papiNet® Forest Wood Supply & Bioproducts

Use Case 03

Biofuel to multiple destinations

Table of Contents

1. Copyright

2. FWS Use Case 03 - Biofuel to multiple destinations

2.1 Overview

The Forest Company is selling biofuel (energy wood) to several Power Plants. Biofuel Logistics Operator is a contractor specialised in biofuel processing and transportation logistics. In this use case Biofuel Logistics Operator is selling truck transportation services of biofuel. It is responsible for deliveries of biofuel from roadside landings and terminals to use place, normally Power Plant. Biofuel Logistics Operator can also be responsible for forest operations (harvesting, forest forwarding, stump lifting etc.), as well as chipping, crushing and other terminal operations. Those are not included in this use case.

The Forest Company is the buyer of the truck transport services. Transports are planned and operated by the Biofuel Logistics Operator, but the Operator can also have sub-contracts with other truck transport companies. The Biofuel Logistics Operator is paid by measured energy content (MWh) quantity of delivered biofuel.

The Forest Company sends a **Delivery Instruction #1** to the Biofuel Logistics Operator to make a transport order and to give preliminary instructions for deliveries of biofuel products to the Power Plants. The delivery is made from one Delivery Origin (roadside landing) with two Supply Points containing both different Products. It is possible to deliver the Products either to Power Plant A or Power Plant B. Both of the Power Plants are buying both of the two products. The Forest Company sends the information about alternative Delivery Destinations in Delivery Instruction. The Biofuel Logistics Operator accepts to carry out this instruction by responding with a **Business Acceptance #1**.

Inventory Status is sent from the Forest Company to the Biofuel Logistics Operator to inform about the up-to-date quantities of the products at the roadside landing. Inventory Status has inventory at two Supply Points, both with different Product. Based on the Inventory Status information the Biofuel Logistics Operator can do detailed planning of the transports.

The Biofuel Logistics Operator sends a **Delivery Planning #1** document to the Forest Company to notify about the planned transports. The Forest Company either accepts or rejects the transport plan by sending a **Business Acceptance #2** message. The process is circulated until the plan is accepted by both parties. Final accepted transport plan is sent to the Power Plant in **Delivery Planning #2** message to notify about upcoming deliveries.

The Biofuel Logistics Operator instructs the deliveries by sending a **Delivery Instruction #2** type LoadingInstruction to the vehicle. Delivery is made from one Delivery Origin with two Supply Points. When the loading is finished the Truck sends a **Delivery Message #1** type LoadedSpecification to the Biofuel Logistics Operator. The truck is loaded with 2 energy wood piles from Supply Point 1 with one Product and with 3 energy wood piles from Supply Point 2 with another Product. Weight of loaded energy wood is measured using a weight scale measuring system of the truck. Delivery Message is used to inform the quantities per energy wood piles and the location of each pile on the vehicle. **Delivery Message #2** type DeliveryMessage is sent from the Biofuel Logistics Operator either to the system of the Forest Company or to millgate reception system of the Power Plant or to both with similar content. If the message is sent only to the Forest Company, it can forward the document to the Power Plant as it is or as modified.

The Power Plant is responsible for reception operations and measuring. The Products are unloaded at the Power Plant by transporting vehicles or by unloading machines which normally are operated by a contractor. Payments for the unloading contractor are outside of the use case. Quantities of the Products are measured by weight scaling either when the truck enters the mill gate or during the unloading process, depending on the measuring system used at the mill. Each log pile of the load is measured. The measuring system creates a **Measuring Ticket #1** type ArrivalTicket ("scale ticket") right after the truck load has been received and measured.

Samples are taken from the Products of the truck load in order to measure the moisture and energy content per mass unit. Measurements of the samples are used to classify the quality of

the Product delivered to the Power Plant. **Measuring Ticket #2** type SampleMeasuringTicket ("analysis ticket") is sent to the Forest Company in order to inform about received energy content and moisture percentage of the Products. The Forest Company sends a **Shipment Status** document to the Biofuel Logistics Operator to notify of the received quantities (MWh and kilograms / metric tons) of the Products.

Invoicing of the sold Products is based on the measured energy content (MWh) of the delivered Products. The Forest Company sends an **Invoice #1** to the Power Plant. Invoicing of the transport costs is based on the measured energy content quantities of the delivered Products. The Biofuel Logistics Operator sends an **Invoice #2** 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. An e-document receiver uses the Business Acknowledgement to notify the sender that a document has been successfully presented to the receiver's ERP system. The Status with value Success or Failure specifies whether the document content has been validated without or with errors when presented to the receiver's ERP system.

papiNet e-documents are recommended to be wrapped into the **papiNet Envelope** before they are sent. The xml-file, i.e. the payload, that is sent to the receiving partner consists of the papiNet Envelope and the e-document. Routing and processing of e-documents are much easier to implement in a consistent way by using the papiNet Envelope. Attachments to the e-document can also be wrapped and sent in the papiNet Envelope. Additional transmission envelopes can be used by the message service when transmitting the message.

2.2   Delivery Instruction #1 Forest Company

The Forest Company is selling biofuel (energy wood) to several Power Plants. The Forest Company is the buyer of the transport services. The Forest Company sends a Delivery Instruction to the Biofuel Logistics Operator to order and instruct delivery of biofuel to the Power Plants.

Scope: 1 Delivery Origin (roadside landing or Terminal) with 2 supply points, delivery possible to two alternative Power Plants on the choice of Biofuel Logistics Operator, 1 DeliveryLeg taking 2 products, 1 DeliveryLegSequence with 2 DeliveryDestinations specifying the Power Plants.

XML-file: UC03_2.2_DeliveryInstruction_1_ForestCompany_yyyy-mm-dd.xml

2.3   FWS Case 03 Business Acceptance # 1 Biofuel Logistics Operator

The Forest Company is selling biofuel (energy wood) to several Power Plants. The Forest Company is the buyer of the transport services. The Forest Company sends a Delivery Instruction to the Biofuel Logistics Operator to order and instruct delivery of biofuel to the Power Plants. The Biofuel Logistics Operator accepts to carry out this instruction by responding with a Business Acceptance.

Scope: Acceptance of Delivery Instruction.
XML-file: UC03_2.3_BusinessAcceptance_1_yyyy-mm-dd.xml

2.4   FWS Case 03 Inventory Status

The Forest Company is selling biofuel (energy wood) to several Power Plants. The Forest Company is the buyer of the transport services. The Forest Company sends an Inventory Status to the Biofuel Logistics Operator to inform about inventory or changes of the inventory at supply points of the Delivery Origin.

Scope: 1 Delivery Origin (roadside landing or Terminal) with 2 supply points, Supply Point 1 with one Product (line item 1) and Supply Point 2 with another Product (line item 2).
XML-file: UC03_2.4_InventoryStatus_yyyy-mm-dd.xml

2.5 FWS Case 03 Delivery Planning # 1 Biofuel Logistics Operator

The Forest Company is selling biofuel (energy wood) to several Power Plants. The Forest Company is the buyer of the transport services. The Biofuel Logistics Operator sends a Delivery Planning to the Forest Company to inform about the planned transports, especially quantities per products and arriving times at the Power Plants. The Delivery Planning can be made on monthly or weekly basis or it can inform a specific delivery only.

Scope: The delivery by truck from 1 Delivery Origin (roadside landing or Terminal) with 2 supply points, delivery to two Power Plants on the choice of Biofuel Logistics Operator.

XML-file: UC03_2.5_DeliveryPlanning_1_yyyy-mm-dd.xml

2.6 FWS Case 03 Business Acceptance # 2 Forest Company

The Forest Company is selling biofuel (energy wood) to several Power Plants. The Forest Company is the buyer of the transport services. The Biofuel Logistics Operator sends first a Delivery Planning to the Forest Company to inform about the planned transports. The Forest Company either accepts or rejects the transport plan by sending a Business Acceptance message. The process is circulated until the plan is accepted by both parties.

Scope: Acceptance of Delivery Planning.

XML-file: UC03_2.6_BusinessAcceptance_2_yyyy-mm-dd.xml

2.7 FWS Case 03 Delivery Planning # 2 Biofuel Logistics Operator

The Forest Company is selling biofuel (energy wood) to several Power Plants. The Biofuel Logistics Operator sends a final accepted Delivery Planning to the Power Plant and to Forest Company to inform about the coming transports.

Scope: The delivery by truck from 1 Delivery Origin (roadside landing or Terminal) with 2 supply points, delivery to two Power Plants on the choice of Biofuel Logistics Operator.

XML-file: UC03_2.7_DeliveryPlanning_2_yyyy-mm-dd.xml

2.8 FWS Case 03 Delivery Instruction # 2 Biofuel Logistics Operator

The Forest Company is selling biofuel (energy wood) to several Power Plants. The Forest Company is the buyer of the transport services. The Biofuel Logistics Operator sends a Delivery Instruction to the Truck to instruct loading of biofuel from Supply Points as well as to instruct the transportation to the delivery destination (Power Plant).

Scope: The delivery by truck from 1 Delivery Origin (roadside landing or Terminal) with 2 supply points, delivery to one Power Plant.

XML-file: UC03_2.8_DeliveryInstruction_2_BiofuelLogisticsOperator_yyyy-mm-dd.xml

2.9 FWS Case 03 Delivery Message # 1 Truck

The Forest Company is selling biofuel (energy wood) to several Power Plants. The Forest Company is the buyer of the transport services. The Truck sends a Delivery Message to the Biofuel Logistics Operator when the truck is loaded at the Delivery Origin.

Scope: The truck is loaded with two products from two supply points at the roadside landing (or terminal), delivery to one Power Plant.

XML-file: UC03_2.9_DeliveryMessage_1_Truck_yyyy-mm-dd.xml

2.10 FWS Case 03 Delivery Message # 2 Biofuel Logistics Operator

The Forest Company is selling biofuel (energy wood) to several Power Plants. The Forest Company is the buyer of the transport services. The Biofuel Logistics Operator is sending a Delivery Message to notify about an arriving truck either to the system of the Forest Company or to millgate reception system of the Power Plant or to both with similar content. If the message is sent only to the Forest Company, it can forward the document to the Power Plant as it is or as modified.

Scope: The truck is loaded with two products from two supply points at the roadside landing (or terminal), delivery to one Power Plant.

XML-file: UC03_2.10_DeliveryMessage_2_BiofuelLogisticsOperator_yyyy-mm-dd.xml

2.11 FWS Case 03 Measuring Ticket # 1 Power Plant (Arrival Ticket)

The Forest Company is selling biofuel (energy wood) to several Power Plants. The Power Plant sends a Measuring Ticket to the Forest Company when the delivery is measured and quality samples have been taken.

Scope: The delivery contains two products from one truck. Masses of the log piles are measured with the measuring systems of the Power Plant. Measurement results of the delivery are sent in the message to the Forest Company to be used for invoicing.

XML-file: UC03_2.11_MeasuringTicket_1_PowerPlant_yyyy-mm-dd.xml

2.12 FWS Case 03 Measuring Ticket # 2 Power Plant (Measuring Ticket)

The Forest Company is selling biofuel (energy wood) to several Power Plants. The Power Plant sends a Measuring Ticket to the Forest Company when the delivery is measured and quality samples have been taken.

Scope: The delivery contains two products from one truck. Moisture and energy content of the biofuel is measured from the samples of the truck load. Measurement results are sent in the message to the Forest Company to be used for invoicing.

XML-file: UC03_2.12_MeasuringTicket_2_PowerPlant_yyyy-mm-dd.xml

2.13 FWS Case 03 Shipment Status

The Forest Company is selling biofuel (energy wood) to several Power Plants. The Forest Company is the buyer of the transport services. The Forest Company sends a Shipment Status to the Biofuel Logistics Operator for the basis of the transport cost invoicing.

Scope: The delivery contains two products from one truck. Mass of the biofuel is measured with the measuring systems of the Power Plant. Moisture and energy content of the biofuel is measured from the samples of the truck load. Delivered energy quantities (MWh) are calculated based on the measurements.

XML-file: UC03_2.13_ShipmentStatus_yyyy-mm-dd.xml

2.14 FWS Case 03 Invoice #1 Biofuel

The Forest Company is selling biofuel (energy wood) to several Power Plants. Billing of sold biofuel is based on measured received energy content of the deliveries. The Forest Company sends an Invoice to the Power Plant for deliveries of one month.

Scope: Invoice on the sold biofuel from the Forest Company to the Power Plant.

XML-file: UC03_2.14_Invoice_1_Biofuel_yyyy-mm-dd.xml

2.15 FWS Case 03 Invoice #2 Logistics

The Forest Company is selling biofuel (energy wood) to several Power Plants. The Forest Company is the buyer of the transport services. Billing of transport costs is based on measured energy content of the received biofuel and the distance from the Delivery Origin to the Power Plant. The Biofuel Logistics Operator sends an Invoice to the Forest Company for payment of the transport costs.

Scope: Invoice on the transports of the biofuel from the Biofuel Logistics Operator to the Forest Company.

XML-file: UC03_2.15_Invoice_2_Logistics_yyyy-mm-dd.xml

2.16 FWS Case 03 Business Acknowledgement

It is recommended to use papiNet e-document Business Acknowledgement as a system acknowledgement for all received papiNet e-documents. An e-document receiver uses the Business Acknowledgement to notify the sender that a document has been successfully presented to the receiver's ERP system. The Status with value Success or Failure specifies whether the document content has been validated without or with errors when presented to the receiver's ERP system.

Scope: The Biofuel Logistics Operator sends an Invoice to the Forest Company for payment of the transport costs. The Forest Company notifies the Biofuel Logistics Operator that the Invoice has been presented to the ERP system and validated without errors by responding with a Business Acknowledgement.

XML-file: UC03_2.16_BusinessAcknowledgement_yyyy-mm-dd.xml

2.17 FWS Case 03 papiNet Envelope

papiNet e-documents are recommended to be wrapped into the papiNet Envelope before they are sent. The xml-file, i.e. the payload, that is sent to the receiving partner consists of the papiNet Envelope and the e-document. Routing and processing of e-documents are much easier to implement in a consistent way by using the papiNet Envelope. Attachments to the e-document can also be wrapped and sent in the papiNet Envelope. Additional transmission envelopes can be used by the message service when transmitting the message.

Scope: The Biofuel Logistics Operator sends an Invoice to the Forest Company for payment of the transport and loading costs. The Forest Company has outsourced their IT Services to an IT Company. The receiver of the transmitted message is the IT Company, i.e. the Transmission Receiver in the papiNet Envelope. The Receiver Party in the Invoice e-document is the Forest Company.

XML-file: UC03_2.17_papiNetEnvelope_yyyy-mm-dd.xml