

# Endorsement letter - Women in BioDiesel

<b>Context</b>	This document provides an Endorsement for the Women in BioDiesel Project by SAEON and explains how the project fits into the broader objectives of the BioEnergy Atlas
<b>Topics</b>	Project support motivation
<b>Intended Audience</b>	SAEON, External Stakeholders, FETOLA
<b>Stakeholders</b>	Researchers, government departments, NGO's, Project Funders

## Revision History

Date	Authors	Notes
24-04-2020	HT Wilson	First Draft

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## Acronyms

BEA - The BioEnergy Atlas for South Africa

DSI - The Department of Science and Innovation

NCCIS - National Climate Change and Information System

NRF - National Research Foundation

SAEON - The South African Environmental Observation Network

SARVA - South African Risk and Vulnerability Atlas

## 1. Introduction to the BioEnergy Atlas (BEA) for South Africa

The BioEnergy Atlas is a Department of Science and Technology funded initiative to assist with the establishment of a bioenergy industry in South Africa. Within the energy economy of Southern Africa there is scope for the addition of renewable energy sources in order to improve energy security and limit the generation of greenhouse gases. BioEnergy Atlas 2.0 aims to establish a decision support system for the food, water, energy nexus and as such will utilise the latest available information to assist with the integration of bioenergy sources in combination with other energy sources into South Africa's energy economy and assist South Africa with meeting international climate objectives.

The atlas aims to equip mitigation and adaptation planners in local government, investors in Independent Power Production, and national departments with the tools to facilitate decision-making around bioenergy project implementation. There is additional scope for the infrastructure, techniques and methodologies developed within the atlas to be applied to SADC/Africa and as such the project aims to facilitate this process. The use of multi-criteria optimisation modelling allows for the implementation of site-specific hybrid energy systems where a mixture of bioenergy sources provides energy optimised to the specific value requirements of that site.

The BioEnergy Atlas 2.0 is an extension of the existing BioEnergy Atlas to include refinements to datasets such as spatial datasets and cost estimates included in the atlas, improvement of the models to include multi-criteria optimisation, as well as integration with government programs, the South African Risk and Vulnerability Atlas (SARVA) and the Department of Environmental Affairs (DEA) National Climate Change Information System (NCCIS). Additionally, the project aims to assist in supporting research to cover gaps in existing knowledge and assist with project implementation.

The project is scheduled to run from 2019 - 2022 with quarterly progress reports, annual progress reports, and annual records of delivery. The DSI has allocated 6 million rand to SAEON for the project duration and it is expected that a proportion of that funding be allocated to the support of SME's through the feasibility testing of business cases to a bankable state.

## **2. Strategic Objectives of the BioEnergy Atlas**

The goal of the BioEnergy Atlas 2.0 is to provide the tools and data to assist with the scoping, feasible utilisation and integration of BioEnergy into the Energy mix of South Africa. It will achieve this by meeting the following objectives:

- Data Improvements to ensure that the data used for modelling is the most up to date version and meets the project specifications for decision ready data, modelling to create feasible scenarios for BioEnergy and Hybrid BioEnergy systems.
- Research to ensure that knowledge gaps are identified and that NRF funding is allocated to address the knowledge shortfall.
- Integration of the feasibility tested scenarios for hybrid BioEnergy systems into policy tools
- Implementation of feasibility tested scenarios by members of the private sector for planning purposes by updating the existing online data publication platform and engaging with selected programmes.

## **3. The Women in BioDiesel Project**

Women in Biodiesel, aims to establish small delocalized women owned/managed biodiesel enterprises in South Africa. This project meets a number of the DSI's project requirements in that it facilitates gender transformation, empowers previously disadvantaged persons and is expected to generate 75 permanent jobs consisting of a 50% woman, 50% youth allocation.

The project is expected to generate 3,000,000 liters of biodiesel production per annum , supplying a total of 3125 users (households), saving an estimated R2/liter or R160/month while also mitigating 24,000 tCO<sub>2</sub> per year through fossil fuel displacement. SAEON has been brought on to assist with market research as well as support with logistics modelling as is being developed for the new modelling platform for the Bioenergy Atlas.

## **4. Overview of how the Women in BioDiesel Project supports the objectives of BEA**

The collaboration between SAEON, FETOLA and iLive on the Women in BioDiesel Project supports the overarching objectives of BEA 2.0 and also meets a number of the project requirements that the DSI has stipulated as critical outcomes of the BEA 2.0 project.

At a broad scale, the BioEnergy Atlas aims to assist with the establishment of a bioenergy industry in South Africa. As such it assesses a range of techno-economic options for energy production in relation to the spatial distributions and logistical requirements for the exploitation of different feedstocks.

Production of BioDiesel from used cooking oil is seen as an underutilised resource in South Africa and a significant knowledge gap exists on the volumes and distributions of the resource. As such, the

characterisation of the feedstock and its associated supply chains as required for the Women in BioDiesel Project is directly in alignment with the objectives of Work Package 2 of the BioEnergy Atlas Inception Report which are the following:

1. Updating the existing National Biomass feedstock spatial distributions, feedstock volumes and temporal availability to reflect the current status of knowledge within South Africa
2. Development of Fine-Scale Spatial Cost Factors and Logistics Considerations
3. Feedstock and BioEnergy Product Value Chain Assessment
4. Assessment of the Carbon emission/ capture potential for each feasible technology option
5. Determine the potential impacts associated with the feasible technology option.

In addition to the research requirements for the Women in BioDiesel project aligning with those of work package 2, the Women in BioDiesel Project also fulfils a key project outcome as stipulated by the DSI.

These project outcomes are outlined in work package 4 of the BioEnergy Atlas Inception Report, which are: to identify and partner with a limited number of key industry members, determine the constraints/challenges that they are experiencing with their project implementation and then utilise the outputs and capabilities of the modelling process and associated data to facilitate their project process to the bankable feasibility stage. The outputs of the work plan will be to publish the detailed feasibility studies in the form of case studies showing the range of technology options, hybrid utilisation scenarios, downstream impacts etc. for the implementation of viable BioEnergy resource utilisation.

The DSI gauges the success of this work package through the production of a feasible, bankable business case for bioEnergy production. As such, the DSI expects SAEON to provide project support to key members of industry in order to co-develop a bankable business case. The women in BioDiesel Project is one such project which SAEON is providing project support in the form of Data acquisition, Data Processing, Logistics analysis, supply chain mapping etc.

Finally, the collaboration with iLive and FETOLA in the Women in BioDiesel Project will also assist with the BioEnergy Atlas objectives in that both iLive and FETOLA provide a unique perspective on what is considered to be useful information that needs to be presented to the public in order to make informed decisions. As such, the collaboration between the two organisations and SAEON enables the generation of a valuable product that has the potential to be relevant to a greater audience than would previously have been possible.

## **5. Conclusion**

The women in BioDiesel Project aligns with key objectives for BEA 2.0 and as such SAEON will provide full support for the project as is within the scope outlined in the project inception report submitted to DSI and as stipulated within the MoU drafted between SAEON and FETOLA.