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HVO RENEWABLE DIESEL SCHEME FOR VERIFICATION OF COMPLIANCE WITH THE RED SUSTAINABILITY CRITERIA FOR BIOFUELS

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Appendices:

Appendix 1: DIRECTIVE 2009/28/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 23 April 2009 on the promotion of the use of energy from renewable

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sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC (available from: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:140:0016:0062:EN:PDF>)



RED_english.pdf

Appendix 2: Traceability



Traceability
instructions.doc

Appendix 3: Mass Balance Method



Mass balance
method.doc

Appendix 4: Greenhouse gas data handling



GHG Handling.doc

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1 Purpose and Scope of the Voluntary Scheme

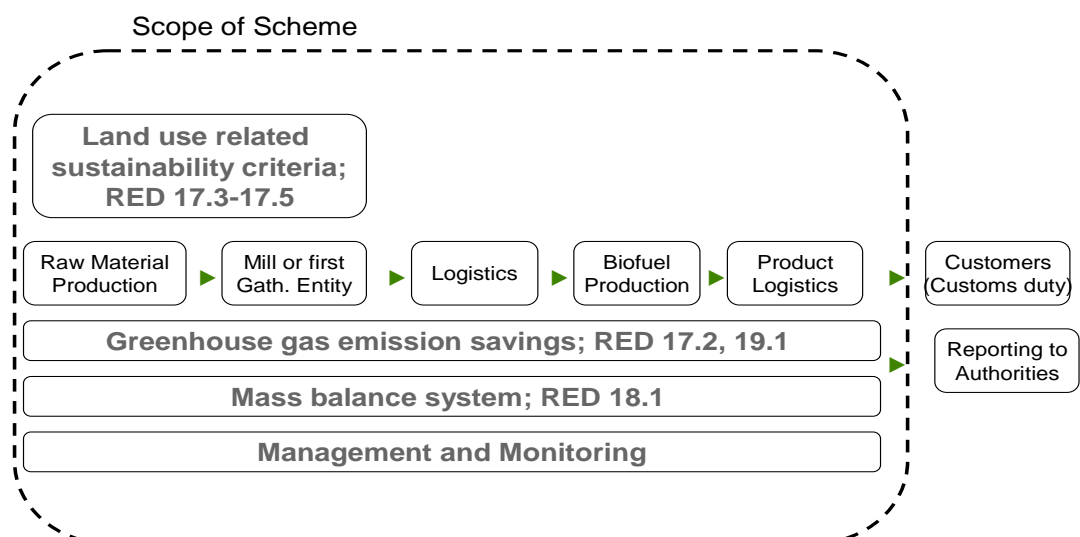
This document contains the system descriptions and procedures applicable by any economic operator in the value chain aimed at producing HVO-type (hydrotreated vegetable oil) renewable diesel from various raw materials to comply with the European Union Renewable Energy Directive (RED) 2009/28/EC requirements.

This scheme covers the identification, control and management of the sustainability aspects listed in the EU RED, and in the corresponding national legislations in the European Union member states. The scheme covers all geographic locations and principles for managing all feedstocks suitable for HVO-type renewable diesel. The scheme contains detailed information for using crude palm oil, rapeseed oil, soybean oil and waste or residue materials as raw material for HVO-type renewable diesel.

The scheme is developed to meet adequate standards of reliability, transparency and independent auditing, as well as to comply with the methodological requirements in Annex V of the RED directive to measure greenhouse gas emission saving.

This scheme is applicable to any operator in the value chain that uses hydrotreatment processing as the final production phase for biofuel or bioliquid, as defined in the RED directive. Oil refining and marketing company Neste Oil uses the system in running its renewable fuel and oil businesses. Therefore, the examples used in the instructions and annexes of the scheme are related to practices of Neste Oil's existing HVO renewable diesel (trade name NExBTL) production.

The scheme covers the processes and methods needed in producing, sourcing and purchasing raw materials, producing, transporting and delivering HVO-diesel into the European market. The effective date is the date the European Commission recognizes this system as a voluntary scheme for the verification of RED compliance.



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2 Sustainability Criteria for EU RED Compliance

2.1 Regulatory framework

All raw materials and production and logistics the used for the production of renewable fuels have to comply with the criteria set in the RED. The set of criteria is derived from the following documents containing the essential requirements:

1. DIRECTIVE 2009/28/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 23 April 2009 on the promotion of the use of energy from renewable sources (Appendix 1).
2. Communication from the Commission on voluntary schemes and default values in the EU biofuels and bioliquids sustainability scheme (2010/C 160/01)
3. Communication from the Commission on the practical implementation of the EU biofuels and bioliquids sustainability scheme and on counting rules for biofuels (2010/C 160/02)
4. Commission Decision (2010/335/EU) on guidelines for the calculation of land carbon stocks for the purposes of Annex V of Directive 2009/28/EC

Regarding all the above mentioned documents: as amended and approved by the relevant bodies as authorized in the RED directive.

The key aspects guiding all economic operators are the RED requirements on the greenhouse gas emissions, the chain of custody control, qualitative sustainability requirements on the origin of raw materials ('no-go areas'), adequate standards for independent auditing, and the reporting needs.

The second subparagraph of Directive 2009/29/EC (Appendix 1) Article 18.4 states: "The Commission may decide that voluntary national or international schemes setting standards for the production of biomass products contain accurate data for the purposes of Article 17(2) or demonstrate that consignments of biofuel comply with the sustainability criteria set out in Article 17(3) to (5). The Commission may decide that those schemes contain accurate data for the purposes of information on measures taken for the conservation of areas that provide, in critical situations, basic ecosystem services (such as watershed protection and erosion control), for soil, water and air protection, the restoration of degraded land, the avoidance of excessive water consumption in areas where water is scarce and on the issues referred to in the second subparagraph of Article 17(7)."

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2.2 Requirements for biofuels and bioliquids with reference to Renewable Energy Directive articles

The following aspects are the requirements for acceptability of the biofuels in this voluntary scheme. All the economic operators in the biofuel supply chain shall comply with the requirement in order to be eligible to biofuel status as defined in the RED.

| Issue | Requirement in this Voluntary Scheme | RED Article |
|---|--|---|
| Green-house gas emission savings | <p>1 The greenhouse gas emission saving from the use of biofuels and bioliquids shall be at least 35%.</p> <ul style="list-style-type: none"> Greenhouse gas emissions from any land-use change that has occurred since 1 January 2008 shall be taken into account in the greenhouse gas calculation, according to the methodology in the RED Annex V. <p>1.2 In the case of biofuels and bioliquids produced by any installation (installation includes any processing installation used in the production process, as long as it has not been intentionally added to the production chain only to qualify for the exemption) that was in operation on 23 January 2008, the 35% greenhouse gas saving threshold needs to apply from 1 April 2013. This change (grandfathering clause) to the general rule shall not be applied to biofuels produced after 1 April 2013.</p> <p>1.3 As of 1 January 2017, the greenhouse gas saving from the use of biofuels and bioliquids shall be at least 50 %.</p> <p>1.4. As of 1 January 2018 that greenhouse gas emission saving shall be at least 60 % for biofuels and bioliquids produced in installations in which production started on or after 1 January 2017.</p> | <p>17.2</p> <p>The greenhouse gas emission saving from the use of biofuels and bioliquids taken into account for the purposes referred to in points (a), (b) and (c) of paragraph 1 shall be at least 35 %.</p> <p>With effect from 1 January 2017, the greenhouse gas emission saving from the use of biofuels and bioliquids taken into account for the purposes referred to in points (a), (b) and (c) of paragraph 1 shall be at least 50 %. From 1 January 2018 that greenhouse gas emission saving shall be at least 60 % for biofuels and bioliquids produced in installations in which production started on or after 1 January 2017.</p> <p>The greenhouse gas emission saving from the use of biofuels and bioliquids shall be calculated in accordance with Article 19(1).</p> <p>In the case of biofuels and bioliquids produced by installations that were in operation on 23 January 2008, the first subparagraph shall apply from 1 April 2013.</p> |

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| Issue | Requirement in this Voluntary Scheme | RED Article |
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| <p>High biodiversity value land</p> | <p>2 Biofuels and bioliquids shall not be made from raw material obtained from land with high biodiversity value as defined in the RED and interpreted as follows:</p> <p>2.1 Conservation of primary forest and other wooded land</p> <ul style="list-style-type: none"> • Biofuels and bioliquids shall not be made from raw material obtained from land that was primary forest or other wooded land in or after January 2008, whether or not the land continues to have that status • Primary forest and other wooded land is defined as forest and other wooded land of native species, where there is no clearly visible indication of human activity and the ecological processes are not significantly disturbed. <p>2.2 Conservation of protected areas</p> <ul style="list-style-type: none"> • Biofuels and bioliquids shall not be made from raw material obtained from land that was a protected area in or after January 2008, whether or not the land continues to have that status. • This includes areas designated: <ul style="list-style-type: none"> ○ i) by law or by the relevant competent authority for nature protection purposes; or ○ ii) for the protection of rare, threatened or endangered ecosystems or species recognised by international agreements or included in lists drawn up by intergovernmental organisations or the International Union for the Conservation of Nature, subject to their recognition in accordance with the second subparagraph of Article 18(4) of the RED; ○ An exception to the abovementioned is possible if evidence is provided that the production of that raw material did not interfere with those nature protection purposes. | <p>17.3</p> <p>Biofuels and bioliquids taken into account for the purposes referred to in points (a), (b) and (c) of paragraph 1 shall not be made from raw material obtained from land with high biodiversity value, namely land that had one of the following statuses in or after January 2008, whether or not the land continues to have that status:</p> <p>(a) primary forest and other wooded land, namely forest and other wooded land of native species, where there is no clearly visible indication of human activity and the ecological processes are not significantly disturbed;</p> <p>(b) areas designated:</p> <p>(i) by law or by the relevant competent authority for nature protection purposes; or</p> <p>(ii) for the protection of rare, threatened or endangered ecosystems or species recognised by international agreements or included in lists drawn up by intergovernmental organisations or the International Union for the Conservation of Nature, subject to their recognition in accordance with the second subparagraph of Article 18(4);</p> <p>unless evidence is provided that the production of that raw material did not interfere with those nature protection purposes;</p> <p>(c) highly biodiverse grassland that is:</p> |

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| Issue | Requirement in this Voluntary Scheme | RED Article |
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| | <p>2.3 Any conversion of grasslands after January 2008 is prohibited to cultivation of feedstocks for biofuel or bioliquid production, until the European Commission has published its definition of high biodiverse grassland, and this Voluntary Scheme has been amended and recognized accordingly.</p> <p>The European Commission will set up the criteria and geographic ranges to determine which grassland are considered to be highly biodiverse grassland.</p> <p>Once the European Commission has published its definition of high biodiverse grassland, Neste Oil, as the owner of the scheme, will</p> <ul style="list-style-type: none"> • communicate to the participants of the scheme any details of the definition as soon as they are available from the EC, • update the documentation in this voluntary scheme accordingly • apply for recognition of the amended scheme from the EC • after receiving the recognition, communicate it to participants • start using the updated version. Until the recognition, the conversion of grassland remains prohibited. | <p>(i) natural, namely grassland that would remain grassland in the absence of human intervention and which maintains the natural species composition and ecological characteristics and processes; or</p> <p>(ii) non-natural, namely grassland that would cease to be grassland in the absence of human intervention and which is species-rich and not degraded, unless evidence is provided that the harvesting of the raw material is necessary to preserve its grassland status.</p> <p>The Commission shall establish the criteria and geographic ranges to determine which grassland shall be covered by point (c) of the first subparagraph. Those measures, designed to amend non-essential elements of this Directive, by supplementing it shall be adopted in accordance with the regulatory procedure with scrutiny referred to in Article 25(4).</p> |
| <p>High carbon stock land</p> | <p>3 Biofuels and bioliquids shall not be made from raw material obtained from land with high carbon stock</p> <p>3.1 Conservation of wetlands</p> <ul style="list-style-type: none"> • Biofuels and bioliquids shall not be made from raw material obtained from land that was wetland in January 2008 and no longer has that status • A wetland is land that is covered with or saturated by water permanently or for a significant part of the year • These provisions shall not apply if, at the time the raw material was obtained, the land had the same status as it had in January 2008 | <p>17.4</p> <p>Biofuels and bioliquids taken into account for the purposes referred to in points (a), (b) and (c) of paragraph 1 shall not be made from raw material obtained from land with high carbon stock, namely land that had one of the following statuses in January 2008 and no longer has that status:</p> <p>(a) wetlands, namely land that is covered with or saturated by water permanently or for a significant part of the year;</p> |

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| | <p>3.2 Conservation of continuously forested areas</p> <ul style="list-style-type: none"> • Biofuels and bioliquids shall not be made from raw material obtained from land that was continuously forested in January 2008 and no longer has that status • Continuously forested areas are defined as land spanning more than one hectare with trees higher than five metres and a canopy cover of more than 30%, or trees able to reach those thresholds in situ • Continuously forested areas do not include land that is predominantly under agricultural or urban land use. In this context, land under agricultural use refers to tree stands in agricultural production systems, such as fruit tree plantations, oil palm plantations and agroforestry systems when crops are grown under tree cover (EC Communication 2010/C 160/02). • These provisions shall not apply if, at the time the raw material was obtained, the land had the same status as it had in January 2008 <p>3.3 Conservation of sparsely forested areas</p> <ul style="list-style-type: none"> • Biofuels and bioliquids shall not be made from raw material obtained from land that was sparsely forested in January 2008 and no longer has that status • Sparsely forested areas are defined as land spanning more than one hectare with trees higher than five metres and a canopy cover of between 10% and 30%, or trees able to reach those thresholds in situ, unless evidence is provided that the carbon stock of the area before and after conversion is such that, when the methodology laid down in part C of Annex V is applied, the greenhouse gas threshold (principle 1 above) would still be fulfilled • These provisions shall not apply if, at the time the raw material was obtained, the land had the same status as it had in January 2008 | <p>(b) continuously forested areas, namely land spanning more than one hectare with trees higher than five metres and a canopy cover of more than 30 %, or trees able to reach those thresholds in situ;</p> <p>(c) land spanning more than one hectare with trees higher than five metres and a canopy cover of between 10 % and 30 %, or trees able to reach those thresholds in situ, unless evidence is provided that the carbon stock of the area before and after conversion is such that, when the methodology laid down in part C of Annex V is applied, the conditions laid down in paragraph 2 of this Article would be fulfilled.</p> <p>The provisions of this paragraph shall not apply if, at the time the raw material was obtained, the land had the same status as it had in January 2008</p> |

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| Peatland | <p>4 Biofuels and bioliquids shall not be made from raw material obtained from peatland</p> <p>4.1 Conservation of peatlands</p> <ul style="list-style-type: none"> • Biofuels and bioliquids shall not be made from raw material obtained from land that was peatland in January 2008, unless evidence is provided that the cultivation and harvesting of that raw material does not involve drainage of previously undrained soil. • This means that for peatland that was partially drained in January 2008 a subsequent deeper drainage, affecting soil that was not already fully drained, would constitute a breach of the criterion. (EC Communication 2010/C 160/02, section 4.2.3.) | <p>17.5</p> <p>Biofuels and bioliquids taken into account for the purposes referred to in points (a), (b) and (c) of paragraph 1 shall not be made from raw material obtained from land that was peatland in January 2008, unless evidence is provided that the cultivation and harvesting of that raw material does not involve drainage of previously undrained soil.</p> |
| Cross compliance | <p>5 Specific requirements for feedstocks cultivated in the area of European Community. (informative)</p> <p>Agricultural products cultivated within the European Union and used for the production of biofuels or bioliquids shall comply with European Agricultural regulation (Council Regulation (EC) No 73/2009 of 19 January 2009).</p> <p>The default GHG values as defined in the RED in part A of Annex V for biofuels, and the disaggregated default values for cultivation in part D of Annex V for biofuels and bioliquids, may be used only when their raw materials are:</p> <p>(a) cultivated outside the Community;</p> <p>(b) cultivated in the Community in areas included in the list of areas classified as level 2 in the nomenclature of territorial units for statistics (NUTS) where the typical greenhouse gas emissions from cultivation of agricultural raw materials can be expected to be lower than or equal to the emissions reported under the heading ‘Disaggregated default values for cultivation’ in part D of Annex V to this Directive</p> <p>(c) waste or residues other than agricultural,</p> | <p>17.6</p> <p>Agricultural raw materials cultivated in the Community and used for the production of biofuels and bioliquids taken into account for the purposes referred to in points (a), (b) and (c) of paragraph 1 shall be obtained in accordance with the requirements and standards under the provisions referred to under the heading ‘Environment’ in part A and in point 9 of Annex II to Council Regulation (EC) No 73/2009 of 19 January 2009 establishing common rules for direct support schemes for farmers under the common agricultural policy and establishing certain support schemes for farmers OJ L 30, 31.1.2009, p. 16. and in accordance with the minimum requirements for good agricultural and environmental condition defined pursuant to Article 6(1) of that Regulation</p> <p>RED 19.2</p> |

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| | <p>aquaculture and fisheries residues.</p> <p>For biofuels and bioliquids not falling under points (a), (b) or (c), actual values for cultivation shall be used.</p> | <p>By 31 March 2010, Member States shall submit to the Commission a report including a list of those areas on their territory classified as level 2 in the nomenclature of territorial units for statistics (NUTS) or as a more disaggregated NUTS level in accordance with Regulation (EC) No 1059/2003 of the European Parliament and of the Council of 26 May 2003 on the establishment of a common classification of territorial units for statistics (NUTS)⁽¹⁾ OJ L 154, 21.6.2003, p. 1. where the typical greenhouse gas emissions from cultivation of agricultural raw materials can be expected to be lower than or equal to the emissions reported under the heading 'Disaggregated default values for cultivation' in part D of Annex V to this Directive, accompanied by a description of the method and data used to establish that list. That method shall take into account soil characteristics, climate and expected raw material yields.</p> <p>RED 19.3</p> <p>The default values in part A of Annex V for biofuels, and the disaggregated default values for cultivation in part D of Annex V for biofuels and bioliquids, may be used only when their raw materials are:</p> <p>(a) cultivated outside the Community;</p> <p>(b) cultivated in the Community in areas included in the lists referred to in paragraph 2; or</p> <p>(c) waste or residues other than agricultural, aquaculture and fisheries residues.</p> <p>For biofuels and bioliquids not falling under points (a), (b) or (c), actual values for cultivation shall be used.</p> |
| Mass balance system | <p>6 Economic operators shall use a mass balance system</p> <p>The requirements set for managing chain of custody in the chapter 4 of this scheme shall be followed. Basic requirements are as follows:</p> | <p>18.1</p> <p>Where biofuels and bioliquids are to be taken into account for the purposes referred to in points (a), (b) and (c) of Article 17(1), Member States shall require economic operators to</p> |

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| | <p>6.1 Economic operators shall use a mass balance system, that</p> <ul style="list-style-type: none"> a) allows consignments of raw material or biofuel with differing sustainability characteristics to be mixed; b) requires information about the sustainability characteristics and sizes of the consignments referred to in point (a) to remain assigned to the mixture; and c) provides for the sum of all consignments withdrawn from the mixture to be described as having the same sustainability characteristics, in the same quantities, as the sum of all consignments added to the mixture. <p>6.2 Prevention of incorrect double counting/claiming</p> <ul style="list-style-type: none"> • RED compliant data shall be recorded in the material accounting system by the organization after it has gained legal ownership of the input material, and has ensured the supporting documentation contains the correct RED compliant information (the required documentation is listed in detail in appendix 3, chapter 7.3). <p>6.3 The mass balance system shall operate at least at the level of a site</p> <ul style="list-style-type: none"> • The mass balance system shall operate at a level where consignments could normally be in contact, typically a processing or logistical facility or site (defined as a geographical location with precise boundaries within which products can be mixed). <p>6.4 The mass balance shall specify the timeframe over which the system operates</p> <ul style="list-style-type: none"> • The balance in the system shall be achieved over an appropriate period of time and regularly verified. The inventory period duration shall be equal to or less than 3 months. | <p>show that the sustainability criteria set out in Article 17(2) to (5) have been fulfilled. For that purpose they shall require economic operators to use a mass balance system which:</p> <p>(a) allows consignments of raw material or biofuel with differing sustainability characteristics to be mixed;</p> <p>(b) requires information about the sustainability characteristics and sizes of the consignments referred to in point (a) to remain assigned to the mixture; and</p> <p>(c) provides for the sum of all consignments withdrawn from the mixture to be described as having the same sustainability characteristics, in the same quantities, as the sum of all consignments added to the mixture.</p> |

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| Green-house gas calculation | <p>7 The greenhouse gas emission saving from the use of biofuels and bioliquids shall be calculated in accordance with RED Article 19(1)-19(3), Annex V and Commission Decision 2010/335/EU of 10 June 2010.</p> <ul style="list-style-type: none"> The greenhouse gas calculations have to be carried out following the procedures that are described in the chapter 5 of this voluntary scheme. | <p>19.1 For the purposes of Article 17(2), the greenhouse gas emission saving from the use of biofuel and bioliquids shall be calculated as follows:</p> <p>(a) where a default value for greenhouse gas emission saving for the production pathway is laid down in part A or B of Annex V and where the e/ value for those biofuels or bioliquids calculated in accordance with point 7 of part C of Annex V is equal to or less than zero, by using that default value;</p> <p>(b) by using an actual value calculated in accordance with the methodology laid down in part C of Annex V; or</p> <p>(c) by using a value calculated as the sum of the factors of the formula referred to in point 1 of part C of Annex V, where disaggregated default values in part D or E of Annex V may be used for some factors, and actual values, calculated in accordance with the methodology laid down in part C of Annex V, for all other factors.</p> |
| Standard of independent auditing and Requirements for the verification system | <p>8 The basic requirements for the standard of independent auditing are separately set in the chapter 7 of this document.</p> <p>8.1 The participants to this voluntary scheme must have a documentation management system</p> <ul style="list-style-type: none"> In specific, the economic operators shall <ul style="list-style-type: none"> have an auditable system for the evidence related to the claims they | <p>RED, recital (79):</p> <p>It is in the interests of the Community to encourage the development of multilateral and bilateral agreements and voluntary international or national schemes that set standards for the production of sustainable biofuels and bioliquids, and that certify that the production of biofuels and bioliquids meets those</p> |

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| | <p>make or rely on,</p> <ul style="list-style-type: none"> ○ keep any evidence for a minimum of five years ○ accept responsibility for preparing any information related to the auditing of such evidence <p>8.2 Retrospective verification audits</p> <p>The voluntary scheme shall arrange for regular, at least yearly, retrospective auditing of a sample of claims made under the scheme. It is the responsibility of the verifiers to define the size of the sample that will permit them to reach the level of confidence necessary to issue a verification statement.</p> <p>8.3 Audits before participation to the Voluntary Scheme</p> <p>Economic operators shall be audited before they are allowed to participate in the voluntary scheme.</p> <p>8.4 Group audits may be performed for the producers of raw materials (please see the specific requirement under chapter 2.3)</p> <ul style="list-style-type: none"> • Group auditing is only allowed when Group has a valid certificate by a valid EC recognized voluntary scheme. • Groups for auditing are not formed under this voluntary scheme. • The validity of approved Group's certificate, including its coverage shall be checked in yearly verification audit. | <p>standards. For that reason, provision should be made for such agreements or schemes to be recognised as providing reliable evidence and data, provided that they meet adequate standards of reliability, transparency and independent auditing.</p> <p>Article 18 Verification of compliance with the sustainability criteria for biofuels and bioliquids</p> <p>18.3. Member States shall take measures to ensure that economic operators submit reliable information and make available to the Member State, on request, the data that were used to develop the information. Member States shall require economic operators to arrange for an adequate standard of independent auditing of the information submitted, and to provide evidence that this has been done. The auditing shall verify that the systems used by economic operators are accurate, reliable and protected against fraud. It shall evaluate the frequency and methodology of sampling and the robustness of the data. Commission Communication 2010/C 160/01:</p> <p>2.2.1. Documentation management It should be a condition of participation in voluntary schemes that economic operators:</p> <ul style="list-style-type: none"> — have an auditable system for the evidence related to the claims they make or rely on, |

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| | | <p>— keep any evidence for a minimum of five years, and</p> <p>— accept responsibility for preparing any information related to the auditing of such evidence.</p> <p>The auditable system should normally be a quality system drawing on points 2 and 5.2 of Module D1 ('Quality assurance of the production process') of Annex II of the Decision on a common framework for the marketing of products.</p> <p>2.2.2. Adequate standard of independent auditing</p> <p>As a general rule, a voluntary scheme should ensure that economic operators are audited before allowing them to participate in the scheme.</p> <p>For such auditing, 'group auditing' — in particular for smallholder farmers, producer organisations and cooperatives — can be performed. In such cases, verification for all units concerned can be performed based on a sample of units, where appropriate taking into account a relevant standard developed for this purpose. Group auditing for compliance with the scheme's land related criteria is only acceptable when the areas concerned are near each other and have similar characteristics. Group auditing for the purpose of calculating greenhouse gas savings is only acceptable when the units have similar production systems and products.</p> <p>In addition, the voluntary</p> |

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| | | <p>scheme should arrange for regular, at least yearly, retrospective auditing of a sample of claims made under the scheme. It is the responsibility of the verifiers to define the size of the sample that will permit them to reach the level of confidence necessary to issue a verification statement.</p> <p>For both types of audit referred to above a verifier should be selected who:</p> <ul style="list-style-type: none"> — is external: the audit is not performed by the economic operator or the scheme itself, — is independent: auditors are independent of the activity being audited and free from conflict of interest, — has the generic skills: the verification body has the general skills for performing audits — and has the appropriate specific skills: auditors have the skills necessary for conducting the audit related to the scheme's criteria. <p>Voluntary schemes should show in their requests for recognition how they will ensure this in arranging for verifier(s) to be selected.</p> <p>It is preferable but not essential that auditors should, whenever possible and where appropriate, be accredited for the kind of auditing tasks they are to undertake.</p> |
| <p>Wastes and residues</p> | <p>9 Within this voluntary scheme the following definitions and rules are used:</p> <p>9.1 Waste is any substance or object which</p> | <p>RED Article 17 paragraph 1.2:</p> <p>However, biofuels and bioliquids produced from</p> |

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| | <p>the holder discards or intends or is required to discard. Raw materials that have been intentionally modified to count as waste (e.g. by adding waste material to a material that was not waste) shall not be considered as qualifying.</p> <p>9.2 Residues are: a) agricultural, aquaculture, fisheries and forestry residues, and b) processing residues.</p> <p>9.2. a) Agricultural, aquaculture, fisheries and forestry residues are residues that are directly produced by agriculture, fisheries, aquaculture and forestry; they do not include residues from related industries or processing.</p> <p>9.2 b) a processing residue is a substance that is not the end product(s) that a production process directly seeks to produce. It is not a primary aim of the production process and the process has not been deliberately modified to produce it.</p> <p>9.3 Implications to sustainability criteria: 9.3.1 Exemption from the land use sustainability criteria (RED 17.3, 17.4 and 17.5) - biofuel produced from waste - biofuel produced from process residues - biofuel produced from residues, other than agricultural, aquaculture, fisheries and forestry residues (which all are subject to fulfilling land use criteria) 9.3.2 Greenhouse gas calculations: zero life-cycle greenhouse gas emissions up to the process of collection of those materials: - wastes - agricultural crop residues - residues from processing</p> | <p>waste and residues, other than agricultural, aquaculture, fisheries and forestry residues, need only fulfill the sustainability criteria set out in paragraph 2 [i.e. greenhouse gas saving targets] in order to be taken into account for the purposes referred to in points (a), (b) and (c).[i.e. demonstrating compliance with national renewable energy obligations].</p> <p>RED Annex V, C 18:</p> <p>Wastes, agricultural crop residues, including straw, bagasse, husks, cobs and nut shells, and residues from processing, including crude glycerine (glycerine that is not refined), shall be considered to have zero life-cycle greenhouse gas emissions up to the process of collection of those materials</p> <p>COMMUNICATION FROM THE COMMISSION on the practical implementation of the EU biofuels and bioliquids sustainability scheme and on counting rules for biofuels (2010/C 160/02) :</p> <p>Section 2.3 For biofuels/bioliquids produced from waste, and from residues other than agricultural, aquaculture, fisheries and forestry residues, only the sustainability criterion relating to greenhouse gas savings applies. What constitutes a waste or residue is addressed in Section 5. Agricultural, aquaculture, fisheries and forestry residues are residues</p> |

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| Issue | Requirement in this Voluntary Scheme | RED Article |
|-------|--------------------------------------|---|
| | | <p>that are directly produced by agriculture, fisheries, aquaculture and forestry; they do not include residues from related industries or processing.</p> <p>Section 5.2 The Directive itself does not contain definitions of 'waste' and 'residues'. The Commission considers that these concepts should be interpreted in line with the objectives of the Directive:</p> <ul style="list-style-type: none"> — for the double counting: diversification of feedstocks, — for the greenhouse gas methodology: no emissions are allocated to co-products which production did not aim for, such as straw in the case of wheat production. <p>In this context waste can be understood as any substance or object which the holder discards or intends or is required to discard. Raw materials that have been intentionally modified to count as waste (e.g. by adding waste material to a material that was not waste) should not be considered as qualifying.</p> <p>In this context residues can include:</p> <ul style="list-style-type: none"> - agricultural, aquaculture, fisheries and forestry residues, and - processing residues. <p>A processing residue is a substance that is not the end product(s) that a production process directly seeks to</p> |

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| Issue | Requirement in this Voluntary Scheme | RED Article |
|-------|--------------------------------------|---|
| | | <p>produce. It is not a primary aim of the production process and the process has not been deliberately modified to produce it. Examples of residues include crude glycerine, tall oil pitch and manure.</p> <p>Annex II of the Communication (2010/C 160/02)</p> <p>No emissions should be allocated to agricultural crop residues and processing residues, since they are considered to have zero emissions until the point of their collection, nor to waste. Further detail on waste and residues is in Section 5.2.[presented above]</p> |

2.3 Meta-standard approach

The RED sets mandatory minimum sustainability requirements. This verification scheme uses to meta-standard concept, which utilizes principles and criteria of other relevant sustainability standards, currently:

- Biomass Biofuels voluntary scheme (2BSvs) developed by the 2BS Consortium
- International Sustainability & Carbon Certification system (ISCC)
- Abengoa RED Bioenergy Sustainability Assurance (RBSA) Scheme
- Roundtable on Sustainable Biofuels (RSB) EU RED certification system
- Round Table on Responsible Soy (RTRS) Version 2.0 with EU RED Requirements
- SQC (Scottish Quality Farm Assured Combinable Crops (SQC) scheme)
- Red Cert
- NTA 8080
- RSPO RED (Roundtable on Sustainable Palm Oil RED)
- Biograce GHG calculation tool

All the voluntary RED verification schemes recognized by the European Commission, and as listed in the transparency platform (<http://ec.europa.eu/energy/renewables>) are valid to show compliance under this scheme as such. This is the case also with any part of the supply chain that is certified against the mentioned schemes.

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Regarding all the schemes listed above: this HVO scheme only recognises EC-recognised schemes for the specific scope that the EC recognises schemes for.

Participants in the EC-recognised scheme shall provide relevant documentary evidence on the verification carried out according to the EC-recognised scheme prior to participating in this scheme. No supplementary checks are needed. In case there are gaps between the EC-recognized scheme (more limited scope) and HVO scheme, the participant in the HVO scheme shall provide supplementary checks as evidence for the verification process.

Raw material suppliers which are able to provide traceable evidence of successful supplementary checks to demonstrate that supply chain operations comply with the RED requirements, are subject to limited burden to exhibit evidence of compliance according to this voluntary scheme.

The independent third party verifier (as defined in the chapter 6) is solely responsible for carrying out the verification process following the procedure and steps as defined in the chapter 6 of this scheme. The verifier may take into account existing valid sustainability certifications or declarations of conformity in the verification process.

Regarding group certificates: Only such raw material producing groups that possess a valid certificate granted under EC recognized RED verification scheme, are allowed to participate in this voluntary scheme.

Participants to this voluntary scheme are obliged to report the status of their existing certificates to the owner of the scheme immediately in case of suspended certificates, as well as to report the outcome of the verification audits.

3 Raw Material Supplier Approval Process

Biofuel or bioliquid producer shall have a system in place to identify and evaluate the sustainability performance of potential raw material suppliers. Especially, the performance in, and ability to comply with the RED requirements shall be assessed.

Aspects that shall be covered in the assessment of the supplier are knowledge in greenhouse gas emissions, compliance with qualitative RED sustainability requirements, and systematic management of the operations.

Agricultural raw materials cultivated in the European Community shall be obtained from suppliers that are able to demonstrate compliance with the European requirements and standards on good agricultural and environmental conditions, using the cross-compliance approach.

Prior to participating in this voluntary scheme, all the biofuel feedstock suppliers and other economic operators shall be in compliance with the requirements of the HVO voluntary scheme. There are two ways to show compliance:

- 1 economic operators shall be able to provide relevant documentary evidence on the verification carried out according to other EC-recognised scheme, as defined in the chapter 2.3., or
- 2 economic operators shall be audited against the criteria set in the chapter 2.2 of this scheme. The verification audits are described in detail in the chapter 6 of this document.

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4 Chain of Custody

The method by which a connection is made between data, information or claims concerning raw materials or intermediate products and claims concerning final products is known as the chain of custody. The method laid down in the RED for the chain of custody is the mass balance method.

4.1 Responsibilities in the chain of custody

Each economic operator in the biofuel or bioliquid supply chain, which is at any point the legal owner of the product, shall put in place the administration necessary to maintain the chain of custody. Each economic operator in the chain of custody should appoint a person or position with responsibility for compliance with the chain of custody procedures.

4.2 Management of the chain of custody

The economic operators in the biofuel supply chain shall run a documented system that enables traceability of materials they handle. Traceability does not only cover the basic requirements that products can be traced forth and back throughout the value chain from origin to the point of final delivery but also e.g. the possibility to specify what they are made of and how they have been processed.

In the biofuel or bioliquid supply chain, in which each economic operator delivers or transfers a consignment of RED compliant product, the economic operator shall provide the next economic operator with a product declaration clearly stating that RED requirements are met. The chain of custody system shall cover the sustainability criteria relevant for RED compliance listed in the chapter 2.

It is recommended that material flows of biofuel or bioliquid production are identified and expressed by using flow charts or other method enabling reliable and accurate monitoring of the flows. The example of flow charts Neste Oil uses for palm oil based HVO renewable diesel (NExBTL) is shown in appendix 3 of this scheme.

The detailed description of the requirements for traceability management is expressed in standard practice: NExBTL Renewable Diesel - Requirements for Traceability (appendix 2).

4.3 Mass balance

Economic operators in biofuel supply chain shall have in place a mass balance system for controlling and monitoring of sustainability characteristics in the consignments. Mass balance method shall ensure that in any given point of the value chain (the site), the inputs and outputs of both volumes and related characteristics are controlled and in balance, e.g. data from feedstock purchased and sold is in balance at site level, as defined in detail in the appendix 3. Site is defined as a geographical location with precise boundaries within which products can be mixed. Mass balance reporting stands for reporting of necessary sustainability data between economic operators of supply chain.

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All the raw materials, processes and the entire supply chain the economic operator uses for biofuel production shall meet the RED sustainability criteria, including the GHG saving requirements. All the relevant criteria listed in the chapter 2 of this voluntary scheme have to be complied with. Only supply chains that meet the 35%¹ greenhouse gas savings target are taken into account as biofuels or bioliquids.

The detailed description of the requirements for mass balance system is expressed in standard practice: NExBTL Renewable Diesel – Mass Balance Method (appendix 3). Each economic operator shall provide evidence of system that is complying with the RED requirements; appendix 3 is recommended to be used.

5 Greenhouse Gas (GHG) Data Handling

5.1 Basic requirements

Economic operator shall run and maintain greenhouse gas monitoring and calculation methods that are in compliance with the RED requirements, being able to provide data for showing compliance with the RED. It is recommended that greenhouse gas data handling practices and methodology “Greenhouse gas (GHG) data handling”, appendix 4 of this voluntary scheme, should be used. The chapters 5.2 – 5.4 of this document describe the calculation system in more detail. Each economic operator shall calculate the carbon intensity of the supply chain in a way that fulfils the quality and accuracy requirements set in the RED.

5.2 Methodology for greenhouse gas data gathering and calculations

The NExBTL renewable diesel fuel supply chain is built by using systems approach and life cycle assessment as described in international standards (EN ISO 14040, 2006 and EN ISO 14044, 2006). Annexes of appendix 4 contain the following detailed descriptions: life cycle assessment methodology, system boundary used in calculations, and the allocation procedure used.

Guidance given in international greenhouse gas verification standard (ISO 14064-1, 2006) and international carbon footprint standard (ISO 14067, under development) and WRI/WBCSD the Greenhouse Gas Protocol Initiative, Product Life Cycle Accounting and Reporting Standard (draft November 2009) have also been taken into account in greenhouse gas calculations. All direct and indirect (but not ILUC) emissions or avoided emissions that are a result of the production of biofuel have been taken into account. Land use change is dealt as a separate issue by following the rules given in the RED directive.

¹ With effect from 1 January 2017, the greenhouse gas emission saving from the use of biofuels and bioliquids [taken into account for the purposes referred to in points (a), (b) and (c) of paragraph 1] shall be at least 50 %. From 1 January 2018 that greenhouse gas emission saving shall be at least 60 % for biofuels and bioliquids produced in installations in which production started on or after 1 January 2017.

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5.3 Data sources and traceability

Data for greenhouse gas calculations may include both default values given in the RED directive annex V part D, and actual values. Actual values shall be calculated based on the actual documented performance and cultivation data. All emissions of fossil carbon dioxide (CO₂), dinitrogen oxide (N₂O) and methane (CH₄) have to be included in the calculations, as defined in more detail in the appendix 4.

The validity of data used in calculation of actual values is referred to the values found in literature study made by Neste Oil (Greenhouse gas and energy intensity of biofuel product chain - Case: transport biofuel. 2008). Preference is given to data obtained from peer-reviewed sources and mid-of-the-range values. The actual value data must be recorded.

Land use data is dealt with separately and taken into account during greenhouse gas calculations by following the rules given in EU RED directive. The rules and related land use change calculations are described in appendix 4.

5.4 Greenhouse gas emission calculations

Rules for calculating the greenhouse gas impact of biofuels and their fossil fuel comparators given in the annex V of the RED directive shall be followed. By following the calculation rules, the flowchart of supply chain greenhouse gas emissions can be formed. This flowchart is illustrated in the figure 1.

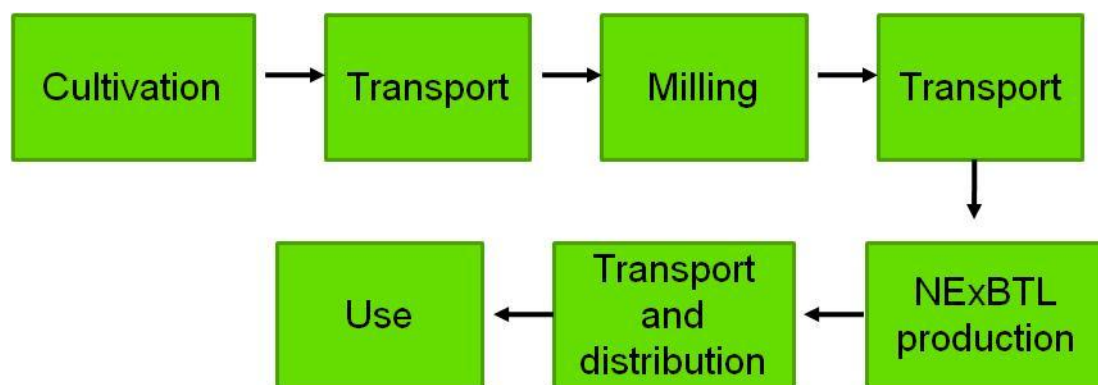


Figure 1. Flowchart for NExBTL renewable diesel supply chain greenhouse gas management

6 Verification of Sustainability Scheme

This voluntary scheme covers the sustainability criteria laid down in the RED Directive. The sustainability management system of biofuel supply chain shall be verified by external, independent and competent body against the RED requirements. Pre-audits must be performed before participation in the scheme in order to ensure operability and reliability of the control of the sustainability aspects within the product chain. Operations

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that are covered by a valid certificate (The meta-standard approach, chapter 2.3) are accepted to participate to this scheme without additional audit.

The detailed description of the verifying procedures, audit frequencies and depth are decided by the competent body carrying out the verification. The verifier may take into account the existing evidence of quality assurance actions, such as valid certificates, or available second-party reports of the audits the biofuel processor has carried out in the supply chain, but has the obligation to independently formulate the procedure for the verification.

This voluntary scheme requires regular, annual, retrospective auditing of a sample of claims made under the scheme. It is the responsibility of the verifiers to define the sampling methodology, including the size of the sample that will permit them to reach the level of confidence necessary to issue a verification statement.

The auditing shall verify that the management systems and documentation used by economic operators are accurate, reliable and protected against fraud.

6.1 Standard of independent verification

Verifiers of this sustainability scheme are selected taking into account assessment and recognition requirements by the Commission, or relevant national accreditation bodies. The relevant national accreditation bodies are official bodies that have been given the authority to accredit the operators for the verification processes in the national legislations imposing the RED.

Accreditation may be obtained through:

- a) Accreditation by a national accreditation body affiliated to the International Accreditation Forum (IAF)
- b) Accreditation as a full member or 'associate' member of ISEAL
- c) 'Commitment to comply' with ISO 17011: 2004 (General requirements for accreditation bodies accrediting conformity assessment bodies), or
- d) justified equivalent, within 3 years (consistent with ISEAL associate member)

6.1.1 Requirements for the verifier and verification process

Mandatory requirements for the verifier are the following:

- is external: the audit is not performed by the economic operator or the scheme itself
- is independent: auditors are from third party and free from conflict of interest
- has the generic skills: the verification body has the general skills for performing audits
- has the appropriate specific skills: auditor team has the skills necessary for conducting the audit related to the scheme's criteria e.g.:
 - land use
 - agriculture and ecology etc.
 - chain of custody system
 - mass balance
 - greenhouse gas calculations and management
 - experience and understanding of lifecycle assessment according to ISO 14040

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- Experience of carrying out audits in conformity with standard ISO 14064-3 establishing specification with guidance for the validation and verification of greenhouse gas assertions.

The verification has to fulfil the following mandatory requirements:

- Audits shall be carried out in conformity with standard ISO 19011 establishing guidelines for quality and/or environmental management systems auditing.
- Accreditation against standard ISO Guide 65 establishing general requirements for bodies operating product certification systems.
- Follow the ISO 17021 standard, Conformity assessment -- Requirements for bodies providing audit and certification of management systems
- Accreditation against standard ISO 14065 establishing requirements for greenhouse gas validation and verification bodies for use in accreditation or other forms of recognition.

In the selection of the verifier, preference is given to auditors that

- have experience of carrying out audits in conformity with the International Standard on Assurance Engagements (ISAE) 3000
- are accredited for the kind of auditing tasks they are to undertake.

All verifiers are not only evaluated based on costs, but also on eagerness and capability to deliver verification services (completeness of offer and references etc.).

The verifier shall select members to the auditor team to ensure sufficient knowledge and skills to perform the audit they are undertaking. Auditors shall have sufficient knowledge and specific skills required to audit schemes criteria (2.2). Auditors must have university degree or work experience (minimum 3 years) at relevant work area that contributes to the development of knowledge and specific skills required to audit the schemes criteria. All auditors must have completed training (minimum 15 hours) in audit principles, procedures and techniques by standard ISO 19011. Auditors should acquire audit experience under the supervision of an audit team leader (minimum 10 days). Audit team leader should have acquired additional audit experience working under the direction and guidance of an audit team leader (minimum 20 days).

6.1.2 Workflow of verification

Verification audits shall be properly planned, conducted and reported on. The following steps are to be taken by the auditor:

- identifies the activities undertaken by the economic operator which are relevant to the scheme's criteria,
- identifies the relevant systems of the economic operator and its overall organisation with respect to the scheme's criteria and checks the effective implementation of relevant control systems, e.g. the internal audit program,
- establishes at least a 'limited assurance level' in the context of the nature and complexity of the economic operator's activities,

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- analyses the risks which could lead to a material misstatement, based on the verifier's professional knowledge and the information submitted by the economic operator,
- draws up a verification plan which corresponds to the risk analysis and the scope and complexity of the economic operator's activities, and which defines the sampling methods to be used with respect to that operator's activities,
- carries out the verification plan by gathering evidence in accordance with the defined sampling methods, plus all relevant additional evidence, upon which the verifier's verification conclusion will be based,
- requests the operator to provide any missing elements of audit trails, explain variations, or revise claims or calculations, before reaching a final verification conclusion.

6.1.3 Non-conformity

The RED basic criteria (greenhouse gas savings, no-go areas (as defined in the this scheme in chapter 2.2., sub-paragraphs 2-4, e.g. peatland use) , mass balance system and regulatory compliance are regarded as major non-conformities that have to be corrected within two weeks of the audit, or the economic operator is not given a certificate or a valid certificate is cancelled. Minor non-conformities are expected to be corrected within 6 months time and will be followed up in the surveillance audit.

For the supplier audit, the supplier should made use of the audit results and close whatever gaps highlighted in the shortest possible time.

Non-conformities are communicated to the participant and the owner of the scheme immediately in report in writing by the verifier.

7 Training and Continuous Development of Supply Chain Management

The subscribers to this scheme shall have a training program with training records in place to ensure sufficient knowledge of the issues managed hereby. The economic operator should review annually the operations and effectiveness of this verification scheme. Emphasis is put on the aspects raised in the audits and operational experience gained by the various functions and businesses running the system. Especially, the reliability of control and performance of greenhouse gas management shall be focused. In case of malfunctions or deviations, the improvements are to be made with no delay.

8 Confidentiality

Documents and each kind of information are confidentially treated by all elements of the supply chain as indicated in the Non Disclosure Agreement (NDA).

Third party auditors are given all information and documentation needed during auditing. The economic operator is responsible for preparing all information related to the auditing.

Third party auditors should treat all information given during the audits as confidential.

9 Maintaining and updating this voluntary scheme

The documents referred to in this scheme are part of Neste Oil Management System and are updated and maintained according to the procedures therein. The person

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responsible for updating this scheme in Neste Oil is the Director, Sustainability and Supplier Compliance.

This verification scheme is reviewed annually by Neste Oil HSEQ & Sustainability function. The participants of the scheme are informed accordingly. In case material changes are introduced, the scheme is sent to the European Commission for information or for approval.

In case the regulatory basis for this scheme is changed substantially, the system is updated accordingly, and the changes imposed and informed to the authorities following the procedure of the annual reviews.

10 Abbreviations

CPO = Crude Palm Oil

CSPO = Certified Sustainable Palm Oil

GHG = Greenhouse Gases

EU RED = European Union Renewable Energy Directive

EU FQD = European Fuel Quality Directive

HVO = Hydrotreated vegetable oil

ILUC = Indirect Land Use Change

ISCC = International Sustainability and Carbon Certification

MJ = Mega joule

NExBTL renewable diesel = Next generation bio-to-liquid diesel (hydrotreated vegetable oil)

NDA = Non Disclosure Agreement

RSPO = Roundtable on Sustainable Palm Oil

RTRS = Roundtable on Responsible Soy.

WBCSD = World Business Council for Sustainable Development

WRI = World Resources Institute