

papiNet[®] Forest Wood Supply & Bioproducts

Use Case 07

RenewableDiesel Liquid Raw Material Transport

**Truck transports from intermediate storage tank
to plant storage tank**

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2. FWSB Use Case 07 – RenewableDiesel Liquid Raw Material Transport: Truck transport from intermediate storage tank to plant storage tank with loading/unloading slot booking

2.1 Overview

The Forest company is producing RenewableDiesel and buying liquid raw materials from several sources. Raw material is stored in intermediate tanks in order to transport to the Renewablediesel factory or to be sold to customers. Transport company is a transport contractor specialised for liquid transportations with special vehicles and units. Transportation includes pumping of liquid from storage tank when loading and pumping into site tank when unloading. Volumes have to be measured at loading and unloading locations. Also quality sample is taken when unloading liquid to tank. Loading / unloading slot booking is used if loading/unloading is done at the RenewableDiesel plant. Transportation bookings and confirmations are routed via Logistic Integration Provider to / from Transport companies.

The Forest Company is the buyer of the truck transport services. Transports are planned by Forest Company and operated by the Transport Company. The Transport Company is paid by measured weight (tn) quantity of delivered liquids.

The Forest Company sends a **LoadTender** to the Logistic Integration Provider, which is then routed to Transport Company to make a transport order and to give preliminary instructions for deliveries of liquid products to the plant or to the customer. **LoadTender** creates an Open Booking to the Logistic Integration provider's slot management system. The delivery is made from one Delivery Origin (tank storage) with one Supply Point. The Transport Company accepts to carry out this instruction by responding with an initial **LoadTenderResponse** via Logistic Integration Provider.

If the loading/unloading requires slot time booking then Transport Company makes detailed planning of the transports and books also loading/ unloading slots from Logistic Integration Provider. An **updated LoadTenderResponse** with exact time slot, license plate number etc is sent to Forest Company after slot has booked.

A **Delivery instruction** is sent to Storage Tank Operator after confirmation of loading.

A **MeasuringInstruction** based on **LoadTenderResponse information** is sent to RenewableDiesel plant's automation system as a quantity measuring order including detailed info about vehicle and loading/unloading products in order to match the arriving vehicle and enable measuring activities.

When the loading is finished the Storage Tank Operator provides a Waybill to Transport Company and Forest Company.

The RenewableDiesel Plant is responsible for reception operations and measuring. Quantities of the Products are measured by mass flow meter. The measuring system creates a **Measuring Ticket (Weighting ticket)** right after the truck load has been received and measured. The measuring system also sends a **MeasuringInstruction** with all needed master data to Quality Laboratory's system

Samples are taken from the Products of the truck load in order to measure the moisture and other needed quality specifications for classifying the products. The measuring system creates a **MeasuringTicket (Weighting ticket)** right after the truck load has been received and measured. The measuring system also sends a **MeasuringInstruction** with all needed master data to Quality Laboratory's system. Quality Laboratory sends **MeasuringTicket** to Forest Company system after sample quality results are available.

Invoicing of the transport costs is based on the measured weight of the delivered Products. The Transport Company sends an **Invoice** for the transports to the Forest Company.

It is recommended to use papiNet e-document **Business Acknowledgement** as a system acknowledgement for all received papiNet e-documents. Business Acknowledgement confirms if the e-document has been received, validated OK and stored into the receiving system database or if there are any errors in the e-document causing processing errors.

2.2 LoadTender to Transport Company

The Forest company is producing RenewableDiesel and bying liquid raw materials from several sources. The Forest Company is the buyer of the transport services. The Forest Company sends a LoadTender to Logistic Integration Provider, which then sends Transport Order to valid Transport Company.

Scope: 1 Delivery Origin (Intermediate Tank Storgae) with 1 supply points, delivery RenewableDiesel Plant's Storage Tank, 1 DeliveryLeg taking 1 products, 1 DeliveryLegSequence, Time Slot bookingrequirement for RenewableDiesel plant unloading gate also informed

xml-file: UC07_2.2_LoadTender_Example_Truck_yyyy-mm-dd.xml

2.3 Loading/Unloading Slot Time Booking

The Forest company is producing RenewableDiesel and bying liquid raw materials from several sources. The Forest Company is the buyer of the transport services. The Forest Company sends a LoadTender to Logistic Integration Provider, which then sends Transport Order to valid Transport Company. LoadTender message includes definition on unloading gate and requirement of tome slot booking to be done. Transport Company makes a Time Slot Booking from Logistic Integration Provider's system via web. An updated LoadTenderResponse with exact booked time for the gate for a certain vehicle is sent to Forest Company.

Scope: 1 Delivery Origin (Intermediate Tank Storage) with 1 supply points, Booked Loading time for unloading gate, License plate id and carrier name given, type of the truck and transport unit given

xml-file: UC07_2.3_LoadTenderResponse_Example_Truck_Slot_yyyy-mm-dd.xml

2.4 DeliveryInstruction to Storage Tank Operator

The Forest company is producing RenewableDiesel and bying liquid raw materials from several sources. The Forest Company is the buyer of the transport services. The Forest Company sends DeliveryInstruction to Storage Tank Operator after transport has been confirmed loading / unloading slots have been booked.

Scope: The delivery by truck from 1 Delivery Origin (Intermediate Tank Storage) with 1 supply point, delivery to RenewableDiesel Plant Storage Tank.

xml-file: UC07_2.4_DeliveryInstruction_Example_To_TerminalOperator_yyyy-mm-dd.xml

2.5 Waybill from Storage Tank Operator

The Forest company is producing RenewableDiesel and bying liquid raw materials from several sources. The Forest Company is the buyer of the transport services. The storage Tank Operator creates a Waybill manually or using their own IT system, Waybill is sent to Transport Company and Forest Company. Forest Company updates loaded volumes to the load transport load information. Transport is invoiced based on loaded tons.

Scope: A Waybill to the transport Company and Forest Company. The delivery by truck from 1 Delivery Origin (Intermediate Tank Storage) with 1 supply point, delivery to the RenewableDiesel Plant storage tank.

xml-file: UC07_2.5_DeliveryMessage_Example_Truck_Waybill_yyyy-mm-dd.xml

2.6 MeasuringInstruction to RenewableDiesel Plant's automation system

The Forest company is producing RenewableDiesel and bying liquid raw materials from several sources. The Forest Company is the buyer of the transport services. The Forest Company sends a MeasuringTicket e-document as measuring order to RenewableDiesel Plant's automation system as an preadvice for coming load and to enable identifying arriving truck and products it is carrying.

Scope: Preadvice to Renewablediesel Plant for incoming transport, enabling measuring actions, information about unloading gate and booked time slot, Vehicle characteristics, Transport unit characteristics

xml-file: UC07_2.6_MeasuringInstruction_Example_Quantity_Measuring_Order_YYYY-MM-DD.XML

2.7 MeasuringTicket to the Forest Company after unloading truck at RenewableDiesel Plant

The Forest company is producing Renewablediesel and bying liquid raw materials from several sources. The Forest Company is the buyer of the transport services. The truck arrives to Renewablediesel plant unloading gate at the time that is booked from slot management. Truck is identified by license plate number. Truck is unloaded using plant pumps and volumes are measured using mass flow meters. Measured volumes are updated to previously received MeasuringTicket and updated MeasuringTicket is sent to the Forest Company's system.

Scope: Informing received/measured volumes of the truck. The delivery by truck from 1 Delivery Origin (Intermediate Storage Tank) with 1 supply points, delivery to RenewableDiesel Plant, Measuring by mass flow meter, UOM is tons.

xml-file: UC07_2.7_MeasuringTicket_Example_Received_Quantities_YYYY-MM-DD.XML

2.8 MeasuringInstruction to Quality laboratory after unloading truck at RenewableDiesel Plant

The Forest company is producing RenewableDiesel and bying liquid raw materials from several sources. The Forest Company is the buyer of the transport services. Every incoming truck load has to be quality checked. During unloading a quality sample is taken and label is printed from automation system based on received Measuring Ticket information. Quality Sample label is attached to quality sample for later identifying purposes in laboratory. A Quality Sample order message is sent to Quality Laboratory.

Scope: Quality Sample order to Quality laboratory for making laboratory study for certain unloaded load. Quality sample is a basis for calculating patch level tank quality and also may be basis for raw material pricing calculations.

xml-file: UC07_2.8_MeasuringInstruction_Example_Laboratory_Analysis_Order_YYYY-MM-DD.XML

2.9 MeasuringTicket to Forest Company from Quality laboratory

The Forest company is producing RenewableDiesel and bying liquid raw materials from several sources. The Forest Company is the buyer of the transport services. Every incoming truck load has to be quality checked. During unloading a quality sample is taken and label is printed from automation system based on received Measuring Ticket information. Quality Laboratory measures all needed characteristics and sends Qualit Results message to Forest Company

Scope: MeasuringTicket including quality sample results is sent to Forest Company from Quality Laboratory. Quality sample is a basis for calculating patch level tank quality and also may be basis for raw material pricing calculations.

xml-file: UC07_2.9_MeasuringTicket_Example_Laboratory_Analysis_Results_YYYY-MM-DD.XML

2.10 Transport Invoice to Forest Company

The Forest company is producing RenewableDiesel and bying liquid raw materials from several sources. The Forest Company is the buyer of the transport services.

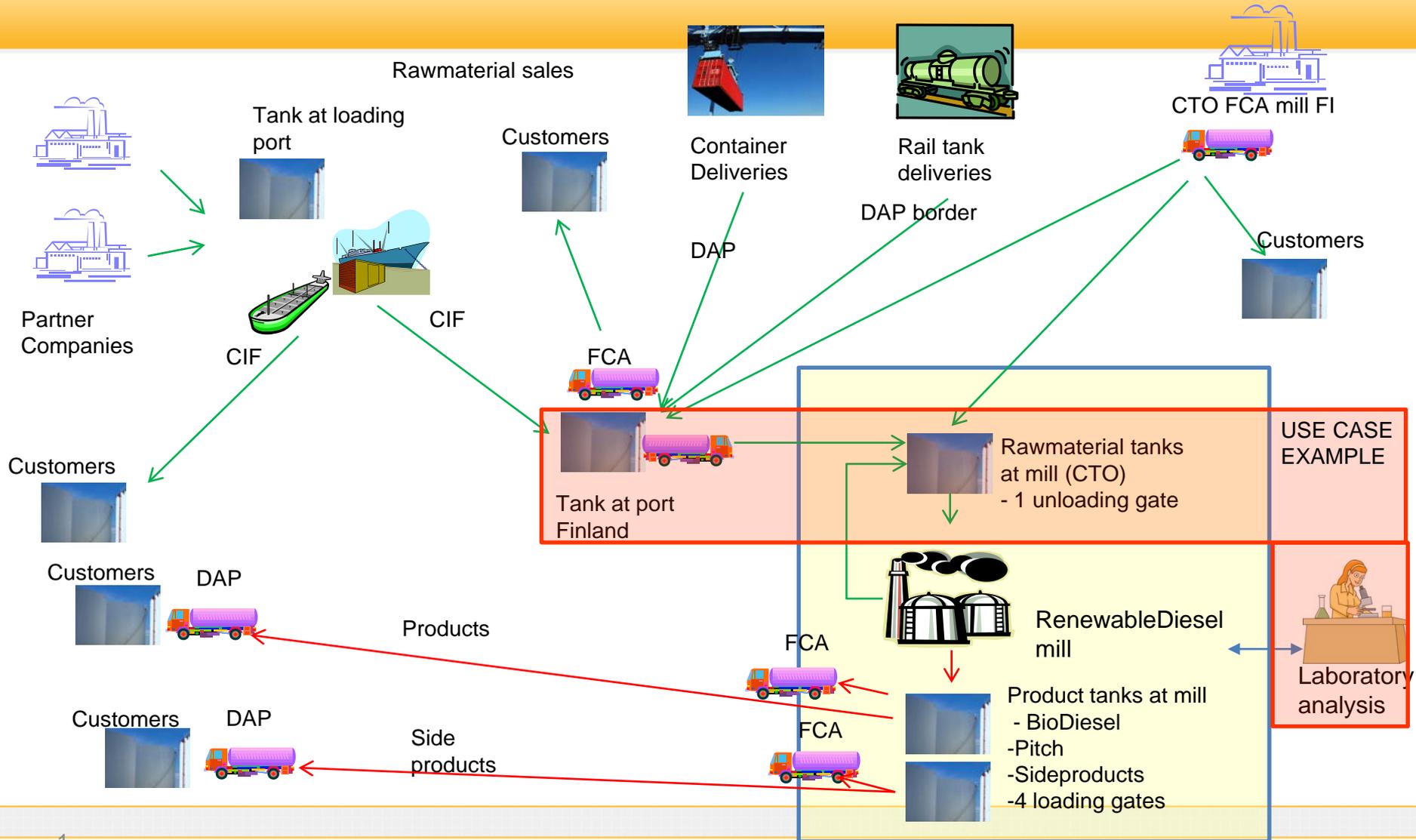
Scope: The Biofuel Logistics Operator sends an Invoice to the Forest Company for payment of the transport and loading costs.. The Receiver Party in the Invoice e-document is the Forest Company. The Forest Company matches the invoice against Waybill volumes and if voluems are within the agreed margins forwards the invoice to payment.

xml-file: UC07_2.10_Invoice_Logistics_YYYY-mm-dd.xml

3. Appendix

3.1 Process Diagrams

Logistic streams for raw material and products in RenewableDiesel case



Business processes

