contract number between supplier (Producer) and recipient (Trader) □ Kind of product □ Quantity (kWh) □ GHG Emission Reduction (gCO2eq /kWh) □ Compliance with Art 17 of the RED II □ Origin of waste according to the RED II
Listing the non-renewable origin of the inputs in order to properly issue the GO of the output product.
Heat pumps: For the purpose of consumer information, it would be preferable if the total energy input to the heat pump would be taken into account, including the electricity input. Thus, if RES-E GOs are cancelled for the electricity used by the heat pump, it should be possible to claim that the full heat or cooling output is renewable. However, in terms of energy statistics and the RES target of RED II, double counting of the renewable electricity must be avoided by appropriate means. RFNBO: When RFNBO are produced, the origin of the CO2 used should be determined and recorded on the GO (bioreactor, fossil fuel source, air capture etc.). This will support the implementation of sustain-ability criteria relating to the origin of the CO2, which can be used in the voluntary market or by regulations under Articles 25ff of REDII .
Energy based is the easiest, most logical way at the moment, but CO2 emissions should be the most important info rather than energy eventually.

54. Do you see the needs properly addressed in the practices mentioned in this sections?

Number of respondents: 7



	n	Percent
Yes	1	14,29%
No	0	0%
Partly	4	57,14%
Don't know	2	28,57%
Other, please specify	0	0%

Answers given into free text field

Option names	Text

55. If relevant, please provide the argument for your reasoning.

Number of respondents: 3

Responses
"Gas – biomethane Renewable gas from biodigestion is produced through a chemical process, of which the input material is considered to be the energy source of biological origin. However, if a significant amount of heat or electricity for the reaction is brought from another source, or generated using gas or electricity, then the origin of that input should be considered as well. "

In practice it is very difficult to determine how the origin of different inputs could be considered in the end-product
DON'T HAVE TIME TO CONSIDER
see above

9. Data to be recorded on the GOs: what information is relevant for consumers

Text for consultation

Apart from the data fields mentioned in REDII Art. 19.7, there can be reasons for consumers to make selective choices in the details on their energy origin. They, however, can only do so if the GO provides information on the variable that stimulates their choice.
A minimum level of transparency on details can make a difference in the public acceptance of the GO system.

This demands from the GO system design an understanding of what type of information has value for consumers. More specifically: What data fields are relevant to be mentioned on GOs for the users of the GOs?
Such information could be optional or mandatory, depending on the desirability in the market, but in either case, the format should be standardised in order to facilitate efficient and reliable cross border transfers.

See also sections 4 and 13 on: 'EU-wide label' and 'onsite consumption'.

Suggestions

Generic on all GOs

- Whether or not the corresponding energy was disposed of on the market
- Optional information:
    - Greenhouse gas emissions produced
    - Whether or not sustainability criteria of REDII are fulfilled, and a reference to the report and identity of the auditing body
    - Intended category of use of the corresponding energy

Electricity

- whether fed into a distribution system, transmission system or closed distribution system

Gas

- Whether or not the corresponding energy was injected into an isolated system or a system that is interconnected with other countries in Europe.
- type of gas (chemical composition: methane, hydrogen, other gas)
- means of supply (injected into the grid, road transport, rail transport, ship transport, …)
- calorific value
    - as the GO is always representing 1 MWh this might not strictly be needed, however for a gas with a very low calorific value, this might have some relevance for credibility by the consumer

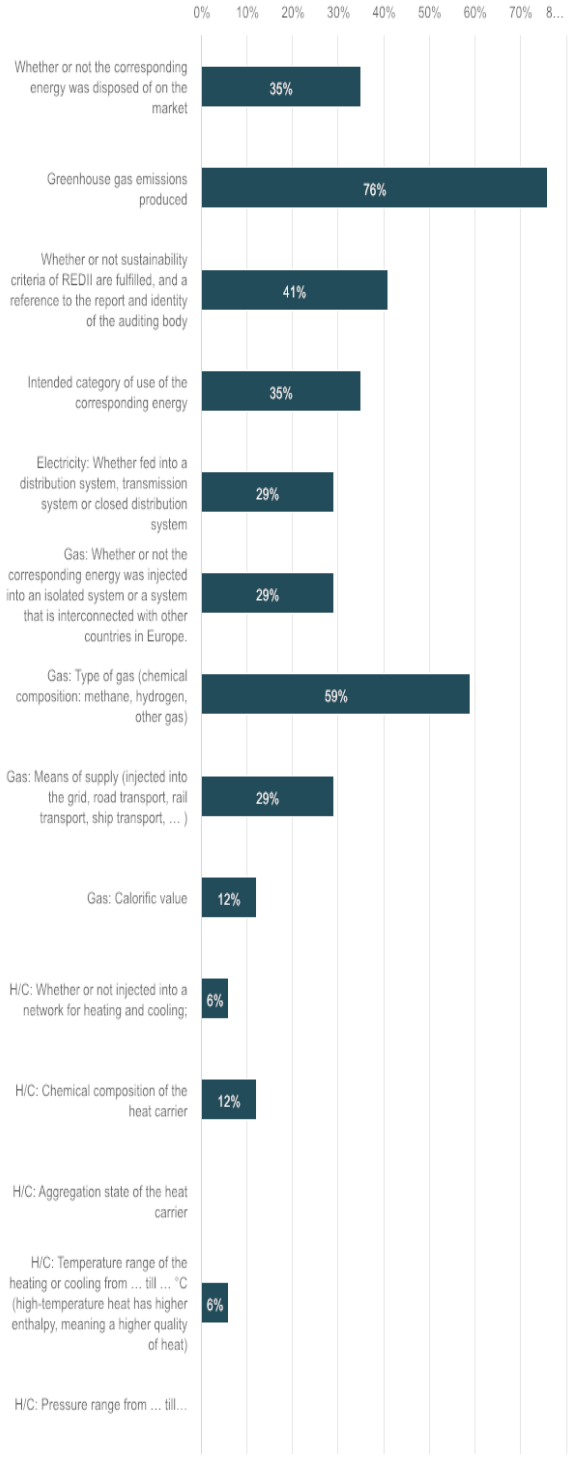
Heating and cooling

- Whether or not injected into a network for heating and cooling;
- chemical composition of the heat carrier
- aggregation state of the heat carrier
- temperature range of the heating or cooling from … till … °C (high-temperature heat has higher enthalpy, meaning a higher quality of heat)
- pressure range from … till…

Questions for consultation and answers

56. Which of the abovementioned data fields have value for consumers in your opinion?

Number of respondents: 17, selected answers: 63



	n	Percent
Whether or not the corresponding energy was disposed of on the market	6	35,29%
Greenhouse gas emissions produced	13	76,47%
Whether or not sustainability criteria of REDII are fulfilled, and a reference to the report and identity of the auditing body	7	41,18%
Intended category of use of the corresponding energy	6	35,29%
Electricity: Whether fed into a distribution system, transmission system or closed distribution system	5	29,41%
Gas: Whether or not the corresponding energy was injected into an isolated system or a system that is interconnected with other countries in Europe.	5	29,41%
Gas: Type of gas (chemical composition: methane, hydrogen, other gas)	10	58,82%
Gas: Means of supply (injected into the grid, road transport, rail transport, ship transport, …)	5	29,41%
Gas: Calorific value	2	11,76%
H/C: Whether or not injected into a network for heating and cooling;	1	5,88%
H/C: Chemical composition of the heat carrier	2	11,76%
H/C: Aggregation state of the heat carrier	0	0%
H/C: Temperature range of the heating or cooling from … till … °C (high-temperature heat has higher enthalpy, meaning a higher quality of heat)	1	5,88%
H/C: Pressure range from … till…	0	0%

57. Which additional data fields would you add to the GO? Why? Please also state the relevant energy carrier.

Number of respondents: 14

Responses
Independend criteria schemes could satisfy a lot of the markets' needs. Besides that, there should be an option that a MWh RES-E is not calculated to existing RES targets of the EU, and this should be indicated
It is really important to add the type of feedstocks on the GOs but already mentionned in RED II.
Greenhouse gas emissions produced - its all about emissions in the end of the day. Not all energy is created equal in this regards. Point of injection is important for consumers as this can determine willingness to pay and differentiates price. Intended category can become important when it comes to sector coupling
None, as it is highly unlikely that end consumer ever sees the cancelled Guarantee of origin. Only larger businesses taking part directly to GoO market know characteristics of the energy origin that they deliberately source. Only valid additional data which would qualify under minimum information required is the intended category. However there should not be “pending” GoOs available in market as GoO should be issued and cancel for the corresponding energy type on consumption
Sold on the market – First a comment on the exact meaning of “sold on the market”. If this shall provide information whether or not the respective electricity was sold by the producer or consumed on the spot, we are on the opinion that GO shall not be issued for electricity that is consumed on the spot. If this shall provide information whether or not the underlying electricity was sold directly to a given consumer under a bilateral contract or was place on a regulated electricity exchange, this could actually be an interesting proposition. However we don’t see a practical way for implementation of this, specifically for the electricity market, having in mind

processes of aggregation and dispatching where the producer is not really sure where the produced electricity is sold. Intended category of use regarding GOs for electricity, we are on the opinion that this is not an attribute that is of any importance for the end consumers. Regarding the biogas GOs however, this may be of use
No additional data for consumers. DG ENER/REDII: GO is only for demonstrating to final customers the share or quantity of energy from renewable sources in an energy supplier's energy mix and in the energy supplied to consumers under contracts marketed with reference to the consumption of energy from renewable sources. Electricity suppliers are free to give extra information for their customers for marketing purposes.
Compatibility for the obtention of EU/national Green label (yes/no)
Providing extra data within the GOs should only be optional. Electricity: The additional information on the GOs, whether there is a feed-in into a distribution system, transmission system or closed distribution system is not relevant for the customer. There is no need for additional obligations for providing extra data within the GOs. More information should only be optional. Gas: From the mentioned suggestions, only the information on type of gas has additional value for the costumer. The costumer should have the information if the gas is from a production site for renewable or decarbonised gases. For decarbonised gases additional information value is gained with the information about the usage or storage of carbon if the hydrogen is produced with CCS (car-bon capture and storage) or CCU (carbon capture and utilisation).
GREENHOUSE GAS EMISSIONS SHOULD BE ACCORDING TO RED II ART 29 GAS: DATA ON CALORIFIC VALUE HAS NO VALUE
None apart from the ones listed previously in this section and the ones included in the RED II.
onsite consumption
Some Member States may require the sustainability criteria and GHG emissions savings in order to be recognised in the EU ETS scheme. This information could be added to a GO. Please see also our responses to questions in sections 3 and 6 and other comments in the file attached (pp..27-28)
No additional data for consumers is needed. GO is for demonstrating to final customers the share or quantity of energy from renewable sources in an energy supplier's energy mix and in the energy supplied to consumers under contracts marketed with reference to the consumption of energy from renewable sources. Electricity suppliers may add extra information for their customers for marketing purposes.
For gas, it must be defined whether GOs are issued based on the higher or the lower heating value of the energy carrier. In order to be compatible with other energy carriers, the lower heating value seems more appropriate. See also the responses on previous questions (e.g. on sustainability information for RFNBO including hydrogen and synthetic methane and the type of source of CO2 for synthetic methane). Although the RED II does not contain regulations in this regard, any future design of GO systems should take into account a future option of issuing “GO plus” – i.e. GO for renewable energy which has not been taken into account for meeting the union-wide target according to Article 3 of

REDII and also not for related national RES targets. This might require at least an additional data field.

58. Where do consumers differentiate / what do they need in order to trust the GOs and to select the characteristics of the GOs they want to cover their energy consumption?

Number of respondents: 5

Responses
The consumer really need information on GHG emission, meaning at least respect of RED II or not by the production, to trust the GOs, knowing what he is buying and accept to pay more for such a product.
In type of technology and commissioning year. The trust is not issue here in general. GoOs only take stand on which type of energy was consumed and informed to consumer. Generally all additional information just makes the system more complex. There should be clear distinction between system wide implementation and perception and the information flow to end consumers. From utility point of view the system is not designed to allocate millions of GoOs to millions of end consumers.
If a consumer is buying a GO as an alternative to fossil fuel, then that customer will require evidence/proof of the renewable or environmental value/property of the fuel they have paid a premium for?
Consumers trust a GO system when they know that the information recorded on the GO has been verified by a credible auditing authority.
The trust is not the problem in general. Additional information just makes the system more complex.

10. Avoiding double counting following from the interplay of GOs (REDII art.19) and sustainability certificates (REDII art.25-31)

Text for consultation

Legislative reference

The Renewable Energy Directive 2018-2001-EU (REDII) addresses two separate aspects of tracking the origin of energy: guarantees of origin (art.19), and sustainability certificates (art. 3.1 and 7.1, 25-31), which will be recorded in an EU Database (art.28.2).
The scope of the GO system under article 19 states: GOs are for demonstrating to end-users the origin of the energy they are consuming. On the other hand, sustainability certificates used for fuel target compliance are created in line with art. 25-31.

In essence, GOs (under Article 19) shall have no function in terms of a Member State's compliance with renewable energy targets. On the other hand, certificates created in line with Articles 27-30 enable counting the respective volumes towards meeting the respective targets in case of transport fuels.

From common logic this should also work the other way around: sustainability certificates should not be used for renewable energy consumption claims. It is, however, difficult to prevent this from happening in reality.

Double counting risk

A link between the management of the two types of certificates (GOs and sustainability certificates) must be established in order to ensure that double counting is avoided. If not, a risk exists that the party who consumes (cancels) the sustainability certificate, claims the consumption of the renewable origin of the corresponding energy. In case for the same amount of energy from RES, a GO had been issued and traded separately, the same MWh of renewable energy production is claimed twice.

Options for interlinking GOs (origin disclosure purpose) and Sustainability certificates (target counting purpose)

This can be done in several ways:

1. by excluding the issuance of one when the other is granted;
   (This implies that, in order to exclude double disclosure for renewable gas volumes which are placed on the market as biofuel for transport, the rules and regulations of the national issuing bodies contain the provision that no GOs are issued to the producer for those volumes which are supplied to transport) This, however, precludes in principle the end-user from being informed about the origin of that product, as GOs must be used for this; or
2. by clearly communicating that the sustainability certificate does not encompass any claim of the origin of the consumed batch
   (although it is difficult to control what claims suppliers and consumers are making, especially when there are no harmonised prescriptions for disclosure of the origin of supplied gases); or
3. by bringing the two purposes together on a single certificate so that both stay together for the whole of their lifetime.

Member states can opt to implement any of these different ways, and they need to choose what works for their system, as long as it ensures the avoidance of double

counting and double disclosure of the same unit of energy from RES, and does not create barriers for cross-border trade between EU Member States.

The last option (3) seems to provide the greatest value (both in the market value of the certificates and reassuring the avoidance of double claims of the same quantity of renewable energy). Such an option requires both functions to be delivered by a single "electronic document" that meets the requirements of both art. 19 and of art. 29-30 of the REDII, and will hence have 2 separate functions, which stay together until their final use.

Both certificates, however, are issued under different approaches: GOs under Article 19 are issued on the „book and claim" basis, sustainability certificates under Articles 27-30 are issued in accordance with the mass-balancing methodology. For those energy carriers and those production devices where an umbrella "energy certificate" would be issued, both methodologies' characteristics need to be incorporated.

Considerations with regards to a "multifunctional - single certificate" approach

Several questions are to be considered where considering the **joint management in a single "energy certificate" of a GO (origin disclosure purpose) and a sustainability certificate (target compliance purpose)**:

a) Many interpretations of the concept of mass balancing exist. Here it is essential to establish an understanding of, and ideally resolve, any differences between the concepts of mass balancing as understood by different organisations, in order to achieve a common definition and understanding.
b) The data content of a certificate in a possible single-certificate system. Efficiency can be gained from collecting data in a single process together for both purposes (origin disclosure to consumers and transport fuel target compliance).
c) How the cross border transfer of such certificates interacts with a required share of renewables in transport fuels and its correct handling target-wise.
d) The end-use of the energy to which the certificate corresponds needs to be handled.
e) The requirement for sustainability is to demonstrate specified GHG emission savings as compared to the relevant fossil fuel equivalent. The thresholds for different end-use applications are different and are fixed in REDII.

Technical option for a single certificate solution

Because different sustainability criteria are relevant to different categories of consumption these criteria cannot be fulfilled independently from the usage.
Hence the issuing procedure of the GOs must be adapted in either of the following ways:

- Issuance in line with the same procedures as the mass balancing certificates, meaning no issuance until the end-use is known.
- At the time of GO issuance: Predetermine on the GO the allowed category of end-use, and install a supervision mechanism to this.

Further it must be noted that there will be RES production that is eligible for only 1 of the purposes (origin disclosure OR target counting), hence the certificate system must account for this.

Questions for consultation and answers

59. How would you resolve the double-counting risk for energy carriers that can be used for transport?

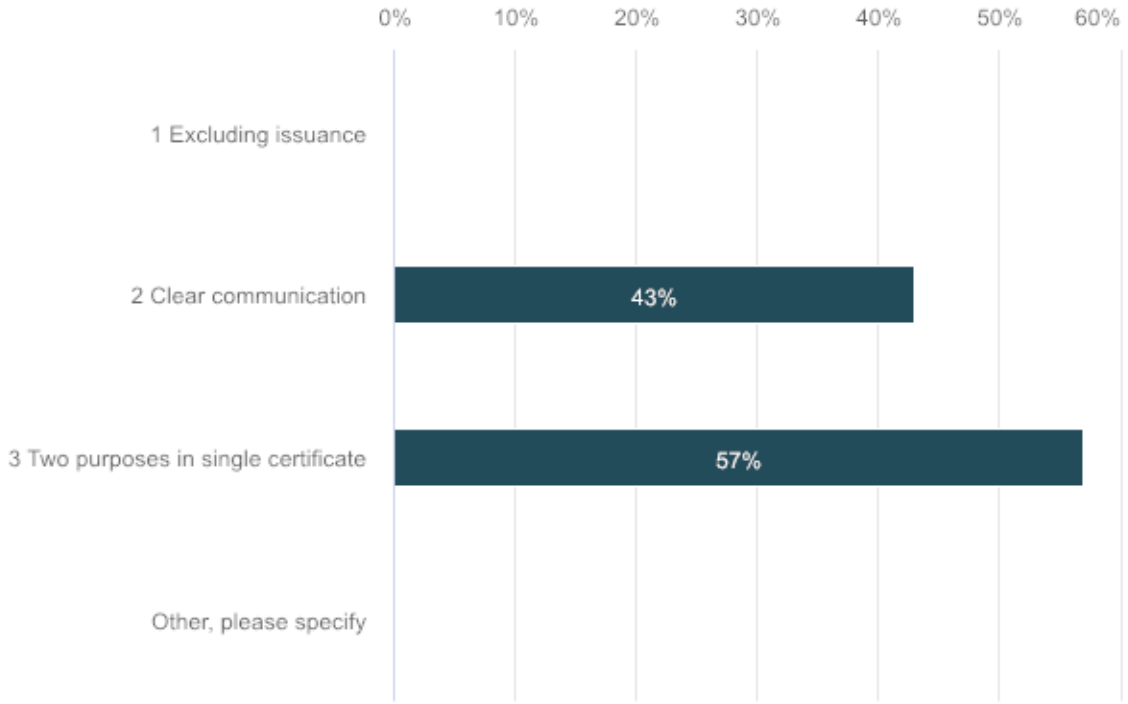
Number of respondents: 12

Responses
As stated in document, there is few possibilities available. In principle these claims should be kept separate due their different usage so option 1 seems most reasonable. However in reality these will be mixed without harmonized usage and rules between Member States (different regulators and issuance bodies). From practical point of view it seems that these certificates needs to be merged as per point 3.
if there are 2 different certificate types or tracking systems that can be applied for different end uses, the robust controls are required to avoid double counting. Alternatively, a single certificate type (if legislation permitted) would mitigate this risk.
A single electronic document demonstrating the renewable characteristics (Art. 19 RED II) and compliance with sustainability / GHG criteria (Art. 29-30) could in principle be a good idea. However, merging GOs and sustainability certificates should not create more issues than it solves. In particular, this option should not import issues related to extensive interpretation of mass balancing that could hamper the development of a GOs market, and should not prevent private transport services providers/users to have optimal access to GOs to let them finance the decarbonization of their industry in the most efficient way. Hence, in the absence of one unique document, the proof of sustainability and the proof of the renewable characteristics should be “inseparably linked” and stay together until final use.
DG ENER/REDII legal framework: neither links to target achievement nor sustainability criteria. This is out of scope of the current standardization work.
GOs shall have no function in terms of a MS compliance with renewable energy targets. Issuance bodies and regulators should check that no supplier or consumer is making misleading claims without the corresponding GOs.
Electricity: BDEW is in discussion with the German Ministry of Economic Affairs & Energy about the energy carrier conversion and avoiding double counting following from the interplay of GOs and sustainability certificates. Gas: BDEW opts for a common mass balancing system in Europe to synchronise the different national systems & sustainability schemes. However, there's no need to implement a mass balancing system for GOs for gas, because the requirements are different for sustainability certificates & GOs. As long as there is no single system for both, it should be avoided to hamper market developments by implementing a complex and costly system like mass balancing. However, since the sustainability schemes already exist and collect all valuable data, it should be possible to use this data for creating more specialised R-/D-gas products. It should be possible to combine both schmemes/purposes, such as keeping the information of the sustainability certificates like a backpack (Rucksack)
IT IS THE RESPONSIBILITY OF THE MEMBER STATE RELEVANT AUTHORITY TO PROVIDE A REGULATORY FRAMEWORK TO AVOID DOUBLE COUNTING.
By making a clear distinction between proof of origin and proof of sustainability. This means that a production plant must decide which system it wants to use. Clearly stating the purpose (final use) of the certificate, either GO for disclosing the origin of the energy or PoS for complying with specific sustainability quota. Only with Proofs of Sustainability can renewable energy quotas in transport be met and would be recognised by the inspection body. There is no risk of double counting here.
In this section of the report it is not clear whether the double counting risk is associated with the ‘target counting’ or ‘disclosure to the consumers’. If the first case is meant, it would be useful to have the climate and sustainability information in one document – the GO – and the sustainability certificate attached to it (GOs themselves cannot be used for counting renewable energy targets). If the second case is meant, the consumers may also benefit from having the GO and sustainability certificate linked (as mentioned above). Moreover, it would be useful if the national legislation indicates that only GOs can be used for the disclosure purpose. Please see more comments on this issue in the file attached (pp.22-24)

At a quick glance, interlinking option 3 (bringing the two purposes together in one certificate) seems to be the best approach.
GO should be the only certificate that allow claiming renewable consumption for any usage. Therefore GO should be issued for the energy carrier and cancelled for the applicable usage, included transport, triggering the right to claim sustainability certificates.
Renewable energy that is counted toward a transportation fuels target should not be eligible to produce GOs that are used for non-transportation related renewable energy claims.

60. Which of the above “options for interlinking” would you propose (1/2/3)? Why?

Number of respondents: 14



	n	Percent
1 Excluding issuance	0	0%
2 Clear communication	6	42,86%
3 Two purposes in single certificate	8	57,14%
Other, please specify	0	0%

Answers given into free text field

Option names	Text

61. Would you see other/better options?

Number of respondents: 6

Responses

3. As stated above. That seems to be only practical way to implement. Option 1 would also work in case there would be one issuing body per Member State for both certificates.
Alignment of legislation to streamline and harmonise into a single 'proof' that can apply to all applications
NOT THE ISSUING BODY. THE EUROPEAN GAS INDUSTRY VIA THE PRIME MOVERS PROCESS LEAD BY ENTSOG/GIE AND REPORTED TO THE 32+33 MADRID FORUM HAS RECOMMENDED OPTION 3.
We chose option 3, but clearly stating the purpose (final use) of the certificate when cancelling it. We do not see other/better options.
We prefer option 3, but with a different reasoning and technical implementation. For us it is important to simplify the document management for the suppliers and consumers and allow the GO with the sustainability certificate attached to be the 'universal' document used for different purposes (e.g. proving that biomass fuel is eligible for financial support for consumption (also could be relevant for the EU ETS purpose) and for compliance with renewable energy obligations if they are introduced in the Member States). The target counting purpose for us is not the highest priority, but this could be an additional benefit. The gas GO should also allow for its different uses, i.e. for greening the transport sector and production of electricity/heating/cooling. Thus the 'use' shall not be predetermined in the GO as proposed. Instead for each potential use GHG emissions savings could be specified in the GO. Please see more comments on this issue in the file attached (pp..22-24).
We agree that Option #3 would provide the greatest assurance against double counting and suggest further evaluating the implications/barriers to implementing such a system. Option #2 is also worth investigating further, as it would reduce double counting risk where a dual-instrument system is maintained. We recommend Option #3 because where multiple uses for a MWh of renewable energy consumption exist, e.g. applications in both the voluntary and compliance markets, the use of a single instrument has an inherent value in preventing double counting. While Option #1 seeks to achieve a similar outcome, it will be subject to the risk (and need for verification) that both instruments are not issued for each MWh. Option #2 should be required in all markets where the issuance of both certificates separately is maintained. In this case, further education about what each certificate does and does not represent is critical.

11. Using the data on the GO for purposes wider than origin disclosure - EU-ETS

Text for consultation

Several organisations are discussing the use of the data on the GO for other purposes. Consumers might use the data on the GO for proper accounting of the combusted bioenergy under the EU-ETS. It follows from internationally recognised standards and EU law that biomass and energy produced from biomass shall have a 'zero-emission' rate[2] . In addition, in practice, GOs are also used for Greenhouse Gas Protocol scope II[3] accounting.
This would increase the market value of the GO certificate, providing producers with an income stream that could go some way to offsetting the reduction of direct support schemes.
It needs further consideration whether additional conditions need to be met, both for reliable origin disclosure and for consistent clean energy support policies.

While the sole use of the GO is to prove to the final customer the origin of energy production, it may be that the customer uses their proof of renewable energy consumption for further purposes and benefits they can derive from their renewable energy consumption.

In general, the process that leads to the issuing of the GO and disclosure of energy use will also generate and provide data that can be used for other purposes. It would be inefficient to organise this same data collection & verification process multiple times for different purposes. In addition, if the GO is used for claimants under other systems than disclosing the origin of the supplied energy, it is worth investigating whether to include these different types of use in the system design.

The GO system management risks of not doing so are twofold:
1) missing out on efficiency opportunities in the data capture and recording process and thereby adding to the GO system an overhead cost that is too big for the market to carry.
2) doublecounting of the same quantity of energy from renewable sources. Claimants could be mixing up the purposes of different types of certificates.Using GOs for EU-ETS?

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[2] In the European Union, emissions from biomass combustion are currently accounted for as zero pursuant to Article 38 of Commission Regulation (EU) No 601/2012 .
This principle has been confirmed also in the recently approved european LULUCF regulation. (REGULATION (EU) 2018/841 ,Whereas 15.
So the **"zero rating principle**" for biomass is widely recognized in the EU legislation.
More precisely in:

- Directive 87/2003 establishing the ETS
- MMR regulation 601/2012
- Biomass issue MMR guideline document n.3
- REGULATION (EU) 2018/841 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 30 May 2018 on the inclusion of greenhouse gas emissions and removals from land use, land use change and forestry

[3] https://ghgprotocol.org/sites/default/files/ghgp/standards/Scope%202%20Guidance_Final_0.pdf

Article 5.2 "Biogas in natural gas grids" in the EU ETS MRR Guidance document No. 3, Updated Version of 27 November 2017 contains:
„If Member States want to make use of biogas in a natural gas grid and want to make the benefits thereof easily accessible to operators of EU ETS installations, they need to establish an appropriate accounting and verification system (e.g. using a biogas registry) which allows the accurate, transparent and verifiable identification of biogas amounts fed into the grid and consumed by installations, effectively avoiding double-counting of biomass. The system also needs to make provisions for avoiding data gaps or double counting if the grid is connected to other grids, including in other Member States."

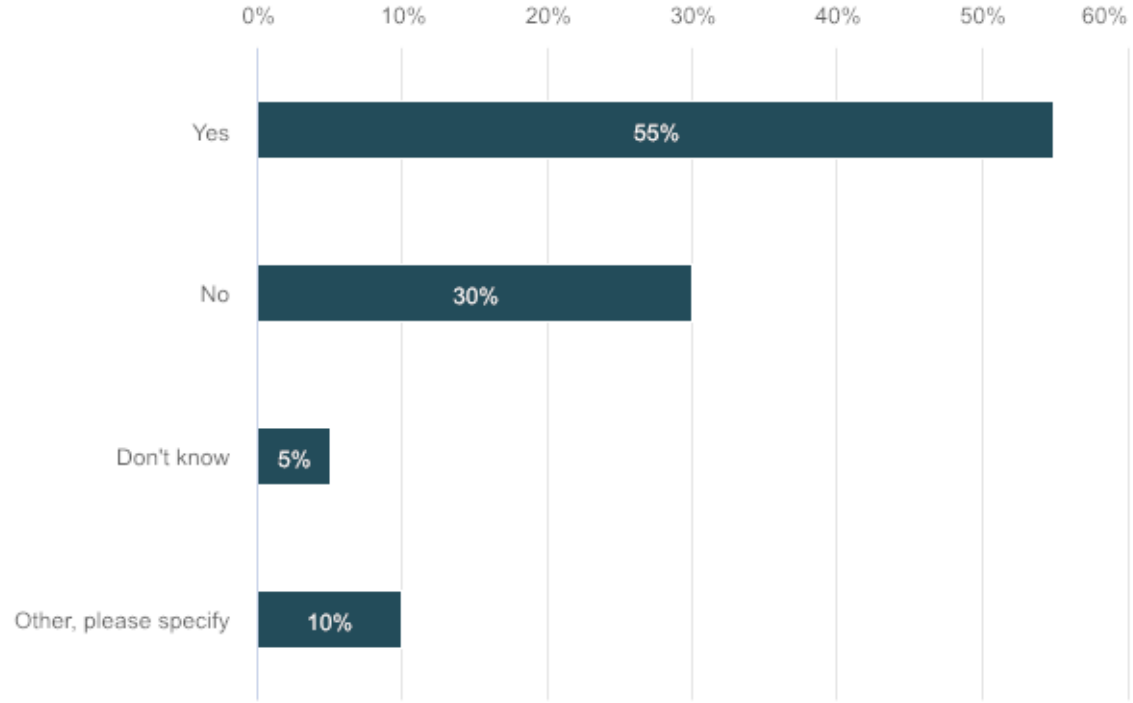
Challenges when using GOs for purposes of EU-ETS are:

- Avoiding double counting: Making sure that when a GO is used as proof for EU-ETS, no other method is used;
- Linking supervision bodies of EU-ETS with GO Issuing bodies;
- Impact on national RES policy purposes: There is a clear difference between an EU-wide scheme such as the ETS and national support schemes which reward for RES through e.g. tax-cuts. Having national incentives based on internationally tradable certificates needs to be carefully scoped in order to avoid undesired consequences in national policy frameworks.
- …

Questions for consultation ans answers

62. Should GOs be usable as proof of renewable energy consumption claims under EU-ETS?

Number of respondents: 20



	n	Percent

Yes	11	55%
No	6	30%
Don't know	1	5%
Other, please specify	2	10%

Answers given into free text field

Option names	Text
Other, please specify	I find it an interesting idea and as an environmental NGO, we would appreciate to be involved in the further discussion.
Other, please specify	only under conditions clearly defined by the ETS system

63. What benefits do you see in using the GOs as proof of renewable energy consumption claims under EU-ETS?

Number of respondents: 16

Responses
Uniformity - if there is a system, it makes sense to use it consequently throughout all sub-sectors of the climate policy. On the other hand: there is very few time left to drastically reduce CO2 emissions. We don't have time for more try-outs and experiments. We have to use what we have and speed up the implementation. With regard to ETS, crucial is to limit the available rights to volumes in line with the obligations of the Paris Agreement. (1,5 degrees) Also: biomass isn't zero carbon at all. So does it even make sense to have this discussion here?
An additional incentive for companies to indirectly promote the market for renewables.
This would increase the market value of the GO certificate, providing producers with an income stream that could go some way to offsetting the reduction of direct support schemes.
None, these 2 schemes should have no interlinkage as they are referring to different aspects. ETS aim is not to increase bio-share in gas grids, but to lower total emissions.
if permitted, then it would require harmonisation of GO's to satisfy all end users and be recognised under EU legislation. A clear approach is required to be embedded in all M.S.'s
Using renewable gas GOs under the EU-ETS could incentivize the market for this type of energy attribute certificates. What is more, some types of feedstock used for biogas production that lead to bigger GHG reduction would be favorited, thus the market preferences will shift towards less carbon intensive biogas supply.
For biomethane GOs: Allows to value biomethane that is injected in the grid in order to green CCGTs and industry. Creates additional demand for GOs and thus revenue streams for biomethane producers. Similar for hydrogen: For instance a refinery with onsite SMR falls under the EU ETS. By procuring renewable hydrogen GOs, it could reduce the need to surrender allowances while the electrolyser to produce this renewable hydrogen could be located where it makes most sense from a grid perspective. Whatever the type of decarbonized or green gas considered, any holder of GoO should be able to decide to consume it as a means to lower or to manage its EUA obligations, in the scope or in line with the ETS scheme. Moreover, this could help lower costs related to verification within the framework of the EU ETS system of the actual renewable production of the biomass-fired plants.
A great simplification of the business of indutrial consumers needing evidence for ETS purposes. Regarding biomethane used via grids, thanks to its zero rating principle, such a method could bring huge benefits to industrial, as they could simply switch renewable gas use (i.e. biomethane) from fossil natural gas, without any need to upgrade their process.

Under this possibility, consumers subject to the EU-ETS system would be incentivized to consume renewable energy as part of their decarbonizarion efforts. It should also be examinated if consumers subject to the EU ETS might not need to buy carbon allowances corresponding with the consumption of renewable energy being part of the residual mix
Electricity: In Germany the use of GOs for electricity is permitted for disclosure only. Gas: For the gas-sector, the link between GOs and sustainability aspects and GHG savings criteria is very important to support the decarbonisation goals. BDEW is currently in discussion with the German Ministry of Economic Affairs and Energy how these topics can be addressed in the national transposition of RED II. The interrelation to the EU-ETS, the prospective national ETS and GOs of electricity production is of upmost important.
CANCELLED GOS WILL IN MOST COUNTRIES PROBABLY BE PART OF THE DOCUMENTATION ATTACHED TO THE GAS PURCHASE AGREEMENT, BUT FURTHER DOCUMENTATION ON SUSTAINABILITY AND RECEIVED SUPPORT IS NEEDED. HAVING SUSTAINABILITY DOCUMENTATION INTEGRATED IN GOS WILL PROBABLY SIMPLIFY ADMINISTRATION AND REDUCE RISK OF DOUBLE DISCLOSURE/SALE OF RENEWABLE GAS INJECTED TO THE GRID. REDII CF GOS TO BE THE ONLY MEAN TO DOCUMENT ORIGIN OF GAS TO AN END CONSUMER. IT IS A NATIONAL DECISION IF THIS ADDITIONAL INFORMATION SHOULD BE INTEGRATED IN GOS – EG. PROOF OF SUSTAINABILITY ACCORDING TO ART 29 - OR IF SUSTAINABILITY CLAIMS CAN ONLY BE ACCEPTED UNDER MASS BALANCE BASED SCHEMES.
Gas GO are more likely to be issued for quantities that have already received state support. These can then be offered more cheaply, which could reduce the industry's costs for the ETS.
We support the idea of using GOs as a proof of renewable energy consumption under the EU ETS scheme. The use of the GO will enable the EU ETS operators under the EU ETS scheme not to buy emission allowances for the share of combusted fuel which was certified with the GO. This will also simplify for the EU ETS operators the process of emissions monitoring and reporting. In addition, this will help generate proper price signals for the market and reflect the decarbonisation costs bringing overall efficiency gains for the EU decarbonisation policy. Please see also our response to questions in section 3.
REDII legal framework: no links to target achievement. These two schemes should have no interlinkage.
In the case mentioned, if the ETS system opens up the possibility to use a tracking system for fuels for determining the emissions of a fuel burning installation, this may be an adequate use of GO, which fits completely with the purpose of a GO for gas. Furthermore, there might be synergies in collection of data for EU-ETS compliance and GO issuing. Beyond ETS: As stated above, I see a further important use of GOs for purposes of implementing criteria for renew-able fuels under Articles 25 and 27 of REDII, see “interlinking option 3” under question 8. The related information should be contained in all GOs for energy which might be used as transport fuel.
It places GOs as the relevant instrument to claim carbon free scope 2 emissions, which is consistent with the purpose of the mechanism.

64. What risks do you see in using the GOs as proof of renewable energy consumption claims under EU-ETS?

Number of respondents: 14

Responses
Companies just claiming green energy but not making additional efforts in being more energy efficient and in actually reducing their carbon footprint

None.
None, and this practice should not be available.
At present, a GO does not meet the Mass-Balance tracking process that is required under the EU ETS
For biomethane GOs: Risks are more generally related to cross-border trade of GOs: cross-border trade of GOs may be impacted through different support mechanisms / regulatory frameworks in different countries.
Regarding biomethane, the TSOs may have a role to play by securing the allocation of daily quantities which could be useful for the GO register (in line with suppliers).
avoidance of double-counting should be well managed
If renewable energy is supported through national support schemes, the State Aid regime for grants to industrial sectors subject to the EU ETS related to the costs of renewable energy might need to be revisited.
THE RISK IS NOT HIGHER COMPARED TO DOCUMENTING PROOF OF RENEWABLE ENERGY VIA OTHER SYSTEMS. PROVIDED MEMBER STATES ENSURE CONSISTENCY. DOCUMENTING MASS BALANCE COULD BE A CHALLENGE IF THIS IS REQUIRED BUT COULD PROBABLY BE RESOLVED.
Double counting between Member States by international transfer. First as a GO (disclosure) and then towards the EU GHG emissions target or renewable energy target. The proposal would make GO registries more complex from a technical and regulatory point of view.
In our view this isn't possible at all. Art. 19 praragraph 2 REDII forbids that. The guarantee of origin shall have no function in terms of a Member State's compliance with Article 3. Transfers of guarantees of origin, separately or together with the physical transfer of energy, shall have no effect on the decision of Member States to use statistical transfers, joint projects or joint support schemes for compliance with Article 3 or on the calculation of the gross final consumption of energy from renewable sources in accordance with Article 7.
This kind of interlinkage between two completely different schemes would have unknown impacts which are difficult to even assess before CEN-16325 has been updated.
As stated in the discussion paper, all forms of double counting must be avoided. IBs for GOs should cooperate with registry operators of the ETS system to ensure that where the two systems interact, this interaction is designed in a sound way.
Main risks are 1/ fraud and 2/ allowing multiple mechanisms to be used for renewable energy consumption claims under EU ETS

65. What measures could be taken in order to overcome these risks?

Number of respondents: 7

Responses
Companies need to have dual goals. To increase renewables whilst proving the actual reduction of carbon emissions
Leaving all interplay between these two schemes unavailable
Standardise GO's to include mass balancing requirements
Biogas registries (referred to in Article 5.2 “Biogas in natural gas grids” in the EU ETS MRR Guidance document No. 3) should also be used outside gas grids if biogas is delivered for example as liquefied
Split the end-use of each certificate: GO for disclosure and PoS for renewable energy and emissions targets.

It is important to stress the principle that the GO as such has no function under the EU-ETS. GO and EUA are completely different schemes. As stated in the discussion paper, all forms of double counting must be avoided. IBs for GOs should cooperate with registry operators of the ETS system to ensure that where the two systems interact, this interaction is designed in a sound way.
1/ Rely on issuing bodies and AIB to put anti fraud controls in action 2/ GO should be the only application mechanism by law

66. How would you see the ideal interaction between organisations performing the role of establishing the ”appropriate accounting and verification system” and those performing the role of renewable gas GO issuing under Article 19. of REDII?"

Number of respondents: 4

Responses
No interaction for these 2 schemes. It would create unintended bureaucracy for both schemes and might undermine both.
The establishment of a system may be a government department task to ensure RED II and other EU directives are implemented. The performance of the role may be outsourced to a party appointed by the government department with responsibility for establishment.
The dena biogasregister reflects the national audit standard. The auditing results and confirmation of compliance with the requirements are entered directly into the biogasregister by the responsible auditors and plausibility checks are carried out by the dena registrar. This approach has proved its worth as it has led to a direct exchange of information based on partnership.
Accounting and verification authorities should have full, read only access to the GO registry in order to access and verify the relevant data. Regular meetings to check the quality of the data that is used for the controls.

67. If GOs can be used as proof for the ‘zero emission rate’ of biomass in the EU-ETS, what data is required to be recorded on the GO?

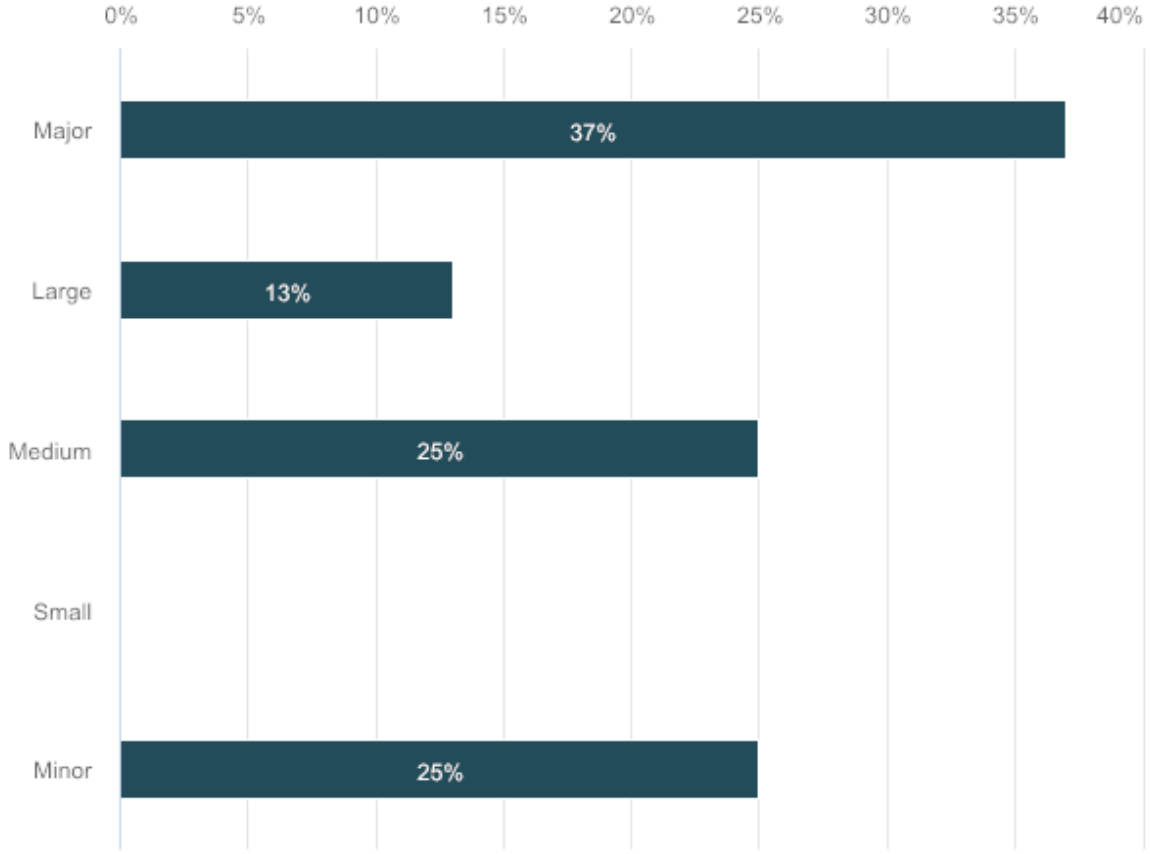
Number of respondents: 12

Responses
Most biomass isn't zero emission and therefore shouldn't be conuted as zero emission.
If the production attached to the GOs is conformed or not to RED II sustainability and GHG emission criteria.
As mentioned above. This should not be possible and we see concrete threat to undermine both schemes.
Proof of quality - of sustainability and GHG values.
In the case of renewable gas GOs, attributes like GHG emissions and feedstock should be recorded on the GO. Yet, it is questionable whether the ‘zero emission rate’ principle should be applicable as some sorts of feedstock used for renewable gas production could even achieve net negative GHG emissions. The ‘net negative’ GOs could improve significantly the GHG balance of installations and they could carry a premium on the market therefore.
In order to be recognized under the EU ETS, GOs should only come from sustainably produced bioenergy (and hydrogen/synthethic gas that complies with GHG reduction criteria of RED II). Therefore the information on compliance with sustainability and GHG reduction criteria is needed

and should be included in the GO . If GOs comply with sustainability and GHG requirements, each MWh covered by GOs should be considered completely carbon-neutral (as today).
In case of biomethane, the GO should include the mention of zero emission rate guarantying so its validity to be used for ETS purposes.
DG ENER/REDII legal framework: no link to sustainability criteria.
A TICK THAT IS CERTIFIED AS SUSTAINABLE ACCORDING TO REDII ART 29 BY A VOLUNTARY SCHEME APPROVED BY EC
Feedstock origin and verification information of the biomass being used and that the used volumes were delivered via mass balance.
REDII legal framework: no link to sustainability criteria (or ETS).
Note that biogas might have to fulfil certain sustainability criteria in order to be accounted for with zero emissions under the EU-ETS. The GO for gas would have to support the relevant information.

68. Were the EU-ETS to be revised in order to support the above, how substantial do you think such modifications would be?

Number of respondents: 8



	n	Percent
Major	3	37,5%
Large	1	12,5%
Medium	2	25%

Small	0	0%
Minor	2	25%

69. Please provide your reasoining

Number of respondents: 6

Responses
I'll discuss this with ETS experts and get back to you as soon as possible.
The EU ETS regulation already mentions the possibility to use GOs in this scheme.
This would require very substantial revision for both schemes and we see that this is out of scope on current standardization work.
Currently there is inconsistent application or acceptance of renewables in the ETS by individual member states. Further clarity is required to ensure there is no ambiguity in the requirements of the scheme and to ensure there is consistent application in all M.S.'s
It would be very difficult to keep the forms of guarantees of origin and proof of sustainability clearly separated. In addition, there would be differently stringent auditing requirements for the same purpose, which would make no sense.
This is out of scope of the current standardization work.

2. GO Market

Text for consultation

12.Prevention of double disclosure of the origin of sold energy

Challenge

To maintain (public) trust that where a GO is issued that the GO solely represents the right to supply the attributes to which the GO relates. When such trust is lost, whether through double issuing, double counting or even the perception that either might occur, the 'raison d'être' of the GO system vanishes.

Affected Areas of GO system operation

Registration, issuing, transfer, cancellation, consumer claims

Directions for solving the matter

Double issuance

Controls must be maintained that prevent the issuance of more than one GO for the same unit of produced energy.

Double transfer

The registration of ownership of a GO as an electronic document must be supervised by a designated competent body. The same applies to facilitating and supervising the transfer of ownership of a GO. It is essential to set up reliable IT systems and data protocols for cross-border trade to avoid GOs being (accidentally or intentionally) copied during the transfer of ownership. Therefore a GO must be kept in the registry of a trusted competent body at all times, and it can no longer be a GO with the same quality guarantees when it no longer resides in such a registry.

Double cancellation

Controls must be maintained that ensure that GOs can be cancelled only once, and only if they had not already expired or been withdrawn.

Double disclosure

Rules and controls must be maintained and/or introduced that:

- secure that a claim on energy delivered from a system that is within the scope of a GO scheme can only be made through GO cancellation;
- exclusively limit the means by which a claim can be made about the origin of energy (GO cancellation, tracking of supported energy, residual mix), to prevent the same unit of energy for which a GO has been issued being tracked by another tracking instrument such as another certificate system or by means of contract-based tracking;
- the energy origin represented by GOs is correctly accounted for in the residual energy mix, and the use of the residual mix is mandatory for non-tracked commercial offers;
- prevent claims on more energy than the amount of GOs cancelled, due to an insufficiently precise description of the use in the cancellation statement
- In many EU countries, there is insufficient coordination regarding whether disclosure information relates to the energy product sold, or to the total supplier mix. This leads to significant volumes of double-counting of renewable energy origin. The problem will be corrected by the provisions of the new IEM

Directive annexe I.5, which specifically require the disclosure of the electricity provided to the customer (i.e. product mixes) and not the total supplier mix alone. However, since the problem is so significant, and since the implementation of the IEM requirement needs to be coordinated, there is a need to harmonize procedures relating to the disclosure information that is presented to the consumer.

Double perception

- Media releases sometimes indicate a lack of consumer trust. This can even happen when all legislative requirements have been fulfilled, and these ensure that the origin of the supplied energy is disclosed on suppliers' invoices, and this is proven by the cancellation of GOs. Consumers in net GO exporting countries sometimes make statements which suggest that all renewable production is consumed in their own country. This causes some consumers in net GO importing countries to be cautious about relying on imported GOs, as they understand that the renewable attributes of the imported GOs have already been claimed in the country of origin.
- This challenge shows the limits of what legislation can do. It requires educational efforts to improve public awareness, especially in net GO exporting countries, that exported renewable attributes cannot be claimed as domestically consumed by any means.
- a clear definition must be introduced, of consumption for which the origin of energy must be disclosed. This also relates to a clear definition of the boundaries of the system to which the GO system applies;
- it should be defined what (level of) supervision is required if the abovementioned requirements are to be met.

System boundaries

- The GO system enables reliable origin tracking as long as the system boundaries are maintained. First of all such boundaries are geographical and political, but also the type of certification / tracking system is in scope.
- Linkages (imports and exports) with another system must mutually incorporate the core principles of the other system. When allowing import and export, the following needs to be taken into account:
  - Export = leakage of attributes must be replaced;
  - Import = make sure quality of the imported GO is maintained, and is not disclosed for use in the exporting country/system;
- Framework containing the conditions on claims on the origin of energy;
- Conditions: there are power connections, AND harmonised GO systems, AND harmonised origin disclosure systems.

Further specific challenges per sector

Gas:

Install disclosure legislation

For gas supply, there is not yet legislation that obliges gas suppliers to use GOs to prove the origin of their claims of renewable gas supply. As there is no system in place that regulates the proof of the origin of renewable gas supply claims, this involves a risk of double claims, as suppliers and consumers might use other channels to make claims on using RES-gas which has been awarded tradeable GOs.

Note: Disclosure legislation surrounding the GO framework cannot be imposed through the standardisation of GOs alone, and requires EU legislative decisions concerning the surrounding framework. A GO scheme will only avoid double disclosure when there is general acceptance that claims cannot be made regarding products from such systems

unless GOs have been cancelled (unless it belongs to the residual mix or to a contractual based tracking mechanism set up in a way that it doesn't cause double counting) since the fundamental underlying principle is that the attributes are represented by the GO.

Heating and cooling: strengthen disclosure legislation

For heating and cooling:
REDII article 24 provides a disclosure framework for renewable heat in district heating/cooling, thus:
"Member States shall ensure that information on the energy performance and the share of renewable energy in their district heating and cooling systems is provided to final consumers in an easily accessible manner, such as on the suppliers' websites, on annual bills or upon request."
This could be strengthened by requiring that the renewable origin should be proven by cancelling a corresponding quantity of guarantees of origin, should these have been issued; and in general by ensuring that the same amount of heat cannot be disclosed more than once.

Correlation with other energy certification systems

Besides the system of guarantees of origin provided by article 19 of REDII, there exist other systems which facilitate claims regarding the consumption of energy from RES.

Some organisations claim to facilitate certificate schemes that have a different purpose than energy disclosure, and such schemes may be interpreted differently by users. E.g. Solarcoin aims to provide support to producers by awarding them "solarcoins", which are subsequently traded on an open market. However, media reports show that solarcoin buyers do make claims about the consumption of renewable energy, even though the solarcoin never expires and even if a GO is issued for the same MWh.

In general, it is of substantial relevance for public trust in the GO system that no claims on the consumption of energy from RES can be made through another mechanism than GOs, if GOs are allowed to be issued for the same MWh.

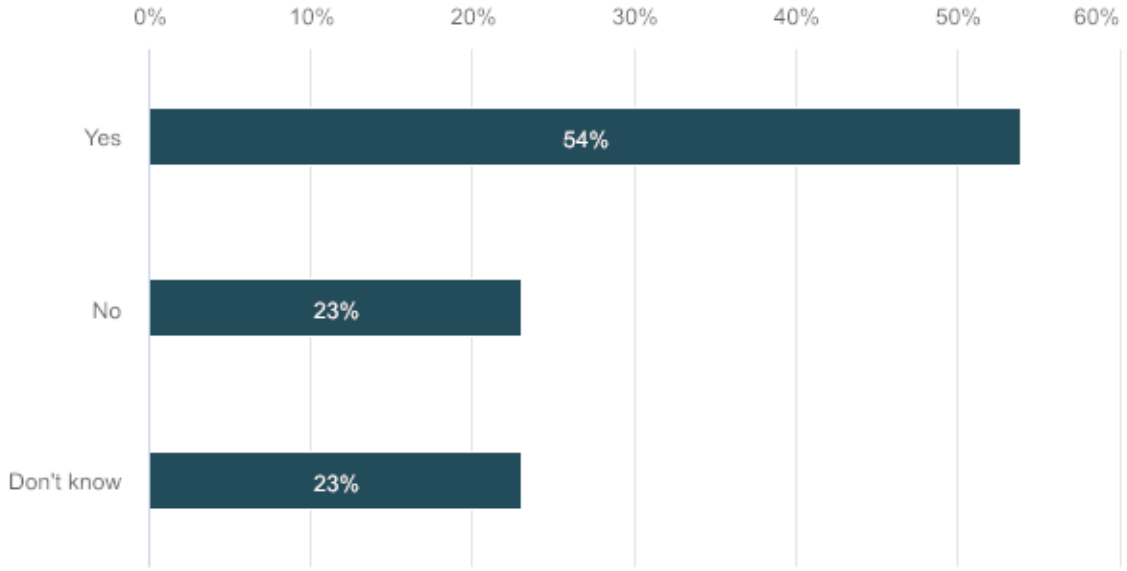
Renewable energy communities (REDII art. 22)

It must be kept in scope that for the "renewable" energy being transferred within a renewable energy community, then where GOs have been issued for the corresponding amount of production, then these have been cancelled.

Questions for stakeholder consultation and answers

70. Should it be mandatory for gas suppliers to disclose energy origin on their invoices?

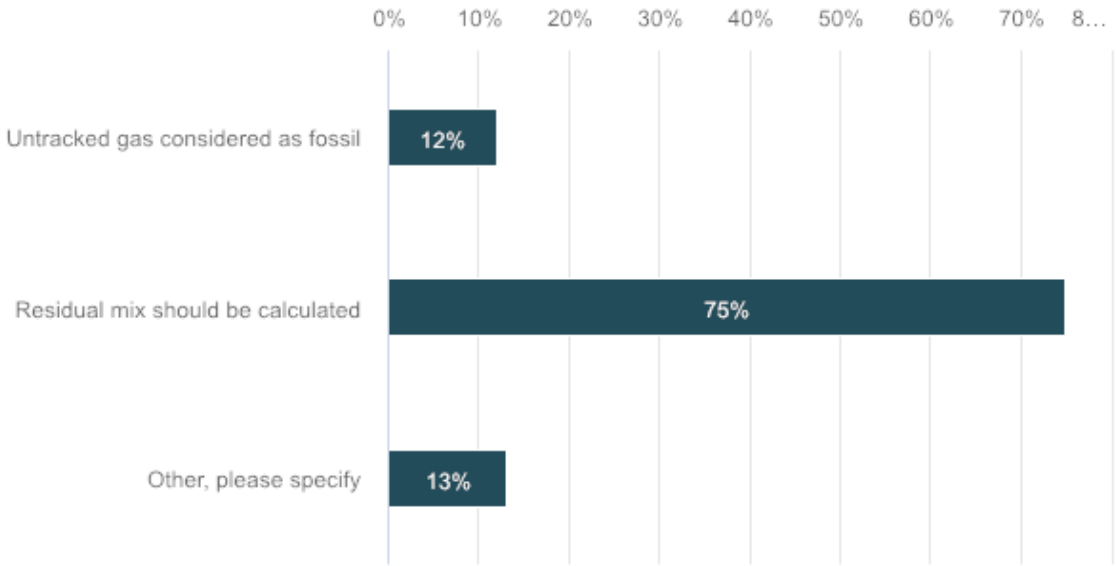
Number of respondents: 13



	n	Percent
Yes	7	53,84%
No	3	23,08%
Don't know	3	23,08%

71. If you answered "yes" to the previous question, should untracked gas be considered to be fossil, or is a residual mix needed?

Number of respondents: 8



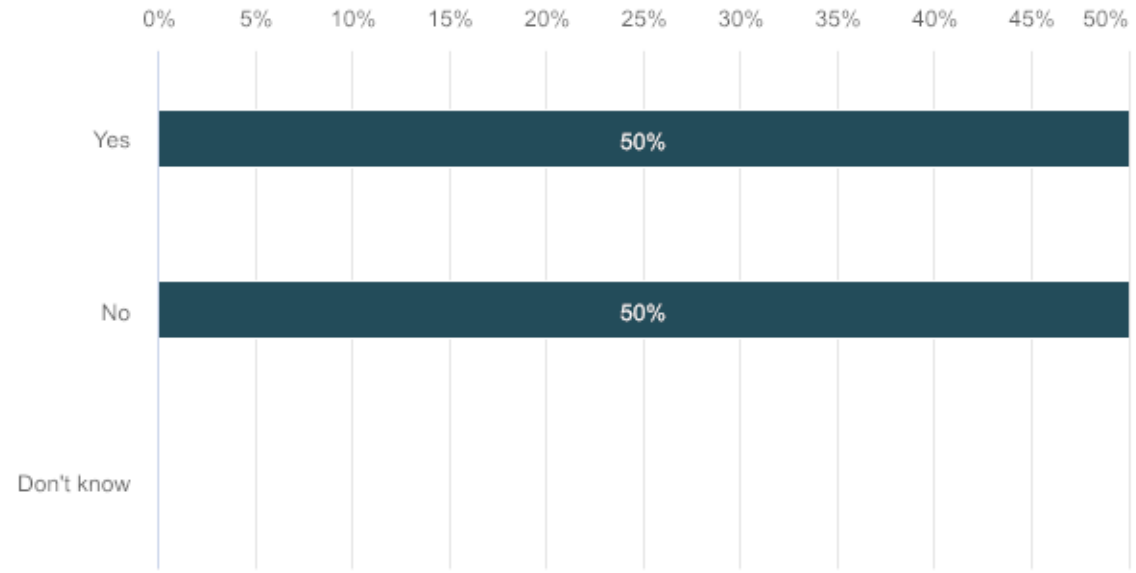
	n	Percent
Untracked gas considered as fossil	1	12,5%
Residual mix should be calculated	6	75%
Other, please specify	1	12,5%

Answers given into free text field

Option names	Text
Other, please specify	We assume that the disclosure of gas origin should be done only by GOs and the residual mix should not be used. It follows from Article 19(8) RED II that 'where Member States have arranged to have guarantees of origin for other types of energy, suppliers shall use for disclosure the same type of guarantees of origin as the energy supplied'. However, if the concept of residual mix may bring some benefits for the EU gas market, this option could be further considered. At this point, it is not clear how this residual mix could contribute to the functioning of the internal gas market.

72. To prevent double counting of non-renewable low-CO2 energy attributes (e.g. for nuclear energy), should GOs be by default available for all energy sources (+require to use for disclosure)?

Number of respondents: 10



	n	Percent
Yes	5	50%
No	5	50%
Don't know	0	0%

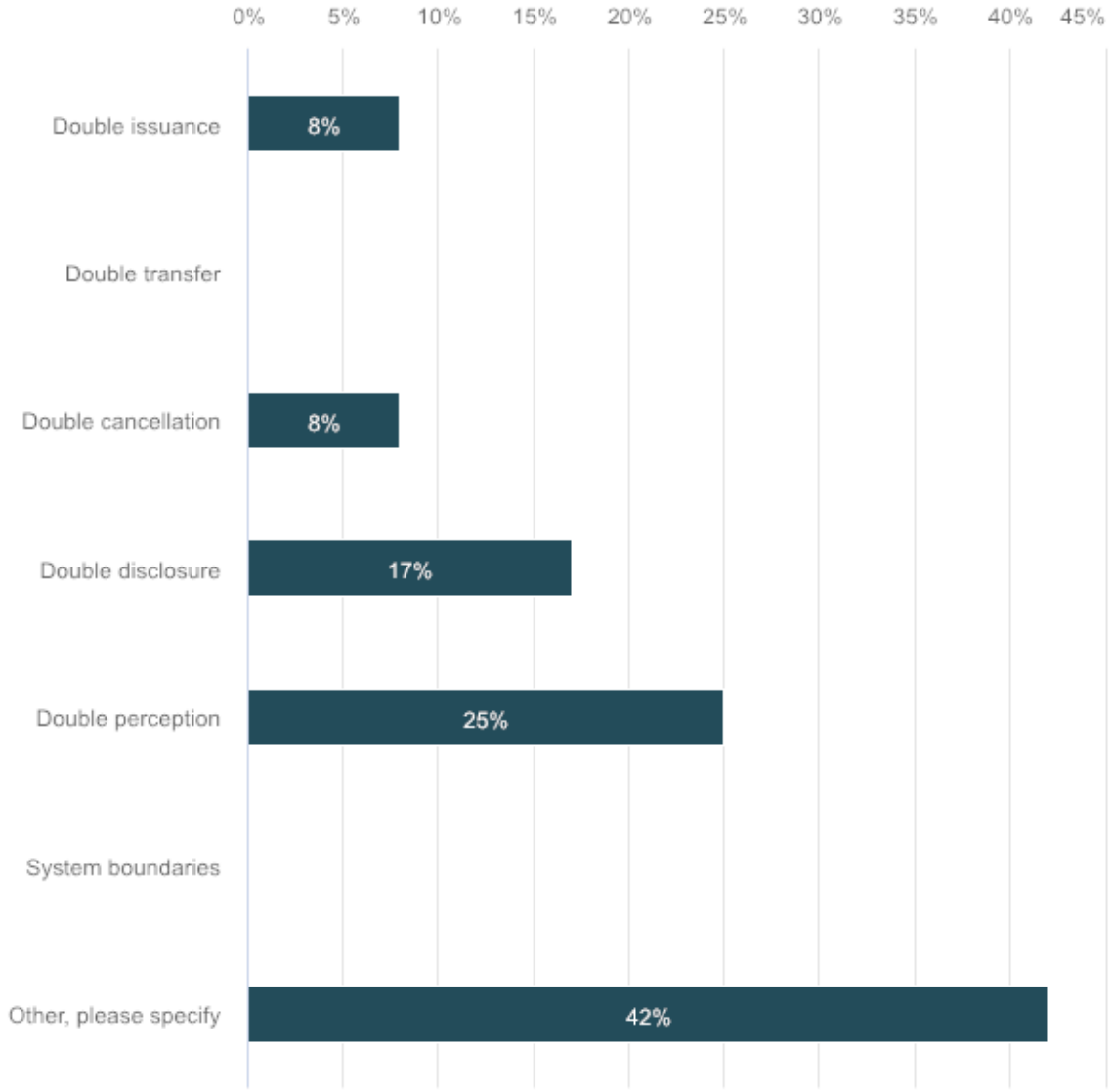
73. Please provide your reasoning

Number of respondents: 9

Responses
Not by default but from producers request. As stated in directive Member States could opt to issue GoOs for non-renewable origins.
Should only be provided for renewables, otherwise it increases the complexity of the processes and can result in decreased value for a GO
Yes. We are on the opinion that the full disclosure scheme that assigns guarantees of origin of all produced energy, regardless of the method of its production, is the easiest way to achieve full transparency and eliminate the risk of double counting. As far as we are aware, some countries like the Netherlands, Switzerland and Austria, have already introduced such full disclosure systems for the origin of the electricity sold to final clients.
A difference should be made between full disclosure (mainly relevant in the power sector) which is a significant administrative burden for suppliers (who will need to procure GOs for all clients to cover the full energy consumption) and GOs that could be issued also to non-renewable or decarbonized energies (for instance green vs blue hydrogen). The latter is optional in RED II. If a member State makes use of this option, it is important to ensure that a distinction between renewable and non-renewable energies is possible. That being said, the cost of issuing, holding, transferring and cancelling GOs for multiple times the current volumes needs to be controlled as otherwise it will end up as a net cost to the society.
Electricity: For self-generation and self-consumption there is no need for using GOs. The issuing and usage of the GOs should be aligned to the national disclosure system Gas: Only suppliers offering renewable and/or decarbonised gas contracts/products shall specify in the invoices the contribution of each type of gas purchased by the final customer in accord-ance (product level disclosure). Member States are responsible for further details on the de-sign and use of GOs for gas in accordance with Article 19 of RED II. Member States should be responsible for further details on the design and use of GOs for non-renewable energy production in accordance with Article 19 of RED II. GOs for non-renewable energy production could be a better way for preventing double-counting as other accounting methods.
We prefer that Member States set up a GO system for non-renewable decarbonised and low-carbon gases to facilitate their production and consumption. However, the issue of double counting in this respect is not clear for us.
The residual mix is robust enough and in the end it gives a more meaningful picture of energy attribute allocation than a full GO system, which requires an allocation of attributes which do not have a market value per se.
Full disclosure is the target for a successful and efficient Energy Management/Policy
Yes. Full disclosure of the sources of consumed energy is beneficial, regardless of whether energy resources are classified as renewable, zero emission, or fossil. Full disclosure also inherently reduces the risk of double counting.

74. Where are the most prominent risks of double-counting likely to be found?

Number of respondents: 12



	n	Percent
Double issuance	1	8,33%
Double transfer	0	0%
Double cancellation	1	8,33%
Double disclosure	2	16,67%
Double perception	3	25%
System boundaries	0	0%
Other, please specify	5	41,67%

Answers given into free text field

Option names	Text
Other, please specify	Not harmonized disclosure timelines and methods
Other, please specify	A lack of harmonization regarding disclosure timelines and calculation methods. In a case where GoOs are valid for 18 months they will appear on different fuel mix calculations under current calculation. In general disclosures should be calculated only for the GOs cancelled. Not issuance based or transaction based. GoOs which have not yet expired or are not yet cancelled should not be calculated. This would give most meaningful data view for that domains consumed renewable energy.
Other, please specify	In our understanding the double counting issue related to the GOs may arise where: i) double disclosure/sale of climate value occurs (if the GO is disclosed/sold to more than one consumer or if a sustainability/other certificate is used for the origin disclosure); ii) in monitoring emissions from biomass fuels in the EU ETS scheme GOs are used for determination of the biomass fraction in parallel with other methods (see Article 39 of the EU ETS Monitoring and Reporting Regulation).
Other, please specify	We believe that the EECS market has a fairly low risk of explicit double counting. That being said, we do believe there are two prominent risks of claims issues. The first is improper claims associated with the purchase of compliance-based certificates, such as the Elcertificate. Where both a compliance and a voluntary market instrument are issued for the same MWh, there is an inherent risk that the compliance instrument could be improperly used to claim the consumption of one MWh of renewable energy. The second type of risk relates to improper claims at the facility level, e.g. where electricity - but not the GO - is consumed/purchased from a renewable power plant.

75. What are the most efficient means to prevent double perception? Open comments are invited.

Number of respondents: 12

Responses
Many MS have an electronic system whilst some others do not. There needs to be an understanding that not all MS have the ability to facilitate electronic forms of GO management (this links to double disclosure). There needs to be a leeway for MS to work hand in hand to also accept manual transfers that should be able to be inserted into their electronic system (that accounts as an audit trail for both parties) and this way accountability will increase.
Harmonized disclosure rules and enforcement of competent bodies guidance. Double perception is hard to tackle due misleading information by references to production mix. However best approach to change this is education and correction of false claims. The disclosure legislation should dictate purpose to use GoOs which are issued for self-consumers. We welcome the harmonized guidance from competent bodies to advice use of GoOs for energy communities, (Corporate) PPAs, small scale instalments etc. The definition on on-site consumption is not universal. Also the most straight forward approach would be issue GoOs and the cancel them for self-consumers benefit on harmonized manner The current framework inherits also non grid connected areas which are seen inside the market boundaries. The system wide approach has been largely adopted and that should remain as guideline. The consumer are able to choose their origin with additional definitions such as region/age/tech/grid connections.
Perceptions are best changed through information and harmonized disclosure rules. Provide relevant information to the market and leave it up to the market actors to decide which GoOs are most valuable. Provide the customer with information, and it is up to the customer whether to buy the GoOs for their own consumption (thus ratifying this consumption as green) or alternatively take the residual mix.

A robust system that is mandatory in each M.S. where only one certificate can be issued and cancelled.
For gas, it would be adequate to have one single, harmonized European platform (ie. merging of ErGAR, Certify, etc.), in order to ensure harmonization of GoO and to ease a proper tracking of GoOs for cross-border trading throughout Europe
Avoiding the issuance of GOs to RES production facilities benefitting from non-competitive national support schemes. This energy should be integrated as part of the residual mix
GO SHOULD BE THE ONLY MEAN DO DOCUMENT ORIGIN TO END CONSUMER. GOS SHOULD BE INTEGRATED WITH OTHER DOCUMENTATION. OTHER INSTRUENTS AND SCHEMES SHOULD BE USED TO DOCUMENT AND VERIFY ADDITIONAL DOCUMENTATION.
Cancel the GO as soon as it is used for disclosure. GO registries should be able to identify GOs that have already been cancelled in case someone wants to trade them or use them again for disclosure.
The link between a GO and a sustainability certificate may help to prevent double perception together with clarification in the national legislation that only GOs can be used for the origin disclosure.
GO issuing bodies should be required to undertake PR activities to explain the cross border trading of GO and its effect on the consumption mix of energy. IBs should report to AIB on activities they have undertaken to prevent double perception.
Other systems like SolarCoin with no correlation to disclosure as well as traceability mechanisms will keep rising over time as public perception on GOs can be sometimes no ideal. The best solution would be to ensure that issuing bodies and AIB work hand in hand with those emerging solutions in order to ensure interoperability in the future. Joint communication will also go a long way towards clarifyig the differences between the GO and other tools, as uncertainty will develop over time as long as different means of communication will be used. Rather than trying to show the weaknesses of the systems that are looking to undermine the GO system, AIB and Issuing Bodies should try to collaborate because there is an actual need from consumers that should be addressed. Double perception should be prevented by working this way.
Due to the qualitative and sometimes subjective nature of claims, accounting measures alone are not sufficient to prevent perceptions of duplicative claims. Government regulations mandating the use of GOs to substantiate marketing claims referencing the use of renewables, similar to those developed by the US Federal Trade Commission in its Green Guides (https://www.ftc.gov/news-events/media-resources/truth-advertising/green-guides), would formally prohibit an unsubstantiated renewable energy claim and could be used to help regulate the market. Mandating a transition toward full fuel mix disclosure across the EU that requires GOs to underpin any reported/delivered renewable energy would also mitigate double perception risks. Claims reviews at the generator/facility level to verify that only a single renewable energy claim exists have been beneficial in the North American market (for example, as is required by Green-e Energy certification - https://www.green-e.org/programs/energy).

76. Other open comments

Number of respondents: 5

Responses
This web questionnaire is completely different form the document available and thus logical responses are not in line with questions presented in actual document.
The disclosure legislation should define how to prevent from douple disclosure. The main principle is following: an electricity user that, in its marketing, reports that the electricity it uses is produced from renewable energy sources, must certify the origin of the electricity with

GOs. Also a producer that, in other business operations, reports to its customers of the origin of the electricity it uses, shall certify the origin of electricity with GOs.
As current penetration of renewable gas is very low in most MS, and the technology is still under development, mirroring disclosure obligations in gas billing wouldn't make sense for the moment being, as there is a rather uniform supply. However, as a proof of transparency for consumers contracting green gas offers, suppliers offering renewable and/or decarbonised gas contracts shall make available the following information to the final customers who have with a supply gas contract that includes renewable and/or decarbonised gas: the contribution of each type of gas purchased by the final customer in accordance with the gas supply contract (in other words:product level disclosure for green gas offers)
Please see other comments in the file attached (pp.32-35)
The disclosure legislation should define how GOs which are issued for self- consumers in order to prevent from double disclosure. The main principle is following: an electricity user that, in its marketing, reports that the electricity it uses is produced from renewable energy sources, must certify the origin of the electricity with GOs. Also a producer that, in other business operations, reports to its customers of the origin of the electricity it uses, shall certify the origin of electricity with GOs. The grid definitions are not possible because of national legislation.

13. Double disclosure or double perception related to onsite consumption and non-interconnected grids

Text for consultation

Electricity: avoid double disclosure of "onsite consumption"

The operators of the guarantee of origin system for electricity have, in most countries, at least 15 years experience in setting up measures which will prevent double counting. A European obligation on electricity suppliers to disclose the origin of their supplied electricity on their invoices, and to prove the renewable origin of this electricity by means of guarantees of origin, gives the GO system a legal underpinning which ensure that "double disclosure" is avoided.

However, there are ongoing discussions on how to remove the risk of double disclosure related to so-called "onsite consumption" (= electricity consumed at the site of the production device without it flowing into the grid).
If onsite consumption is eligible for the issuance of tradeable GOs, it must be clear that electricity consumed onsite cannot be claimed as having green/renewable attributes. One way to establish this is to introduce the principle that tradeable GOs can only be issued for electricity that is made "available to the market for trade".
Another way of achieving the same result is by ensuring that only grid-injected electricity qualifies to receive tradeable GOs. Grids here could be defined as distribution systems, transmission systems and closed distribution systems[4] with Third Party Access, in the meaning of the IEM Directive 2019/944.
Either way, in order to avoid double disclosure, the national disclosure framework must incorporate in the residual mix calculation the GOs that were issued for electricity that was not injected into the grid, and for which tradeable GOs have been issued.

On a bigger scale, a similar question arose for electricity injected into island grids, where public opinion sometimes struggles to accept the credibility of export and import to another grid, even if accompanied by solid origin disclosure legislation for electricity suppliers.

Off-grid gas

Like for electricity injected into islands grids, in the opinion of some, it is hard to accept that renewable gases injected into gas grids which are not connected to a gas grid where the gas is consumed, can be sold as renewable gas consumption. GOs however by law facilitate this practice.

Heating grids are not interconnected

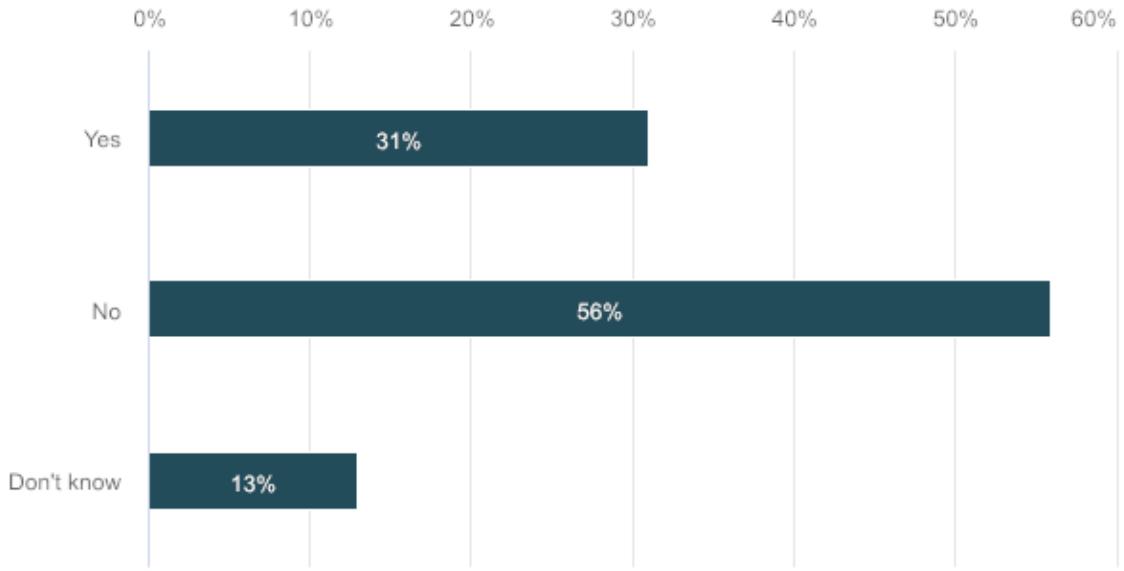
Heating grids are not interconnected. This raises the question of whether GOs issued for heating and cooling injected on another heating and cooling grid can be accepted for proving renewable heat supply (see also reasoning in topic 17 on cross border transfer of heating and cooling).

[4] The concept of Closed Distribution Systems is elaborated in art. 38 of the IEM Directive 2019/944/EU.

Questions for stakeholder consultation and answers

77. Should tradeable GOs be issued for energy that is consumed at the site of the production device?

Number of respondents: 16



	n	Percent
Yes	5	31,25%
No	9	56,25%
Don't know	2	12,5%

78. Please provide your reasoning

Number of respondents: 13

Responses
Once again the "tradable" term is bit misleading. Double counting only arises if the company/producer claims produced RES attributes on their consumption and in fact sells the GoOs issued for them. This is not in scope of technical standard but remains on the scope of enforcement of disclosure competent bodies. Obviously this activity should be forbidden. As mentioned earlier, there is need for harmonized disclosure rules on member states. For double perception please see above. We encourage all renewable energy production receive GoOs, but claims related to these should be dictated in disclosure legislation and practices.
GoOs should be issued for commercial electricity, both on networks such as IKN networks and electricity that is directly injected into the grid. It is then up to the consumer whether to cancel the GoOs for their own consumption (thus ratifying this consumption as green) or alternatively take the residual mix and sell the GoOs to the market.
Please refer to the answers given to question 4
Tradable GOs can be issued provided that they are available to the market for trade. This implies connection to the commodity market and the interconnected European network.
The disclosure legislation should define how to prevent from douple disclosure.

As mentioned before, self-consumed energy is already benefitting either from direct or indirect support (through the non-payment of regulated and energy policy costs). Selfconsumed energy shouldn't be allocated tradable GOs.
For self-generation and self-consumption there is no need for using GOs. The issuing and usage of the GOs should be aligned to the national disclosure system.
Without grid feed-in, it is not possible to supply third parties with the electricity on which the GO is based. However, this is a mandatory characteristic of GOs in UBA's understanding, since according to Art. 15 para. 1 Directive 2009/28/EC, GOs serve as proof to the end customer of the origin of electricity generated from renewable energy sources. This understanding of the Directive and its implementation in national law enables UBA to guarantee green electricity customers that the amount of renewable energy fed into the European electricity grid is equal to the amount of cancelled GOs.
It depends if the climate value of that energy could be recognised in another way than tradeable GOs. In case of doubt, yes, tradeable GOs should be issued for energy consumed at the site of the production device.
The GO should exist at the moment it is injected on the grid. GO is an accounting system where the consumer has his say. On site production is not linked to consumer. It should be regulated separately in order to protect the GO system credibility from this loophole.
Should be issued for all energy, tradeable for grid injected energy only.
3Degrees partially agrees with this statement. GOs should only be issued for electricity not claimed as renewable. GOs could theoretically be issued for generation consumed onsite, if the facility is grid-connected, and only if there is a process in place to ensure that only the purchaser of the GOs has the sole claim to be using this renewable energy.

79. If yes, what measures should be installed for the avoidance of double counting/double disclosure/double perception?

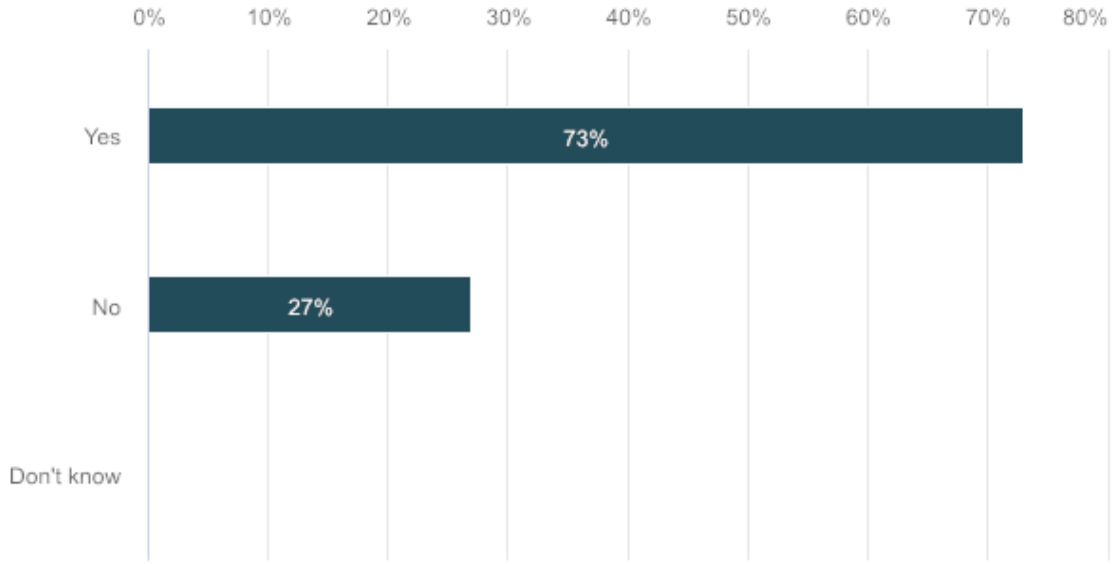
Number of respondents: 7

Responses
Quality legislation and disclosure rules harmonized between member states.
The suggestion above already avoids double counting of the GoO and therefore the accepted way of tracking the green electricity. The definition on on-site consumption is not universal, so would likely create a European wide issue - the most straight forward approach would be issue GoOs and then if they wish let self consumers cancel them. GoOs should always be issued for tracking purposes, whether they can be cancelled or used is a decision based on the national legislation. If they are not cancelled, consumption is not ratified green.
The main principle is following: an electricity user that, in its marketing, reports that the electricity it uses is produced from renewable energy sources, must certify the origin of the electricity with GOs. Also a producer that, in other business operations, reports to its customers of the origin of the electricity it uses, shall certify the origin of electricity with GOs.
The disclosure legislation should define how to prevent from double disclosure. The main principle is following: an electricity user that, in its marketing, reports that the electricity it uses is produced from renewable energy sources, must certify the origin of the electricity with GOs. Also a producer that, in other business operations, reports to its customers of the origin of the electricity it uses, shall certify the origin of electricity with GOs.
no GOs.

Separate regulation for those who aren't connected to the grid.
Should be issued for all energy, tradeable for grid injected energy only.
Please see answer to 12.5

80. Can GO cancellation be linked to consumption on a grid that is not connected to the grid in which the energy was injected for which the GO was issued?

Number of respondents: 15



	n	Percent
Yes	11	73,33%
No	4	26,67%
Don't know	0	0%

81. If yes, what measures should be installed for the avoidance of double counting/double disclosure/double perception

Number of respondents: 9

Responses
The current framework inherits also non grid connected areas which are seen inside the market boundaries. The system wide approach has been largely adopted and that should remain as guideline. The consumer are able to choose their origin with additional definitions such as region/age/tech/grid connections. This standard should be technical and not consumer guidance standard.
GOOs, as a track and claim instrument, should be the only system for any consumption claims.
Yes, the legal framework allows also off-grid connected areas to be part of the system. No links to physical transfer are needed (DG ENER/REDII) If this is not possible, EU Member States like Cyprus or Ireland (not connected to EU grid ?) would be out of the GO-system. This is not defined in the REDII that islands are out of the system..

Only GO holders might claim the consumption of renewable energy.
. Electronic transfer of the respective GO between issuing and receiving registry should include the exact amount of energy to be disclosed by the receiving registry.
The amount of energy has to be controlled by an auditor, before issuing.
Yes, GO should be used also when the consumption network is not connected to the network where the energy has been injected. The measures to avoid double counting/ disclosure are the same as the ones described in sections 8,9 and 10. If such practice is not allowed, development of the market for renewable gases will be at stake. In addition, it is important to understand, how a GO for electricity will be transformed into a GO for gas and if the 'Power to Gas plant' be the link between the “production” grid and the “consumption” network.
The legal framework allows also off-grid connected areas to be part of the system. No links to physical transfer are needed. The system wide approach has been largely adopted and there is no reason to change that principle.
1 GO >> 1 Cancellation. It is the national (isolated/non-connected) Regulator's and Registry's responsibility to count properly the GOs. They should avoid double speech.

82. If no, how do you explain this in the light of REDII art.19.9?

Number of respondents: 3

Responses
Note that we refer to tradable GoO (it is not spelled out in the question whether it refers to tradable GOs).
If it is accepted that a tradeable GO should be issued when and only when the energy can be sold on the market, then the GO should be sold in the same market as the energy. ==> Can be sold in integrated markets (i.e interconnected grids), but not elsewhere.
No. Because GOs are intended to give electricity consumers connected to a shared grid the opportunity to make specified renewable energy use claims, production and consumption should occur on the same electrical grid. Physical grid connection is a core requirement for claims to renewable energy and zero emissions power, as is stated in the World Resource Institute’s GHG Protocol Scope 2 Guidance (https://ghgprotocol.org/sites/default/files/standards/Scope%202%20Guidance_Final_Sept26.pdf). For a valid claim, it should be technically possible for electrons to flow from the point of GO issuance to the point of consumption, i.e. where the GO is claimed. Article 19 allows Member States to challenge the validity of GO issuance, and issuance of GOs for MWh that do not represent a valid renewable energy claim is sufficient rationale to do so.

83. Other reasoning

Number of respondents: 4

Responses
The disclosure legislation should dictate purpose to use GoOs which are issued for self-consumers. We welcome the harmonized guidance from competent bodies to advice use of GoOs for energy communities, (Corporate) PPAs, small scale instalments etc. The definition on on-site consumption is not universal. Also the most straight forward approach would be issue GoOs and the cancel them for self-consumers benefit on harmonized manner.
Yes, provided however that the GO is marked accordingly. The definition of isolated grid however could be tricky. Allowing GOs from one grid to be used for consumption on another non-connected grid could hamper the credibility of the system in the eyes of the general public. But we are fully aware of the technical difficulties arising from such a differentiation, having in mind the different situation with the electricity and gas grids Regarding electricity, we must differentiate between the cases where we have countries whose grids are totally isolated from the rest of Europe (i.e Iceland) or parts of countries which are

isolated from the mainland grid (such as some Greek islands) and the case where we have a "private" grid, owned by a one or more is producers and/or industrial clients and which is usually much more smaller than the other type Regarding gas, the matters are further complicated by the possibility of transport of gas between grids by LNG terminals or road transport
The text above was written in a very complex way?? "Can GO cancellation be linked to ...."
It should be possible if it is a member state and is connected to AIB. AIB should set standards to prevent double counting/double disclosure.

14.Attention points related to GO Cancellation by consumers

Text for consultation

Art.19.1 of REDII allows that the GOs may be used by/for suppliers and consumers or their representatives.
Practical experience raises a few points that need attention:

Mitigate the risk of double disclosure

Parties involved in Power Purchase Agreements (PPAs) should cancel GOs in the country of consumption when they claim the greenness of the energy. They do not always do this.
EFET and RE100 promote the cancellation of GOs in connection with claiming green energy consumption and even promote a model PPA template, but not all companies follow this advice. The risks are twofold:

Consumers not cancelling GOs for their claimed RES consumption

Consumers might not cancel GOs for claiming the renewable origin of energy which has been granted GOs. Legislative requirements for cancelling GOs for RES are imposed upon suppliers, but the same level of requirement is not required from consumers.

Failing to involve the Competent Body of the country of consumption

Energy consumption in another Domain may be disclosed without giving notice to the issuing body for the Domain where the energy is consumed. Some traders promote the purchase of GOs in non-AIB member countries, cancelling them there and using them for sustainability reporting. The consequences of this include:

- This may not be included correctly in the statistics of the countries involved. It may not be of similar quality, and there is a risk of double counting, given the lack of assessment of the cancelling issuing body – it is unclear how and whether this would be included in the Residual Mix.
- Consequently, the overall European GO statistics from member state statistics are invalidated along with any residual mix calculations that use them (and the work done in producing these statistics is wasted). This means that policymakers and end-consumers are given the wrong numbers to act upon, which defeats the original purpose of a GO.
- EECS Rule C7.2.1(e)(iii) does not yet prevent a form of double selling, whereby the quality of the electricity is claimed by cancelling GOs, and by the residual mix of the country which unknowingly "imports" it by means of such "ex-domain cancellations".
- However, simply deleting this provision from the EECS Rules will only result in market parties continuing their current practice and recording "disclosure" incorrectly – which would be difficult to detect.

Options for solving the matter

What should happen is for GOs to be moved from the selling country to the consumption country, and then cancelled – this is also required in the EFET PPA contract 3.3.b.
An alternative is to overcome the burden of a multinational company needing to enrol in multiple registries through the centralization, either of the cancellation or of the registries themselves. (see also section 20 IT Infrastructure)

In addition, action must be undertaken in order to:

a. Acknowledge that GOs are cancelled by consumers, and not always by suppliers and to design double-disclosure prevention measures accordingly.
b. This should be done in such a way that the legally-required supervision of GOs by Disclosure Competent Bodies (DCBs) is related to the suppliers' disclosure of the origin of their supplied electricity, and not to consumers' disclosure of this, as that would exceed the responsibility of the DCBs.

Question for consultation and answers

84. What is your advice for overcoming the concerns?

Number of respondents: 10

Responses
First of all, we do not encourage the this approach and we hope that there would not be AIB/non- AIB countries after roll-out of CEN EN 16325. The importance of harmonization cannot be emphasized enough. All MS should implement the RED II so that producers and consumers are acting on leveled playing field. Also harmonization of Disclosure rules is key item. The statistics are never correct in case there is pockets remaining in Member States. As mentioned in paper, the claims to renewable consumption should be done only with GoOs in their respective domains. We are struggling to find the possibility of double claims if this activity is done with GoOs, as they would always be part of statistics in consumption country and in relation to those claims. We see the problem with enrolment to multiple domains, but there is possibilities to improve the account opening protocols or utilize existing account holders in respective domains.
If all statistics and reporting is generated from the source data, from the official issuing body in each M.S., then actual cancellation of individual certs or GO's is less relevant
Ideally all MS registries should be interconnected to avoid GO cancellation in the wrong country when a registry is not connected to the AIB network. In the meantime a mandatory procedure involving the Competent Body of the country of consumption is required. Consumers claiming RES consumption should indeed mandatorily cancel the relevant GoOs (including for on-site embedded generation).
GOs must be carried from the issuing country to the country where the final consumer is located. Issuing bodies should be coordinated to avoid including exporting GOs as part of the residual mix.
Suppliers should do the process of cancellation of GOs in general. Exceptions should be allowed for restricted groups (e. g. privileged end consumers, who are also subject to labeling according to German law).
BY PRINCIPLE ONLY ALLOW ENERGY/GAS SUPPLIERS TO CANCEL GOS. NOT CONSUMERS. GOS IS FOR A SUPPLIER TO DOCUMENT ORIGIN TO AN END CONSUMER.
Build robust and reliable electronic registries that record each activity/transaction related to each GO and effectively cancel each GO when used for disclosure.
IBs will have only little means to regulate consumers. It might be more appropriate to require producers of electricity to ensure that all GO related to electricity marketed directly to consumers are cancelled. This might have to be included in auditing procedures for production devices.
For Ex domain Cancellations (XDC): - XDCs should be limited to the strict minimum - XDC reporting should be improved in order to facilitate data update at the relevant issuing body when necessary For PPAs - When a BRP / agregator is part of the contract (sleeving agreement), he should issue (but not trade) and cancel the GOs

- When direct PPA between producer and consumer, the producer should issue and cancel the GO for the consumer GOs from PPAs should not be included in any supplier mix, in any case.
Please see the DOCUMENT ATTACHED to this survey for a thorough response on ways to improve the GO cancellation process and increase compliance with EECS Rules.

15. Prevention of financial fraud in GO markets

(see Annex 2)

16. Estimate development of GO market behaviour

Text for consultation

Problem Statement / challenge:

The European GO market is untransparent. System operators and market participants, particularly new entrants, lack information about the volumes of renewable energy on the market and the prices of attributes related to different types of renewable energy. This lack of transparency can reduce the confidence of users, observers, and operators of renewable energy markets in Europe. There is also an increased risk of fraud in markets that lack transparency.

In addition, it is currently particularly challenging to estimate the development of GO market behaviour. The translation of the Clean Energy Package into national legislation will impact the GO market to a degree that is difficult to quantify in the middle of an implementation period that runs from January 2019 to July 2021. Article 19 addresses GOs, and makes a number of important changes that will affect the development of GO market behaviour. Not least, the article widens the use of GOs from electricity only, to all forms of renewable energy. The article also makes it mandatory for the first time, for a national issuing body to issue a GO when requested by a producer – in the past this was voluntary. These important changes could alter both the volume of GOs available and their price – impacting the supply and demand dynamic in significant ways that are difficult to predict.

Affected areas of GO system operation

The lack of transparency described above directly affects the transactions of GOs. The lack of publicly available, easily understood and reliable data about the prices and volumes of GOs means that market participants face a number of risks, most importantly whether they will be able to buy or sell the amount of renewable energy they have or want at a price with which they are comfortable. System observers and operators also lack an understanding of how to estimate the development of GO market behaviour – i.e. how prices and volumes are expected to change in the coming months and years.

Potential directions (high level) for solving the matter

Given that the challenge is a lack of data, the clearest solution is the provision of more data. However, if this data is to increase the confidence of market participants and the understanding of market operators and observers, then it must be consistent, reliable, public, comparable and open to examination. This would require that all Member State issuing bodies release information for the same time periods and based on the same definitions of key terms such as 'issued', 'transferred', 'expired', 'withdrawn' and 'cancelled'.

As regards reliable and publicly available price information, this is made particularly challenging by the fact that many GO trades are bilateral, with details that are known only to the parties involved. Some price information is made public, such as that released following national auctions of GOs. However, this data could be made more granular, including the crucial aspect of the difference in prices for different volumes of GOs (buying 100MWh as compared to 10,000MWh).
Mandatory GO price reporting per transaction to the Issuing Body would enable the latter to publish aggregated average prices. This price reporting obligation is currently

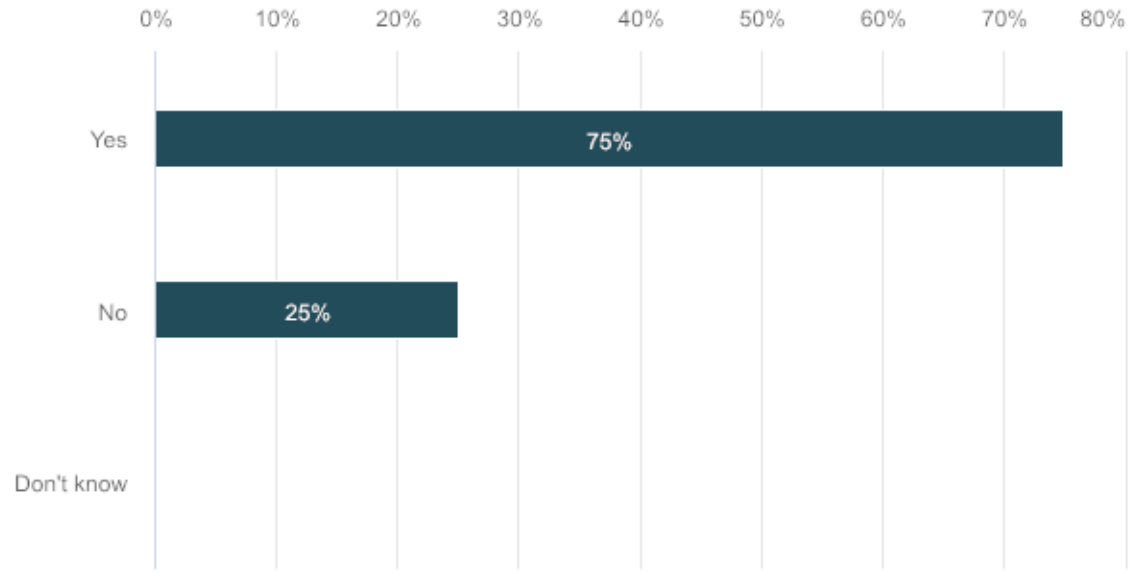
only available under Flemish legislation, where it results in publicly available monthly statistics[5] on price.

Questions for stakeholder consultation and answers

1. For issuing bodies:

97. Do you agree with the definitions of data points as proposed (issued, transferred, expired, withdrawn, cancelled)?

Number of respondents: 4



	n	Percent
Yes	3	75%
No	1	25%
Don't know	0	0%

98. Please provide reasoning

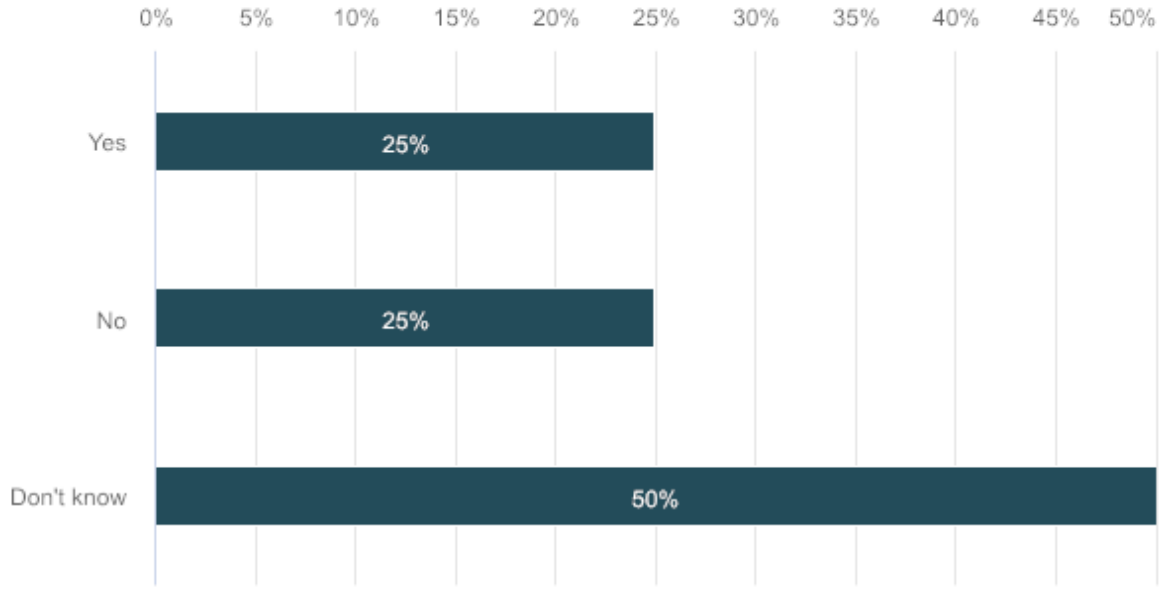
Number of respondents: 3

Responses
All published data must be aggregated in a way that no individual actor can be recognised
Yes, because data should give clarity to market participants. However, it is important that the publicly available data cannot be traced back to individual processes.
We need further Information, regarding the definition of the data points.

[5] https://www.vreg.be/nl/steuncertificaten-groene-stroom-wkk-en-garanties-van-oorsprong

99. Do you think it is feasible for the issuing body you represent to provide data in the manner proposed by the project team?

Number of respondents: 4



	n	Percent
Yes	1	25%
No	1	25%
Don't know	2	50%

100. Please provide reasoning

Number of respondents: 3

Responses
One axis of transparency is the money flow that goes from consumer to the producers /investors into renewable capacity. While consumers pay between 3-15 EUR pr. Mwh of goos as green product then the producer often gets under 10% of the value. The challenge is perceptual and is similar to when consumers that give to charity, discover that the cause gets such a low part of the price they pay. Without transparency here, the role of goos to finance new capacity is greatly undermined.
Yes, but only regarding GO volumes and not on prices because dena does not have information on prices.
We need further Information, regarding the definition of the data points.

101. Do you have suggestions for additional data that should be made available by GO issuing bodies? Please provide reasons.

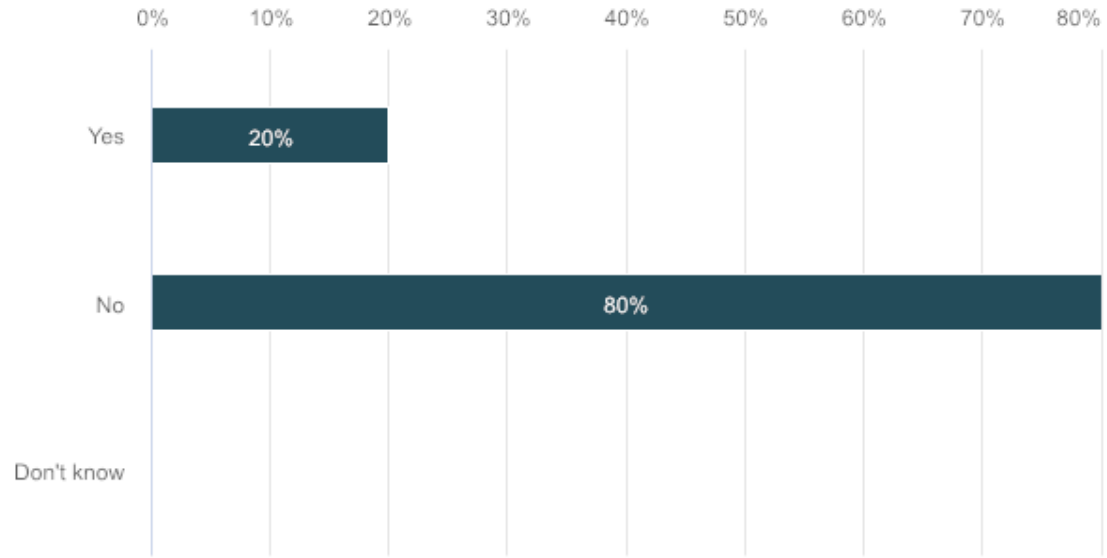
Number of respondents: 3

Responses
When consumers choose green products based on certificates, they assume that a fair share goes towards producer/investor. This is not the case. Therefore, it is important for consumer

choice that transparency is introduced between supplier and consumer about how large share of the certificate consumer price goes towards the production of the electricity.
No

102. Should there be reporting of price information in transfer?

Number of respondents: 5



	n	Percent
Yes	1	20%
No	4	80%
Don't know	0	0%

103. How this could be done in your Member State?

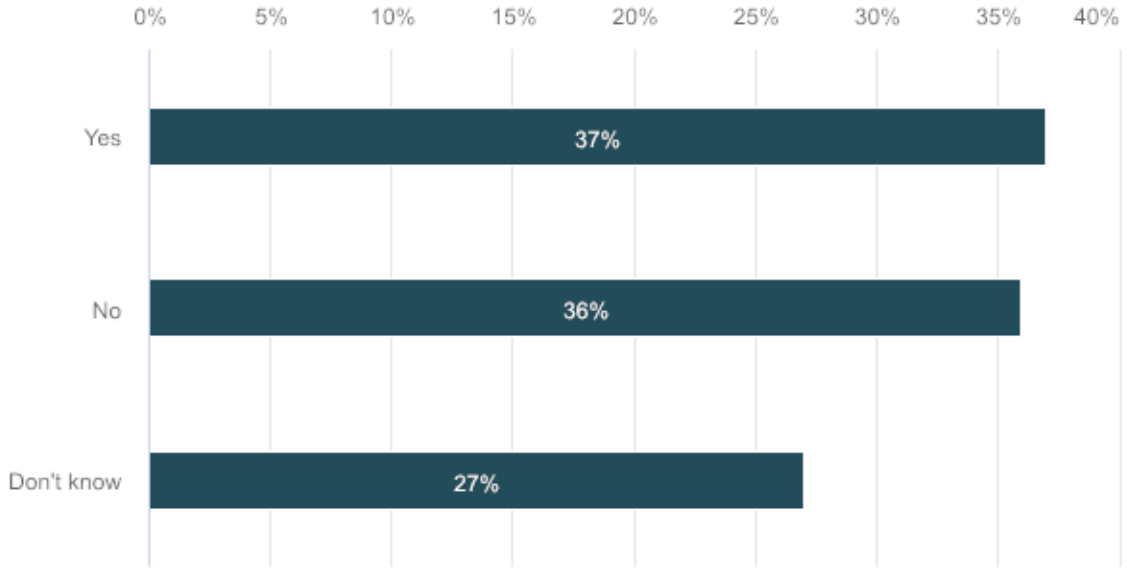
Number of respondents: 3

Responses
In contracts with end users as reported by suppliers.
Proposal for obligatory price information is not possible, because there is no legislation for it.
Regarding this question, that is not the matter of an issuing body! That's up to trading platforms!

2. For market participants:

104. Do you agree with the project team's proposals for the provision of data to GO market participants?

Number of respondents: 11



	n	Percent
Yes	4	36,37%
No	4	36,36%
Don't know	3	27,27%

105. Please provide reasoning

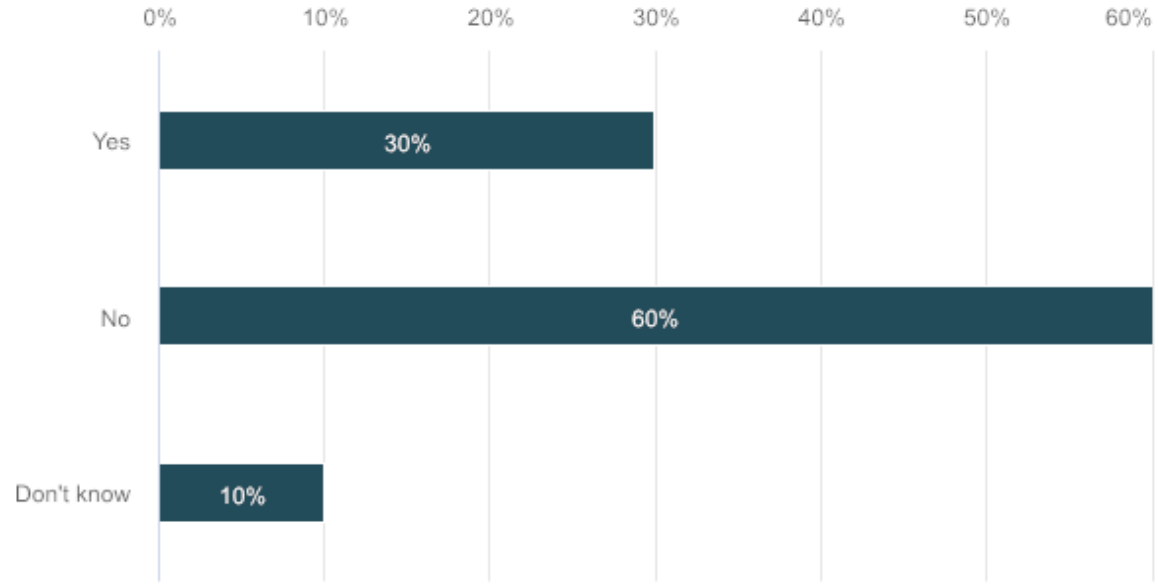
Number of respondents: 8

Responses
Proposal for obligatory price information is not relevant and we do not see justification or benefits for that. First of all GoO is not commodity as it is tool to demonstrate origin of energy to end consumer. It also acts as a branding tool for the suppliers and therefore it is rather hard to create universal price. Even though it is aggregated and averaged, it still has the regional characteristics. There is also confidentiality clauses involved on bilateral trades so without higher level of EU intervention it is not possible to release that information. Secondly the price information is only theoretical at best with published transfer prices. The contract what involves the specific delivery of GoOs could have been agreed 10 years prior to delivery. For anyone interested on the price information, it is available via different service providers. GoOs are also contracted via PPA contracts and in general prices for power and GoOs are not publicly released unless contract parties agree.
Indeed that data provided should help toward increasing the confidence of the market participants, thus we need reliable, consistent, clear and standardized statistics, with no discrepancies from one issuing body to another.
Proposal for obligatory price information is not possible, because there is no legislation for it.
Public and reliable pricing information is very challenging, as most of the volumes are traded bilaterally. Public auctions provide some information. However, the data provided should be made more granular for different volumes of GOs (e.g. purchase of 100 MWh vs 10,000 MWh). Mandatory notification of prices to the Issuing Body might facilitate the publication of aggregated average prices. This is currently allowed only under Flemish legislation, with monthly publication of prices.
As an issuing body, placed in an authority, we just provide a platform for issuing, tranferring and cancelling GOs due to our legal mission. Trade questions are not in our area of responsibility.

Proposal for obligatory price information is not possible, because there is no legislation for it.
CO2 info opens he GO's future for a more comprehensive system.
3Degrees is supportive of efforts to increase transparency in the GO market and agrees that such initiatives are beneficial to improving confidence among market participants. That said, disclosure of pricing data should be approached carefully.

106. Should there be reporting of price information in transfer?

Number of respondents: 10



	n	Percent
Yes	3	30%
No	6	60%
Don't know	1	10%

107. What level of detail would benefit the market?

Number of respondents: 8

Responses
No, please see above the reasoning. It will also leads to creation of indexation and might have some unintentional effects for the market set-up.
Although we encourage the transparency of the market, adding a price to each transaction will complicate disproportional to the benefits the market participants will gain. Furthermore, since the market is evolving and there are more independent data providers as well as more organized marketplaces, who usually publish freely their results (including prices & volumes), we believe that this is already the optimal development.
It should evolve from an over-the-counter market to an organized market. Notably because GoOs onboards the decarbonization value of the product which, at the end of the day, is financed by consumers (complementary to or instead of public subsidies or public support).
Establish a starting average price for the GO
See above

Proposal for obligatory price information is not possible, because there is no legislation for it.
Leave market info to market. Jobs exist from that.
3Degrees cautions against providing pricing information associated with each transaction in the market or for average pricing. GO pricing varies widely depending on factors such as resource type, location, level of government support, and age of the issuing facility. Furthermore, identical GOs may be priced differently as a result of the volume at which the GOs are transacted (small volumes typically require higher per unit pricing to balance administrative costs). Disclosure of "average pricing" could have the unintended effect of misleading/confusing consumers who are not accustomed to the nuances of GO pricing. Market participants seeking pricing statistics can request this data from GO brokers.

108. Are there additional data on GO markets that you would particularly value? Please provide reasons.

Number of respondents: 5

Responses
No, the minimum criteria specified by RED II should be sufficient minimum for leveled playing field between Member States.
Data revealing the transactions such as import and export volumes between per production date and per import/export country will be very beneficial for all market participants. This will increase transparency and provide insights on the GO flows between countries. What is more, registers like the UBA HKNR should report all GO cancellations per production date, not only the German ones.
Yes. The consultation document focuses on prices, but the real issue in the GoO market is the supply-demand balance assessment. The level of transparency in most registries is quite poor, with key data available mostly from the AIB website (where the source list shows half of the contributors provided Excel spreadsheets rather than a database access) and some nice exceptions like the French registry providing a list of all GoOs past and present, and some monthly flow information in some others. Ideally all registries should publish everything they hold or have cancelled/exported, plus periodic statistical summaries (daily/monthly/yearly), as this would allow analysts to cross-check everything.
No, there is no need for additional data for market participants, especially for price infor-mation. GOs are traded and priced in the market. Pricing information is a trade secret.
No, the minimum criteria specified by RED II should be sufficient to create a level playing field for actors in the Member States.

17.Cross-border trade of heating and cooling GOs

Text for consultation

Origin disclosure of heating and cooling

The Renewable Energy Directive (2018/2001) stipulates that only GOs shall be issued for the purpose of demonstrating to final customers the share or quantity of energy from renewable sources and that no other form of proof is acceptable. Further, it requires each MS to recognise GOs issued by other MS. This includes GOs for renewable heating and cooling.

However, while Directive 2019/944 on the internal electricity market requires suppliers:

- to disclose the origin of electricity supplied; and
- to use GOs for disclosing the renewable nature of the supplied electricity,

the corresponding requirements in the RED[6] for renewable origin disclosure for the supply of heating and cooling does not relate to GOs.

The question then becomes: how to secure the reliability and credibility of claims made regarding the origin of supply of heat and cold? Since the issuance of GOs for these energy carriers is not linked to a requirement to also cancel them for disclosure, there is a risk of double-counting.

Further, it may be difficult to convince final customers that they were supplied energy with particular attributes where there is no possibility for such energy to actually physically reach them.

Cross-border trade of renewable heating and cooling

REDII art.19 requires Member States to accept heating and cooling GOs for import from other Member States, except where they can substantiate reasons for doubting their accuracy, reliability and veracity. This means that Member States are bound to facilitate cross-border trade of heating and cooling GOs.
The above-mentioned absence of a full-proof disclosure system may, however, make mutual recognition of heating and cooling GOs difficult across national borders.
For the same reasons, it remains to be seen whether there is interest in cross-border trade in renewable heating and cooling.
Low market interest reduces the case for investing in the infrastructure and systems for reliable cross-border trade, which then becomes another reason to question the reliability of the import.
A general question hence is how to carry system development cost for the international exchange of heating and cooling related energy attributes.

Case studies from domains with a legislative GO scheme for heating (and cooling)

In the Netherlands, a GO scheme for renewable heat has already been established. There, GOs for renewable heat can only be used to disclose the origin of heat supplied

[6] REDII article 24. Origin disclosure for heating and cooling: (only for district heating/cooling and only for share of renewable origin):
"Member States shall ensure that information on the energy performance and the share of renewable energy in their district heating and cooling systems is provided to final consumers in an easily accessible manner, such as on the suppliers' websites, on annual bills or upon request."

through a grid to which both the production device *and* the consumer are connected. Our translation of art. 25a, subparagraph b of the Dutch Regulation on guarantees of origin (https://wetten.overheid.nl/BWBR0035971/2020-01-01#Paragraaf6_Artikel25) is as follows:
"For the purpose of art. 77a of the Electricity Act 1998 (as amended) and art. 25, subparagraph 1, a GO for heat produced from renewable energy sources shall only be proof of supply to a final customer **connected to the same grid as that into which the heat was injected.**"
This principle could be applied for cross-border trade, meaning that such trade would be useful for heating and cooling grids that are either situated on multiple sides of the borders of Member States or at least connected across such borders. For the time being, this may limit the extent to which actual heating and cooling GO trade takes place (which may influence MS' willingness to invest in infrastructure that enables such trade). This may change if and when heat and cold grids become interconnected on a larger scale throughout Europe.

In Belgium, Flemish legislation integrated GOs for heating and cooling in spring 2019, and implementation is ongoing. An English translation of the Flemish GO legislation, incorporating GOs for heating and cooling is available at: https://www.vreg.be/sites/default/files/wetgeving_inzake_gos.pdf.
Some of the conditions are:

- the heat or cold must be injected into a grid or a system that supplies more than one consumer.
- Heating and cooling GOs are only issued to production devices with a capacity of 300kW or more. This is the threshold above which an environmental licence of operating is required by law. It avoids also practical administrative problems not incorporating all small household wood pellet stoves.
- Heating and cooling GOs can be used for claiming renewable heat consumption on another heating and cooling grid.
- On the GOs there is data recording on additional fields especially for heating and cooling
    - Type of heat carrier
    - Temperature range of the heating and cooling
- Disclosure legislation is foreseen in two levels:
    - Already in place: "The supply of heating or cooling in the Flemish Region as heating or cooling generated from renewable energy sources shall be permitted where the quantity of heating or cooling supplied in this way corresponds to the corresponding number of MWh of the guarantees of origin for heating and cooling from renewable energy sources having been submitted to the central database, as referred to in Article 7.1/1.1, § 3."
    - In primary legislation but not yet in force and not yet elaborated in secondary legislation:
        - All invoices and printed and electronic promotional material of a heating or cooling supplier supplying heating or cooling via a heating or cooling network shall include the following information:
            1. the percentage of each energy source in the total fuel mix supplied in the preceding calendar year by the heating or cooling supplier via heating or cooling networks in the Flemish Region;
            2. the percentage of each energy source in the heating or cooling product of the customer in question supplied in the previous year by the heating or cooling supplier via heating or cooling networks in the Flemish Region. (…)

The remaining question is: what is required for consumers to trust GOs transferred to them?

Potential solution
Disclosure of heating and cooling from RES needs to be accompanied by the cancellation of GOs.

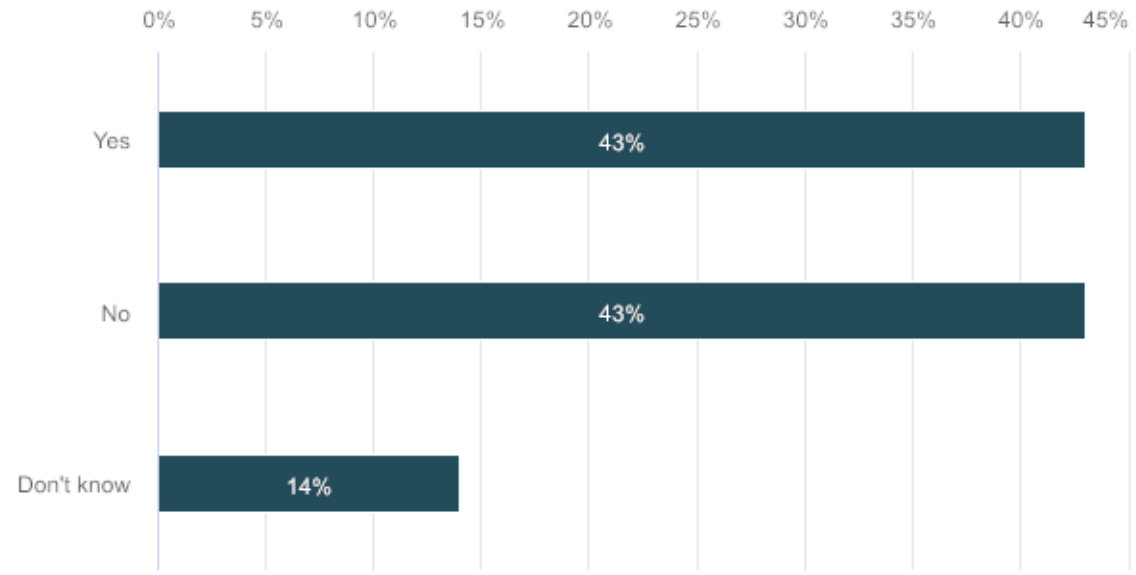
Consumer trust enhancing

Transparency with extra data fields on the GO could enhance consumer trust, as it allows consumers to make an informed choice. For a heat consumer of 800°C heat, a GO issued for warm water at 60°C has no credible value, as the high-temperature heat has a higher energetic value than the low-temperature heat. When heat temperature intervals are mentioned on the GOs, an industrial consumer of 800°C heat will probably look for GOs issued for a corresponding credible temperature range. Information that influences public opinion on the quality of a GO, in whatever direction, is relevant to be mentioned on a GO. On electricity GOs, a lack of such transparency has given rise to mistrust among consumers and in wider public opinion. By standardising extra data fields on the GOs, relevant for public trust, cross-border trade could be facilitated.
This project cannot oversee whether cross-border trade for heating and cooling GOs will take place, but can look at what is required to enable such trading.

Questions for consultation and answers

109. Do you observe market demand for heating and cooling GOs?

Number of respondents: 7



	n	Percent
Yes	3	42,86%
No	3	42,86%

Don't know	1	14,28%

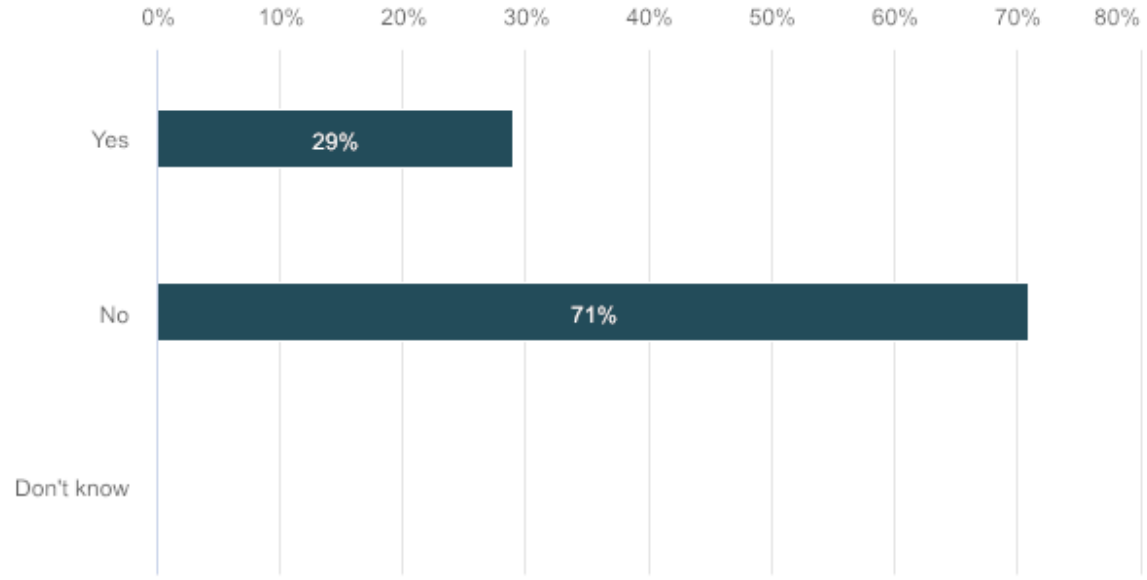
110. Open comments

Number of respondents: 4

Responses
There might be very limited demand (e.g. for disctrict heating with several heating plants), but this can sufficiently be monitored and documented by other means than standardised tradeable GOs...
Quite limited at the moment
Significant demand in ROI from large I&C gas consumers who have challenging decarbonisation targets
No, not in Germany at least.

111. Do you see demand for cross-border trade of heating and cooling GOs?

Number of respondents: 7



	n	Percent
Yes	2	28,57%
No	5	71,43%
Don't know	0	0%

112. Open comments

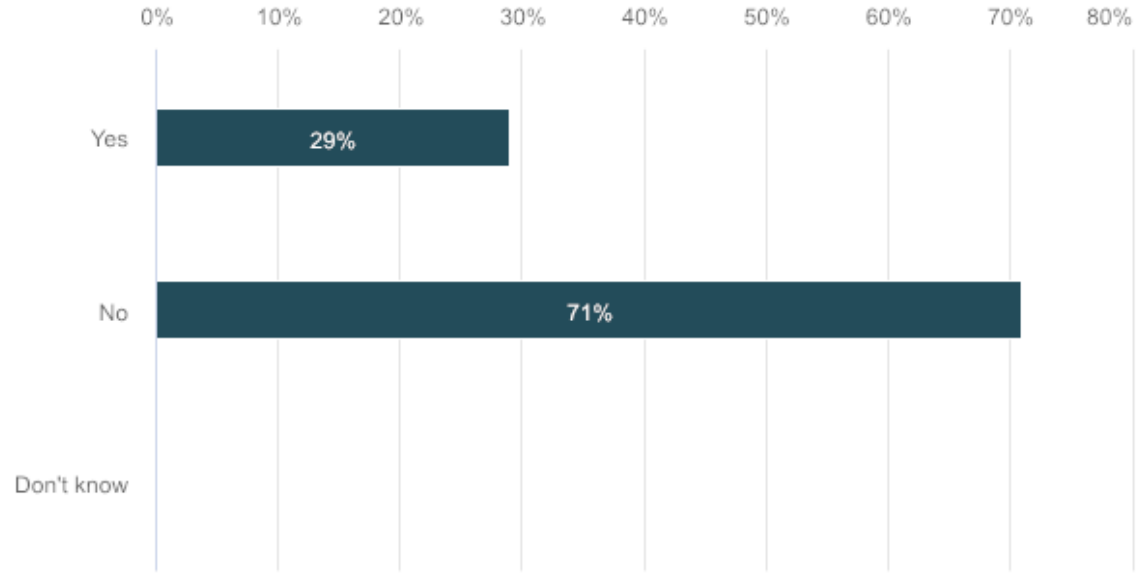
Number of respondents: 3

Responses
Not currently
Where indigenous production does not meet demand, then cross border trade is vital

Not yet. Maybe in future if neighboring countries have an cross-border interconnected heating/cooling grid.

113. Do you see demand for the cross-heating-grid transfer of heating and cooling GOs?

Number of respondents: 7



	n	Percent
Yes	2	28,57%
No	5	71,43%
Don't know	0	0%

114. Open comments

Number of respondents: 3

Responses
Not currently, but before creating any additional requirements for cross border trade it is necessary to decide system wide or regional scope.
especially for industries who have processes dependant on natural gas, there is a strong demand or requirement for cross border trade
Not yet. Maybe in future if neighboring countries have an cross-border interconnected heating/cooling grid.

18. Sector coupling and Energy Carrier Conversion => influence on GO market price for different energy carriers

Text for consultation

Challenge:
On European markets, we see different orders of magnitude for the prices of GOs of different energy carriers. Electricity GOs being traded in 2019 between 1 and 2 euro, gas certificates often trade at a price which is at least 10, if not 20 types higher.
GOs enhance both the market and consumer awareness. The difference in the price of GOs of various energy carriers might at some point in time become a driver for energy carrier conversion.
As an attention point for issuing GOs for energy carrier conversion, one must be cautious of not interfering with the policy intentions behind existing support systems for a specific energy carrier. In such a way, a specific energy producer might receive windfall profits, and the policy budget for necessary additional investments could be .

Affected areas of operation
Conversion, issuing, transfer, total production counting

Potential directions for solving the matter
Surrounding framework, consciously designed legislation.

Questions for consultation and answers

115. What risks and opportunities for the GO market do you see with regards to energy carrier conversion?

Number of respondents: 8

Responses
Opportunities include additional value to renewable electricity when set in regulatory context to blending obligations as depicted in GJ in the EU Fuel Quality Directive.
Hard to estimate prior to conversion requirements are more materialized.
Double counting.
The price of electricity GOs should not converge with the Price of other GOs (e.g. gas or hydrogen) as they are different products from different technologies.
Sector coupling and Energy Carrier Conversion are expected to have an impact on market prices of GOs, especially when there is an energy carrier conversation using GOs for elec-tricity to produce renewable gas (e.g. electrolysis). The price of GOs for electricity could rise, when there will be an increased demand for green gas.
a) Opportunities. Developing a GO market where GO from energy conversion processes are traded could foster the development of PtG installations in Europe, diversifying the energy sector and decarbonizing it. b) Risks. Lack of proper or adequate legislation might lead to mistakes during the issuance of GO after each conversion process and double counting.
The responsibility for avoiding windfall profits is firstly one of the designers of (support) policies. The related schemes should be designed properly and there should be clear decisions whether converted energy is eligible for certain types of support or not. IBs should support policy makers in avoiding wind-fall profits and should refrain from creating or maintaining loopholes for unintended market activity in the case of imperfect policy scheme design.
Risk: too technical and specific. This might be misunderstood. Opportunity: controlling CO2 from a consumer point of view.

116. Would it add value to introduce conditions for issuing GOs after energy carrier conversion, which would prove the origin of the conversion based on related to the cancelled GOs for proving the origin of the conversion, add value?

Number of respondents: 7

Responses
One Mwh is 3,6 Gj
Remains to be seen with interplay between energy conversions.
Yes as it increases customer awareness.
Conversion of GOs should be allowed only with the same type of GO. A renewable GO should be converted into a renewable GO only.
Yes. Establishment of clear regulations and operation rules for the GO market could incentivize the participation of more entities in the market, increasing therefore their commodity value.
In principle, yes.
not sure.

3. Cross-border cooperation amongst Competent Bodies for Issuing GOs and for supervising Disclosure

Text for consultation

19. Using the Residual mix

The electricity disclosure legislation in the Internal Energy Market Directive obliges electricity suppliers to disclose the origin of their supplied electricity.
For supply not covered by the cancellation of guarantees of origin, the use of the residual mix is advised by REDII art.19.8. The calculation of the residual mix, as advised in the Best Practice Recommendations of the RE-DISS projects, requires aggregating figures on power generation and GO handling across borders to an EU-wide perspective.
After the RE-DISS Projects I and II, the AIB took over the calculation of the Residual mix.

Needing every European country on board for a synchronised practice

In order to keep the disclosure mechanism reliable, in this age with high volumes of cross-border GO trade, it is important that every involved country uses the same method for calculating this residual mix.
The Annex 1.5 of the Internal Energy Market Directive 2019-944 stipulates that every Member State reassures the supervision of this disclosure obligation. There is however no legislative mechanism reassuring these Disclosure Competent Bodies (DCBs) to align their approach on the calculation of the residual mix.
Given problems that have arisen through current practice, the AIB is working to establish an updated residual mix calculation method that it hopes all designated competent bodies (DCBs) will voluntarily agree to adopt.
As there is no formal platform for gathering DCBs (yet), it is challenging to establish this, as the AIB can only facilitate and advise but not require the wide adoption of any new methodology.

The revised RM calculation methodology is available here: https://www.aib-net.org/facts/european-residual-mix.

Note: a webinar will be organised that sets out the Revised methodology for calculating the residual mix. Time and date are available and subscriptions are registered at the above link.

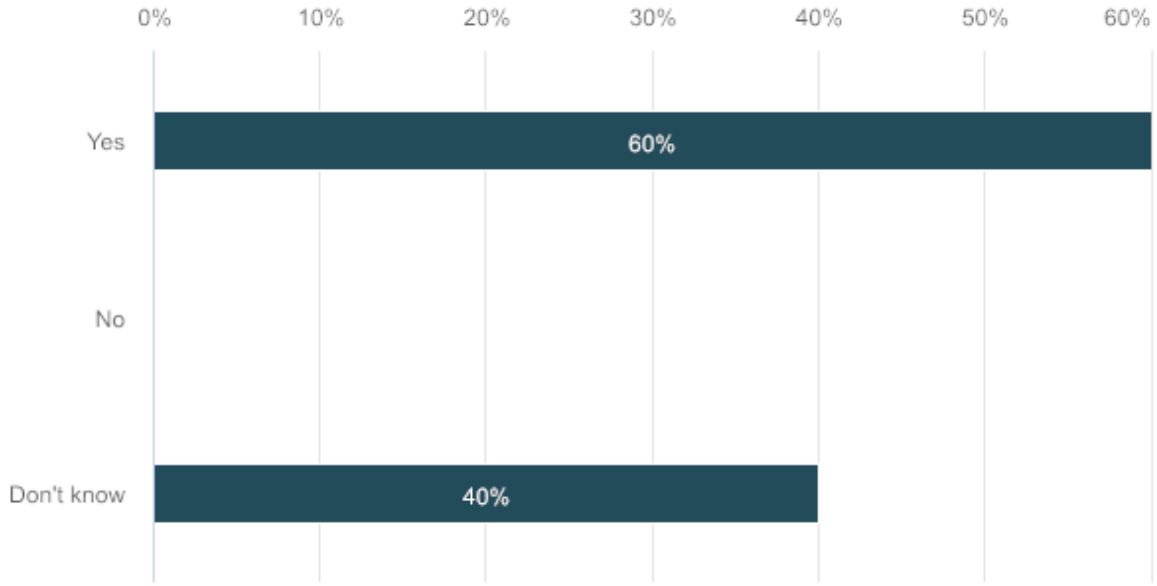
Beyond the current legislative framework

The RE-DIS Best Practice Recommendations start from the legislative framework in place at the time of the RE-DIS project, which ended in 2015. It hence proposes RM figures for individual countries, while sourcing data from a European Attribute Mix (EAM). While EAM calculations are done at pan-European level, there are still calculations for individual countries' residual mixes.
Another way forward could be to calculate the RM on an EU wide basis. This would mean that European consumers buy the European blend rather than the national blend. However, whether this is appropriate depends on the level of participation of all involved countries, which is hard to establish without a legislative framework establishing such.

Questions for consultation:

117. Do you have comments on the revised Residual Mix calculation methodology?

Number of respondents: 5



	n	Percent
Yes	3	60%
No	0	0%
Don't know	2	40%

118. If yes, what are your comments?

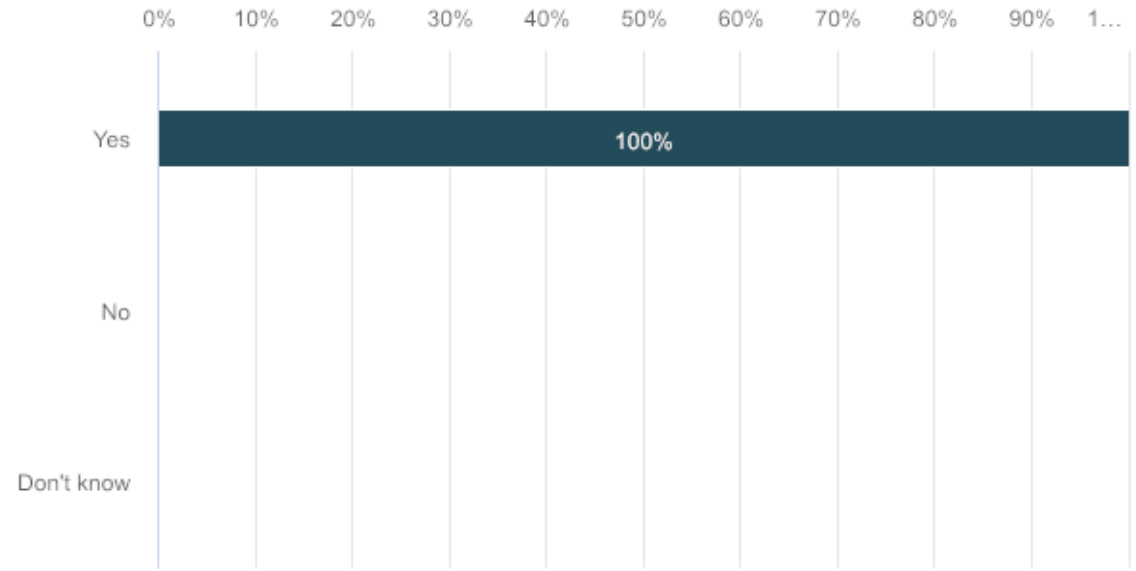
Number of respondents: 4

Responses
It is welcomed initiative to update the methodology, even though most simplistic would be the cancellation based.
Non cancelled GOs up to the máximum date (31st of March) must go to the national residual mix, including exported GOs.
NOT APPLICABLE TO GAS AND H2 GOS AS THERE IS NO DISCLUSURE LEGISLATION OR REPORTING OBLIGATION IN PLACE AS IS THE CASE IN ELECTRICITY. GAS INDUSTRY VIA ENTSOG/GIE PRIME MOVER PROCES HAS RECOMMENDED TO 32+33 MADRID FORUM THAT A DISCLOSURE OBLIGATION IS MIRRORED FROM ELECTRICITY MARKET DIRECTIVE TO FUTURE GAS LEGISLATION TAKING INTO ACCOUNT SPECIFICS OF GAS MARKETS.
Unfortunately, we do not have enough time to go into details here. On the general question: the regional scope of the RM should follow the regional scope of the majority of (net) trading of electricity (not only the spot market, but the contractual origin of all electricity consumed in a country). This will give consumers a meaningful picture of their electricity mix, if no explicit tracking is used. So far, electricity (net) trading usually remains on a national level (with a growing role for regional power pools). Thus, it still makes sense to keep the RM calculations on the national level. A future step should be to create regional RM calculations for those countries which are very strongly integrated in electricity trading.

BTW: The term “untracked consumption” might be misleading. It seems to be applied for the use of implicit tracking mechanisms. Under EU disclosure regulations, all electricity delivered to final consumers must be tracked.

119. Will your member state use the revised Residual Mix calculation methodology as from the 2020 calculations for 2019 origin disclosure?

Number of respondents: 2



	n	Percent
Yes	2	100%
No	0	0%
Don't know	0	0%

120. If no/don't know, why?

Number of respondents: 0

Responses

20.IT Infrastructure

Text for consultation

History of EECS Transfer mechanism

The Renewable Energy Certificate System, RECS, was the first international voluntary renewable energy certificate transfer mechanism. As a result of this initiative, the AIB and RECS International were founded in 2002.
The RECS transfer system went live soon after the first registries (the registry shared by the Nordic countries and the Dutch registry) emerged in 2001. In the beginning, transfer of GOs was supported by a data protocol to move XML files over secured emails from one registry to another. As the number of registries grew, peer-to-peer connections became too difficult and the first interconnector hub was introduced in 2007 by the AIB. Since its introduction, the hub has been rebuilt twice; first in 2011 and again in 2016. In its most recent iteration, more centralized elements have been added to the hub to overcome most evident problems of the strongly distributed infrastructure. Such central elements include a centralized account holder database, fraud prevention reports and collection of statistics (being developed at the time of writing this report).

IT infrastructure requirements have grown with the growth of the system

Despite many improvements and the long history, and partly because of it, the current infrastructure – consisting of a hub and separate registries - has weaknesses that need to be addressed to enable the market to develop to the next level. The reasons for the current architecture were partly the result of the organic development of the systems architecture, and partly due to member countries wishing to:

1) exercise direct control over the build, support and operation of their own registries, and encourage competition in software development at a national level;
2) keep investment in software development and operation within their own national boundaries;
3) integrate their systems directly with:
    a. data collection services - e.g. for meter reading and settlements; and
    b. renewable energy support and energy taxation systems;
4) set their own rules for operating an energy certificate system, in a way which offers national flexibility, coordinates with national support mechanisms and reflects national policy initiatives.

The question now is whether to stay with this architecture or to move to one which is partly or fully centralised.

The main challenges are:

1) Inflexibility and high cost of change occasioned by the need to coordinate across many national implementations
2) Harmonisation, due to national subsidiarity and misunderstandings
3) Intransparency on GO trade in the market and for system operators, due to difficulty in obtaining meaningful information about market activity
4) Complex technical dispute resolution
5) Adequacy of market supervision, including fraud detection
6) Barriers of entry due to needs for the specification of system requirements and tendering regulations,
7) Inhibition of free movement of GOs, due to the need for multinationals to register on each registry
8) Speed and integrity of transactions and unnecessary data duplication due to moving GOs from registry to Hub to registry

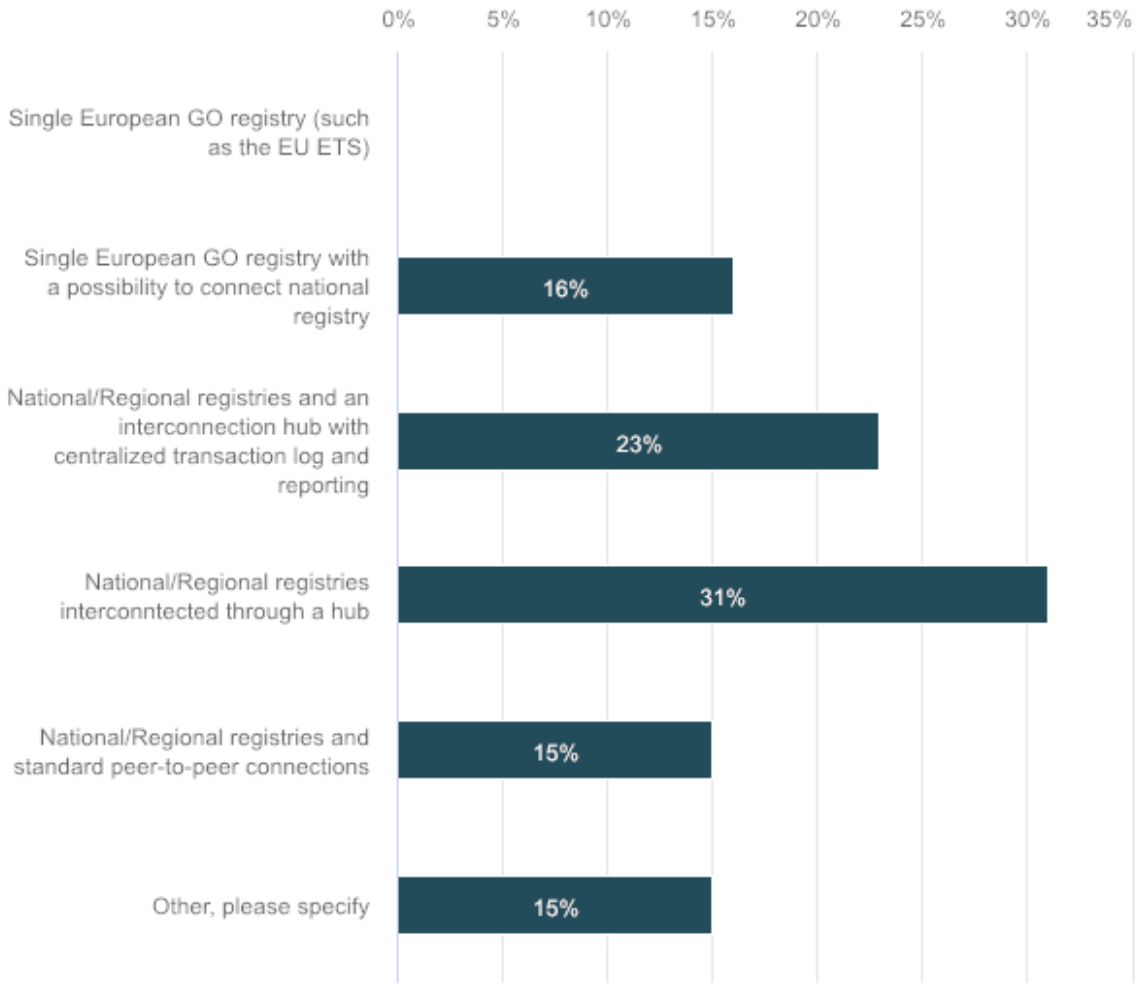
9) Maturation of the market requiring increasing technical support
10) Costs. The cost of developing and operating the European hub/registry network over a normal lifecycle suggests costs which are disproportionately high compared with those of a mature commodity market.
11) Identification of chain of custody of GOs in support of market supervision (including anti-fraud measures); energy carrier conversion; monitoring and controlling interplay between GOs (REDII art. 19) and sustainability certificates (REDII art. 25-31), and between GOs and EU-ETS; and improved market intelligence.

The timeframe for implementing any answer to this question should take these challenges into account.

Questions for consultation and answers

121. Making abstraction of the timeline of implementation, what would be your preferred level of registry centralisation? Please provide the reasoning behind your preference.

Number of respondents: 13



	n	Percent
Single European GO registry (such as the EU ETS)	0	0%
Single European GO registry with a possibility to connect national registry	2	15,39%
National/Regional registries and an interconnection hub with centralized transaction log and reporting	3	23,08%
National/Regional registries interconntected through a hub	4	30,77%
National/Regional registries and standard peer-to-peer connections	2	15,38%
Other, please specify	2	15,38%

Answers given into free text field

Option names	Text
Other, please specify	Generally, in favour of a harmonization of high level principles, but that does not necessarily mean a harmonization of registries. The current IT infrastructure seems to work fine, if changes are considered a cost-benefit analysis is required first.

122. Open comments

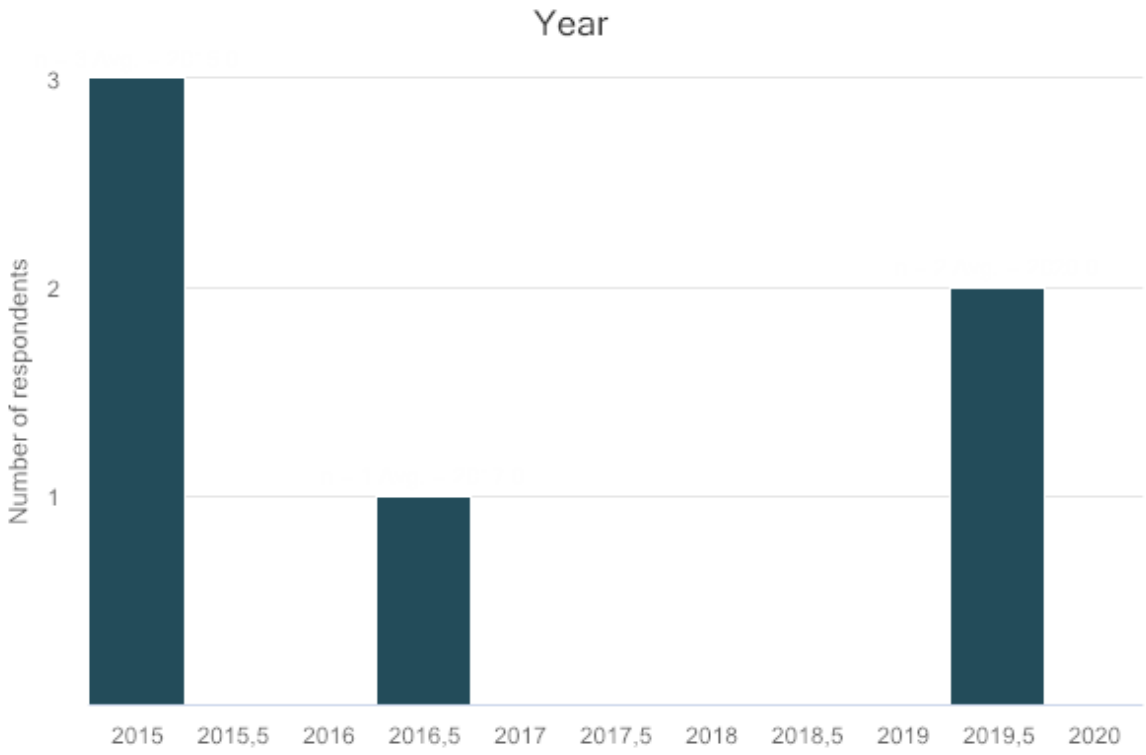
Number of respondents: 8

Responses
Single European GO registry is not valid as there is also level of national legislation involved. Might be option for future, but not without harmonized implementation. Also the mandate to upkeep single European GO registry demands different mandate to operate.
The answer to the question above is dependant on the level of harmonization and standardisation that is embedded at M.S. level
A single European registry seems politically difficult. At minimum, registries should be properly linked and feature for instance a centralized transaction log or hub. It is important to have fluidity in trade and transfers and to avoid transfer cost. Option e. seems not appropriate. National registries connected to a European hub may be good options (cf. c. and d.), but a European one as the backbone and able to be connected to national registries (i.e. option b.) may probably be the best trade-off.
SIngle European GO registry is not possible based on REDII. The Member States will have their own legislative basis for national registries e.g. supervising disclosure, administrative legislation, cost allocation, language, combining with support systems, aggregation model with subaccounts, number of power plants in the system (e.g. solar panels). Peer-to-peer connection are mandatory based on REDII, the Member States must transfer GOs electronically with each other. National registries connected via a hub is possible, as already today.
A national register duly coordinated with European registers could be enough to guarantee the European Go's will be exchangeable. A European Register could be also a solution. As mentioned in our answer to question 11, the functioning of national registries still has room for improvement. They must be digital, ideally generating the GO's monthly and automatically, without the necessity of sending requests.
- National/Regional registries and an interconnection hub with centralized transaction log and reporting This would be our first option. - National/Regional registries interconnected through a hub This would be our second option
The chosen last option is mandatory based on REDII, the Member States must transfer GOs electronically with each other.

Also the option "National/Regional registries interconntected through a hub" could be possible. Single European GO registry is not possible based on REDII. The Member States will have their own legislative basis for national registries e.g. supervising disclosure, administrative legislation, cost allocation, language, combining the support system, aggregation model with sub-accounts.
A single European GO registry creates the following risk - cost of maintenance and evolution high - complex governance in order to comply with different market needs (MS laws, specific customers needs) - centralization of ALL GO market data in one specific, single point of failure ==> high risk of cyberattacks and frauds National and regional registries are best suited to address the needs of their specific markets. However, the central hub should be enhanced with greater control on EU transactions control to prevent fraud and improve the security of the mechanism.

123. What is the last time the GO registry of your country was re-build?

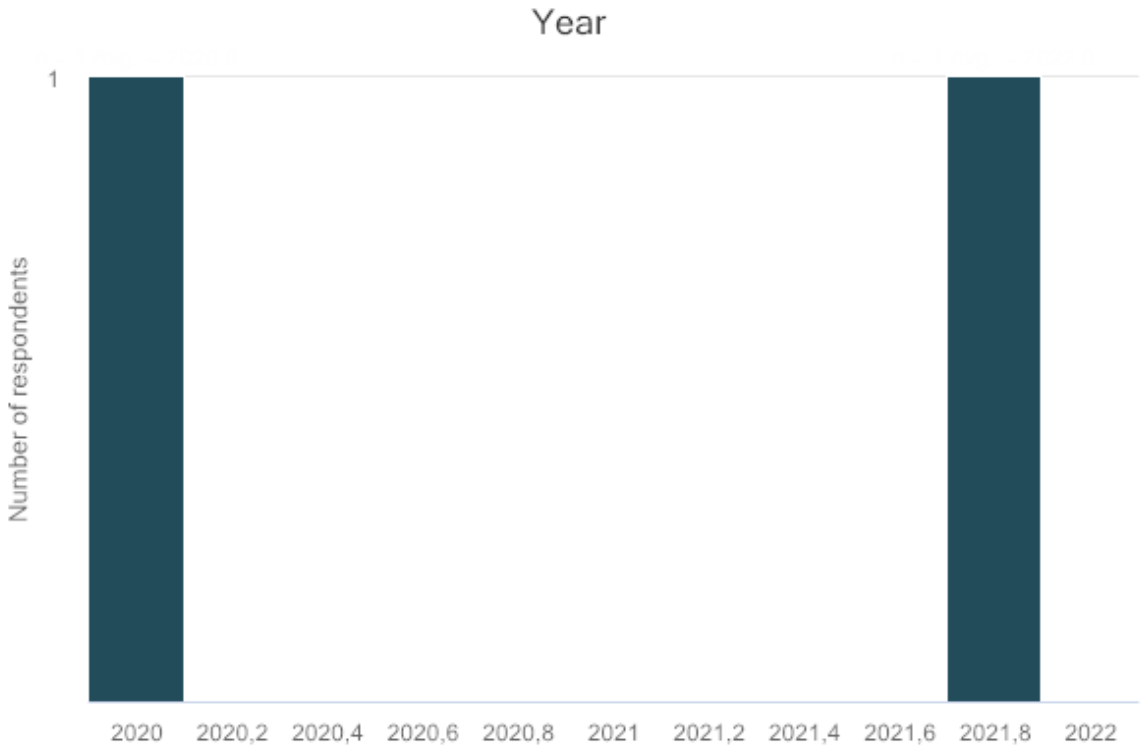
Number of respondents: 6



	Min value	Max value	Average	Median	Sum	Standard Deviation
Year	2015	2020	2017	2016	12102	2,45

124. If a change to the infrastructure would be set-up, and assuming all concerns were overcome, in what year would your country earliest be able to participate?

Number of respondents: 2



	Min value	Max value	Average	Median	Sum	Standard Deviation
Year	2020	2022	2021	2021	4042	1,41

125. What would be the essential concerns to be overcome for your country to participate in a centralised GO registry (registering ownership and transfer of GOs).

Number of respondents: 5

Responses
National legislation and cost structure. This initiative should come from voluntary part of market and independent actor from regulators and producers/suppliers.
Standardisation and harmonisation. Same GO type in each M.S. and the same processes in place at registry level and the same auditing being performed.
Not possible.
WE FAVOR LINKED NATIONAL REGISTRIES. NATIONAL REGISTRIES ARE CLOSER TO MARKET PRODUCERS, TRADERS AND USERS – HENCE TRANSPARANCY, INTEGRITY, COMPLIANCE AND INTEGRATION WITH NATIONAL SYSTEMS AND LEGISLATIONS IS ENSURED. A CENTRAL EUROPEAN REGISTRY MIGHT BE MORE COST EFFECTIVE IN SOME WAYS BUT MORE VULNERABLE TO FRAUD.
There are always country-specific aspects which could not be adequately covered by a centralized registry.

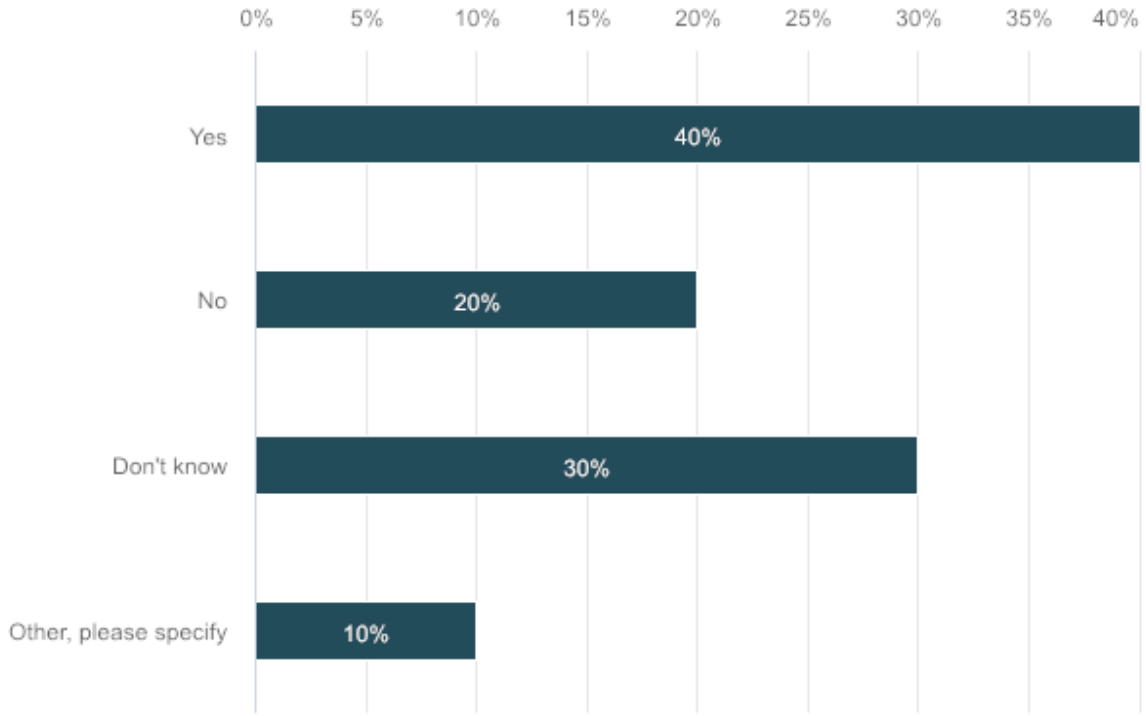
126. What would be the essential concerns to be overcome for your country to participate in a centralised production device registry?

Number of respondents: 4

Responses
Same as above. Even though we see some additional value on this registry it is is challenging to see who would bear the costs of maintaining this.
Standardisation and harmonisation
The structure of GO-system in the Member States: amount of power plants e.g. household solar panels, cost allocation, national legislation
The verification and auditing process, and eventual certification of the production device. Standards on a EU level would be required.

127. Should different energy carriers (power, gas, heating/cooling, and hydrogen) have separate registries/hubs?

Number of respondents: 10



	n	Percent
Yes	4	40%
No	2	20%
Don't know	3	30%
Other, please specify	1	10%

Answers given into free text field

Option names	Text
Other, please specify	PROBABLY

128. Please provide your reasoning

Number of respondents: 6

Responses
Yes, as there is different national regulators governing different energy sources
Due to the different production processes, separate energy grids it seems logical that each carrier would be kept separate.
Yes, there should be separated registries for electricity, gas (i.e. various forms of methane) and hydrogen, as they will be traded on separated markets (i.e. out of their green or decarbonized value) and flow on different/separated networks (except for the – marginal – case of H2 blending to the gas network). As an alternative option, one common registry with separated chapters could be considered in order to minimize costs and boost efficiency. Moreover, GoOs for energy carriers other than power and gas are likely to be quite expensive to certify and manage. A separate registry for at least power and gas should be ensured, to avoid any cross-subsidy risk and any delay due to a more difficult implementation of the non-power non-gas GoOs.
BDEW is currently in discussion with the German Ministry of Economic Affairs and Energy about the energy carrier conversion and the correlation with the GO-systems.
It makes sense to have separate registries/hubs for every energy carrier as these address different group of interests (i.e. Electricity distributor, gas distributor, district heating network operators)
Specific needs for each market should be addressed by the most relevant entity in any case.

129. What are the drivers for your preference? What are your concerns on this subject?

Number of respondents: 4

Responses
Please see above. Centralization requires higher level evaluation and successful harmonization between all Member States. Also the cost side needs to be evaluated as voluntary registrants fund the system in various member states.
It would appear more efficient to keep separate and have inter-operability processes in place where one carrier is converted to another
see above
See answer above.

130. Do you have specific suggestions in order to overcome any challenges mentioned here?

Number of respondents: 2

Responses
As a general remark here, we would like to ask a theoretical question regarding the general security of the IT resources involved in the GO business, most specifically the national registrars of the different Domains We would like to stress that we are extremely pleased by he operability and the reliability of all registrars that we are using and have never had any worries or problems. Still, with the increase of the volumes traded and the number of market participants, the losses from any potential failure of a registrar, for any reason it may be, are also increasing. Although we are completely sure that the registrars are taking this into consideration, it would probably be

good to initiate a broader discussion on the measures that are undertaken by registrars to ensure the safety and the integrity of the system and how the user can assist there.
Development of verification standards on a European level for auditing production devices. Compliance to these standards would be easier for production plants that own facilities in several Member States than complying with the standards from each Member State.

21. Compliance and alignment of designated competent bodies for issuance of GOs

Text for consultation

The credibility of a GO system in a country also implies credibility of the GOs imported into that country. A country can scrutinise a foreign GO system from which it allows imports. However, when there are many countries from which imports are allowed, such scrutiny becomes a significant burden. This burden is even greater if scrutiny has to be repeated whenever a country updates its systems. Given that every country will have to undertake its own scrutiny, this multiplies the administrative cost for ensuring reliability across all European countries and calls for burden-sharing of such scrutiny activities. On the other hand, countries may have differences in interpretation and different implicit or explicit criteria on reliability.
A Member State has to reassure its consumers regarding the quality of the imported GOs.

Lessons from practice

AIB

Within the AIB, a 'member audit' system has been implemented to ensure that quality is maintained in practice, and this audit is repeated every 3-years. This results in an observation report. Such report facilitates two judgements:

- Compliance with the EECS Rules, the standard to which all AIB members have committed; and
- Individual considerations per country (or region) concerning specific topics, based on the information in the neutral observations.

An AIB audit is performed by a two-person team, consisting of an AIB member and a professional reviewer. The AIB has established a Professional Reviewer Group (PRG), providing a pool of the professional reviewers who take the lead on every audit. In the PRG, the reviewers practice peer-to-peer learning and share knowledge and experience in order to ensure a common approach to, and quality of, audits. The PRG has created systemized processes for conducting member audits, including an audit checklist and a list of good practices. A Member audit is always set up in a constructive atmosphere, as a mutual learning experience for both reviewee and reviewer.

Lessons from this experience are positive. Even with an extensive set of agreements amongst AIB members, almost every member audit brings forward some issues that can be improved as well as new best practices to spread accorss members. In our experience, issuing bodies find this proves to be useful as it enables them to improve the quality of their operations. From the AIB's perspective, many lessons are learned about on-site practices from member audits. Regularly member audit discussions result in further refinement of the EECS Rules and practices in the respective country as well as Europe-wide.

This also shows the value of having a practical framework of operation in addition to EN16325: an agreement between issuing bodies which is flexibly adaptable to changed circumstances ensures that both the formal standard and the means of its application are enforced, identifying any issues for resolution and improvement, and so promotes the efficient operation of the GO system across Europe.

Further challenges

1. Many issues can be captured in such member audits, but some, however, are not captured, as the audit of an issuing body is designed to be non-disruptive. In view of the volumes concerned, inspection is by sampling, so not all instances of operational activity can be reviewed. Inevitably, this means that some areas of non-compliance may not be detected.
2. When a breach in the agreement between issuing bodies is noted, it is not always easy for a membership-based association like the AIB to take action. Member States have the authority (and responsibility) to set up their own GO schemes, but not to make decisions on those of others -even when they are heavily impacted by them and believe that they could cause reputational damage to the GO system.

CertifHy

CertifHy has solved the compliance issue in another way: a central system was designed, with the CertifHy scheme being centrally managed under a single operator, applicable over many countries. This way, the need for a compliance check by other issuing bodies is redundant, although it does strengthen the need for a rigorous audit of the system operator. Where CertifHy connects to other schemes, this question re-appears on the table.

Ergar

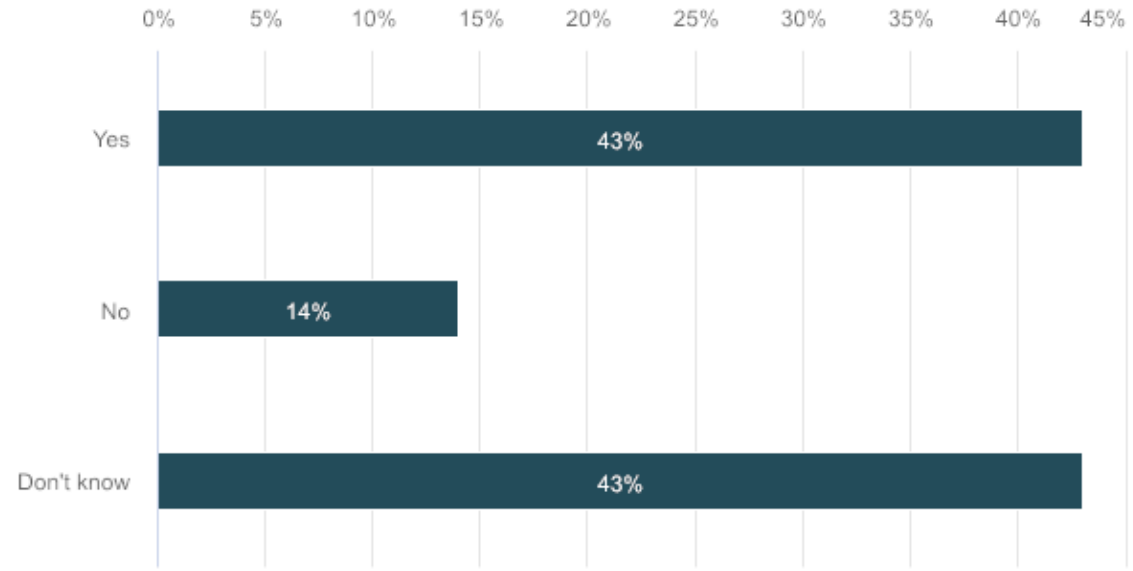
All registries must follow the rules and regulations of the scheme, the set quality requirements and provide for harmonisation of operations.

The registries are admitted to the scheme upon successful initial audit to be carried out by independent auditors following the instructions by ERGaR and the elaborated audit checklists. During operation, yearly production device audits are performed by independent auditors. The complex system of internal and external audits, inspections, risk assessment and sanctions secures the quality of certificates forwarded by every registry.
There is no ongoing cross-registry control system (yet).

Questions for consultation and answers

131. Do you value the centralized quality assurance system of the AIB that regularly audits the practices of the Issuing Bodies and their Domain Protocols compared to the EECS Rules?

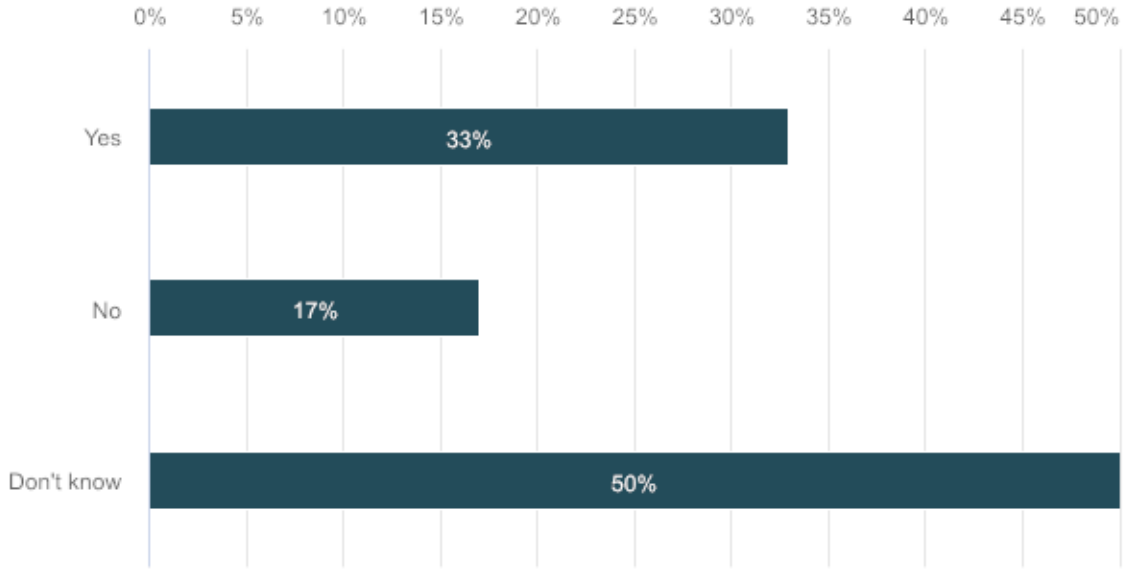
Number of respondents: 7



	n	Percent
Yes	3	42,86%
No	1	14,28%
Don't know	3	42,86%

132. Do you perceive it to be more efficient than national peer-to-peer checks of the GO Domains from which imports occur?

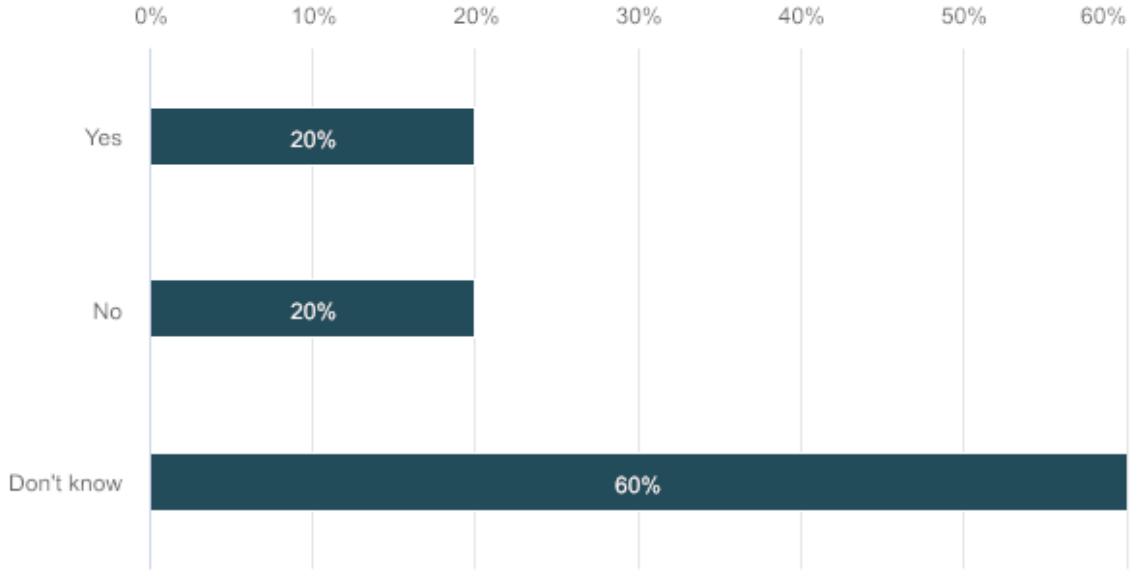
Number of respondents: 6



	n	Percent
Yes	2	33,33%
No	1	16,67%
Don't know	3	50%

133. Does that relieve your own organisation from doing a lot of work?

Number of respondents: 5

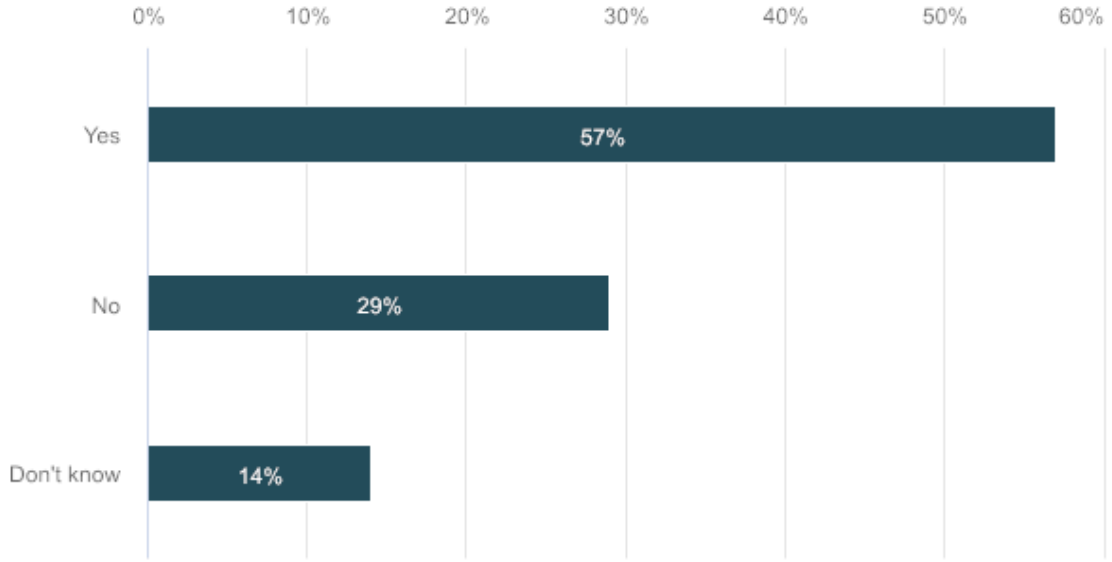


	n	Percent
Yes	1	20%

No	1	20%
Don't know	3	60%

134. Or would you simply depend on the reliability of another country's GOs on the basis of them being legal documents?

Number of respondents: 7



	n	Percent
Yes	4	57,14%
No	2	28,57%
Don't know	1	14,29%

135. Open comments

Number of respondents: 7

Responses
Yes, in case implementation is successful. The value of current EECS standard has proven this minimum level of trust and from our view this is now the most critical task of revised EN 16325 standard. The possibility to Member States apply additional level of standardization from market participant point of view does not make sense The whole idea of 2 applicable standards is unreasonable as this would most likely lead to separation of market and more peer to peer (MS to MS) type of transfer. This would obviously have impact on overall system as current hub set-up has enabled efficient transfer of Guarantees of Origin, both in terms of financial costs , trust and speed. We do not support the claim for having a practical standard in addition to EN16325 as this would lead to discriminatory practices based on the Member State implementation and focus from harmonization is having less value.
There is value in the centralized quality assurance system of the AIB but at the moment not having all registries plugged into a single infrastructure creates the double-counting and

inaccurate residual mix issues, so focusing instead on advising registry operators about potentially dubious GoOs or procedural issues elsewhere would be a progress. With regards to the peer-to-peer checks: both are needed as the ability to refuse a GoO on meaningful ground is vested in the national authority by the regulation.
The Member States will make their own decisions how they accept the GOs from the other Member States.
No assessment possible. Please find the feedback of the German issuing body (HKNR respectively the German Environment Agency UBA).
NO COMMENTS. THERES IS NO AIB EXPERIENCE ON GAS GOS AND ISSUING OF GAS GOS.
We already do it with our bilateral cooperation agreements with Austria, UK and Denmark.
Both AIB and local controls are necessary

22.Synchronising discussion fora for gas GO issuing bodies

Text for consultation

Synchronising gas GO issuing bodies fora:
For certification and cross-border trade of certificates and GOs in the electricity sector, there has been for many years a common discussion forum within the AIB regarding which currently gathers together 27 officially designated competent bodies for electricity of 24 EU Member States plus some applicants and observer countries. The annual Open Markets Committee, which AIB and RECS International co-organise annually, also provides a forum for market parties and issuing bodies to share concerns and views.

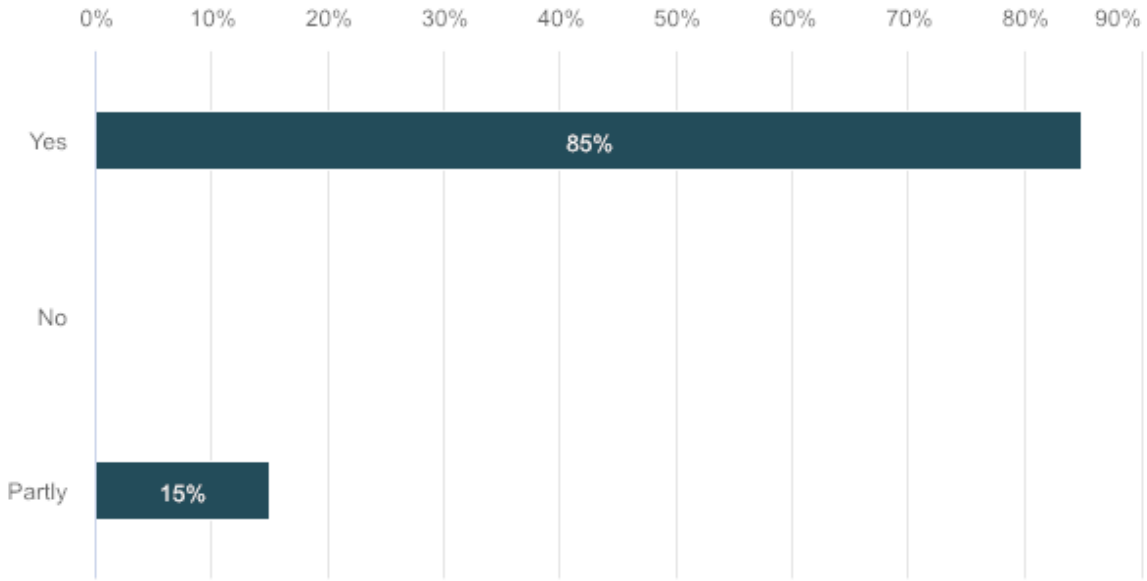
For gas certificate cross-border trade, however, discussion fora are not yet synchronised. Certification bodies for gas from RES are using different methods and standards in their certification systems, and not all of these result in the issuing of guarantees of origin. Some officially designated bodies follow the EECS standard, which consists of a generic energy certificate system with schemes that arrange for energy carrier-specific data, others have carried forward a separate scheme within ERGaR. The hydrogen sector has developed its fundamentals for a GO system under the two FCHJU funded CertifHy projects that Hinicio coordinates.
REDII has for the first time triggered a real need for alignment and provisions for efficient cross-border trade.

Facilitating a joint framework for issuing bodies of GOs of different energy carriers:
Energy will be transferred from one energy carrier to another - gas will be used to fuel electricity production, electricity will be used to produce hydrogen and so on. This calls for the design of a European GO system with a common basis for all GOs. When the GOs for different energy carriers are developed in the same design structure and format, the energy carrier conversion can be accompanied by the conversion of GOs. GOs for a newly generated energy carrier will use the data on the GOs that are cancelled to prove the origin of the converted energy carrier (see sections 7 and 24 on conversion rules and conversion admin).

Question for consultation and answers

136. Do you endorse this text?

Number of respondents: 13



	n	Percent
Yes	11	84,62%
No	0	0%
Partly	2	15,38%

137. Open comments

Number of respondents: 4

Responses
Do you endorse this text? Which text?
No assessment possible. Please find the feedback of the German issuing body (HKNR respectively the German Environment Agency UBA).
We would like to clarify some conclusions and statements made in the paper. Please see our questions and comments in the file attached.
Standardisation of processes like suggested above. Education of the political sphere about GOs. Converging general principles behind the the GOs existence itself will help improving the system as more adapted to the needs.

138. What do you see as necessary measures for synchronising the existing discussion fora for gas issuing bodies?

Number of respondents: 3

Responses
We would strongly encourage a more close cooperation between the respective competent bodies, as the evolution of the GO electricity system can be used as a blueprint for the development of the biogas GOs
THAT ALL GAS GO REGISTRIES AND ISSUING BODIES ARE INVOLVED. ERGAR REPRESENTS REGISTRIES ISSUING GOS FOR MORE THAN 90% OF RENEWABLE GAS INJECTED TO THE GAS GRID IN EUROPE.
- Effective communication between gas issuing bodies. - Coordination of joint efforts to reach consensus regarding discussion for a coordination and development of a common design structure and format for the easy transfer and conversion of GO every time an energy conversion process takes place.

23.Challenges facing issuing bodies in making collective decisions

Text for consultation

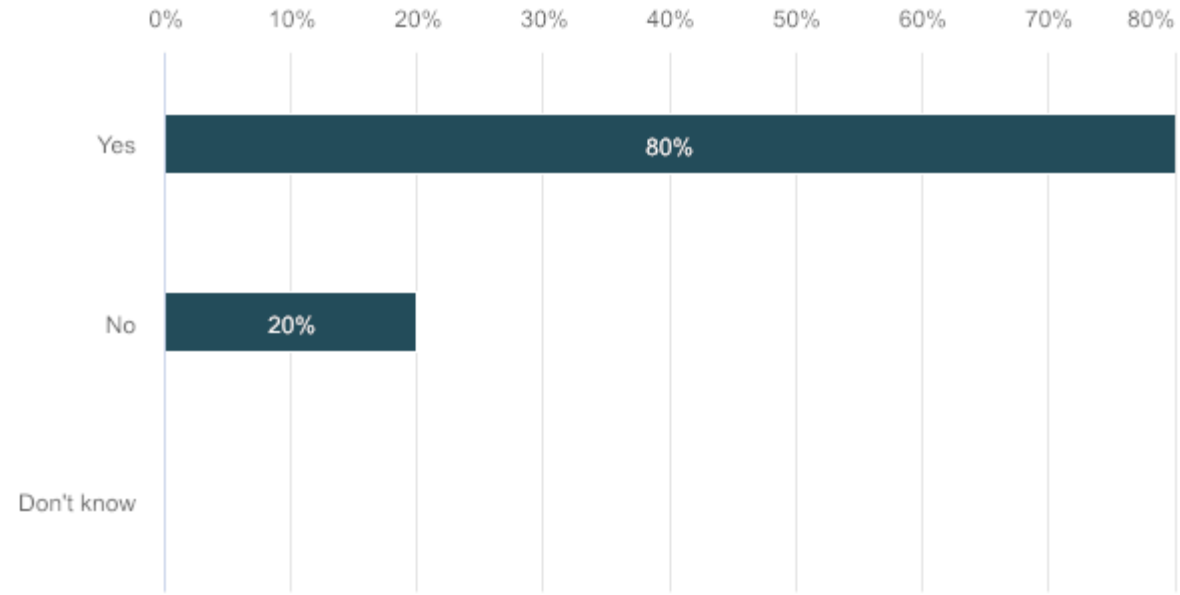
The experience of AIB and ERGaR shows that organisations performing the same functions in their home countries can cooperate effectively, independent of their legal status (government agency, TSO, DSO, company, association, etc.).
Also, high value is placed on collaboration between issuing bodies, their harmonised GO handling practices, and the constant updating of the jointly agreed ruleset, flexibly responding to changing circumstances.

AIB now facilitates a market that transfers more than 600 million GOs across national borders in Europe, through an association of TSOs, market operators, energy agencies, environmental agencies, regulators, public companies, … who all have a similar mandate.
Even if Issuing bodies in different countries are assigned exactly the same task, the way such a task is addressed may differ depending on the type of organisation that is mandated to execute it.
In small, immature organisations, this often enriches the value of the jointly created content. Growing big as an association has many advantages of scale. When the highest decision-making body is an organism of >27 members, however, this sometimes challenges the ability of the AIB to be suitably agile. Consisting of many decision-making parties, in addition to the fact that each such party is subject to a different framework of rules, it can be time-consuming to align on ways forward for specific issues. Further, some issuing bodies have time constraints imposed upon them for consultations and approval by ministries etc., which impact the speed at which the association can move, as well as limiting their flexibility. This calls for continuous organisational and process realignment to react to changing market conditions.

Questions for consultation and answers

139. Do you endorse this observation?

Number of respondents: 5



	n	Percent
Yes	4	80%
No	1	20%
Don't know	0	0%

140. If yes, what options do you see for overcoming the challenges mentionedit? What would you recommend?

Number of respondents: 4

Responses
Obviously most straight forward solution is to add Guarantees of Origin related issues to EU body with mandate such as ACER.
No assessment possible. Please find the feedback of the German issuing body (HKNR respectively the German Environment Agency UBA).
WE ENDORSE THIS OBSERVATION AND ARE CONCERNED IF AN ORGANISATION HAVING SPENT 20 YEARS FACILITATING ELECTRICITY GOS AMONGST 27 MEMBER COUNTRIES CAN TRULY ACCOMMODATE THE SPECIFICS AND NEEDS FOR ISSUING AND CANCELLING GAS GOS AND INTEGRATE IT WITH GAS MARKETS AND OTHER REGULATION AND SYSTEMS RELATED TO RENEWABLE GAS.
It is certainly a challenge to reach agreement with 27 Member States. Possible ways to overcome these issues: 1. Group together members by region and manage regional decisions rather than individual (by Member) ones. 2. Prioritize decisions depending on urgency of topics.

24. Sector coupling & Energy Carrier Conversion => supervision of the issuing process and data management between different organisations

Text for consultation

Challenge

Perceived administrative complexity of data handling and checking the monthly amount of GOs cancelled of the input energy carrier.

Affected areas of operation

Issuing, cancellation, synchronising operations of registry operators / Issuing Bodies for various energy carriers.

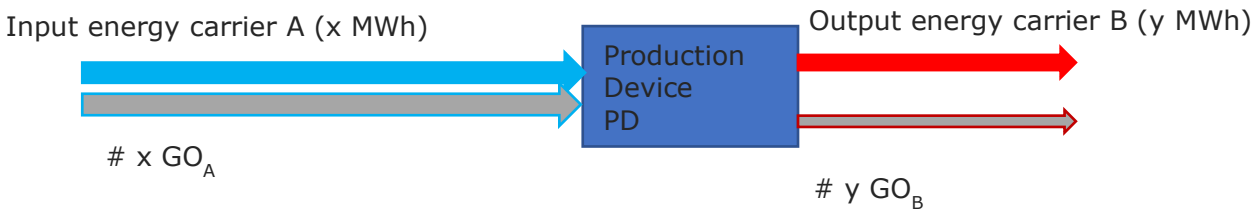
Potential directions for solving the matter

Starting from the proposed rules for the administration of energy carrier conversion under topic 7, the following steps of the GO issuing process are affected when the origin of energy conversion is to be proven using cancelled GOs:

1) The process of GO application: the producer applies for GOs to an issuing body.
2) The data input in the registry of the issuing body (or its agent)
3) The conditions for issuing GOs in the case of conversion (of which the origin is proven with cancelled GOs)
4) The data content on the GOs to be issued in the case of conversion (of which the origin is proven with cancelled GOs)
5) The amount of GOs to be issued containing a specific set of data

Process steps for GO issuing in the case of conversion of which the origin is proven with cancelled GOs:

1) Applying for GOs:
    a. Issuing body /Production registrar handles the application for GOs for fossil production device PD like a normal GO application. Including Inspection of meters, energy flow diagram, ...
    b. Additional in the application: producer's commitment to submit monthly GOs: e.g. by a statement to be signed (issuing body could foresee a template or this).
2) Data Input in the registry of the energy carrier B Issuing Body (or its agent):



    a. The following measurement data is registered in the registry of the issuing body (or its agent):
        i. Measured input: x MWh
        ii. Measured net output y MWh (= that gives entitlement to GOs from energy carrier B on condition #x GOs for energy carrier A are submitted).
    b. In order to enable GO issuing, certain checks must take place:
        i. Have sufficient amount of GOs been cancelled for the input energy carrier a?

This check seems easy, but in case of large numbers of conversion devices, the issuing body may meet managerial constraints:

1. Does he have access to the registry where the x GOs of energy carrier A are cancelled?
2. Can he see that these x GOs have been effectively cancelled?
3. Is it confirmed to him that these x GOs of energy carrier A are cancelled for the purpose of the energy conversion in this specific production device PD and for this specific period of production of energy carrier B?

ii. Do the cancelled GOs meet the requirements?

1. Check Parameters of alpha: Energy carrier == A
2. Production period still valid
3. Energy source criteria,
4. ….

In case the GOs of both energy carriers A and B are managed in the same registry, these checks can easily be automated in the software of the registry:

iii. Software rule: "Above measured input can lead to issuing of b GOs for energy carrier B, **if** the producer submits x GOs of type A and characteristics alfa, then y GOs may be awarded for energy carrier B with characteristics beta."

In some countries, for historical reasons, it is not self-evident to organise the issuing of GOs in a single registry per country. In that case, procedures need to be set up for communication between the different registries that hold the GOs for energy carriers A and B respectively. Depending on the allocation of roles to organisations within a country, the organisation of this communication might be different, hence this document does not elaborate in detail on the options on this subject. It should be discussed at a national level whether it is up to the producer to prove the above checks can be confirmed, or up to the different issuing bodies involved for A and B to design a framework. In any case, the system must be designed in such a way that no double counting can occur, and the issuing body for energy carrier B needs to be sure that this is the case.

3) Conditions for actual issuing of GOs of energy carrier B:
   a. Production registrar of energy carrier B has approved an application from production plant PD
   b. Link to measured production y of energy carrier B based on a registered production installation fed with energy carrier A

4) What data to mention on the GO of energy carrier B:
   See Conversion rules under section 7 Energy Carrier conversion: Rules for GO issuing related to energy carrier conversion.
5) GOs of energy carrier A from different installations/production periods => how many GOs of energy carrier B with each data set?

   x> y => Pro rata allocation and completion
   x1 / x = y1 / y GOs with the characteristics of the submitted x1 GOs
   x2 / x = y2 / y GOs with the characteristics of the submitted x2 GOs
   xn / x = yn / y GOs with the characteristics of the submitted xN GOs

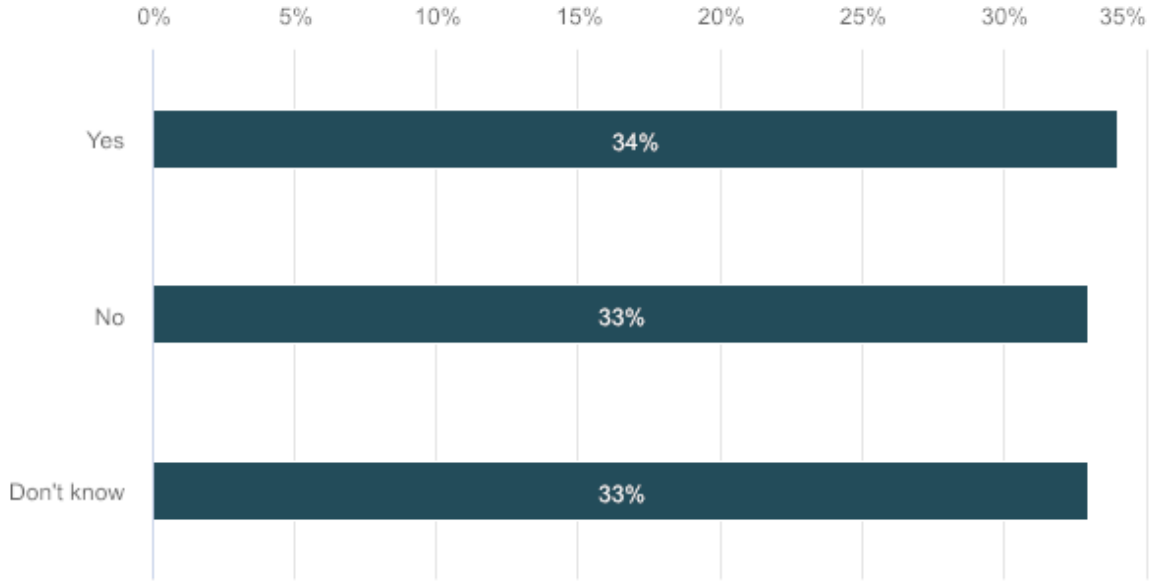
   With
   x = measured input, y = measured net output that is entitled to GOs, and
   x = (x1 + x2 + ... + xn)
   y = (y1 + y2 + ... + yn)

x <y => also pro rata

Questions for consultation and answers

141. Did your country already consider the above challenge?

Number of respondents: 3



	n	Percent
Yes	1	33,34%
No	1	33,33%
Don't know	1	33,33%

142. Would the approach described here, work for your country?

Number of respondents: 1

Responses
It would only work once the legal framework has been defined and put into practice.

143. What challenges do you see in the data management within a Member State, which are not addressed here?

Number of respondents: 2

Responses
BDEW is currently in discussion with the German Ministry of Economic Affairs and Energy about the energy carrier conversion and the correlation with the GO-systems.
- Effective communication between governmental agencies and/or issuing bodies responsible for different types of GO, depending on the energy carrier. - Effective data transfer for issuing and cancelling of GO from different energy carriers.

4. Other

25.Other challenges that exist in the management of the GO systems

Feedback from consultation

144. Other: Please specify here if you would like to add specific challenges of the GO system which were missing from the list

Number of respondents: 1

Responses
The coexistence of different GOs for different technologies should be examinated in light of the mutual impacts between them. The existance of GOs facilitating low costs renewable energy procurement strategies (e,g, using GOs from legacy investments or massively subsidized installations) has an impact on the procurement strategies based on non-supported or developing technologies