Environmental and Social Review Summary

Buchanan Renewables Fuel

This Environmental and Social Review Summary (ESRS) is prepared by MIGA staff and disclosed in advance of the MIGA Board consideration of the proposed issuance of a Contract of Guarantee. Its purpose is to enhance the transparency of MIGA’s activities. This document should not be construed as presuming the outcome of the decision by the MIGA Board of Directors. Board dates are estimates only.

Any documentation which is attached to this ESRS has been prepared by the project sponsor, and authorization has been given for public release. MIGA has reviewed the attached documentation as provided by the applicant, and considers it of adequate quality to be released to the public, but does not endorse the content.

Country: Liberia
Sector: Agribusiness, Manufacturing and Services (AMS)
Project Enterprise: Buchanan Renewables Fuel
Environmental Category: B
Date ESRS Disclosed: November 18, 2010
Status: Due Diligence

A. Project Description

Buchanan Renewables Fuel (BR Fuel) and Buchanan Renewables Technical Services, together doing business as Buchanan Renewables, is a Liberian biomass producer that focuses on the collection and processing of expired rubber trees (i.e., rubber-producing trees that have reached the end of their productive life) for use in coal-fired and dual-fired power plants. Currently BR Fuel exports biofuel woodchips to power companies in Europe, including Vattenfall, a Swedish energy company that aims to acquire 20% of BR Fuel. Vattenfall has approached MIGA for political risk insurance on this investment.

BR Fuel is not a greenfield project and was previously operated by Pamoja of Switzerland. Vattenfall’s entry into the project will lead to an expansion of the current operation from 500,000 tons of biomass p.a. to 2,000,000 tons by expanding their operations to different parts of the country to access additional biomass (i.e., unproductive rubber trees) on plantations. Vattenfall’s support will be key to BR Fuel’s investment in the infrastructure necessary for it to operate in Liberia.

For the next several years BR Fuel will obtain rubber tree wood primarily from some of Liberia’s largest rubber concessionaires and plantation owners, including Firestone and Liberian Agricultural Company. In future years BR Fuel plans to obtain an increasing supply of wood from smallholder rubber farmers.

BR Fuel’s operations currently include (some of this is carried out by Buchanan Renewables Technical Services):

1 There are also plans by Buchanan Power, a company closely related to BR Fuel, to build a power station outside of Monrovia, which in the future will receive some of the biofuel produced by BR Fuel.
Wood-chipping, carried out by two mobile wood chipping units, generally deployed to different locations
Harvesting of non productive rubber trees for chipping, using teams of backhoes and skidders operated in the near vicinity of each wood chipping unit
Trucking of woodchips to the port
Storage of wood chips at a BR Fuel facility located close to Buchanan port
Loading of third party ships at Buchanan port
Maintenance of existing roads, including maintenance of small bridges, grading of laterite (hard-packed dirt) roads, and temporary laterite pot-hole filling on paved roads, but not including new roads, road expansion, or paving; and
Transport of staff in passenger vehicles.

As operations expand, the use of mobile wood chippers will change to stationary chippers located at the Port of Buchanan.

BR Fuel currently exports the wood chips at the commercial Port of Buchanan. BR Fuel itself, or through a closely related company, will carry out port rehabilitation activities (including dredging and shipwreck salvaging) to facilitate BR Fuel’s ability to export the projected increased volumes of wood chips. These port improvements will also benefit other commercial users of the port. BR Fuel will submit to MIGA all necessary social and environmental information in advance of proceeding with any port rehabilitation activities. BR Fuel has confirmed that activities to be carried out as part of the port rehabilitation will not impact designated sites of ecological or conservation value. BR Fuel has committed to carry out all activities in compliance with social and environmental requirements.

The following operations are carried out or proposed by BR Fuel or closely related companies, but are not considered part of the MIGA-supported project and are not the subject of this due diligence review:

- A proposed 35 MW biomass-fueled power plant, and
- The raising of one or more wrecks in the port of Monrovia and/or any other ports where port rehabilitation activities are not carried out to benefit BR Fuel’s core operations.

B. Environmental and Social Categorization

The project is Category B under MIGA’s Policy on Social and Environmental Sustainability because potential adverse social or environmental impacts are few in number, generally site-specific, largely reversible and readily addressed through mitigation measures. Potential risks of the harvesting activities of the project are associated with operations, with key issues related to surface and/or groundwater contamination, soil quality, air and noise emissions, biodiversity, waste management, community and occupational health and safety, and the risk of child labor in the supply chain. Potential risks of the port rehabilitation activities of the project are associated with
the improvement and operations phase, with key issues related to sea water quality, the marine ecosystem, and management of solid waste.

C. Applicable Standards

While all Performance Standards are applicable to this investment, based on our current information the investment will have impacts which must be managed in a manner consistent with the following Performance Standards:

- PS1: Social and Environmental Assessment and Management System
- PS2: Labor and Working Conditions
- PS3: Pollution Prevention and Abatement
- PS4: Community Health, Safety and Security

PS5 on Land Acquisition and Resettlement is not applicable as the BR Fuel compound and Monrovia office did not entail physical or economic displacement, and BR Fuel’s other operations all involve the use of third party concessions and privately owned rubber plantations, as well as government assets such as existing roads and the port of Buchanan. Significant effects on cultural resources are not expected, although a “chance finds” procedure consistent with PS8 will be required as part of the Environmental and Social Management Plan.

Based on available information and our preliminary research it appears unlikely that there are communities that can be considered indigenous under PS7 living in the areas in which the project operates. BR Fuel consults with local communities whenever it moves its mobile operations to a new area in order to address any potential negative impacts. Positive impacts on local communities are expected in the form of employment opportunities, and currently individuals from more than 15 different ethnic groups are represented in BR Fuel’s workforce. As noted below under PS2, conditions of employment are favorable. Furthermore the pending Collective Bargaining Agreement creates a Joint Consultative Committee through which the company and union will address social issues and employee welfare through a consensus process. This appears to be an appropriate mechanism through which vulnerable members of the workforce, and the communities from which the workforce is drawn, can be identified and supported.

The World Bank Group General Environmental, Health and Safety Guidelines, Environmental, Health and Safety Guidelines for Forest Harvesting Operations, and Environmental, Health and Safety Guidelines for Ports, Harbors, and Terminals, are all applicable to this project.

D. Key Documents and Scope of MIGA Review

As part of due diligence, MIGA’s social and environmental specialists visited the project site in September 2010. MIGA’s review of this project also included environmental and social information submitted by BR Fuel and Vattenfall. The objective of MIGA’s due diligence was to review the social and environmental management capacity of the project enterprise to ensure that all operations are (and will be) carried out in compliance with
MIGA’s Performance Standards. The Overseas Private Investment Corporation (OPIC), an agency of the United States government, has provided support to BR Fuel’s existing operations.

The documents reviewed by MIGA included:

- Draft Environmental and Social Impact Assessment, October 2010
- Draft Environmental Management Plan Port of Buchanan – Rehabilitation, October 2010
- Harvesting Plan (August 2010 – December 2010)
- Harvesting Management Plan February 2009
- Fire Safety Plan June 2009
- BR Fuel briefing note on child labor
- Map of the BR Fuel compound
- EPA certificate permitting harvesting of non productive rubber trees in Grand Bassa, River Cess, Bong and Nimba counties
- Business plans
- Documents originally submitted to OPIC
- Vattenfall’s Environmental Due Diligence Report
- Vattenfall’s Corporate Social Responsibility Due Diligence Assessment
- Vattenfall’s Climate Considerations of the Monroe Project, Liberia
- Vattenfall’s Control Risks Report on integrity and political risk due diligence.

These documents adequately assess the social and environmental impacts of BR Fuel’s operations. Together with further documentation that will be developed and provided to MIGA, including a comprehensive Environmental Management Plan, further Best Practice Manuals, and a revised Environmental Management Plan for the port rehabilitation and operation, they provide a sound basis for the proper mitigation of the S&E risks posed by this project.

E. Key Issues and Mitigation

PS1: Social and Environmental Assessment and Management Systems

Social and Environmental Assessment: BR Fuel is committed to developing a systematic approach to managing social and environmental aspects of its operations. The company is currently in the process of formalizing and documenting its social and environmental policies and procedures. The Deputy Country Director (DCD) is responsible for overseeing the development and implementation of the environmental and social management system and its related policies, programs, and plans. The DCD reports directly to the Country Director of BR Fuel through formal and informal means.

The project has limited construction impacts as main project activities encompass harvesting of unproductive rubber trees on existing plantations. Activities carried out by BR Fuel are divided into “off-site” and “on-site” activities. Off-site activities encompass
a variety of actions related to harvesting of the unproductive rubber trees, chipping the felled trees, replanting the cleared land (including maintaining a nursery), transporting wood chips to the port, and loading and shipping the wood chips. Off-site activities also include rehabilitating existing roads within and around the areas of harvest at existing plantations. On-site activities include activities within the workshop/compound in Buchanan and in the port of Buchanan.

Management Program: Through the use of consultants (Earthtime Inc.), BR Fuel prepared an Environmental Management Plan (EMP) in 2008 which was submitted to and reviewed by the Liberian Environmental Protection Agency (EPA). Comments were issued by the EPA and addressed by BR Fuel in a revised EMP dated 2009. Since then, BR Fuel (with Earthtime Inc.) has prepared a draft Environmental and Social Impact Assessment (ESIA) (October 2010) to address the expansion of current activities. This ESIA will be submitted to the EPA for review. The draft ESIA (October 2010) describes the general environmental and occupational health and safety aspects of the project and proposed mitigation measures, and has sufficiently identified potential impacts. However, a final version with further details will be submitted to MIGA. In addition, a comprehensive environmental management plan will be submitted to MIGA which includes the roles and responsibilities, timelines, and overall budget allocations.

BR Fuel has committed to prepare harvesting plans semi-annually to address forecasted demand for wood chip exports. These plans identify the areas to be harvested, activities associated with replanting and farm maintenance, and nursery activities. As significant numbers of unproductive rubber tree blocks will be harvested, separate site specific Harvesting Management Plans will be prepared by the project enterprise in accordance with national laws and MIGA’s Performance Standards. The Harvesting Management Plans will be attached to quarterly environmental reports which are submitted to the Liberian EPA.

BR Fuel will ensure that roles and responsibilities, including replanting of harvested blocks of unproductive rubber trees, are well defined in written harvesting contracts. Large concessionaires and large plantation holders will carry out their own replanting and care for the land according to their standard practice. On smallholder farms where capacity is limited, BR Fuel will provide resources (e.g., stumps, fertilizer, etc.) and technical support to assist with replanting.

BR Fuel’s activities at the Port of Buchanan include dredging of the entrance to the Port, the area along the commercial quay, and other areas as necessary. This dredging will ensure a draft of at least 12 m, and will be carried out using a suction dredger. Shipwreck removal and salvage will be carried out to ensure a safe navigation channel at the Port of Buchanan, and this will be performed by another company closely related to BR Fuel. Further basic port improvements will also be carried out (e.g., installation of fenders and bollards, navigations aids, etc.). A draft Environmental Management Plan (EMP) has been prepared and will be submitted to the Liberian EPA. The draft EMP has been reviewed by MIGA; a revised version will be submitted to MIGA. The EMP will be updated as needed to reflect changes in operations and lessons learned.
Organizational Capacity and Training: Vattenfall is Europe's fifth largest generator of electricity and the largest generator of heat. It currently has operations in Belgium, Denmark, Finland, Germany, United Kingdom, Poland, Netherlands and Sweden. Vattenfall is active at all stages of the electricity value chain - generation, transmission, distribution and sales. Vattenfall also generates, distributes and sells heat, and conducts energy trading and lignite mining. The parent company, Vattenfall AB, is wholly owned by the Swedish state.

BR Fuel has been in operations since 2008. The DCD is currently supported by several staff assigned specific roles to formalize operational plans as per the commitments outlined in the ESIA and other social and environmental documentation.

Nursery staff has undergone comprehensive training in bud grafting. These grafted stumps are then used for replanting of those harvested blocks of rubber trees for which BR Fuel has committed to assist with replanting.

Expatriate managers and technicians currently provide employees with extensive job training. BR Fuel is in the process of developing formal training programs for its mechanics and drivers as part of a partnership with a local vocational school. Technical training will continue to be a main business focus.

Monitoring and Reporting: BR Fuel presented a monitoring framework to ensure that both compliance and impact detection monitoring are carried out. Detailed monitoring plans for harvesting activities will be developed. Detailed plans will identify monitoring locations, frequency of monitoring, parameters to be monitored, sampling protocol, national and other applicable emission and effluent standards (e.g., World Bank Group), evaluation methods, reporting, auditing, etc. for continued monitoring throughout operations. Monitoring of port rehabilitation activities will also be carried out.

BR Fuel has committed to publicly disclose annual monitoring reports and future corporate social responsibility reports on its corporate website. BR Fuel will submit a copy of the final reports to MIGA.

PS 2: Labor and Working Conditions

BR Fuel employs 480 people of whom 440 are local employees and 40 are expats. Of those 40 expats 10 are in management roles. Local employees are paid above the legal minimum wage and above the civil service minimum wage, and receive extensive on the job training. Over the next five years, the company expects to spend the equivalent of between $50,000-100,000 per month on staff training. Human resources procedures (including workers’ grievance mechanism, hiring/firing practices, etc.) will be submitted to MIGA. During the site visit, MIGA observed that labor practices are in compliance with PS 2.

Child labor is not a concern for BR Fuel’s own operations, both because of the relatively capital-intensive nature of their operations and because of close supervision by a
management committed to employing those only over age 18 (or 16 in the case of interns registered by the Liberian Department of Labor). The company has measures in place via its Collective Bargaining Agreement to monitor and identify infractions of its labor policies, in which child labor standards are defined in accordance with both the ILO’s Minimum Age Convention and the laws of Liberia. The project will implement monitoring and auditing protocols with respect to the project’s own activities. MIGA will be updated as part of their regular monitoring reports submitted to MIGA.

BR Fuel is aware of allegations of child labor and poor labor practices in the rubber sector in Liberia. Regarding BR Fuel’s operations, the risk of child labor in the supply chain as addressed in PS2 is mitigated in the following ways:

- The pricing of unproductive rubber trees is not a function of how that tree was used during its productive life. The type and cost of labor used in rubber production will not likely affect the price of unproductive rubber tree wood, whereas it may affect the price of rubber. Therefore BR Fuel does not stand to benefit economically from any incidence of child labor in the production of rubber, in the event that some of the allegations are true, as the cost of labor in the production of rubber is not a factor in determining the competitiveness of a wood chipping operation.
- BR Fuel reports that through their supply contracts, the major suppliers commit not to use child labor.
- BR Fuel intends to develop a supplier code of conduct which will address child labor, among other issues. MIGA will continue to obtain updates from BR Fuel on this issue.

PS 3: Pollution Prevention and Abatement

An overview of some of BR Fuel’s proposed mitigation measures for preventing and abating pollution are summarized below.

Impacts on surface and groundwater quality may include possible leaks and spills of fuel and lubricants, improper use of agrochemicals, soil erosion, and sediment mobilization and transport. These impacts will be managed and controlled by standard practices related to management of hazardous materials and wastes, training in use of agrochemicals, stockpiling and replacement of topsoil, creating drainage diversions, using settling ponds, preserving buffer zones near water bodies, and minimizing contact of rain water with woodchip stockpiles.

Potential impacts to soil quality include degradation of soil cover properties, soil compaction due to vehicle/heavy equipment circulation, and contamination from leaks and spills. In addition to following mitigation measures to minimize impacts on surface and groundwater quality above, impacts will be managed and controlled on cleared areas by following conservation tillage principles, uniformly spreading mulch and organic material, and planting fast growing vegetation and crops.

Fugitive dust, air emissions, noise, and vibration emissions from the operational activities will be managed or controlled through mitigation measures such as watering of surfaces,
covering truck beds carrying woodchips, properly maintaining equipment, limiting harvesting activities to daylight hours, using personal protective equipment to protect workers, and using signage and diversion barriers to protect the public.

Waste resulting from operational activities will be collected, stored, and disposed properly.

Potential risks associated with port rehabilitation activities of the project are related to the improvement and operations phase. Key issues include sea water quality, the marine ecosystem, and management of solid waste. The draft EMP addresses these potential impacts. Information presented in the draft EMP indicates that the sediments are not polluted. Although pollution impacts are expected to be negligible, dredging activities may cause harm to the marine environment. The draft EMP presents measures to minimize, mitigate, and monitor such impacts. Dredged materials will be used to help remediate some of the areas affected by soil erosion near the port. The draft EMP also includes mitigation measures to address potential waste products such as diesel that may still be on ships which will be removed from the port as part of the wreck salvaging activities, although such activities will be carried out by another company closely related to BR Fuel.

Occupational health and safety measures will include providing employee awareness and training, using personal protective equipment, providing drinking water and sanitation facilities, following standard operating procedures for the use of equipment (e.g., chainsaws), and ensuring adequate signage and barriers are in place.

Emergency response procedures have been developed by BR Fuel. Fire control measures include providing basic firefighting equipment, assigning a team for fire watching, and providing emergency numbers at the site. Prevention measures are adopted to reduce the risk of fire occurrence. These measures include prohibiting littering, properly storing hazardous materials and waste, providing spill control equipment, prohibiting smoking near flammable materials, and providing appropriate training. Medical emergency response measures in the field include availability of an ambulance staffed by a trained paramedic. As operations expand across broader geographic locations, additional emergency response equipment will be needed.

PS 4: Community Health, Safety & Security

Generally, harvesting activities will not take place immediately adjacent to communities. Access to operations where BR Fuel heavy equipment is being used on plantations is restricted to BR Fuel personnel, and safety zones are monitored by site security. In addition to posting signs, BR Fuel verbally notifies plantation holders and nearby communities (if any) one week in advance of commencing harvesting activities.

Traffic management is part of the draft ESIA. BR Fuel operates a 24/7 logistics chain to transport processed wood from the chipping sites to the port. This is designed in part to reduce traffic congestion caused by BR Fuel’s trucks. Drivers receive appropriate training and are required to obey traffic laws. On mission MIGA observed appropriate conduct by
BR Fuel truck drivers on the roads between chipping operations, the port, and the BR Fuel compound.

Impacts related to air, noise, and vibration may affect nearby communities if standard mitigation practices are not followed. BR Fuel follows standard mitigation measures in its current practices. Monitoring of impacts will be included as part of its monitoring program.

**Security Arrangements:** Security consists of security for BR Fuel’s office and compound, security for operations outside of the compound and security for expats. BR Fuel contracts 195 security persons from a private security company. They are active in all BR Fuel’s operations. The security force is obliged to be in compliance with BR Fuel’s ethical standards, although these standards are not yet expressed in a written policy. Security personnel do not use firearms; firearms possession is prohibited in Liberia except for official military and police forces. BR Fuel is implementing a training program for security personnel, covering non-violent resolution of threats, gradually escalating use of force, and other best practices. BR Fuel reports that there have been no major security problems.

**PS6: Biodiversity Conservation and Sustainable Natural Resource Management**

Project harvesting activities take place on existing plantations. Even though rubber plantations are not known to be biodiversity rich and are generally considered of low conservation value, mitigation measures to control and manage potential adverse impacts to the biological environment will be followed. These measures include identifying any rare/threatened/endangered species, preserving riparian zones as ecological corridors, preserving wetlands, maintaining landscape connectivity to decrease habitat fragmentation, and ensuring harvest activities do not coincide with nesting or breeding seasons of local wildlife identified on particular plantations. Separate site specific harvesting plans will include mapping of riparian management zones, water bodies, relevant cultural or conservation areas, and other buffer zones. The project will not carry out activities in designated sites of ecological or conservation value.

BR Fuel has confirmed in its draft EMP for Port Rehabilitation that there are no sensitive receptors in the immediate vicinity of the project site. Measures to minimize, mitigate, and monitor impacts are presented in the draft EMP.

**F. Environmental Permitting Process and Community Engagement**

BR Fuel has obtained a permit from the Liberian Environmental Protection Agency (EPA) for harvesting of non productive rubber trees in Grand Bassa, River Cess, Bong and Nimba counties. Community consultations were carried out and documented as part of the recent ESIA process. BR Fuel employs a community outreach officer who engages in consultation with local communities and local government officials on an ongoing basis, and a public relations officer who engages in public outreach to the broader Liberian public through mass media and engagement with national government.
BR Fuel will provide copies of the ESIA to the Liberian EPA for public disclosure for sixty days. Hard copies will also be made available in the BR Fuel office in Monrovia. All documents submitted to and/or approved by the EPA are available to the public at the EPA.

BR Fuel will be submitting a revised EMP to the Liberian EPA for rehabilitation activities at the Port of Buchanan. This report will be publicly disclosed for 60 days and hard copies will be available in BR Fuel’s Monrovia office.

G. Availability of Documentation

The following documents are available electronically as PDF attachments to this ESRS at www.MIGA.org.

- Draft Environmental and Social Impact Assessment for Woodchip Biomass Production, prepared by Earthtime Inc., prepared for Buchanan Renewables Fuel (October 2010).
- Draft Environmental Management Plan for Port of Buchanan-Rehabilitation, prepared by Earthtime Inc., prepared for Buchanan Renewables (October 2010).
- Harvesting Management Plan, prepared by Earthcons, Inc., prepared for Buchanan Renewables Fuel (February 2009).

These documents are also available locally at BR Fuel’s office in Monrovia.