

Model contract for biomass delivery

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ABBREVIATIONS

DH	district heating
atro	absolutely dry wood
kW	Kilowatt

1 INTRODUCTION

The Horizon 2020 project **Bioenergy4Business** aims to **increase the usage of bioenergy through an (at least partial) fuel-switch from coal, oil or natural gas, which are used in “in-house” boilers in commercial sectors for heat purposes or in district heating (DH), to solid biomass sources**. The erection of completely new biomass heat applications is considered as an option as well. Bioenergy4Business focuses on solid biomass sources and on medium and large heat-only boilers (> 100 kW heat load) providing low temperature and process heat for commercial usage.

Bioenergy4Business builds bridges between policies and markets to support the creation of an enabling environment, the use of sound business and financing models and the careful assessment and implementation of bioenergy heat in local and district heating and in “in-house” applications. These aspects are considered for the most promising market segments among industry and commerce, residential buildings, agriculture and commercial and public services.

Bioenergy4Business involves partners from 12 EU Member States and Ukraine. 12 of these project partners (AT, DE, BG, CR, FI, GR, NL, PL, RO, SK, UA and DK, except BE) are target countries, where tailor-made activities for the most promising market segments will take place from January 2015 until August 2017.

The Deliverable D 5.3 "Recommendations for biomass delivery contract" was developed under WP5: Capacity building activities targeting main stakeholder groups.

The **aim of this task** is to provide information to current and potential operators of solid biomass plants, regarding the **configuration of biomass delivery contracts**. The experiences of **good practice in the countries Germany, Netherland, Denmark and Finland** serve as a basis for the recommendation.

2 FACTORS AFFECTING CONTRACT CONTENT

2.1 Objectives of the plant operator

In order to ensure an economic operation of their systems, operators of heating (power) plants have to ensure a longest possible supply with biomass fuel. In many cases the conclusion of a long-term supply contract **is a basic prerequisite for bank lending** anyway. Only by keeping a defined fuel quality, matching to the specific heating plant, a low-disruption operation can be guaranteed.

As shown in Figure 2-1 and Figure 2-2 plant operators can take over different areas of responsibility, which have influence on their objectives. **In variant 1** the heat-customer/facility management is in charge of maintenance of buildings and structures. The plant operator is also responsible for cleaning and maintenance of the boiler just as the supply with solid biomass. The customer billing is based on the heat output of the heat plant. Thus the responsibility for fuel quality and for a trouble-free operation of the system falls to the operator.

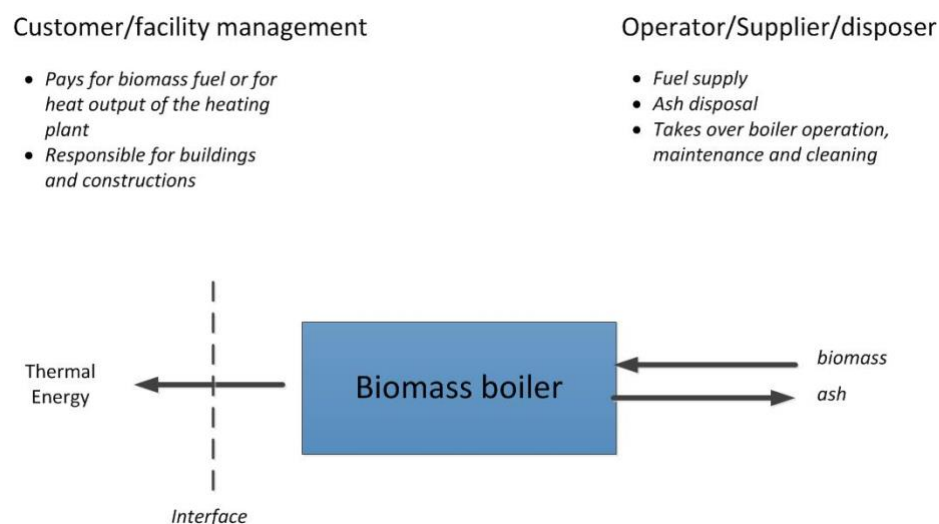


Figure 2-1 Energy Service Organization also takes over fuel supply (Variant 1)
source: in dependence of C.A.R.M.E.N. e.V., 2015)

In **variant 2**, the supplier is responsible for the delivery of solid biomass fuels. The supplier eliminates contamination at the site of the heating plant and is committed to professionally exploit the ash in compliance with the regulatory requirements or local authorities. The operator pays for the deliveries (billing models, see Chapter 2.2) and is

responsible for the maintenance of the conveying system from the fuel bunker to the boiler plant as well as the construction works of the fuel bunker.

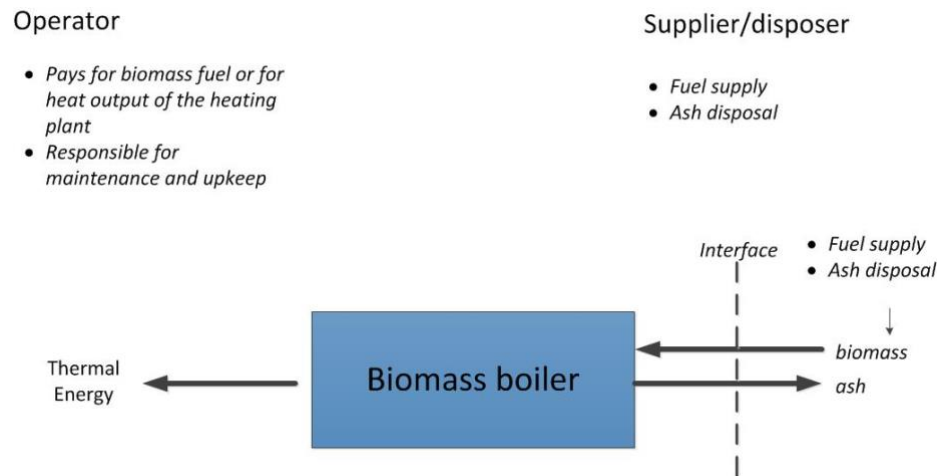


Figure 2-2 Operator and supplier are different legal persons (Variant 2)
source: in dependence of C.A.R.M.E.N. e.V., 2015

If the operator and the fuel supplier(s) are different legal persons (see Variant 2), the mutual rights and obligations should be recorded in a contract.

Delivery contracts are designed to specify the delivery quantity, delivery times and quality of fuel suitable for the selected firing system, the remuneration and other rights and obligations of each party. Price escalation clauses bear the general market trend into account and facilitate the conclusion of long-term contracts.

Depending on the type of fuel, the number of suppliers and the willingness / ability of the plant operator to internal labour there are differences with respect to the contract contents.

To encourage the relevant stakeholders from the industry, commercial, agricultural and service sectors to a fuel switch to solid biomass, the following statements are focused on the plant operators and less on the fuel supplier.

2.2 Possible billing models

The actual value of biofuel corresponds to its energy content. The energy content is a function of weight and lower heating value, which in turn is determined largely on the water content of the Biomass.

The price calculation can therefore be based on the volume or the weight of the delivery, taking into account the water content. Alternatively, the energy content can be determined by the generated heat of the heating plant. Therefore the heat output is

measured by a heat meter. The boiler efficiency is taken into account by a conversion factor.

In the following the several billing models are presented:

Volume	<p>This method has the least effort. The volume can be determined from the dimension of the hold (bulk goods) or in case of straw bales of the number and the dimensions of the bales.</p> <p>In an clearing on volume, even the type of wood has to be considered. The accuracy of this method is low, because the bulk density of fuel assortments can differ, which have a major impact on the measurement result. Therefore this method is only recommended for homogenous fuel assortments.</p>
weight and water content	<p>The weight determination is done mostly with in-house scales and is often more complicated than the volume determination. Because of the disadvantages mentioned above this billing model is more suitable for inhomogeneous fuels. To increase the accuracy in the determination of the energy content an additional water content measurement is required.</p> <p>In a clearing on the weight and water content, the type of wood is negligible, as all wood species have an almost identical calorific value per kilogram of wood.</p>
generated heat quantity	<p>The advantages of this method are the reduced metrological effort at the fuel delivery (a quality control can usually not yet discontinued) and high measurement accuracy. However, systematic measurement errors may be occurring during the operation of the plant; contamination of the boilers' flues can result in higher temperatures and thus in lower effectiveness.</p> <p>This method is only useful when the reference biomass is delivered exclusively from one supplier, since otherwise a clear assignment is getting difficult.</p>

In Germany there is a "buyer's market" regarding woodchips- the supply of goods / services is higher than the demand, thus buyers are able to put pressure on the prices and to negotiate contracts in their favour.

Because it is easy to determine on a heat meter, more and more system operators require a settlement due to the amount of heat measured at the heat distribution behind the boiler plant. Therefore the woodchips supplier has to bear the economic risk of the energy yield, but has only a low influence on the efficiency of the system (e.g. by regular cleaning of the flue gas passes and a weather-optimized adjustment of the system), part-load times, etc. On the other hand the operator has no incentive to operate its plant in a fuel efficient way.

According to the statement of a solid biomass vendor the fuel consumption can thus rise by up to 50%. For this reason a billing method on basis of the generated heat is not a best practice model, whereas the settlement on basis of weight and water content provides a high level of safety for the operator and the supplier and offers a good incentive to increase the effectivity of the heating plant.

For the sake of simplicity the customers often indenture the supplier to dispose the ashes. However this is not necessarily the least expensive solution. Because the disposal of ash is not the core activity of the supplier and the delivery vehicles cannot be used for the removal of ash, the ash disposal by specialized companies is commonly more cost effective.

But it is difficult to make a blanket statement, because there are differences in starting conditions in the EU-countries. For example in Denmark commissioning of a company that takes care of the ashes will increase the costs due to high labour costs and taxes. So it is recommended to consider alternatives.

3 RECOMMENDATIONS FOR BIOMASS DELIVERY CONTRACT

3.1 Essential Contract contents

The essential contract contents of biomass supply contract are listed in table

Essential contract contents	Details
delivery obligations	<ul style="list-style-type: none"> • Sufficient specification of the solid biomass fuel in terms of its content of plant species and the way of its conditioning • Requirements for the minimum standards of quality (water content, contamination, etc.) • Agreements on minimum delivery volumes and their temporal distribution (e.g. in the form of weekly or monthly plans). • Release or indemnification from delivery promise, e.g. in case of adverse weather and crop conditions
	<p>TIP <i>In addition, extraordinary deliveries can be arranged, in case the stock of biomass fuel is running out or a shortage of fuel supply is foreseen</i></p>
purchase commitment	<ul style="list-style-type: none"> • Release or indemnification in case of non-culpable plant standstill. • Right to obtain biomass from third parties, if the supplier fails to meet its obligations.
remuneration arrangement	<ul style="list-style-type: none"> • Determination of the price of fuel delivery to the plant for the year of initial start up • Regulations adjusting the basic fuel price in case of deviating (from the agreed base case) fuel qualities and agreed delivery times as well as regulations for future price changes (price change clauses) • Dates of payment and consequences of default in payment
contract duration	<ul style="list-style-type: none"> • Start and end of contract

	<p>TIP</p> <p><i>It is recommended to arrange an as long as possible contract period of at least five years with an option for an extension of the contract. This leads both parties to a calculable residual risk assessment. Most financial institutions demand long supply contracts, before they issue a credit, as well.</i></p> <p><i>3 year contracts are common in DK. The straw supply is subject of large variation depending on climatic conditions. In some years there are excessive amounts of straw, pressing down the prices. In other years there are shortages and prices go up. The 3 year period is kind of a compromise between buyers and suppliers to ensure stable supply and foreseeable (fair) prices.</i></p> <p><i>There are of course exceptions, especially in years with excessive straw supply where farmers are selling their straw at almost any price.</i></p>
proof of origin/incoming control	<ul style="list-style-type: none"> • In accordance with the required fuel assortment and the resulting imposed condition, proofs of origin must be arranged with the fuel supplier • Incoming control to determine the delivered quantity and various quality characteristics • Rejection of the goods in the event that the fuel quality is insufficient in terms of combustion or of subjects to regulatory approval as well as agreed proofs of origin are missing
Other provisions	<ul style="list-style-type: none"> • Notice periods, conditions for an immediate dismissal of its settlement process, • assumption of risk and liability responsibility, • assumption of costs for damage and malfunctions by force majeure, • contract changes and additions, • arrangements for invalidity and ambiguity of interpretations • jurisdiction clause.

3.2 Model Contracts

In the next chapters the specific contractual terms are discussed in detail and examples of good practice are shown. Where possible, formulation aids are added, too. But - due to the specific conditions of each heating plant - **in any case a legal aid should be consulted to elaborate the biomass supply contract.**

In order to provide the potential plant operators a quick access to the information needed, the next chapters respectively are focused on one of the various solid biomass fuels – woodchips, pellets, straw. (This approach induces repetitions).

3.2.1 Woodchips

Trade and Measurement

Chips in general are traded as loose bulk material. Depending on the type of wood size and water content, a cubic meter of woodchips correspond an amount of 250 kg to 450 kg. The heat content per cubic meter varies between 630 kWh and 1,100 kWh.

Woodchips are usually delivered loose by regional suppliers. Lately, woodchips can be blown into the supply base.

The settlement in cubic meters is relatively imprecise due to the mix of types of wood, the different chips' size and the compaction of the bulk material during transport. Shipments with unmixed chips are practically very rare. For this reason woodchips should be accepted by weight and water content. The pricing is based on ton of absolutely dry (atro) woodchips. The exact delivery weight is easy to determine by weighing the delivery vehicle on a weighbridge before and after the load.

The water content can be quickly determined with commercially available measuring instruments.

Quality requirements

Each biomass boiler has certain demands on the chip quality that is determined by the manufacturer of the heating plant or the planners in the form of a reference fuel.

The main quality standards for woodchips are:

- Low water content
- Uniformity (equal size of pieces as far as possible)
- Low proportion of fine particles
- little cuttings (leaves, needles) and little pollution

While large biomass heating plants can also utilize inferior woodchips energetically, small and medium heating systems are usually designed for dry, high-quality woodchips. Rotten, dirty and mouldy wood and demolition wood or shrubbery with thin branches is not suitable as a raw material for the production of high-quality woodchips. These raw materials are processed into woodchips of lower quality. For a more precise specification of the fuel, the criteria class size and water content are used.

The water content is the most important quality, because it is decisive for the energy value and the storability of the fuel. Forest fresh woodchips have adapted a water content of about 50% and are not suitable for a long-term storage and energy use in small and medium-sized biomass heating systems. In district heating plants and in large

industrial furnaces, however, the use of very wet woodchips is reasonable and customary for economic reasons. A low-emission and efficient burning is ensured by their technical equipment (e.g. flue gas cleaning, flue gas condensation).

In 2014 the ISO 17225, Part 4 came into force, which is valid for woodchips utilization in small heating plants.

With reference of the statements made in Chapter 3.1 in following a good example of a supply contract is shown with a billing method basing on weight and water content.

Contract for the supply of woodchips

between <company name of the plant operator>

based in <postcode, location>

represented by <name of representative>
-hereafter called customer-

and <company name of supplier>

based in <postcode, location>

represented by <name of representative>
-hereafter called supplier-

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§ 1

Object of Agreement

This agreement regulates the delivery and acceptance of wood chips as fuel for <Name, location of the plant> - hereafter called heating plant.

§ 2

Scope of Supply

The delivery volume depends on the required thermal heat of the supplied facilities and amounts to <indication of quantity> cubic meters per year.

A reduction in the delivery quantity, due to the reduction of the heat demand of the supplied facilities does not entitle the supplier to increase the Working price.

The supplier is principally willing to increase the agreed delivery quantity, provided that the operators' written request is received in good time and the supplier is able to meet the increased demand.

§ 3

Quantity Measurement and Control

[Example for Billing according weight and water content]

To determine the energy content, the weight of the transport vehicle is measured on an in-house calibrated scale. In addition the determination of water content must be carried out by the oven-drying method at 105 °C, up to constant weight. The finding of the weight loss (as a percentage) is done with a precision balance according to the formula:

$\text{weight loss [\%]} = (\text{wet weight} - \text{dry weight}) / \text{wet weight} \times 100$

Per load or batch samples have to be taken from at least three locations. For billing the arithmetic mean of the measurements is used. The measured values must be recorded.

[As well as taking of retention samples for a revision can be agreed]

§ 4

Quality of Fuel

The fuel supplied shall be reasonably free from incombustible extraneous particles, such as stones.

The delivery includes only fuel from natural woodchips with water content (M) of M20 to M50 and a size distribution according to ISO 17225-4; P31S delivered. The supplier must ensure that damages to the heat supply system are excluded due to the nature of the woodchips delivered. Impurities such as stones, metal parts and other extraneous particles as well as combustible fuels, which are not complying with the above mentioned descriptions, are not permitted.

If the quality of the delivered fuel material does not meet the agreed specifications, the operator can reject the delivery. The supplier is then obliged to take back the fuel at its own expense

For damages which can be traced on pollution in the fuel delivered by the supplier, the supplier is liable.

§ 5

Remuneration of the Woodchips Delivered

The woodchips will be reimbursed according to their respective energy content. The method to determine the energy content is shown under § 3.

§ 6

Duties of the Operator

The operator provides the supplier the fuel bunker on his ground for storage of woodchips free of charge. Within the delivery the operator guarantees to the supplier unimpeded access to his premises.

§ 7

Duties of the Supplier

The supplier undertakes to supply the entire agreed need for woodchips in accordance with § 2 of the biomass plant mentioned in § 1 and comply with the quality criteria set out in § 4.

The delivery of the agreed amount is free to the bunker of the heating plant. The fuel supply must be documented in accordance with specifications of the operator. After each delivery, the supplier is supposed to leave the entry area of the facility property clean. The delivery time must be agreed with the operator. If the supplier, even after two reminders, does not attend its obligations, the operator is entitled to terminate for good reason.

§ 8

Price Escalation Clause

The agreed base price is valid until 31.12.2016.

After that the heat price will be adjusted according to the following equation:

$$\text{Heatprice: WP} = \text{WPo} * (0.2 * \text{HEL} / \text{HEL0} + 0.5 * \text{E} / \text{E0} + 0.1 \text{ L} / \text{L0} + 0.2 * \text{IG} / \text{IG0})$$

The required input data are available on:

HEL = Light fuel oil according to Federal Statistical Office specialist series 17, series 2, p. 12, current no. 177

E = energy wood price index as the average of the current numbers 113 and 126 (50% Ser. No. 113 + 50% serial no. 126) according to Federal Statistical Office specialist series 17, series 2

L = labour cost index according to Federal Statistical Office specialist series 16, series 2.3, Table 1.2

IG = capital goods index according to Federal Statistical Office specialist series 17, series 2, serial number 3

The respective underlying (o) refers to the annual average 2015. The price adjustments occur at the 01 January of each year of the contract for the entire contract year. With respect to the definition of price change factors are the main annual averages of the preceding year.

Decisive for the determination of price change factors are the annual averages of the preceding year.

§ 9

Billing and Payment Methods

In order to determine the energy content (MWh), the supplier sends the operator the delivery note including the weighing slip and the results of the oven-drying method.

The settlement of the delivery takes place after invoicing without deduction with a payment term of 14 days to an account.

For late payment the supplier is entitled to levy interest at the rate of five percentage points above the current base rate according to § 247 BGB, without the necessity of any special reminders.

The supplier is entitled to terminate for good reason, if he - despite a reminder - is not or not fully paid by the customer or if the operator is repeatedly in default of payment.

§ 10

Contract Period and Notice Periods

The contract begins with signing of the contract and runs for an indefinite period. It may be terminated by either party giving six months to the end of a calendar year, but the first time with effect from 31.12.2020.

[Note: a contract duration of at least 5 years should be agreed]

The right to extraordinary termination for cause remains unaffected. A termination for gross, culpable infringement of a contracting party requires that the terminating party has unsuccessfully warned the contractual partner in writing previously.

§ 11 Liability

If in consequence of non-compliance with the contractually guaranteed obligations, an interruption in the biomass boiler operation, damage to the operator's installation or an interruption in the supply of the operator's customer occurs, the supplier has to replace the operator's additional costs and other losses.

This primarily includes higher expenses for the operation of back-up boiler, increased repair and maintenance expenses, revenue losses on the sale of heat, repayment of

governmental subsidies received or own hours for the operator to correct the interference.

The obligation to indemnify the supplier omitted only if the failure to fulfil its obligation was caused by an unforeseeable or unavoidable event of force majeure (s. §12). In a breach of duty under § 3 sentence 1 (security of supply), the supplier shall have the burden of proof and the operator in a breach of duty under § 4 (quality of the chips). Further damage claims remain unaffected.

Upon the request of the purchaser, the supplier is obliged to remove the substandard fuel from the fuel bunker on his own expense, in case the fuel does not correspond to defined quality under §4. In the event this does not happen within 24 hours upon request by the operator, the operator can initiate the removal without further warning and invoice the costs to the supplier. In all other cases the supplier is liable according to legal regulations.

§ 12

Force Majeure

If the contracting parties are prevented from performing their respective duties due to events or circumstances beyond their reasonable control or which cannot be prevented through reasonable technical or economic efforts their respective duties shall be suspended until said events or circumstances will cease to exist.

The contracting parties shall endeavour to resolve the causes of this disruption immediately.

§ 13

Regulation of Legal Succession

Each party is entitled to assign its rights and obligations under this contract to a third party. The retiring party still remains responsible for fulfilment of the contract, until the date on which the legal successor of the retiring party confirms the full contractual obligations in writing and the remaining party has consented in writing.

§ 14

General Provisions

If any provision of this agreement is or becomes invalid, this shall not affect the validity of the remaining provisions. The contracting parties undertake to replace the ineffective provision with a legally valid provision, whereby the economic and factual purpose of the invalid provision is achieved as far as possible.

Should a necessary point of regulation not have been fixed in this regulation by mistake, the contractual parties undertake to fill this gap within the meaning and spirit of this agreement by a supplementary agreement.

The contracting parties shall endeavour to resolve any disagreements from this contract out of court. Nevertheless, it is agreed that the exclusive venue is <place name>. All amendments and additions, as well as the cancellation of the contract, including the written form clause must be in writing.

Oral side agreements have not been made. Each party shall receive a copy of the contract.

place, date

place, date

signature (supplier)

signature (customer)

3.2.2 Pellets

Trade and measurement

Wood pellets are usually transported **in a dry bulk silo to the consumer**. The storage room can be filled easily and free of dust using a hose. On request pellets can also be supplied as bagged goods.

Since the achievable market prices do not allow higher transport costs, pellets are still sold mostly regionally in Germany. This is also a measure of protection of domestic producers against competition from abroad.

But with rising prices transport costs are getting relatively less and less significant. With increasing demand and rising prices the imports from abroad will increase, too.

Quality requirements

The normalized and standardized dimensions of the pellets allow easy, comfortable handling, a low-cost transport and the use of fully automated conveyor systems. For wooden pellets ISO 17225-2 "solid biofuels - Fuel specifications and classes" applies. Part 1 "General" of the norm is valid for pellets for non-industrial use. Part 2 "classification of wood pellets": Part 2 sets tighter specifications, since the small combustion plants used here are often located in residential areas and are usually equipped with less elaborate controls and exhaust gas purification systems. Additionally they mostly cannot be operated by specialists.

Basically, the following points ought to be clarified with the supplier:

- Quality class (in accordance with standard, certificate)
- Minimum order quantity,
- price (depending on the delivery quantity)
- any additional transport costs and
- possibly with additional fixed rate for blowing in the storage in case of delivery by silo truck

Apart from the quality and the price of pellets, there are also differences in the way of delivery of the pellets **in a dry bulk silo**. Suppliers, using a tanker with low-pressure system and an exhaust fan for exhausting the air from the storage room, shall be preferred. Thus noise and dust during injection of the pellets can be kept low. The pellets are conveyed gently into pellet store. For safety reasons the heating system must be shut down at least three hours before filling the store.

Contract for the supply of pellets

between <company name of the plant operator>

based in <postcode, location>

represented by <name of representative>
-hereafter called customer-

and <company name of supplier>

based in <postcode, location>

represented by <name of representative>
-hereafter called supplier-

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§1

Object of Agreement

This agreement regulates the delivery and acceptance of wooden pellets (hereafter just called pellets) as fuel for <Name, location of the plant> - hereafter called heating plant.

Note: In case the customer operates more than one heating plant, the following text block can be inserted.

This agreement regulates the delivery and acceptance of wooden pellets (hereafter just called pellets) as fuel for the customer's plants, listed in Annex 1.

§2

Scope of Supply

(1) The supplier commits himself to meet the entire demand of the heating plant(s) during the contract period and to comply with the quality criteria, set out in § 3. The customer commits himself to refer his entire demand for the named object(s) during the contract period.

(2) The delivery quantity is at least about <indication of quantity> t per year, this is also the reference value for the offer. An up to 25% lower or higher amount order does not entitle the supplier to price renegotiations. The delivery quantity refers to a lower calorific value of the pellets of 4.9 kWh / kg.

(3) The delivery takes place no later than 5 working days after ordering through the customer. The customer strives to order only a full truckload (max. 25 t), which possibly has to be unloaded at several locations. However, the customer reserves the right, also to order partial truckloads.

(4) The supplier has the right to fill the pellet bunkers of the heating plant(s) without ordering after consultation with the customer (e.g. for utilisation of remaining quantities in the transport vehicle).

[optional supplement:

Priority has the supply of heating plant <name of the plant>. Exempted from this regulation is the object<name of the plant> in the period from <Date> to <Date>]

(5) The filling is carried out independently by the supplier. The supplier informs the competent caretaker (phone number see Appendix 1) of the delivery date in good time before the filling. Before starting the inflation of the store the supplier shall contact the caretaker. The customer provides the supplier the required keys, but not other services or personnel.

§3 Quality

- 1) The Supplier shall ensure that damage to the technical facilities of the customer is excluded due to the nature of the pellets supplied. The supplier is obliged to familiarize with the technical facilities of the customer and only to provide such pellets that ensure a low-disturbance operation as far as possible.
- 2) The supplier delivers pellets that meet the quality criteria and delivery modalities set out below:
 - • DIN Plus (+), diameter 6 mm
 - • Filling with Pellet pump
- (3) Impurities such as stones, sand, metal parts or other foreign bodies as well as combustible fuels, not complying with the descriptions above, are not permitted.
- 4) The customer has the right but not the obligation, to ask the supplier (randomly) for a retained sample of approximately one litre in a suitable air and water vapour-tight vessel.
- (5) The customer has the right to give the delivery a close inspection and to refuse the delivery, if he determines defects in quality, using equitable discretion.

§4 Remuneration

- (1) The pellets are remunerated by weight. The price for delivery in <month of contract signing, year of contract signing> is <amount> Euro per tonne plus tax (currently <percentage> %). The price is adjusted monthly according to the following formula (the date of delivery is decisive):

$$\text{Price per month } y = \text{agreed price per tonne} \times \frac{\text{pellet price index in the month } y}{\text{Pellet Price Index in } \langle \text{Month and year of contract signing} \rangle}$$

[Note: Valid in this case is the pellet price index of the Institute "3N" with the specifications: average for the Lower Saxony area, including delivery and VAT for 20 t; He is currently posted in: http://www.3-n.info/index.php?con_kat=126&con_lang=1.]

- (2) The measurement is made using a scale of the delivery vehicle and is proofed by an automatically printed delivery note. In case of a malfunction the caretaker of the plant has to read off the counter of the scale before and after unloading and confirm this on the delivery note. A delivery with a defective scale or counter is not permitted.

The balance has to comply with the calibration regulations. The delivery notes must be countersigned by the caretaker and handed over to him. If this is impossible, they have to be sent immediately to <contact data> after delivery. On request possible lost delivery notes shall handed in later as a copy.

(3) The abovementioned price is paid within the meaning of the VAT Act. The added value tax will be charged additionally at the applicable tax rate.

§5

Accounting

(1) The supplier shall issue a monthly separate invoice for each heating plant listed in Appendix. The invoice shall contain the following information:

- Delivery note no. and date of the delivery note
- Date of delivery
- Delivered quantity

(2) Invoice address:

Location(s) <if there are more than one heating plant and more than one invoice address, an assignment has to be made>

(3) Term of payment is 30 calendar days after receipt of invoice.

§ 6

Contract Duration

(1) The contract begins with the signing of the contract by both parties, but not earlier than <date>. The term of the contract ends on <date>.

(2) If one or more deliveries do not meet the requirements of § 3, the customer has the right to terminate the contract extraordinarily with immediate effect. The customer's right to assert further claims for compensation remains unaffected hereby.

(3) Both Parties have the right to cancel at any time within a notice period of three months, if the above-mentioned price index no longer appears or the basis for calculating the price index change and the parties cannot agree on a new price index. During the notice period the last calculated price on basis of the price index (see § 4 (1)) is valid.

§ 7

Obligations of the Customer

The customer undertakes to ensure that the thermal energy of the heating plant, operated as a bivalent system is mainly generated with the pellet, except for the summer months from May to September. The customer has to be ensured by regular maintenance and operation of monitoring a very high operational readiness.

§ 8

Liability and Obligations of the Supplier

- (1) The Supplier shall check, whether it is possible to approach the plant location by a delivery vehicle. However, the customer assures that the sites are easily accessible on paved roads and all locations were already often supplied in the past. Only two sites can be supplied with a trailer (s. Annex 1). The coupling connection for the filling and the dust exhaust is a Storzcoupling NW 100. The filling device and the pellet storage are grounded against static electricity.
- (2) The supplier is obligated to report any defects in the silo of the customer immediately.
- (3) The supplier is obliged to eliminate contaminations of the silo installation incl. and path surfaces of the customer, caused by him.
- (4) After each filling the supplier is obliged to satisfy himself of the road safety of the filling station and the road areas.
- (5) If the supplier does not fulfil his contractual obligations or in an inadequate manner, and thereby there is an interruption of the plant operation or a damage of the plant, any resulting additional costs and any damage must be compensated by the supplier. Inferior fuel must be removed within 24 hours by the supplier from the silo. If the supplier does not fulfil this obligation, or at least not within the stipulated period despite a request in due time after, the customer will induce the removal at the supplier's risk and cost.

§ 9

Regulation of Legal Succession

Each party is entitled to assign its rights and obligations under this contract to a third party. The retiring party still remains responsible for fulfilment of the contract, until the date on which the legal successor of the retiring party confirms the full contractual obligations in writing and the remaining party has consented in writing.

§ 10

General Provisions

- (1) If any provision of this Agreement is or becomes invalid, this shall not affect the validity of the remaining provisions. The contracting parties undertake to replace the ineffective provision with a legally valid provision, whereby the economic and factual purpose of the invalid provision is achieved as far as possible.
- (2) Should a necessary point of regulation not have been fixed in this regulation by mistake, the contractual parties undertake to fill this gap within the meaning and spirit of this agreement by a supplementary agreement.
- (3) The contracting parties shall endeavour to resolve any disagreements from this contract out of court. Nevertheless, it is agreed that the exclusive venue is <place name>. All amendments and additions, as well as the cancellation of the contract, including the written form clause must be in writing.

(4) Oral side agreements have not been made. Each party shall receive a copy of the contract.

(5) The customer points out that all personal data of the supplier data are stored electronically as far as necessary for the performance of the contract or due to statutory provisions. The provisions of the Federal Data Protection Act are observed. The Supplier hereby agrees.

place, date

place, date

signature (supplier)

signature (customer)

Annex 1: Location information about the facilities

Location-No.:	1	2	3	4
Name of location:				
Address				
Heating capacity				
Delivery quantity (t/a):				
Storage capacity:				
Approach with trailer possible?				
Name of Caretaker				
Phone				

3.2.3 Straw

Trade and measurement

Depending on the requirements of the straw heating plant, square bales or round bales with appropriate compressed density are utilized. The fuel is usually stored in a warehouse and transported with a tractor and trailer or a truck to the boiler.

Special notes how to optimize the measuring process and the unloading as well as terms of delivery are given in the Annex 1.

Quality requirements

The bales shall be stored on dry, solid ground under tarpaulin. Storage of straw without cover has to be refused due to ingress **of wetness or moisture**. At the goods receiving department of the plant straw quality is checked in particular with regard to water content and impurities.

Moist and inhomogeneous straw may cause technical problems in the boiler (slagging, deposits, ash discharge) and lead on to increased pollutant emissions and odors. Straw and stalk material should be used large, uniform batches. To guarantee this uniformity the storage and retrieval of the bales as the delivery shall be done separately field block for field block. Thus the firing system can more easily be optimally adjusted for the fuel.

Standard contract for grain straw delivery to heating plant 2015-2018

Translated example from REFA Biomasseindkøb Aps, Denmark
The original is available to public online

Straw type	Amount (t /a)
grain straw	

Contents

§1 Parties

§ Contractual Basis

§3 Quantity and Straw Type

§4 Ash Reception

§5 Contract Duration

§6 Prices, Price Adjustment and Payment Terms

§7 Obligations of the Customer

§8 Liability and Obligations of the Supplier

§9 Delivery and Delivery Plans

§10 General Provisions

§ 1 Parties

Contract No.:

Supplier No.:

Supplier:

Name:

VAT number:

E-mail:

Mobile:

Bank account number:

Hereinafter referred to as "supplier"

Buyer:

Name:

Address:

VAT number:

Hereinafter referred to as "buyer"

§ 2 Contractual Basis

The contractual basis consists of the following documents

- This contract
- Contract Appendix 1: Straw guide 2015
- Contract Appendix 2: Tender list completed by supplier (not included in this

report)

Items not governed by this contract are subject to the general Danish laws and regulations, including buying Act general rules, road transport rules, environmental legislation provisions, and safety legislation requirements.

§3 Definitions

Straw delivery Instruction: Document “Straw guide 2015” (Appendix 1)

Offered price: The price offered by the supplier for the supply of cereal straw with a moisture content of 13% applicable from 1st August 2015 to 31st January 2016.

Base price: The price for the next half year of delivery before adjustment due to moisture content. In the first half year of the contract: offered price = base price. Afterwards the price is regulated once every half year depending on recent price developments and this regulated price will be the base price for the forthcoming half year of delivery.

Straw Type: Grain Straw as described in the "Product Description straw" in "Straw Guide" (Appendix 1).

Contract period: The 3-year period, from 1st August in 2015 to and including 31st July 2018.

Delivery year: 3 periods each from 1st August to 31st July

§ 4 Quantity and Straw Type

The contract includes the following amounts and prices:

Straw type	Amount (t / year)	Price per t
Grain straw		

§ 5 Ash Reception

The supplier shall receive an ash amount corresponding to the contracted amount of straw. The ash is delivered to the supplier's address listed above, or by appointment at a different address max. 10 km from here.

A declaration regarding ash quality, corresponding to the requirements of the spreading of ashes in accordance with relevant legislation will be provided.

The supplier is obliged to store and spread the ashes on his own costs.

§ 6 Contract Duration

This contract is valid for a three-year period commencing 1st August 2015 and should be completed by 31st July 2018 or at the latest at the completion of delivery of the contracted amount of grain straw.

After that, the contract will be terminated without further notice.

§ 7

Prices, Price Adjustment and Payment Terms

The price is valid per 1st August 2015 for grain straw with a moisture content of 13%. The price is valid for the first half year of delivery, as it is equal to the base price in the first half year of delivery.

Price regulation

The base price is adjusted once every half year, the first time with effect from per 1st February 2016 and thereafter every six months per 1st August and per 1st February. The regulated price is the base price for the coming half year.

The base price is adjusted according to 4 parameters (price indices) available through “Statistics Denmark” based on the price indices per 1st April (for regulation in August thereafter) or per 1st October (for regulation in February thereafter).

Index	Distribution
Nettoprice index	70%
Price index for Fertilizers	10 %
Price index Diesel and motor oil	10 %
Salary index	10%

* average price incl. VAT and delivery costs. The collection of data and the publication of the calculated indices is carried out by the statistics authority.

An example:

Regulation 1st February, price is regulated based on indices from the previous 1st October:

Old base price: 600 DKK/t

	April	October
Nettoprice index	130.3	130.7
Price index Diesel and Motor oil	232.7	236.9
Price index Fertilizer	171.7	182.7
Salary index	122.9	123.2

New base price is calculated as follows:

$$600 \times \left(\frac{130,7}{130,3} \times 0,7 + \frac{236,9}{232,7} \times 0,1 + \frac{182,7}{171,7} \times 0,1 + \frac{123,2}{122,9} \times 0,1 \right)$$

The price can increase or decline compared to the previous base price

Settlement

In connection with each delivery the weight is corrected based on the moisture content of the delivered straw, and this corrected weight forms the basis for the final settlement price.

$$\text{Price} = \text{Base price} \times (\text{delivered amount} \times \text{correction factor})$$

Base price is valid for 13 % moisture content (weight based)

The weighted amount of grain straw is corrected for moisture content in the following manner:

- If the average moisture content moisture content below 13%, no further corrections, the lowest moisture content that can form the basis for settlement is 13%.
- If the average moisture content greater than 13%, but less than 15%, the weight is corrected with minus 2% per percentage point increase in moisture content.
- If the average moisture content is 16% or greater the weight is corrected by minus 2% per percentage point of increased moisture content for the interval 13 to 15 %, and thereafter with minus 3% per percentage point for the increased moisture content of 16% and above.

Examples:

Moisture content = 15%: by weight is reduced by $2 \times 2\% = 4\%$

Moisture content = 16%: weight reduction of $((2 \times 2) + 3)\% = 7\%$.

Moisture content = 18%: by weight is reduced by $((2 \times 2) + (3 \times 3)) = 13\%$.

The measured values are rounded in the following manner:

13% moisture content covers a measured average within the range of less than 13.4%.

14% moisture content covers a measured average within the range 13.5 to 14.4%

15% moisture content covers a measured average within the range 14.5 to 15.4%

and so on.

The settlement is made after weighing performed with the truck scale, installed in the factory. Receipts on the weighted values are produced after the weighing is complete.

Terms of payment

The statement on the amounts of delivered straw, corrected for moisture content, is made by the buyer on the last weekday of the month. The purchase prices for the straw deliveries are due to the current month plus 30 days. If the last day of the month is a Saturday, Sunday, or a bank holiday, the payment is due on the following weekday.

The cost of straw deliveries must be transferable to a Danish bank.

§8

Delivery and Delivery Plans

Delivery year runs from 1st August to 31st July of the following year.

The supplier must be able to deliver straw over the whole delivery year, so that there are no periods where the supplier cannot deliver straw.

Delivery plans

Each year in August the buyer prepares an overall delivery plan, which roughly represents how much straw each supplier is expected to deliver in every month of the delivery year. The buyer endeavours to ensure that the deliveries are distributed evenly across all suppliers, so that storage costs are evenly distributed.

The buyer will to some extent take into account requests from suppliers, but the buyer is always entitled to fix the time of delivery within the time period specified, and at any time in the supply year.

Delivery date

The supplier is contacted by the straw-coordinator of the buyer to arrange delivery time and quantity per day, within two working days prior to the delivery of straw. The straw is to be delivered as specified in this plan.

The other party shall be immediately informed in the event of a suspension or reduction in straw delivery or straw reception. The reason and the expected duration of the stop or reduction are to be described to the other party. The parties shall then jointly seek a solution to mitigate the impact of the reduced supply.

If the supplier has commenced transportation of a load of straw, then the buyer must receive the load, unless it is refused according to the criteria in § 10.

§ 9

Adjustment of the Contracted Amount

Each straw supply contract is considered fulfilled when the delivered quantity corresponds with the contracted amount, rounded to the nearest whole load.

When calculating the amount that each supplier has delivered, the weight is corrected for moisture content, as described under point 7a

Example: weighed 200 tons with an average moisture content of 15% means that the quantity supplied is reduced by 4%, so that the quantity supplied = 200 tons x (100-4)% = 192 tons.

The supplier shall be deemed to have fulfilled their obligation to supply a year of delivery, when the minimum 95% of the agreed amount is delivered. If the supplier is unable to

meet its supply commitment, the buyer is entitled to make a purchase to cover the missing biomass; the supplier is responsible to cover the potential price difference, up to a maximum of 20 % of the contract price per delivery year.

The buyer is considered to have fulfilled its purchase obligation when at least 95% of the agreed amount is obtained from the supplier. If the buyer is not in a position to fulfil his purchase obligations, the remaining amount will be transferred to the subsequent delivery in the following delivery year, with the agreed price regulation stipulated in 7a. If the purchase obligation is not met in the third year of delivery, there is a contract renewal for one year, although a maximum of 5% of the total amount can be transferred in this way.

In addition to these stated regulations the buyer is entitled at any time to reduce the straw supply contracts agreed quantity if technical issues at the power plant occur, including but not limited to periods of downtime and / or reduced production (reduced operation) make such reductions necessary or appropriate.

This can for instance be (whole or partial) technical failures, whether due to attributes in the delivered straw, issues related to the plant or its operation, technical issues that require another type of biomass to be used, or external factors. The parties shall hereafter jointly seek a solution that helps to mitigate the effects of the reduced reception of straw as much as possible, e.g. giving the supplier priority in the coming year of delivery. The buyer is not liable if this is not possible in whole or partially, for instance as a result of the extent of the technical issues and / or because the buyer has held new tender, and therefore cannot postpone the purchase obligation.

The buyer endeavours to ensure that all necessary reductions in straw reception are distributed proportionally between all straw supply contracts for the buyer.

A precondition for reimbursement of the additional cost endured by the suppliers is that the buyer has not lived up to their commitments, and cannot exceed an amount in excess of 20% of the contract value per delivery year.

Increase of the total amount offered

The buyer is permitted, without making new tender offer, to increase the amount of each straw supply contracts with up to 15%. Such a request to increase straw contracts shall be sent to all suppliers, who have been awarded contracts under this tender. Suppliers are requested in writing to affirm the prices offered, because the supplier cannot change their original quoted price.

Increase due to missing deliveries

The buyer can also offer to increase the volume in a single straw-supply contract with up to 15%, when one or more of the other straw suppliers do not deliver the agreed volume. In that case, the request to increase the contracted amount is only sent to the suppliers that have been able to deliver the agreed upon volume of straw.

§ 10

Reject Criteria

The buyer is entitled to, but not obliged to, reject a straw delivery, here meaning a full load of straw, if:

- Two or more bales differs from size criteria (see Annex 1, section. 1.3)
- Two or more bales of straw are too humid (see Annex 1, section. 1.6)
- Two or more bales of straw are deformed or warped (see Annex 1, section. 1.6)
- Two or more bales lacking straw ribbons or straw bands are tender (straw bales without outer bale cords are always rejected)
- Two or more bales by visual assessment differ from normal satisfactory quality, e.g. surface moisture, snow cover, decay, etc.

If only a single straw bale is rejected due to one of the above shortcomings, a “bale set” (2 straw bales placed one above the other) can be rejected. The settlement price will only reflect the straw delivered to the CHP.

The buyer is also entitled, but not obliged, to reject a straw delivery, understood as a whole load of straw, if

- - Bales are not covered with nets (see Annex 1, section 1.6)
- - Bales are not loaded correctly (see Annex 1, section. 1.5)
- - Bales contain non-combustible material

If the supplier disagrees with the rejection, the supplier must protest against it on site, in connection with the rejection. Otherwise the rejection is considered approved by the supplier.

The straw delivery may also be refused if:

- Other conditions in this contract or the related “Straw instructions” are not met
- If it in any way can be proven / deemed probable that the delivery in connection with the production, transport, delivery or otherwise has breached Danish law.
- The local environmental and safety regulations have not been followed
- Instructions from the buyer’s staff have not been followed.

If a straw delivery or individual bales are rejected, it means that the supplier is not entitled to pay for the rejected grain straw, and they themselves must bear all expenses in connection with the clean-up and disposal of the rejected consignment, including coverage of the rejected straw with nets.

Only straw, which is accepted by the buyer, is included in the calculations for the contracted delivery amounts.

§ 11

Reduction of the Agreed Amount due to the Weather

In case of supply shortages due to bad weather, the supplier may reduce the amount of straw to be delivered down to 80% of the agreed annual amount.

The buyer must receive written notice of the required reduction in the current delivery year by the 1st of October. The desired reduction must be approved in writing by the buyer and is only valid when the buyer has made an addendum to this contract.

If this deadline is not met, the supplier is required to provide under the contract concluded; i.e. deliver the full contracted amount of agreed upon for the delivery year.

In the case of a reduction in the delivered amount, the supplier is obligated to compensate the buyer for the reduced amount, at a price of DKK 80 / ton of straw, excluding VAT.

The compensation is to be deducted from the settlement of straw deliveries for October, or the nearest following month.

In case of reduction in delivery, the supplier cannot at a later date deliver the amount reduced, and the buyer is not obliged to buy this amount at a later date.

§ 12

Force Majeure

The Parties shall not be liable if they are subject to force majeure.

Force majeure is defined under this contract circumstances that the parties have no control, including natural disasters, fire in straw storages, errors or accidents on boilers incl. receiving facilities or the like at the plant, which prevents or reduces the possibilities to receive and burn straw.

General lack of straw within the geographical area due to unusually wet weather during the harvesting of straw can be considered as force majeure. It is in this context a necessary, but not solely sufficient condition, that there in the period between 1st August and 1st October has precipitated a minimum of 200 mm rainfall in the region (as calculated by the Danish Meteorological Institute).

If a supplier is planning to invoke force majeure because of the general lack of straw because of unusual weather conditions, it must be in presented in writing to the buyer before 1st October in the contracts' delivery year.

Where force majeure is invoked, each party is freed from their obligations of delivery and purchase. The party that invokes force majeure must notify the other party, without undue delay and in writing of its occurrence, and expected termination of the contract. The reason for force majeure must be documented in writing.

If the plant reduces the quantities received, the buyer will strive that this reduction occurs proportionately to all vendors. Once the cause of force majeure has been removed, the deliveries are resumed.

§ 13

Transfer

The contract cannot be transferred to others without the explicit consent of the buyer.

To ensure the buyer's straw deliveries, the supplier is required, in respect of the company/property transfer (sale or lease), to ensure that the new owner takes over the suppliers rights and obligations under this contract.

§ 14

Breach of Contract

If one party fails to fulfil its obligations under this contract, the other party is entitled to terminate the contract without notice, and claim breach of contract according to Danish law.

If the breach cannot be described as substantial, the other party is, however, only entitled to terminate the contract with three months' notice. Such denunciation shall not deprive the terminating party's right to claim breach of contract according to Danish law.

Repeated attempts of inadmissible straw deliveries or repetitive cases of failure and non-compliance with agreed delivery dates are to be considered as material breach of contract.

§ 15

Dispute Resolution

This agreement is subject to Danish law. Any dispute arising in connection with this Agreement shall be governed by the applicable rules of procedure of the Danish courts.

§ 16

Entry Into Force, Signature and Return

The contract will come into force when it is signed by both parties.

Date:

Date:

Signature:

Signature:

Appendix 1: Example of a straw delivery guide

Translation of Straw guide from REFA ApS, original version available to public online

Straw Guide

Safety and precautions for unloading the straw at Maribo-Sakskøbing CHP Plant

Maribo-Sakskøbing CHP Plant

General information on straw delivery

Phone straw coordinator:

Monday - Thursday 7:00 to 15:00

Friday 7:00 to 12:00

Phone control: 54 74 36 01

Hours:

Monday - Thursday: 06:30 to 13:30 (closed on Wednesday from 8.45 to 9.30)

Friday: 06:30 to 12:00

Deviation from normal hours must be agreed with straw handling staff.

Alcohol and drugs

Maribo-Sakskøbing CHP (MSK) it is forbidden to bring, consume or be under the influence of alcohol and drugs. Violation results in expulsion!

Smoking Policy

Tobacco smoking is banned everywhere, even in cabs in rolling stock.

It is allowed to smoke outdoors, which is located ashtrays, the main entrance, at the workshop and at weighing offices.

Photography

Must obtain special permission.

Environmental and safety rules

Overview of Maribo-Sakskøbing CHP Plant

Traffic Conditions

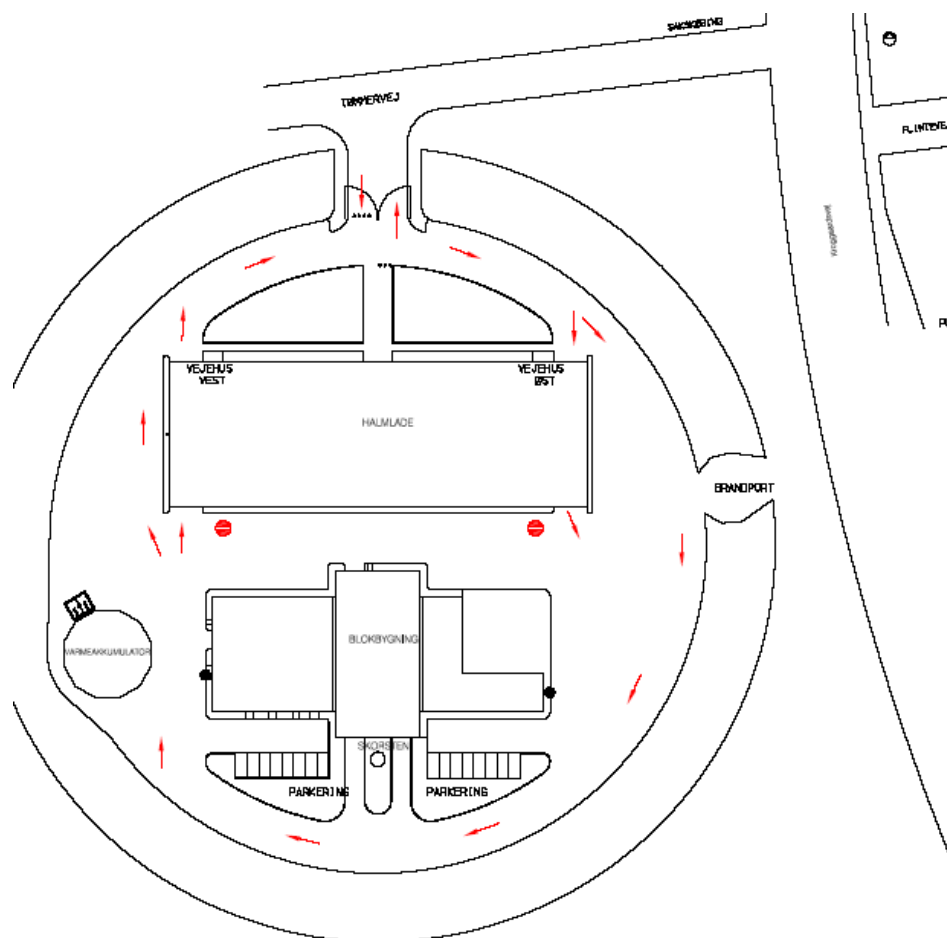
All traffic to and from straw leave must be made through the way around the power plant.

(Correct direction is marked with red arrows on the overview map).

It is not allowed to use the road between straw barn and block building

- Marked in the drawing with

Max. 20 km / h. on the work area



1 Terms of delivery

It is of course always the carrier's obligation to comply with the Road Traffic Act requirement to ensure that the goods transported is not lost on the road - including at least attaching the bales securely with straps.

1.1 Vehicles

All vehicles circulating in straw warehouses must be equipped with **spark arrestor**.

The fully loaded vehicle combination must not exceed the following maximum dimensions:

Length Unloading: 18.75 m

Width: 2.55 m

Height: 4.00 m

Wagon trains must be designed so that the reading of straw bales can be safely and unhindered, taking into account local conditions.

Any contamination of the road area has to be avoided. All contaminations after unloading have to be cleaned by the supplier before departure.

1.2 Straw Transportation

All straw transports must be solid and level base.

To avoid straw waste BE wagon trains be covered so that the straw on all open surfaces are covered by the network. The network must go right to the floor pan, and the mesh size should be no larger than 30 mm.

Straw bales to be loaded in accordance with WEA rules and as described earlier, in section. 1.5.

Straw transports must be equipped in such a way that the supplier independently and without help from the receiving plant's personnel should be able to pull off and impose network secure-care terms fully justified, and in accordance with all regulations.

Before leaving the warehouses the supplier received a receipt for the delivery with the following information:

- - Date and time
- - Supplier
- - Straw type
- - Straw weight in kilograms
- - Straw moisture content in%
- - Weighing slip number

1.3 Straw bales size

Straw bales are delivered as large bales with the following dimensions:

- Width: Min. 115 cm, max. 125 cm
 - Height: Min. 125 cm, max. 130 cm
 - Length: Min. 225 cm, max. 255 cm *)
 - Weight: Min. 400 kg, max. 700 kg
- *) The target small variation in length as possible.

1.4 straw bales humidity

The bales of straw must have as low humidity as possible.

1.4.1 Measuring Equipment

Humidity is measured with the CHP plant installed measurement equipment. REFA Biomass procurement is entitled to replace the measuring equipment in the event that there are new and more accurate measuring instruments and / or measurement methods to determine the moisture content of straw bales.

1.4.2 Measurement methods

The water content in a load of straw is checked before unloading by plugging of moisture measurement spear least 10 sites per. transport. REFA Biomass Purchasing is entitled to make stringent measurements of humidity desired and make these measurements at places of their choice.

There is not measured in the outer 5 cm of straw bale.

1.4.3 Calculation of the moisture content

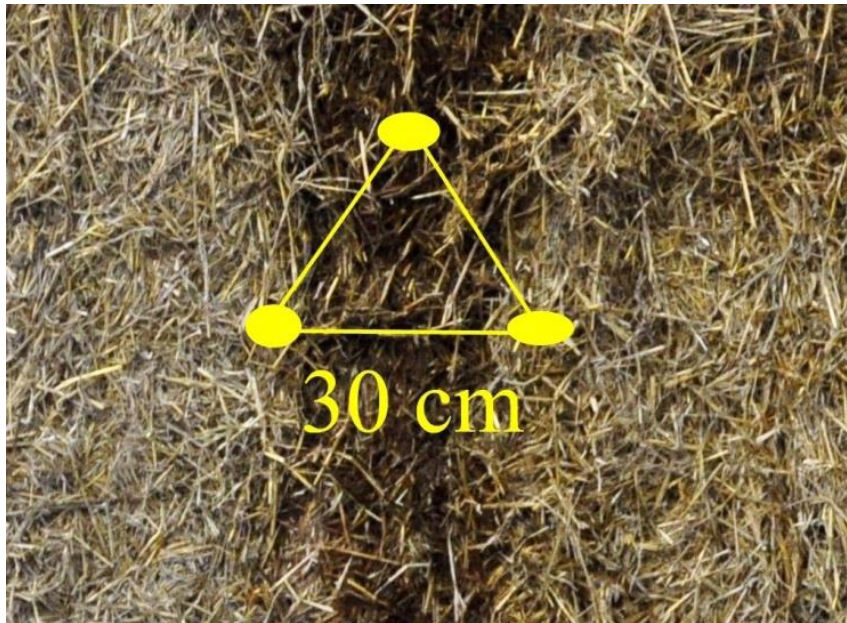
The water content in a load of straw for billing determined as an average of the through-led moisture measurements. The results of the measurements loaded into the work registration system, and the bill is based on it.

1.4.3 Rejection of straw

Are there wet or rotten areas identified visually or by a single measurement with over 22% moisture, carried out in all three measurements for the detection of straw bales average moisture content.

The measuring points must be spaced at least 30 cm and may not be on a vertical axis relative to each other (see figure below).

If the average water content in a straw bale exceeds 22%, REFA will reject this. For the sake of the crane operations the number of straw bales to be rejected is always and even number



1.5 Reading bales

Straw bales to be loaded in accordance with WEA rules and be-written for the power plant below.

1.5.1 Reading the straw bales to Maribo-Sakskøbing CHP Plant

Straw bales to be loaded with 8-24 bales per. transport, as follows:

- 8-24 bales on truck and hangs
- 20 to 24 bales on a trailer with flat and horizontal let along the trolley around slew-'s longitudinal centre line
- Only in two layers and having the same number of straw bales in each layer in such a way that there is no displacement data between the bales
- Straw bales should stand on the bands and with distance so that the truck forks can get around the bales without damaging cords
- Straw bales with discoloration should face the discoloured side up

On arrival at the delivery site

REFA Biomass Purchasing ensures removal of moisture sample and determination of water-per cent.



The supplier takes the safety net off.

The net-weight determination must not commence until the moisture test is finalized and should be performed by one person.

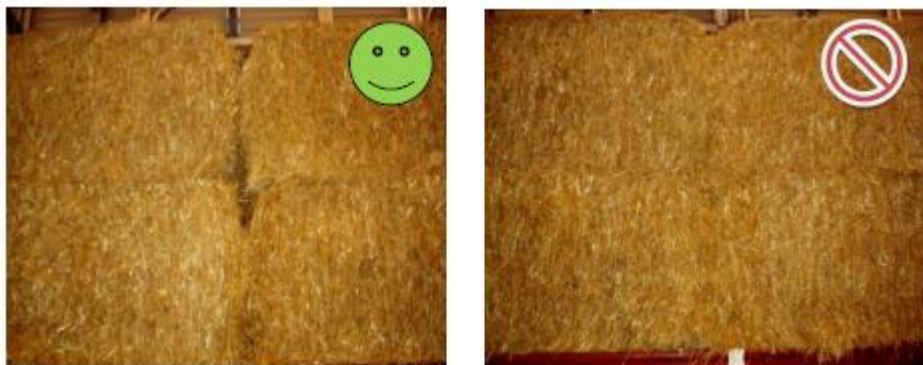


Loose safety nets, slings and other lashing added together and placed between trailer and tractor and not in the unloading area.



Unloading of straw bales

REFA Biomass Purchasing unloads straw using a forklift. Straw bales must therefore be properly spaced so that the truck forks can get around the bales without destroying the strings. The cords should always point upwards.



It is strictly forbidden and extremely dangerous to stay in the unloading zone when the truck is in operation. Stays under unloading must take place in the designated waiting area or in the truck



Clean-up and weighing slip

When unloading the transport is finished and the truck is stopped and cleaning can be initiated.



Clean-up and weighing slip (continued)

The ladders at the guardrail must be used for ascent and descent of the platform.



After cleaning down any loose network straps etc. back on the bandwagon, and weighing slip picked up by roads stand.

1.6 Rejection Criteria

Exceeds 2 or more bales of straw in a straw transportation following limits and requirements REFA Biomass Shopping entitled, but not obliged, to dismiss the entire straw transport.

- Two or more bales containing over 22% water.
- Two or more bales whose length is less than 225 cm or 255 cm.
- Two or more bales whose outer strings missing.
- Two or more bales which are deformed or crooked.



- 2 or more bales with advice at the bottom.
- 2 or more bales containing wet or rotten spots (wet spots are places with more than 22% moisture).
- If only one straw bale per load suffers from one of the above mentioned quality defects, then the straw thermal power station reject this bale + 1 additional straw bale (a set of straw bales).



The Straw transport may also be refused if:

- The network is not intact. Mesh size max. 30 mm.
- Straw bales too close together on the bandwagon.
- Straw bales are reversed so that the cords are not pointing upwards.



Straw transport may finally be rejected if:

- Local environmental or safety regulations are not followed.
- Instructions from Maribo-Sakskøbing CHP Plant staff are not honoured.

1.7 Recommendations

In order to improve the working environment recommends Maribo-Sakskøbing CHP that all straw transport operations roll-nets.



Straw bales dried by machine, should be dried immediately after pressing.



1.8 Product Description straw

Straw for REFA Biomass Shopping can consist of one of the following types:

- Cereal Straw
- Straw from rye, wheat, barley, oats and triticale.
- Seed grass
- The straw from grass seed. Seed grass can only be returned by prior arrangement of the date and amount of the individual loads.
- Rape Straw
- Straw from rape.

Other Description

- Straw delivered, must be pressed. The straw may be the earliest comes two days after the press moulding.
- The straw cannot be cut before it is pressed into bales.
- All tapes must be intact.
- The straw is assumed free of major foreign and may not be added ammonia or other chemicals after pressing.
- The straw must not be or have been affected by rot and fungus due. Risk of toxin production.
- There are only entire truckloads of each straw types accepted.
- The straw should be as dry as possible. Payment is made on the basis of a moisture content of 13%.

Driver safety instructions

....