



Agentschap NL
Ministerie van Volkshuisvesting,
Ruimtelijke Ordening en Milieubeheer

VERIFICATION PROTOCOL FOR THE DOUBLE COUNTING OF BETTER BIOFUELS

Version 4.0 - July 2012 (English)

Report GAVE-12-02

CONTENTS

	Page.
CONTENTS	2
A. INTRODUCTION AND GENERAL REQUIREMENTS	3
B. VERIFICATION STRATEGY	7
C. PHASE 1	9
C1. Pre-verification	9
C2. Phase 1 visit	10
C3. Risk analysis	10
C4. Verification plan	11
C5. Phase 1 report	12
D. PHASE 2	13
D1. Verification programme	13
D2. Sampling	13
D3. Reporting and issuing of statement	13
E. COMPETENCE OF AUDITORS	17
F. GLOSSARY	18
G. EXAMPLE OF STATEMENT	21
H. EXAMPLE OF A COMPLETED ANNEX IV OF THE DUTCH RENEWABLE ENERGY FOR TRANSPORT Order	22

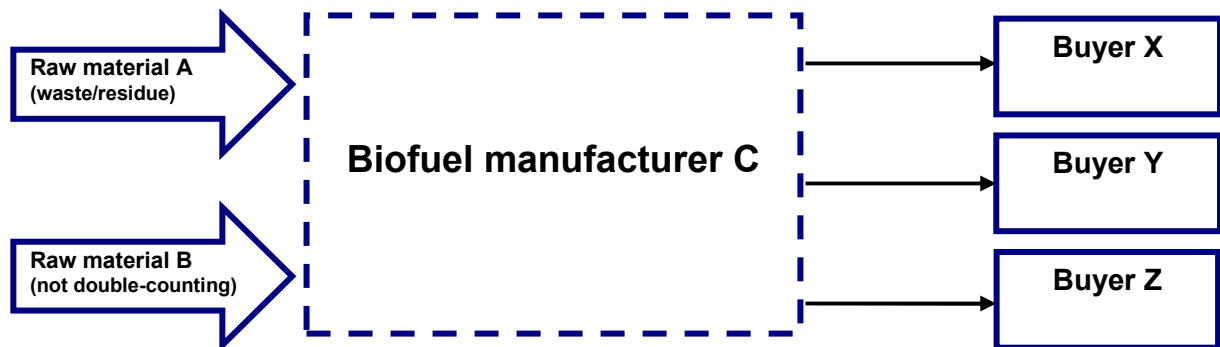
A. INTRODUCTION AND GENERAL REQUIREMENTS

1. The objective of this protocol is to establish basic rules, procedures and guidelines for accredited inspection bodies (as per ISO 17020, Type A) that carry out verification under Article 17 of the Dutch Order Renewable Energy in Transport (hereinafter: order). The relevant inspection body must comply with what is described in this protocol and take the requirements of the order into account. The management of this protocol lies with NL Agency. The latest version of the protocol can be found at www.agentschapnl.nl/GAVE.
2. Verification of data and information that the client or its customers, pursuant to Article 17 of the order, plans to submit to the Dutch Emission Authority (Nea), is designed to provide a level of reasonable assurance.
3. Basing the verification on a reasonable level of assurance requires that the risks involved in the verification process are reduced to an acceptably low level, such that a positive form of verification certification is possible. The inspection body uses an acceptable materiality limit in the design of the verification plan, which is aimed at discovering the quantitative and qualitative abnormalities that are of material importance.
4. Aspects of material importance are relevant to the reportable quantities of biofuel (including the lower heating value and energy content), the detection of production from double-counting raw materials (raw materials from which the biofuel is derived, the composition of the raw materials, and alternative applications) and the sources of the raw materials.
5. For the lower heating value and energy content (asked for in Annex IV A.2 of the order), the lower heating value can be taken from Annex III of the Renewable Energy Directive. For other biofuels this value shall be determined by an accredited laboratory in accordance with ISO/IEC 17025.
6. Quantities of delivered biofuels and raw materials shall be determined using instruments that satisfy the requirements of the Dutch Metrology Act.
7. In the remainder of this document waste, residues and lignocellulosic material that have no alternative use (alternative use as defined in the order) will be called "double-counting raw materials". Regarding the detection of the use of double counting raw materials as feedstock for the production of biofuel, the verification looks in the first instance at the accuracy and completeness of procurement

documents, contracts, and delivery documents (shipping documents) for the raw materials. Thereby all relevant legal requirements are observed. In the case of discrepancies in these documents, the client must demonstrate in another way that use is made of these double-counting raw materials.

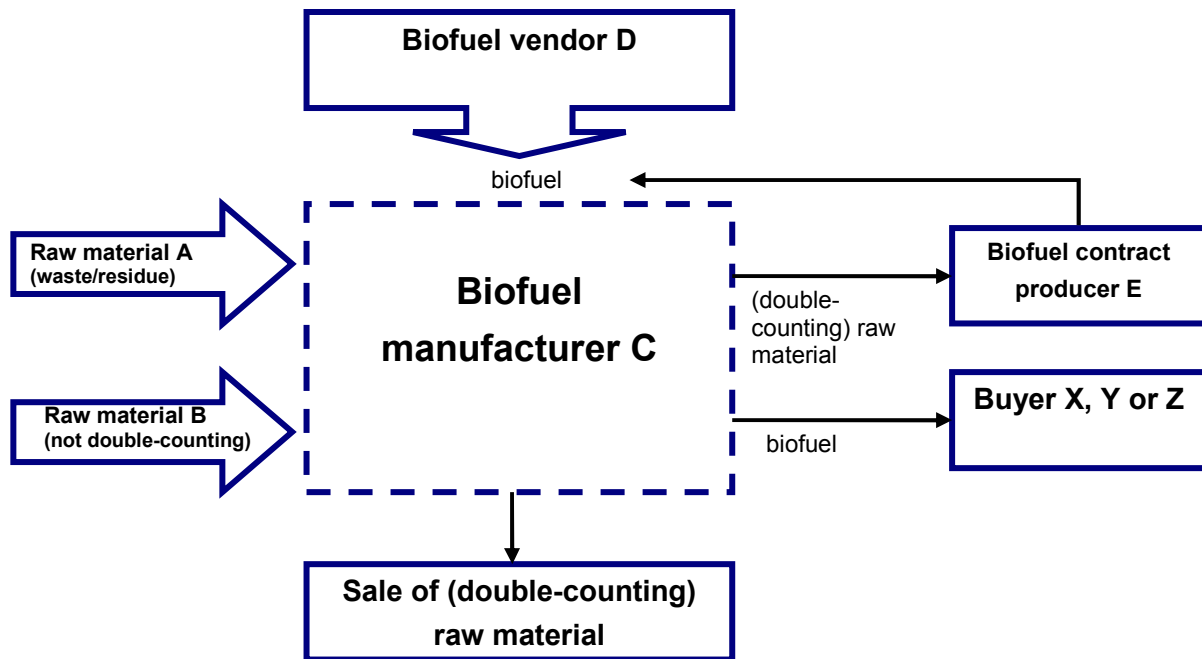
When analysis results are used as evidence of the use of double-counting raw materials and/or the composition of the raw materials, then those analyses must be performed by an accredited laboratory in accordance with ISO/IEC 17025.

8. The verification always relates to a quantity of biofuel (litres of liquid at 15°C or kg of gas) produced in the past and delivered within a set time period. The verification statement therefore also relates to this specific scope.
9. The client requiring verification can be a biofuel manufacturer (C) or a customer of a biofuel producer (X, Y, Z). See the diagram below.



10. If the verification client is a buyer (X, Y or Z), the scope of the verification relates to an amount of biofuel (litres of liquid at 15°C or kg of gas) delivered by manufacturer C to the client in a set time period. The verification protocol and the verification statement are not meant to demonstrate that requirements on mass balance are met by buyer (X, Y or Z) or by an actor further down the chain of supply. Verification statements may therefore only be issued following the scope of the verification as given in article 10 and in articles 11 and 13. Verification statements may be split further down the chain of supply, see article 44.
11. If the verification client is a biofuel manufacturer (C), then the scope of the verification relates to an amount of biofuel (litres of liquid at 15°C or kg of gas) delivered by the producer C to a customer (X, Y or Z) in a set time period. A separate statement must be issued for each buyer.
12. In the event that manufacturer C processes both double-counting raw materials (A) and non-double-counting raw materials (B) into biofuel, then the producer must demonstrate at macro level (by means of mass balances) that sufficient double-

counting raw material was used to cover the amount of biofuel for which a statement was requested. It should explicitly take into account the amount of double-counting raw material (re-)sold by manufacturer C to third parties, the possible purchase of biofuel, and any contract production (see diagram below).



13. The quantity of biofuel purchased from vendor D is beyond the scope of the verification, unless:

- the purchased biofuel is converted into another biofuel by manufacturer C (for instance: manufacturer C converts – using fossil isobutene – ethanol into ETBE or biomethanol into bio-MTBE); and
- the biofuel supplied by vendor D is produced from double counting feedstock and vendor D can submit a verification statement for this biofuel that is issued by an accredited inspection agency, in accordance with the requirements of the order.

14. In contract production, a verification investigation must also be conducted at the manufacturing site(s) of the contract manufacturer (see also Article 16). It must be shown that:

- The contract manufacturer is technically able to process the double-counting raw materials supplied into the intended quantities of biofuels;

- Sufficient double-counting raw materials have been delivered to contract manufacturer E by manufacturer C to account for the contracted production quantities of biofuel produced. This calculation takes account of the production capacity and confirmed production efficiencies at contract manufacturer E;
- The quantities of double-counting raw materials delivered to contract manufacturer E are actually used for the production of the intended quantities of biofuel.

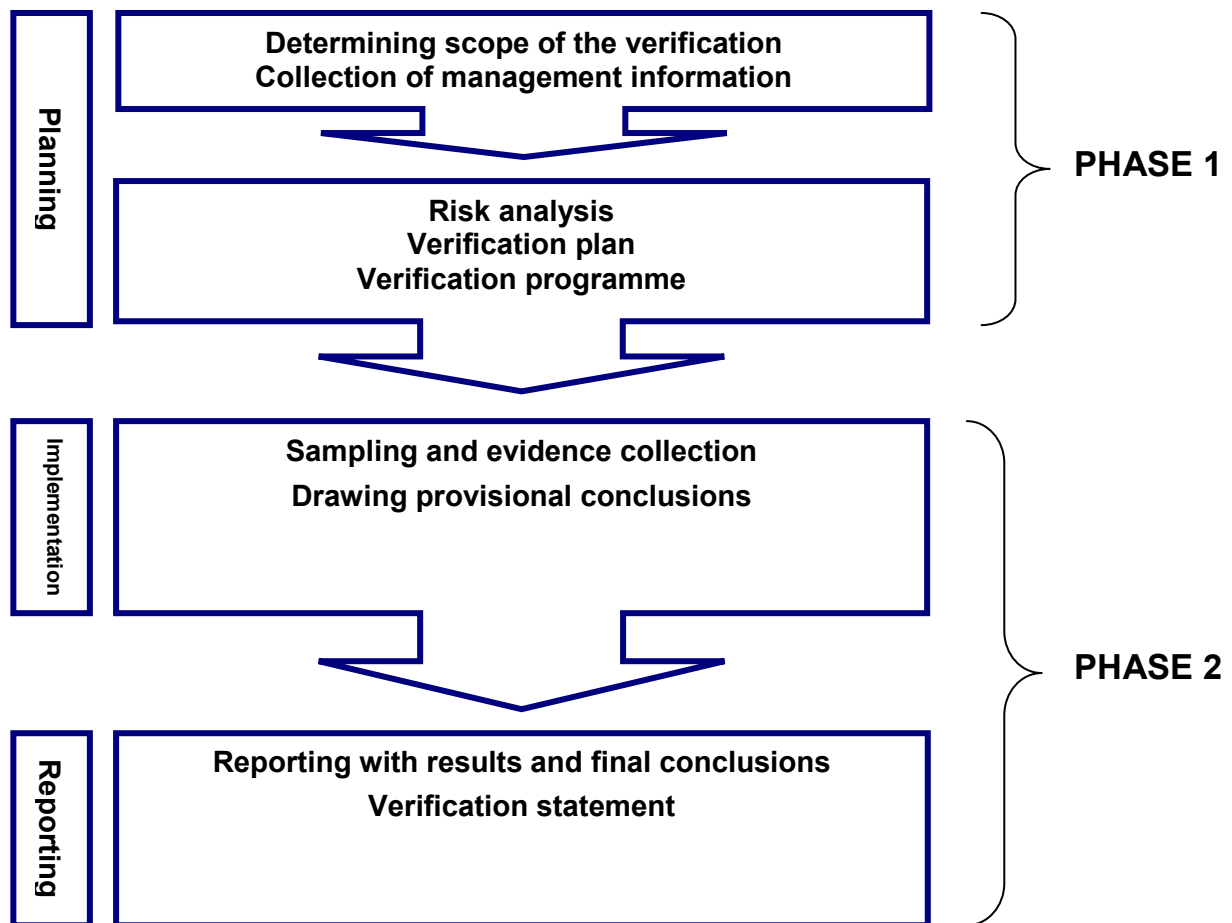
There is only contract production if an agreement is made between manufacturer C and contract manufacturer E, in which the minimum amount of biofuel to be delivered is specified. In the absence of such an agreement, there are normal sales of double-counting raw material and purchases of biofuel by manufacturer C.

15. In contract production, the manufactured biofuel can only be verified if manufacturer C and contract manufacturer E have agreed which of them is the client for the verification (the person for whom a statement is issued). See also Articles 20 and 22.

Biofuels delivered between manufacturers can only be verified when an agreement for the supply between the parties is made (purchase/sales contract or contract for contract manufacturing).

B. VERIFICATION STRATEGY

16. Verification is normally completed in two phases (phase 1 and phase 2), in which research (interviews, observation, review of documents and records) takes place at the manufacturing site(s) (and at the client's suppliers). Phase 1 covers the preparation and planning phase. Phase 2 is the actual sampling, collection of evidence and final reporting of results. See diagram below.



17. Remote (offsite) verification is also possible in the case of a return visit, subject to receipt of the risk analysis and familiarity with the processes and internal controls of the client with regard to the manufacture and supply of biofuel. It is possible that a similar biofuel party has already been verified, or that some aspects have already been verified during an audit visit as part of another scheme (such as ISO 14001/ISO 9001 certification). Where a site visit has not been undertaken, the justification for this will be documented in the verification report and verification statement. The inspection body MUST make a site visit as part of the first check

and perform at least one per phase. It is to be expected that remote authentication is only used for simple processes.

18. If necessary the inspection body will keep copies of relevant evidence gathered during the verification process as part of a complete and transparent file. Relevant evidence includes, for example, contracts, certificates, mass balances, validation statement calculation methods, and previously issued verification statements.

19. The inspection body shall satisfy itself that all parties and organisations from which information is collected during the verification process (see also Article 22), store that information for a minimum of five years.

C. PHASE 1



C1. Pre-verification

20. The inspection body shall inform itself about the scope of the verification contract in advance of the drawing up of the verification contract. To do this, the inspection body must obtain, among other things, the following information from the client:

- The data and information to be verified that is to be reported to the NEa;
- Mass balances relating to raw materials and biofuels, including sold(-on) volumes of double-counting raw materials, bought-in biofuels and contract biofuel production. It is important that the information (for instance the feedstock from which the biofuel is produced) is linked to the size of the deliveries of biofuel, and that the sum of all consignments taken from the mixture has the same information, and the same quantities, as the sum of all consignments added to the mixture;
- If there is contract biofuel production, the established agreements between producer and contract manufacturer regarding the contract for verification (see Article 15);
- Previous statements issued by an accredited inspection agency, in accordance with the order;
- Production data (description of biofuel production process, number of employees involved in the process, number of sorts and types of biofuels that are produced at the site be they processed or stored, method of delivery of the biofuels)
- Data concerning the purchase of raw materials for biofuel production (quantities and types of feedstock used for biofuel production, number of suppliers for raw materials serving the production of biofuel);
- Data on the management measures taken by the client (and potential suppliers) to guarantee improvement of the reliability of reported information (certification against a relevant standard, contract requirements given to suppliers, supplier ratings, supplier audits, input controls, analyses, internal audits and controls, personnel qualifications, etc);

21. The inspection body shall accept the verification contract only if, based on the information obtained, it can be concluded that all requirements in this protocol and the accreditation requirements (NEN-EN-ISO 17020) can be satisfied.
22. If the organisation that contracts the inspection body for the verification is not the responsible party for the completeness and accuracy of the verification data and information, then the inspection body must document the effect this has on access to documents, registrations and other information explicitly considered in accepting the verification contract. It is possible that a check on raw material suppliers and/or contract manufacturers must also be performed in order to issue a statement with a reasonable degree of certainty. Access to all relevant data and information can within that context be guaranteed by signing a multi-party agreement. The agreement must state for which organisation the statement is being made.
23. The agreed scope of the verification (including planned activities) will be recorded in a verification agreement or another appropriate form of contract.

C2. Phase 1 visit

24. In the phase 1 visit, the information mentioned in Article 20 is specifically investigated, and the evidence for this information tested. Part of this visit is a tour of the site(s). The auditor may have time to begin sampling (part of phase 2) during this phase.

C3. Risk analysis

25. A detailed risk analysis must be completed after the phase 1 visit based on the information collected during pre-verification and the phase 1 visit. The risk analysis must identify any potential risks (inherent risks, control risks and detection risks) to the data to be reported that could lead to material misinterpretations associated with, among other things:
 - Ineffectiveness of the management system regarding the delivery and processing of double counting raw materials;
 - Uncertainty about linking the biofuel produced to the double counting feedstock supplied;

- The lack of clear responsibilities and competences with respect to key roles for data management;
- Ineffectiveness of maintenance and calibration of measuring instruments;
- Ineffectiveness of the internal control system;
- Ineffectiveness of a corrective and preventative action system to detect weaknesses in the data and the system to be dealt with;
- The complexity of the processing of data by the organisation;
- The unreliability of any assumptions made;
- The lack of clarity of systems concerning the collection and processing of raw data and further calculations.
- Ineffectiveness of the management system for issuing certificates for sustainability.
- Uncertainty in the status of certification following a voluntary, recognised sustainability scheme.

Risks are classified as high, medium or low. The result of this analysis is used to establish the verification plan.

26. Conducting the risk analysis is a dynamic activity that should be carried out before and during the preparation of the verification plan, during the sampling, and before the verification statement is issued.

27. The risk analysis should also update the conclusions of any previous audit, if relevant and if carried out by the same inspection body. The client may have improved the processes to eliminate or reduce the previously identified risks.

The inspection body may, in its risk analysis, also take into account the output of a risk analysis conducted by the client's data management system.

C4. Verification plan

28. The purpose of a carefully considered verification plan is to reduce risks to an acceptably low level. There is an inverse relationship between materiality and the level of audit risk. The auditor will take account of this relationship when

determining the nature, timing and extent of the sampling.

29. As a point of departure for the verification a materiality level of 1% is taken. The sampling approach and the system-oriented checks shall be aligned to this materiality level. Depending on the feedstock used and/or the circumstances that apply, the auditor can decide to work with another materiality level. The motivation for doing so should be included in the Phase 1 report. When it is decided to work with a higher materiality level, then this has to be mentioned on the verification statement as well.

For example, if the auditor, after planning specific checks, states that the acceptable materiality level is lower, then the audit risk becomes higher. The auditor compensates for this by:

- reducing, where possible, the risk of a material misstatement, by carrying out extended or additional system-oriented checks; or
- reducing the detection risk by modifying the nature, timing and extent of the system-oriented checks.

30. The verification plan must therefore include a rationale for the audit approach chosen and sampling as a result of the risk analysis (why certain aspects are examined and others not, representativeness of the sample, etc.).

31. The verification plan must state a frequency for retrospective audits. This frequency should be at least once a year.

C5. Phase 1 report

32. The inspection body shall report the findings of the phase 1 visit to the client. The report shall include, as a minimum: observed discrepancies, the results of the risk analysis, and a verification programme (the result of the verification plan).

D. PHASE 2



D1. Verification programme

33. The verification programme is a result of the verification plan and describes the nature of the control activities, the evidence to be verified, the staff to be interviewed and the schedule. The aim of the verification programme is to establish a structured implementation of the verification plan and to allow the client to adequately prepare itself for the phase 2 verification audit.
34. The inspection body may decide to apply the verification plan as the verification programme provided they meet the objectives mentioned in Article 33.

D2. Sampling

35. Phase 2 (controls and sampling) shall comply with the completed verification programme. At the beginning of the phase 2 visit, the auditor will consider whether there are any relevant changes in management aspects, determination methods and calculations since phase 1, as these may affect the previous risk analysis, the verification plan and the verification programme. Changes in the verification plan should be documented and justified.
36. If the auditor identifies a material misstatement, he shall report this deviation in a timely manner to the client at the appropriate (management) level. In this case, the auditor will consider reducing the audit risk by performing additional audit procedures or by requesting the management of the client to make corrections with regard to the discrepancies.

D3. Reporting and issuing of statement

37. The inspection body shall report the results of the phase 2 visit, including deficiencies identified, in writing to the client as soon as possible after the completion of the phase 2 investigation.
38. The report of the phase 2 investigation will state the activities that were carried out and what conclusions these led to. The activities performed must be consistent with those in the verification plan and the verification programme. The report should

contain information by which the conclusions about the risks identified and the errors and/or omissions found can be substantiated, and in this context it must include at least the following data:

- Reasons for any changes to the initial risk analysis and the risks.
- Changes in relevant activities of the client that came to light after the phase 1 study was completed, and which led to the verification plan and verification programme having to be adjusted.
- The overall conclusion of the assessment of the errors and/or omissions found, and a consideration of whether such errors and/or omissions are material or not.
- The conclusion with regard to the verification approach and, based on the evidence obtained, a reasonable basis for the formulation of conclusions (adequacy).

39. If the client is unable or unwilling to remedy the material misstatements identified and the findings of the expanded audit do not allow the auditor to conclude that the uncorrected misstatements are not material, this shall result in the qualification of, or the withholding of, a statement. In both cases the inspection body shall justify its decision in the final report.

Qualification in this context means that a statement is issued for a limited scope.

40. At the end of phase 2, the inspection body issues a verification statement. The statement includes at least the following components:

- The name of the client for whom a statement is issued;
- The scope of the verification contract;
- The foundations (legal framework and criteria) of the verification;
- Short description of the activities carried out (including locations of sites visited);
- The type of biofuel, the feedstock from which the biofuel is produced and the country of origin (or countries of origin) of the feedstock;
- A 'positively' formulated decision about a stated amount of biofuel (litres of liquid at 15°C or kg gas¹) delivered in a stated time period that qualifies for double

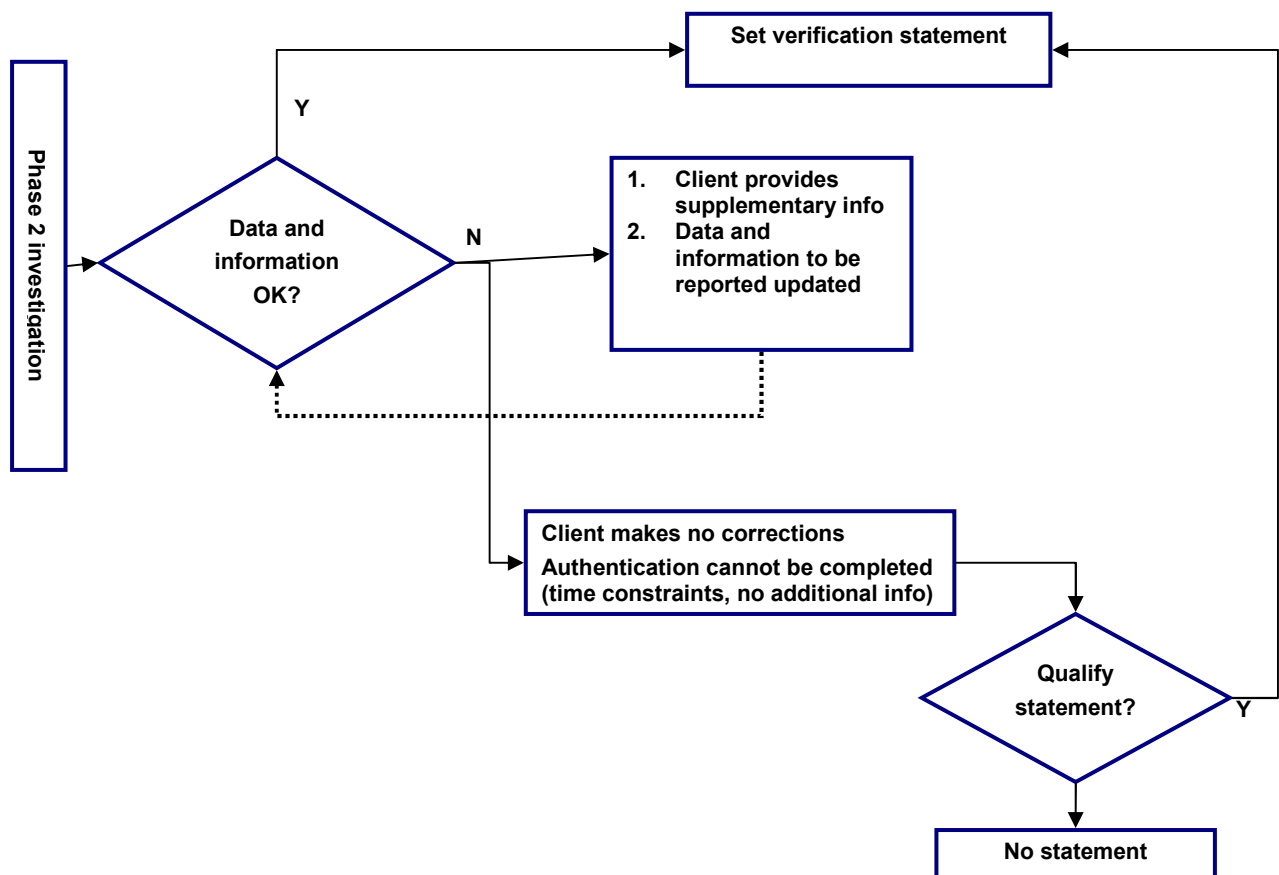
¹: The unit of quantities given should correspondent with the unit in which the quantity of biofuel has to be given on the biofuel balances of the NEa. The manual to these balances states that "wherever 'quantity of biofuel [ℓ] or [kg]' is asked for or is listed, this refers to kilograms for biogas and bioLPG and to liters at 15 degrees centigrade for all other biofuels".

counting;

- A unique code;
- Date;
- Name and signature of the inspection body.

An example statement is presented in Chapter G.

The formulation of the conclusions of the inspection body shall be in accordance with the schematic below.



41. The unique code on the verification statement has the format AAA-xxxxxx.

- AAA is a letter code that refers to the inspection body. An inspection body that fulfils the requirements as set in article 17 of the order can contact the manager of this protocol to obtain a letter code;
- xxxxxx is a serial number. The inspection body takes care that each verification statement issued has a unique serial number. The inspection body keeps in its administration an overview of serial numbers issued.

42. Buyers from the manufacturer, or buyers from these buyers (etc) can request to split a verification statement as long as this statement has not been used as proof for double counting in the fulfilment of a yearly obligation². The meaning of 'splitting' is that a verification statement is split into multiple statements with in total the same volume of biofuels compared to the statement that was split. Verification statements shall only be split by an inspection body that fulfils the requirements of article 17 of the order. De statement to be split has to be handed in to the inspection body³ and cannot be used any more as prove for double counting. The inspection body then gives two or more verification statements for the same overall volume of biofuel as the statement that was handed in. The new statements issued after splitting contain a reference to the old statement before splitting. This reference includes the unique code of the statement that was split.

²: In other words: a verification statement may only be split as long as the unique code on the statement has not been filled out on a biofuel balance that is or will be send to the NEa. When a unique code from a statement is listed on a biofuel balance, then the owner of the statement shall use the statement only as proof for double counting in the current and possibly in the next obligation year. Such a statement cannot be split.

³: The statement that has been collected can either be kept in the archive of the inspection body that has split the verification statement or can be send by this inspection body to the inspection body that has issued the statement, who then keeps it in its archive.

E. COMPETENCE OF AUDITORS

43. Auditors must be competent in accordance with the guidelines of ISO 19011 (guidelines for quality and/or environmental management systems auditing), supplemented by:

- the requirements regarding assessing the sustainability of specific raw materials from sections 7.3.1, 7.3.2 and 7.3.3/7.3.4 of ISO 19011. Contrary to the statement in ISO 19011 that 7.3.3/7.3.4 are specific requirements for auditors of quality management and environmental management systems respectively, 7.3.3/7.3.4 are also applicable here.
- information and data verification. Important aspects are risk analysis and materiality. Auditors should have followed a training course or received specific instruction about these. Moreover, auditors should already have experience gained from previous verifications.

Detailed requirements for the competence of inspection body staff are included in Dutch standard NEN-EN-ISO 17020.

44. The scope of the verification can in some instances require specialised knowledge and skills when collecting and evaluating evidence. In such a situation it may be decided to use persons from other professional disciplines with the required knowledge and skills (experts). The auditor must in this case be able to understand the work of the expert to a sufficient extent to enable the auditor to take responsibility for the conclusions about the evidence.

45. The auditor is not expected to have the same specialised knowledge and skills as the expert. In this context, the auditor shall have sufficient knowledge and competence to:

- determine the objectives of the work of the expert and to determine what impact this work has on the verification process;
- evaluate the reasonableness of the assumptions, the methods and the information sources used by the expert;
- be able to evaluate the reasonableness of the findings of the expert in relation to the aim of the verification process and the conclusions.

F. GLOSSARY

Term	Description
Control risk, Risk management	The risk that errors that may affect the reportable information are not prevented or detected in a timely fashion and corrected by the internal management measures taken by the responsible party.
Detection risk	The risk that the substantive measures taken by the inspection body do not detect faults that (individually, or combined with other errors in the data and information) may be material.
Double-counting raw material	Waste, residues and/or lignocellulosic material for which there is no alternative use (other than for generating electricity and heat, composting, or utilisation of the lignocellulosic portion of the biomass as animal feed).
Inherent risk	Inherent risk is the sensitivity of the information to be reported to a material error, individually or combined with other errors, assuming that no related internal control measures are present.
Inspection body	A competent, independent, accredited body in accordance with Dutch standard NEN-EN-ISO 17020 Type A, which is responsible for the performing of and reporting on the verification process, in accordance with the requirements of this protocol.
Verification statement, Conformity statement	Formal written statement by an impartial inspection body, which gives the results of the assessment conducted by it of the information to be reported, under Article 17 of the order.

Term	Description
-------------	--------------------

Materiality threshold	The joint errors or irregularities in the reportable information can be considered as material (i.e. important) if the users will probably, when the errors are pointed out, take them into account. The auditor must decide how great the extent of the inaccuracies in the information may become and still be regarded as acceptable. This extent is called the 'materiality threshold', or fault tolerance. Under similar circumstances, less audit work is necessary if the threshold is higher.
Material importance, Materiality	Information is material, or materially important, if its omission or misstatement of can affect the decisions of users based on the reported information. The materiality of an aspect or an error depends on its size, assessed under the specific circumstances under which the omission or misstatement occurs. The concept of materiality thus provides more of a threshold or a critical boundary, rather than being a primary qualitative characteristic that information must possess in order to be useful.
Assurance	The extent to which the inspection body, in the conclusions of its statement, provides certainty to third parties that the information provided contains no material misstatement. The investigation of the inspection body may focus on providing a reasonable assurance or a limited assurance.
Reasonable assurance	The objective of an investigation contract to obtain reasonable assurance is to reduce the risks to an acceptably low level, taking into account the circumstances of the contract, to form the basis for the formulation of a positive conclusion by the inspection body.

Term

Description

Verification protocol for the double counting of better biofuels

Verification	Systematic, independent and documented assessment and/or determination by an inspection body that the data reported are complete and reliable.
Verification plan	Description of control measures (type, method, sample size) taken to reduce the risks of material misstatement to an acceptably low level. The verification plan is based on a comprehensive risk analysis.
Verification programme	Description of the nature, time of execution, people to be interviewed and the extent of the work, in order to implement the verification plan.

G. EXAMPLE OF STATEMENT⁴

[name and logo of inspection body]

Unique code (AAA-xxxxxx)

Statement for: [client]
[city], the Netherlands

1. Contract and scope

[inspection body] has received a contract from [client] to carry out a verification, in accordance with the Dutch Renewable Energy for Transport Order, of the double counting of the quantities of [type of biofuel] produced from [feedstock] and produced by [client, manufacturer C] and delivered in the period from January 1 2012 up to and including May 30 2012 to [buyer X].

2. Actions of [inspection body]

The verification was performed according to the Verification Protocol for the double counting of advanced biofuels, version 4.0 of July 2012. Accordingly, we planned and carried out our investigation such that the amount of double-counting produced biofuel can be established with a reasonable degree of certainty.

In forming our conclusions we have:

- Carried out a site tour at the location of [manufacturer C, client] in [city name], [country] and evaluated the internal control and management processes with regard to the requirements of the Dutch Renewable Energy for Transport Order.
- Verified the raw material deliveries during the period from January 2012 up to and including May 2012 for the production of [type of biofuel].
- Verified the production and deliveries of [type of biofuel] and deliveries of [renewable raw materials] to and from the production location of [manufacturer C, client].
- Verified the information provided by the [client] to show these are the types of biofuels referred to in Annex IV of the Dutch Renewable Energy for Transport Order, and verified the data that form the basis of this information.

3. Conclusions of [inspection body]

Based on the above actions, we have determined that the following quantity of [type of biofuel to which double counting is applied], was sustainably produced in accordance with Article 16 of the Dutch Renewable Energy for Transport Order, by [manufacturer C, client] during the period from January 1 2012 to May 30 2012 inclusive. This quantity of [type of biofuel] qualifies for double counting (weighting factor: 2) in accordance with Article 16 of the Dutch Renewable Energy for Transport Order.

Quantity of double-counting [type of biofuel] from [feedstock] (number of litres of liquids at 15°C or number of kg of methane):	Lower heating value (in MJ):	Energy content (in TJ):	Country of origin of the feedstock of the biofuel:
--	------------------------------	-------------------------	--

[Insert the completed part A3 of Annex IV of the order if (part of) the biofuel is produced from the lignocellulosic portion of the raw material].

[name of inspection body]

[Signature]
[Person responsible]

⁴: If the biofuels concerned are not produced from a) the lignocellulosic part of the raw materials, b) crude glycerin, c) used cooking oils and fats or d) animal fats, then Annex IV of the Order must be completed in full and submitted.

H. EXAMPLE OF A COMPLETED ANNEX IV OF THE DUTCH RENEWABLE ENERGY FOR TRANSPORT ORDER⁵

Information regarding double-counting biofuels as referred to in Article 17, first paragraph of the Dutch Renewable Energy for Transport Order

A. Nature of biofuel and the raw material, and the source of the raw material

1. The type of biofuel for which double counting has been requested is bioethanol.
2. The quantity of biofuel for which double counting applies consists of:

- Number of litres at 15°C:	122,750
- Lower heating value in MJ per litre:	21
- Energy content in TJ:	2.57775
- Country of Origin	The Netherlands

3. The raw material from which the bioethanol is made consists of the starch, fats, cellulose and hemicellulose present in wastewater from the food and beverage industry, in this case from [company] in [city name]. This company produces salads using various vegetables (potatoes, celery, etc), meat, eggs and additives. The raw material for the ethanol consists of the non-sievable fraction in the the cooking, rinsing and process water (wastewater).

B. Composition of the raw material

Wastewater is not homogeneous. The composition depends on the food and beverage produced and where the waste water stream is released.

Component	Unit	Value (including minimum and maximum)	Source of value
Amount of dry material	% of total weight	5 (1-7)	Report **
Organic dry material	% of dry material	3 (1-5)	Ditto
Starch	% of dry material	58 (30-80)	Ditto
Cellulose	% of dry material	10 (5-20)	Ditto
Hemicellulose	% of dry material	5 (3-7)	Ditto
Sugars*	% of dry material	5 (2-7)	Ditto
Protein	% of dry material	5 (1-10)	Ditto
Fat	% of dry material	10 (2-20)	Ditto
Lignin	% of dry material	2 (0-4)	Ditto
Ash	% of dry material	2 (2-4)	Ditto

*: free sugars that do not form part of the starch, cellulose or hemicellulose

** : 'Use of industrial wastewater for the production of biofuels'. This report contains the above-mentioned analysis values - its appendices are the analysis reports of laboratory [X] in [city]

⁵: The data in this example statement are fictitious and serve only as models, from which no rights can be derived.

C. Biofuel production

1. In a first step, the organic waste stream is separated from the water by centrifugation. The resulting biomass is then enzymatically treated, wherein the fermentation of the released C5 and C6 sugars to ethanol occurs.
2. a) The following table shows what part of the biofuel is produced from the lignocellulose fraction of the waste stream, and what part is produced from the other components.

Percentage of biofuel deriving from the lignocellulose (cellulose, hemicellulose, lignin) fraction of the raw material	15%
Percentage of biofuel deriving from the non-lignocellulose fraction of the raw material (including sugars, starch, protein, fat)	85%
Total:	100 %

b) The values in the table above are fixed; the analyses are attached in Annex II of the report 'Use of industrial wastewater for the production of biofuels'.

D. Alternative application

The food and beverage industry wastewater can be used to produce biogas or purified in an aerobic treatment plant. The wastewater and the organic fraction in that wastewater that have no other application, thus have no alternative use according to the terminology of the Dutch Renewable Energy for Transport Order.

Note: if the raw material has an alternative application, it must be demonstrated from the results of accompanying market research that the material concerned has no other outlets.

E. Reduction of greenhouse gas emissions

The reduction in greenhouse gas emissions from ethanol from food and beverage industry wastewater averages 65%, with minimum and maximum values of 58% and 72% respectively. The variation in the data is a result of variations in the composition of the raw material.

These values are calculated using BioGrace project spreadsheets (version '4 – public' dated April 2011), and based on input data (conversion efficiency, consumption of natural gas and electricity, input of auxiliary feedstocks) supplied by [company] of [city name], and verified by [inspection body]. It is assumed that the residue 'food and beverage industry wastewater' results in no greenhouse gas emissions, similar to how GHG emissions are calculated for biodiesel from used cooking oil. GHG emissions resulting from production of the enzymes is included, this is a user-defined standard value set at [xxx] g CO_{2,eq}/kg enzyme. This number is specified by the enzyme supplier [company] of [city name], and is supported in [report].

F. Declaration

I certify that this form has been completed fully and truthfully.

G. Signature:

Details of registered company⁶:

Name:	
Address:	
Postcode and city:	
PO box:	
Postcode and city:	

Contact person in registered company⁷:

Name:	
where different from above:	
Address:	
Postcode and city:	
PO box:	
Postcode and city:	
Telephone number:	
Email:	

Signature

Place:	
Date:	
Signed for the registered company:	

Inspection body:

Address:	
Postcode and city:	
Contact person:	

Attachments:

- Verification statement by the inspection body as referred to in Article 17 of the Renewable Energy for Transport Order

⁶: "Registered" means the company that has completed Annex IV, which will normally entail the producer of the biofuel to which Annex IV applies.