

ABENGOA BIOENERGY

RED Bioenergy Sustainability Assurance Scheme

Title:	Executive Summary				
Code:	RBSA_007	Revision:	02	Date:	2011 / 02 / 25

(C) This Abengoa Bioenergy document is protected by copyright. No part of this copyrighted document may be changed or amended. The document may not be duplicated or copied in any form or by any means for commercial purpose without Abengoa Bioenergy's permission. Abengoa Bioenergy disclaims all implied representations and warranties, including but not limited to, warranties of merchantability and fitness for a particular purpose.

Abengoa Bioenergy does not represent or warrant the accuracy or usefulness of the data and procedures enclosed. Neither Abengoa Bioenergy nor its affiliates will have any liabilities or responsibilities whatsoever with respect to any use of those data and procedures. The data and procedures hereby enclosed are subject to confidentiality due to their business importance for Abengoa Bioenergy and cannot be disclosed and used without Abengoa Bioenergy's authorization.

Abengoa Bioenergy has chosen to implement a voluntary scheme to demonstrate compliance with the sustainability regime of the Renewable Energy Directive (RED) in its operations. Hence, the RBSA scheme provides a set of requirements and IT systems to assure compliance with RED sustainable criteria, including the sustainability of biomass production, traceability from biofuel to the biomass and GHG emissions threshold fulfilment, with independent auditing guarantees provided in all cases.

The goal of this document is to briefly explain the structure and main arguments behind the “RED Bioenergy Sustainability Assurance” (RBSA) scheme. This is a descriptive document that intends to deal with the main terms and requirements of the RBSA scheme, but binding requirements would only be those included in the main documents of the RBSA scheme, listed below¹:

- General scheme, reference RBSA_001.
- Mass Balance system requirements, reference RBSA_002.
- Greenhouse gas (GHG) methodology, reference RBSA_003, Annex I and Annex II.
- Sustainable maps methodology, reference RBSA_004.
- Audit Protocol for Certification Bodies, reference RBSA_005.

This document has been structured in terms of questions, in order to better explain the main elements of the scheme and concepts involved.

Question: What biofuels and types of biomass are included within the scheme? What is the RBSA scheme valid for?

This RBSA scheme is applicable on a global scale. Therefore, all types of biomass and biofuel can be included. Only in the case of using wastes / residues for producing biofuels, other than agricultural, aquaculture, fisheries and forestry residues, the requirements to be complied with are solely those related to GHG thresholds (according to art 17.1 of RED).

Under the RBSA scheme it is included a short positive list of waste / residues with identification of applicable RED requirements for each of them for the above mentioned purposes.

Once recognized by the EC, those biofuels produced and / or traded under the RBSA scheme premises are deemed to comply with RED sustainable criteria (art 17.2 to 17.5), including the Mass Balance requirements set out in art 18.1 of said Directive.

The structure of the RBSA scheme has been expressly developed to allow its inclusion in the renewable support legal structure of each Member State (once the RED regulatory development concludes).

¹ This summary is specifically intended to be extracted when disseminating the main terms of RBSA documents that Abengoa Bioenergy considers as confidential to a general audience.

Question: Which agents are participating in the scheme? What requirements do they have to comply with? What mechanisms have been envisaged for reducing the burden on the supply chain?

The RBSA scheme presents three main areas within the chain: the Biomass supply chain, the biofuel processing in Biofuel conversion unit and the Biofuel supply chain. The combination of these three areas makes it possible to cover the entire biofuel pathway, from biomass cultivation to biofuel consumption.

All economic operators within each area must be validated, prior to taking part in operations under the RBSA scheme.

Biomass supply chain

The following economic operators can be found within the Biomass supply chain: Agricultural production units, First collector suppliers and Intermediate biomass suppliers.

All economic operators within the Biomass supply chain must operate under a validated biomass supplier certificate to take part in operations under the RBSA scheme.

General description of these economic operators is as follows:

Agricultural production units. These suppliers have to operate within the RBSA sustainable origin or issue an Agricultural production unit self declaration assuring they are complying with RED provisions regarding sustainability for biomass production.

The Agricultural production units could be included in a compliance audit of the First collector supplier that they supplied.

They shall have a Mass Balance system in place in order to demonstrate that the Agricultural production unit does not sell more sustainable biomass than that produced from RBSA sustainable areas.

First collector suppliers. Under the RBSA scheme, the First collector suppliers are allowed to gather biomass from two different types of Agricultural production units:

- Located in RBSA sustainable origin.
- Sustainable through self - declaration.

They have to apply a Mass Balance system and provide the origin in their supplies as input data for the later GHG calculation.

They are allowed to group their Agricultural production² units if relevant criteria are complied with, for reducing sample size in verification audits - in any case, all Agricultural production units shall be subject to a verification audit.

² If Agricultural production units are not associated in a cooperative or in an official agricultural group.

Intermediate biomass supplier. These suppliers act by physically or commercially managing operations to transfer the biomass along the Biomass supply chain according to a Mass Balance system.

All economic operators previously defined shall operate under validated conditions or under the validation of other operators. A Sustainable biomass attestation³ shall be issued when passing biomass from one validated supplier to other (if this is the case).

In order to reduce the burden on agricultural operations, Abengoa Bioenergy has developed two IT systems to ease biomass supply chain operation:

- **IT system for GHG calculation for agricultural processing.** As RED expressly states, the use of regional averages calculated for smaller geographical areas (than those used in calculating the default values) is permitted as an alternative to actual values. Minimum area definition allowed is equivalent to NUT 3 level (within EU 27) or equivalent GAUL demarcation (outside EU27) or below.

In this way, Abengoa Bioenergy has developed IT systems in order to help the economic operator in the biomass supply chain for calculating GHG emissions; the only requirement is to issue the origin of harvesting in the commercial information.

This significantly reduces the complexity of the Mass Balance (see section "How is the GHG calculated?", for a brief description of GHG calculations and external guarantees).

- **Sustainable maps development.** Abengoa Bioenergy has developed a detailed methodology for the generation of sustainable maps, that would make it possible to qualify a region as "RBSA Sustainable origin", by processing satellite images, related database and preservation figures, and specifically identifying those areas that are described as permitted RED categories for biodiversity and carbon stock. In addition, the RBSA scheme does not allow biomass supplies from areas with a change in land use (as described in relevant EC communication), and therefore, would not eventually be considered in the GHG emission balances. As final outcome of the combined process, a RBSA sustainable origin is obtained, that fully complies with all RED sustainable criteria for biodiversity and carbon stock, and that has also maintained land use without change. After that the so - called RBSA sustainable origins list can be generated, which directly qualifies a consignment of biomass as RED compliant primarily by demonstrating proper origin (if included in the list).

Biofuel conversion unit

The Biofuel conversion unit shall receive a Sustainable biomass attestation from the last validated biomass supplier within the Biomass supply chain or from a Final EC recognized biomass supplier.

³ In order to improve compatibility of the RBSA scheme with other voluntary schemes, validated biomass suppliers are allowed to provide the GHG figures up to the delivery point to a supplier covered under another voluntary scheme.

With this attestation and following requirements of this scheme, a Biofuel conversion unit will generate a Sustainable biofuel attestation / declaration, including the sustainability characteristics of the biomass and the GHG emissions from the three main phases (biomass extraction and cultivation, processing and logistics) according to the methodology described in the scheme (the use of verified IT systems for calculating the three main phases is specifically envisaged).

All Biofuel conversion units operating under the RBSA scheme must be validated in accordance with the validation requirements prior to issuing any RBSA claim.

Biofuel supply chain

The Biofuel supply chain is constituted by just one type of economic operator, the Intermediate biofuel supplier that acts by physically or commercially managing operations to transfer the biofuel along the Biofuel supply chain according to a Mass Balance system and including GHG emissions.

All Intermediate biofuel suppliers must operate under a validated biofuel supplier scope to take part in retailing operations under the RBSA scheme.

A validated intermediate biofuel supplier can generate the same type of RBSA sustainable documents as previously described for the Biofuel conversion unit.

Finally, biofuel from an EC recognized biofuel supplier is permitted at whatever point of the biofuel supply chain, as this biofuel is deemed to meet RED requirements through external documentation or certificates.

EC recognized biofuel suppliers are automatically permitted in the scheme if they are operating under the verified rules of another EC recognized system, being authorized to carry out the same RBSA sustainable claims as a validated biofuel supplier through RBSA requirements.

A graphic description of the RBSA scheme structure is included in the following diagram. This structure has been envisaged in order to allow inclusion under the sustainable supporting system of each Member State once the transposition of the RED is completed. All options are permitted, when combining attestation / declaration with a Biofuel conversion unit / Intermediate Biofuel supplier in the way to dispatch the biofuel to a Final consumer or blender (typically excise duty point or, ultimately, where each Member State decides to account for sustainability of the biofuel on their national support schemes).

Question: How will operators demonstrate their capability to operate under the scheme? What proof can be used to show that they are complying with RED?

Validated suppliers (biomass or biofuel) and Biofuel conversion units will be audited by certification bodies approved under the RBSA scheme for verification of compliance with the relevant sections of the scheme, prior to any RBSA sustainable claim. EC recognized biofuel suppliers under another EC recognized voluntary scheme or agreement are also permitted.

A qualifying operation is described for all economic operators, whereby they demonstrate their capabilities on complying with and implementing the RBSA requirements. Requirements are described for both economic operators within a supply process (biomass or biofuel supply chain), and for validated biomass /

biofuel suppliers in order to provide guarantees to ensure that the RBSA claims are properly made.

Once validated suppliers pass the qualifying operation, they are allowed to issue RBSA claims (Sustainable biomass attestations, and Sustainable biofuel attestations or declarations) covering their subsequent operations in a one - year period. After that, validated suppliers are requested to pass a surveillance process in a sample of their operations in the previous year (since the first RBSA operation) to check the accuracy of their operations.

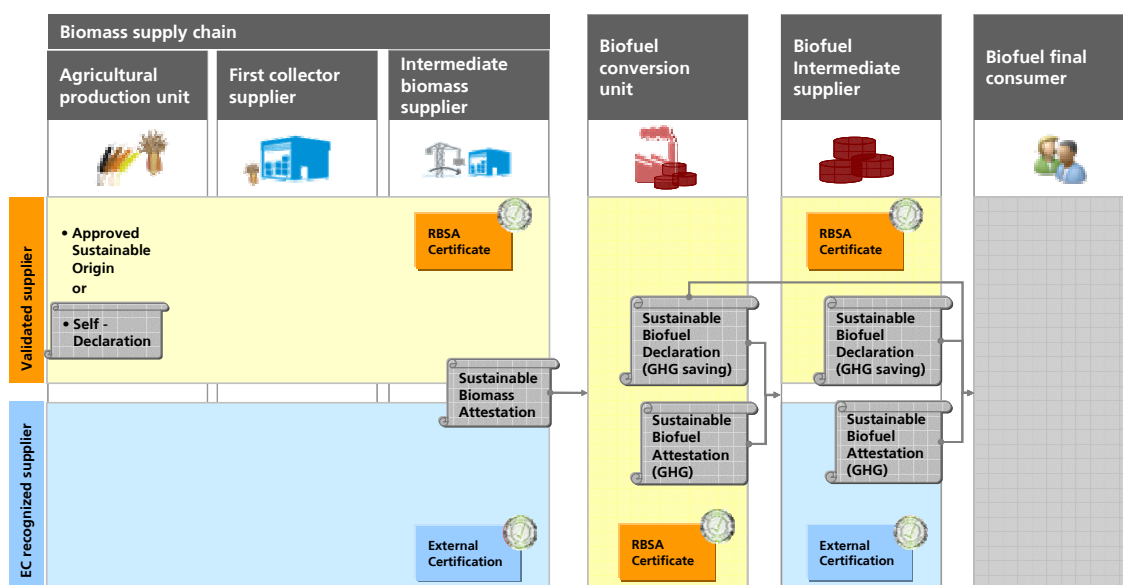


Figure 1. RBSA scheme in practice

To demonstrate compliance with the scheme, all the economic operators⁴ considered will have operational systems, procedures and / or instructions that are in accordance with general principles of relevance, completeness, consistency, transparency and accuracy. Validated suppliers shall have additional requirements when covering the activities of other operators under their validated scope.

For Agricultural production units, different ways to show compliance have been detailed, being possible to use certain maps, official records and, ultimately, onsite verification by certification bodies. A combination of these different ways is also possible, but full compliance with RED land use and biodiversity criteria is necessary (including permitted exceptions).

In any case, onsite verification by certification bodies are needed in order to check the consistency of quantities declared.

Question: How is the verification system managed?

Abengoa Bioenergy will be responsible for the RBSA database that will have to ensure the following (among other things):

⁴ Agricultural production units are excluded from this responsibility, as they are the starting point of the supply chain and their RED sustainable quality can be achieved through adapted requirements allowing a reduction in the burden, as RED expressly states (see section 5 of RBSA_002).

- Registration / control of validated agents and certification bodies in the scheme.
- Suitable monitoring and management of the validation / surveillance process for validated suppliers.
- External communications on the validity of the documents generated under the RBSA scheme.

Confidentiality will be maintained in all cases. This database will be available for authorities or designated bodies in the process to determine the compliance of individual economic operators under the scheme.

Question: How is the GHG calculated in the RBSA scheme? What external guarantees are provided for them?

As previously indicated, Abengoa Bioenergy has developed an IT system to calculate GHG emissions for biomass agricultural processing that can be used by biofuel conversion unit appointed operators once the biomass supplied has been sourced. It is relevant to mention that the RBSA scheme does not allow biomass from Agricultural productions units with land use change since 2008 (IPCC categories plus perennial crops) - therefore these emissions do not need to be included.

Additionally, IT systems have been also developed for determination of processing in conversion unit and biofuel logistic GHG emissions.

The methodology and the calculations for the three IT systems (biomass extraction and cultivation, biofuel conversion unit and logistics) entirely follow the provisions included in annex V of the RED Directive, and subsequent EC communications. These IT systems, and associated procedures, will be externally verified by auditing companies according to ISAE 3000, and comprise not only the RED methodology but also verification of the entire input for the calculation.

It is necessary to have a limited verification report on compliance with the methodology described in the RBSA GHG document (and through this on the RED calculation methodology) to use these IT systems. Proper use of the verified IT systems is also checked during the validation / surveillance process and achieved by procedures implemented at facility level / Intermediate biofuel supplier level, as a binding requirement for achieving a RBSA certificate.

Specifically, for the Biofuel conversion unit, the data compilation shall be ruled out through technical instructions allowing consistent results among Biofuel conversion units. The set of data for the calculation will be specifically determined for the corresponding plant configuration used for that type of biomass – pre - processed biomass. This will enable the use of actual values from the conversion units, based on the best available data measured and / or calculated.

Appropriate guarantees for updating and maintenance of methodology and data used (a detailed procedures has been developed specifically for biomass cultivation and extraction variable databases) are expressly included within the procedures implemented by the appointed Abengoa Bioenergy staff designated for the development of these systems.

Question: How are the sustainable maps generated within the RBSA scheme? What external guarantees are provided for this?

As previously indicated, Abengoa Bioenergy has developed a detailed methodology for the preparation of sustainable maps, qualifying an entire region as RED sustainable origin.

The application of this methodology will be externally verified by auditing companies using ISAE 3000, and comprising not only the RED protected figures and criterion selection, but also verifying all inputs for the preparation. It will be necessary to have at least a limited assurance level verification report on compliance with the methodology described in the RBSA Sustainable maps document to enable the use of the maps generated in accordance with it.⁵

Suitable guarantees for updating and maintaining methodology and input (specifically for the satellite images and database used) are expressly included within the procedures implemented by the appointed Abengoa Bioenergy staff designated for this development.

Question: How is the suitable standard of independent auditing achieved within the RBSA scheme?

Detailed accreditation requirements for certification processes are included for those companies willing to certify under the scheme - they must be recognized by the Abengoa Bioenergy leadership (recognition process is described). Accreditation on ISO 65 is expressly needed.

The verification process is expressly described for economic operators that need a previous validation and on the annual surveillance audit. The terms for the qualifying process and surveillance process are also entirely described. ISO 19011 is expressly required for certification bodies to conduct verification process, including the timeline to resolve non - conformities, requirements and sanctions when any non - compliance (major or minor) is found. Guidance on this and RBSA checklists are provided.

Verification of IT systems and associated procedures for GHG and map development is to be performed by auditing companies against ISAE 3000 - at least a limited assurance level verification report on compliance with the methodology is needed prior to the use of this IT system, not only for calculation or compliance with the methodology, but also for the gathering of input and proper maintenance of the entire methodologies.

Finally, an annual report on the overall operation of the RBSA scheme will be generated and externally verified, specifically covering:

- IT systems and associated procedures usage for GHG calculations.
- Sustainable map generation and update.
- Agents registered and validity of compliance verification documents.

⁵ Other maps recognized by the EC should be also permitted.

ABENGOA BIOENERGY ABENGOA BIOENERGIA	Executive Summary		
RBSA_007	Date: 2011 / 02 / 25	Page: 9 / 9	

- Approval the modifications / new models for RBSA claims.
- RBSA database and other external control and auditing guarantees.

A summary of this report will be available to all those Authorities that so request.

Question: How are the goals and objectives of the RBSA scheme maintained and updated?

As the main reference for a sustainable management system, the structure of the RBSA scheme itself has many provisions for the proper use and updating of all the methodologies and input used - specifically for GHG and maps development.

Furthermore, Abengoa Bioenergy is committed to maintaining and introducing all those necessary changes needed for the proper operation and continuous improvement of the RBSA scheme and compliance with binding RED sustainable criteria, specifically fulfilling EC indications on this (existing or associated to the approval procedures).