



## Fossil Fuel and Biomass

### Energy Services Contract Template

### Guidance Notes

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These Guidance Notes were prepared as part of the Renewable Energy Development Model Pilot Projects element of the RASLRES project. RASLRES is a European bio-energy project led by the Western Development Commission and funded under the INTERREG IVB Northern Periphery Programme. For more information please see [www.raslres.eu](http://www.raslres.eu)

These guidance notes and contract templates have been developed over 2011 and 2012 by RASLRES. They are most applicable for use by larger heat users (businesses) and are intended to enable such users to augment their existing fossil fuel heating systems with biomass fired systems.

The biomass industry was consulted to help develop the contract templates and their views were incorporated. In addition the contract templates were developed and used by several business customers to procure biomass systems and the lessons learnt from that were included. As such the contract templates are designed to offer a model to enable businesses to better determine and then procure and operate biomass heating systems. These guidance notes are to be used in conjunction with the accompanying Biomass Energy Services Contract templates.

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## 1.0 Overall Purpose

### 1.1 Scope of the Energy Supply Contract Templates

These guidance notes refer to the Fossil Fuel and Biomass Energy Supply Contract Template and Biomass Energy Supply Contract Templates (both dated October 2012). These contracts can be used as a 'design, build and operate' or a 'finance design build and operate' contracts.

The contracts are most applicable for use by public and private sector heat users requiring hot water for domestic hot water, space heating or process heating.

It is intended to enable such users to augment their existing heating systems with biomass fired systems with either a defined capital contribution or no capital outlays. The Contract Templates have provision for the Customer to prescribe the capital contribution they wish to make – this would reduce the heat costs and/or the duration of the contract.

The contracts help the Customer to tender for and then contract with a Biomass Fuel Energy Services Company (the Supplier) over a long term period. They should be used with an Invitation to Tender (ITT) to secure the required biomass equipment and O&M services. Outline guidance on an ITT is also provided in these guidance notes.

The contracts cover the design, supply, installation and commissioning of suitable biomass fired plant and its long term operation and maintenance by the Supplier. This entails the supply of biomass fuel and full maintenance and repair on the biomass fuel system. The contracts provide a means for customers to purchase these services via:

- A fixed monthly capital repayment charge (with provision for customer contributions)
- A variable monthly heat charge
- A monthly O&M charge (with spare parts invoiced separately)

The fixed monthly capital repayment charge will require the development of a bespoke financial agreement depending upon how the Customer and Supplier determine that the project will be financed. This guidance does not provide financial and commercial guidance on this and such guidance should be obtained prior to using the contract templates.

Contractually there are no upper and lower limits on the scale of heating provision that could be encompassed in the Contract Templates. However they are less commercially viable for small scale heating applications and

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typically apply to larger commercial and public sector heat users such as swimming pools, schools, hospitals and hotels.

## **1.2 Energy use and savings**

Where buildings have scope to reduce their heat energy demand through energy minimization measures (such as new heating controls, insulation etc.) and there is reasonable prospect that this might occur in the future, and/or where the energy efficiency savings target is being applied, the application of these contracts should be used with caution. In such situations the stated heat load could be reduced to the level of the anticipated energy savings before the contract is used in a procurement process.

Related to this the design and build of a biomass system will be based upon the energy use data that is supplied by the Customer, so they must ensure that this data is as complete and reliable as possible. Schedule 3 of the contract contains some information on the scope and nature of the information that should be created and used in the ITT and contracts.

## **1.3 Use of these guidance notes**

The following section highlights key parts of the Contract Templates and describes the decisions required by the Customer to tailor the contracts to their own purposes. It highlights some of the commercial and practical risks. The Customer will need to obtain professional advice in using the Contracts and in developing them within an ITT. It is a suggested condition of the Contract Templates that independent professionals are used to assess key inputs to the contracts, particularly Schedule 1-7.

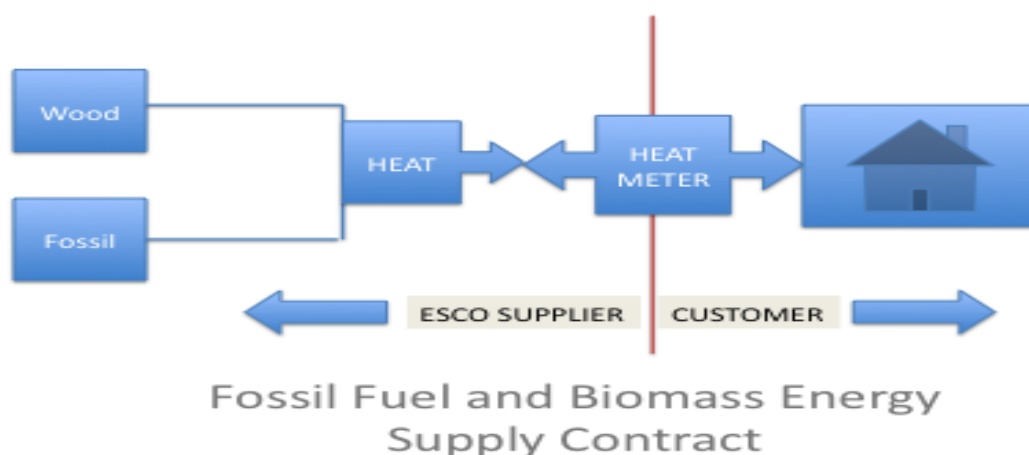
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## 2.0 Guidance notes

### 2.1 Operation and maintenance of the fossil fuel boilers

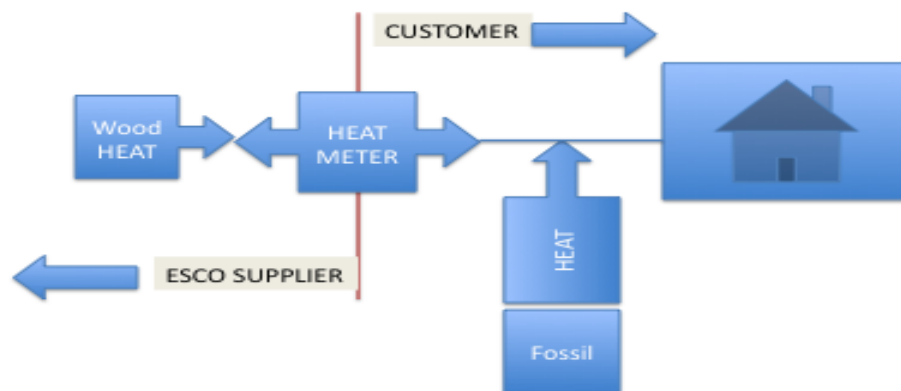
The contracts **can cover** the operation and maintenance of the **existing heating plant** and the supply of fuel for that system. Therefore in order to select the correct Contract Template the first decision must be to determine if the biomass energy services supplier is going to operate and maintain (O&M) the existing fossil fuel boilers. Section 4 of this report provides guidance notes for the Fossil Fuel and Biomass Energy Supply Contract Template. Section 5 provides guidance notes for the Biomass Energy Supply Fossil Contract Template.

Figure 1 below shows the arrangement for fossil fuel O&M being supplied by the biomass supplier.



**Figure 1: Fossil Fuel and Biomass Energy Supply Contract**

Figure 2 below shows the arrangement for O&M if the fossil boilers remain with the Customer.



**Biomass Energy Supply Contract**

**Figure 2: Biomass Energy Supply Contract**

The decision to place the fossil fuel boilers inside the Biomass Energy Supply Contract should be taken following professional advice<sup>1</sup>.

### **3.0 Use of the energy supply contracts in a tender process via ITT's**

#### **3.1 Background**

The energy supply contracts need to be used in partnership with an Invitation to Tender (ITT) that the Customer should separately develop using professional advice. That ITT shall be used to ensure the scope of the design and installation of the biomass equipment and the biomass O&M services will conform to the Customer's requirements. The ITT should cross-refer to the energy supply contract via the schedules, so that what is requested via the ITT is inserted into the final agreed energy supply contract. The ITT may cover the following.

#### **3.2 Heat demand**

It is important that the ITT and the Energy Supply Contracts state fully and clearly how much heat energy the biomass equipment must supply. Schedule 3 of the contract and the ITT should be consistent.

<sup>1</sup> Customers who place their fossil fuel plant inside the biomass contract are transferring risk to the Supplier and simplifying their energy supply to a single integrated tariff arrangement managed by a single supplier. If the fossil fuel plant is to be operated by the Customer it can create disputes over the role of both systems and does not fix the overall cost of heat within a single contract. It also requires a decision about how much heat the biomass system must be designed and operated to replace and raises the problem of what happens if the Supplier fails to achieve that.



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### 3.3 Scope of works

For example Suppliers should be asked to price for the following items in the ITT:

1. Boiler Room
  - a. Build and construct a weather proof structure using blockwork with a flat roof to a size suitable for the project.
  - b. Provide suitable ventilation for the boiler
  - c. All piping to be suitably insulated
  - d. On completion of project the interior walls, floor and ceiling to be finished with fresh paint
  - e. Exterior of walls, windows, doors to be freshly painted
2. Installation of wood fuel boiler.
  - i. Minimum seasonal efficiency 90%
  - ii. Manufactured to EN 303-5
  - iii. CE Certified
  - iv. Automatic ignition
  - v. Mechanical ash removal
  - vi. Minimum of xxxxx litres of buffer tanks with suitable insulation
3. Installation of:
  - a. Pumps, valves and ancillary equipment as required
  - b. Control System as required
    - i. Remote sensing device to alert Supplier when the boiler(s) are not operating.
    - ii. (system to be fully independent of clients network)
  - c. Heat meter on the main header to standard EN 1434
  - d. All equipment must be CE marked and where an option is available from the Triple E Product Register ([http://www.seai.ie/Your\\_Business/Triple\\_E\\_Product\\_Register/](http://www.seai.ie/Your_Business/Triple_E_Product_Register/)).
4. Flue
  - a. A separate double skinned, insulated flue for the biomass boiler
  - b. An access hatch must be installed at the end of each straight section of flue to facilitate cleaning
  - c. Flue must be a minimum of 1 meter higher than any building within a 30m radius
5. Fuel Store
  - a. Construct a fuel store to be able to take a x m3 delivery of woodchip from a standard agricultural tipping trailer with no manual assistance.
  - b. At any stage during fuel deliveries the noise limit must not exceed 70 dBA
  - c. The fuel store must be able to take a full lorry load of wood pellets.

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- i. Two male 4 inch cam-lock fittings adapters must be fitted to the fuel store. One for woodpellet delivery, the other to extract dust.
  - d. The floor, immediately below the discharge mechanism, to be made of concrete
  - e. The boiler loading equipment must be able to empty the entire fuel store and leave no more than 3 m<sup>3</sup> of fuel
  - f. The fuel store must be suitably ventilated
  - g. There must be a sight glass so that the fuel level can be verified without the need to enter the fuel store
  - h. The fuel store must be accessed in such a way that the wood-fuel can be removed with mechanical equipment. No more than 10m<sup>3</sup> should need to be removed by hand.
  - i. On completion of project exterior of walls, windows, doors to be freshly painted
6. Access to fuel store
- a. A hash-yellow road marking will show the area required for fuel deliveries
  - b. Signs to display the times of fuel deliveries

### 3.4 Agreement to provide O&M services for the biomass equipment<sup>2</sup>

The ITT should set out the requirements that the Customer has for the O&M services via an O&M Agreement and then insert these in Schedule 1 part 4. Below is an example of the basic scope of work that should be covered under an O&M Agreement.

#### A. General

1. The Supplier warrants and agrees to, on and from acceptance and at all times during the remainder of this Agreement to, safely and properly operate, maintain and manage the biomass equipment and so provide the O&M services in accordance with good industry practice and equipment manufacturer's printed recommendations subject to, and in accordance with, this Agreement, the Energy Services Contract Document and the ITT.
2. The Supplier shall continuously achieve the service levels and performance targets set out in this Agreement.
3. The performance of the Supplier's obligations is the Supplier's exclusive responsibility and exclusive cost, expense, risk and liability and will be undertaken at no charge to the Customer.

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<sup>2</sup> Where this Agreement is used to also secure fossil fuel O&M it will require modifications

4. Risk, responsibility and liability in respect of the performance (or non- performance) of the Supplier's obligations will remain with the Supplier at all times during the term of this Agreement.
5. If any maintenance or replacement of the biomass equipment is required as a direct or indirect result of any acts, errors, omissions, recklessness or negligence of the Supplier, the Customer will arrange for the maintenance to be performed or the replacement to be undertaken and the Supplier will indemnify fully and effectively the Customer in respects of all costs and expenses and time suffered or incurred in arranging for the required maintenance or replacement, as the case may be.
6. The Supplier will certify in writing to the Customer on the first of January, April, July and October each year during the Term that the Supplier has, during the relevant quarter, operated, maintained and managed the biomass equipment subject to, and in accordance with the service levels or, if the case, certify that it has not done so and clearly identify the extent to which it has not done so and the reasons why.
7. The Supplier will expediently do all acts, things and matters to rectify any such non-compliance and to avoid any such non-compliance re-occurring during the Term.
8. The Supplier acknowledges and agrees that the biomass equipment is such that Maintenance can, and will, be undertaken by the Supplier without giving rise to Outages of heat supply.

#### **B. Service levels in maintaining the biomass equipment.**

1. The Supplier will at all times operate, maintain and manage the biomass equipment so that it continues to successfully achieve the Service Levels.
2. The Supplier will use its best endeavours to immediately remedy and resolve any outages irrespective of the cause of such outages.

*Example of service levels (this must be developed based upon the biomass equipment and its particular and bespoke requirements).*

Interval	Task
Daily	<i>On-line inspection &amp; check of key parameters via web-based PC interface. Take and record heat meter readings.</i>
Weekly	<i>Check motors for oil leaks; empty ash boxes; check system pressure. Tidy plantroom.</i>
Monthly	<i>Check &amp; clean grate &amp; combustion chamber with vacuum.</i>

Quarterly	<i>Clean flue gas sensor &amp; lambda probe.</i>
6-monthly	<i>Check ash &amp; fuel feed drives, air flap servo motors &amp; door switch; check &amp; clean heat exchanger with</i>
Annual	<i>Annual inspection &amp; service as required by manufacturer's printed recommendations covering all parts of the biomass equipment.</i>
Allowance for call-out within fixed price O&M charge	<i>Six times per annum (see below for call out standards)</i>

### C. Performance targets in maintaining the biomass equipment.

1. The Supplier shall make reasonable efforts to achieve the performance targets set out in the table below. The target response times for call-outs are based upon the Supplier receiving an automated failure signal or if a problem is identified within the interrogatable control program without a failure signal or a telephone call from the customer's site representative.

*Example of performance targets (this must be developed based upon the biomass equipment and its particular and bespoke requirements).*

PERFORMANCE TARGETS	
Plant Failure System failures resulting in loss of heat and shut down of the system.	<i>Call Out Target response time to attend site shall be within 6 hours. Target rectification time within 24 hours of arrival at site except in the case of damage to major equipment items.</i>
Major Plant Defects System defects that result in reduced operational performance of the plant, e.g. reduction in thermal unit production, lack of temperature control, failure of ash removal systems etc.	<i>Call Out Target response time to attend site shall be within 12 hours. Target rectification time shall be within 48 hours of arrival at site except in the case of damage to major equipment items.</i>
Minor Plant Defects System defects that do not affect the operation and performance of the plant but require	<i>Scheduled Visit Target response time to attend site shall be at the next scheduled visit. Target rectification time shall be at the</i>

rectification in a timely manner.	<i>next scheduled visit or when any parts required are available.</i>
House Keeping General tidiness of the plant, condition of plant and floors.	<i>Scheduled Visit Target response time to attend site shall be within 6 scheduled visits or by special arrangement.</i>

2. These target response and rectification times require that the Customer provides unfettered access, allows vehicular access and/or offloading equipment for plant items and has maintained the building fabric and utility services in a manner which will safely allow rectification. It also presumes that the fault is singularly the fault with the boiler and has not been caused by external factors such as major pipework failure, loss of distribution pumps etc.

#### **D. Replacement spare parts**

- 1 The Customer will pay for spare parts and this cost shall not be included in the monthly O&M charge under the Energy Supply Contract, unless otherwise agreed in a separate protocol.
- 2 The Supplier will replace any equipment or other item comprised in or part of the System before it becomes unreliable, unsafe, has significant deterioration from the condition it should have been in or becomes unsuitable for its intended purpose or unable to properly operate and function.
- 3 Upon request by the Customer, the Supplier shall provide a detailed list of recommended spare parts for the biomass equipment and the pricing of such spare parts which will be cost price (plus pre-approved reasonable and vouched delivery and handling charges). All pricing will be inclusive of VAT, if chargeable.
- 4 The Customer may require the Supplier to make spare parts for the biomass equipment available for purchase by the Customer.
- 5 The Supplier shall invoice the Customer for such spare parts upon shipment. The invoice must show the delivery address and be accompanied by a delivery note that was signed by an authorised representative of the Customer when the spare part was properly delivered. If the delivery note is not included, the sum set out in the invoice will not become due and owing until proof of delivery is provided.

#### **E. Operating records**

- 1 The Supplier shall maintain full, complete and accurate records concerning the performance of all obligations undertaken under this Agreement and which records shall include, without limitation,

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documentation of maintenance, a rigorous and explicit operating log from which operating hours, Outages and Service Levels can be accurately determined; and a monthly report of the operation, maintenance and management of the biomass equipment.

#### **F. Site Security and Safety and Operating Manuals**

1. The Supplier bears the responsibility for the health and safety of any visitors to the biomass equipment.
2. The Supplier shall comply in all material respects with the biomass equipment safety rules and plan and will ensure observance of all regulations under Law and other safety and environmental regulations, as well as the safety and operating instructions and method statements in accordance with the Operating Manuals relating in any way to the operation and/or maintenance of the biomass equipment.

#### **G. Customer responsibilities**

1. Shall not intentionally do anything that would prevent the Supplier operating the biomass system in accordance with all statutory requirements or which would prevent the Supplier fulfilling its obligations in accordance with the relevant statutory, environmental policy, health or safety requirements during the term of this Agreement.
2. Shall permit the Supplier to retain at the premises, and make available for use, all parts delivered by Supplier in advance of any maintenance.

#### **H. Hand-back requirements**

1. At the end of this Agreement the biomass equipment will be in a condition that is consistent with compliance with the terms and conditions of this Agreement and is in good and substantial working order.
2. The Customer and the Supplier agree to undertake a joint inspection and jointly confirm it has been handed back in a condition that is suitable for its age and operation.
3. If there is a dispute about the condition after the hand-back inspection an independent expert will be appointed at the shared expense of both parties to provide an assessment that both parties will agree to.

### **3.5 Form of contract for the biomass equipment**

For example the installation contract to be awarded to the successful tenderer is a Government form of contract called "PW-CF6 – Public Works Short Form of Contract". A copy of which can be obtained from the following

website: <http://constructionprocurement.gov.ie/contracts/>. By responding to this Invitation to tender document, each tenderer is required to accept the standard terms and conditions of the form of contract and the provisions of this invitation to tender. The successful tender will be requested to enter into agreement by means of a collateral warranty to indemnify the Customer (but limited to), against defective materials and design.

### 3.6 Pricing Schedule

For example the tenders shall complete and submit the following pricing summary schedule.

The pricing schedule shall provide the sum of the capital costs and the operational costs over the next x years allowing for CPI at a rate of x% per annum.

The idea of this is to allow all tender offers to be compared in cost terms to a common basis single price basis.

### 3.7 Tender Requirements

For example this may cover:

A Tender fails to comply in any respect with the requirements set out in this Invitation to Tender or is ambiguous, the Customer shall be entitled at its absolute discretion, (but shall not be obliged) to reject the Tender as non-compliant.

Item	Description	Sum ex VAT
Work Package:	Installation of the biomass equipment	€
Monthly Heat Charge	€/MWh	Insert rate only (do not sum to total)
Monthly O&M charge	€	x x years
6 year Heat Charge at xxx MWhs <sup>3</sup>	€/MWh (Indexed at x%) x xxxx Mhs x monthly heat charge x number of months	€
<b>Total cost of contract</b>		<b>€ sum</b>

<sup>3</sup> The tenderer shall calculate the total cost of providing metered heat over 6 years assuming CPI is indexed annually at x% and that total annual heat use is x MWhs and that total x year heat use is therefore xxxx MWhs.

This is a design and build tender and as such the tenderer is required to submit a design proposal that complies with the standards set out in this ITT and Biomass Energy Supply Contract. The tenderer is entitled to develop variations to the standards stated where they believe the result would be more economically advantageous tender offer. Such variations will not reduce the technical quality of the design. The tenderer shall highlight and justify any proposed variations in their tender offer.

The Customer reserves the right (but shall not be obliged) to request Tenderers to attend interviews with the Customer. If this proves necessary, Tenderers will be informed as soon as possible with regard to the proposed date for interviews.

### 3.8 Tender Submission Requirements

For example this may cover requests for the Supplier to provide:

- Outline schematics of the scheme at a scale of 1:200
- Detailed written specification of the major items
- A detailed cost breakdown of the biomass equipment and all related works
- Written details of company history and turn over.
- Range of existing clients/heat supply contracts.
- The management structure of the company.
- The names of the key staff involved in this contract along with copies of their CV's.
- A minimum of 3 References shall be provided.
- A valid Tax Clearance certificate shall be submitted.

### 3.9 Tender Assessment and Evaluation Criteria

For example the Contract, if awarded, will be awarded to the Tenderer who submits the most economically advantageous Tender. The assessment of the most economically advantageous Tender will be made on the basis of the following criteria:

Criteria		Max. Marks Available
1. Relevant Insurance		Pass / Fail
2. Health and Safety Statement		Pass / Fail
3. Company Background and Experience		20
5. Work Package	Design	25



	Cost	25
4. Heat Supply contract to include Operation and Maintenance of the biomass equipment	Level of Service included in Package	25
	Cost	25
<b>TOTAL AVAILABLE MARKS</b>		<b>100</b>

## 4.0 Fossil Fuel and Biomass Energy Supply Contract Template

### 4.1 Parties to the Contract

The Customer shall insert their full head office address. The Supplier shall insert their full head office address. The Supplier can be asked to provide the names of the main subcontractors involved in the contract. This is an optional clause, but its inclusion can help clarify how the Supplier will secure key services such as biomass fuel and O&M services.

### 4.2 Background to the Contract

For Customers who bulk purchase fossil fuel such rates may be lower than those available to the Supplier. The Customer and the Supplier may reach an agreement outside the scope of the Contract so that Supplier can secure fossil fuel (such as oil or LPG) at the rates that the Customer secures, rather than at the rates that the Supplier may secure. This would require an adjustment to the offered heat price.

The Customer should take independent professional advice in order to verify that the proposed biomass equipment is suitable for its purpose.

The Customer may decide to grant a lease or other legal document that offers the Supplier a clear definition of what aspects of the existing heating plant they will become responsible for. This can include technical descriptions of the age and condition of the plant at the date of handover. It can also include the oil or LPG tanks where this is relevant. The Supplier and Customer may in some circumstances agree that the age and condition of the existing heating plant are in such a condition as to justify removal and replacement under the contract. This would require a variation to the Contract.

The Customer must define the temperature of the hot water or steam required; and state any other requirements.

### 4.3 Basis of the charges

By separating the capital charge from the O&M and metered heat payments the Supplier is securing capital payments irrespective of the amount of heat the Customer uses. As the capital costs are fixed this payment does

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not need to be indexed. This enables the finance element of the contract to be 'bankable' as it is wholly independent of the heat and O&M services that the Customer purchases. A separate bespoke financial agreement should be developed to account for this.

The heat payment and O&M charge must be indexed to account for changes in cost of fuels and maintenance services.

The Customer and the Supplier should develop a separate protocol about how the existing heating plant should be repaired. As these costs are unknown and depend upon the age and condition of the plant they cannot be easily included in the O&M charges. Labour costs and parts can be included in this protocol. As part of this a budget can be estimated to cover estimated repair costs for financial planning purposes. In practice the Supplier can be asked to submit a written quote for ad hoc repairs as they arise and the Customer shall decide to agree to such costs as required.

The Customer may also decide to replace older existing heating plant and include this cost within the Contract. If that is decided it is possible to include this plant within the biomass boiler plant room and so within the scope of the Energy Supply Contract.

#### **4.4 Date and Term of Contract**

The Customer shall decide upon the duration of the Contract. They should obtain professional advice on the duration of the Contract and fix this in terms of the level of revenue savings they are hoping to secure. Contracts can last any length – but are typically 5 to 20 years. The heat and O&M payments may contain break clauses or be subject to a defined period that can be different from the Capital charge.

The Customer can decide upon the start date of the Contract, or leave this open until the contract is concluded with a Supplier. If the Customer decides to specify the start date they should take professional advice so that sufficient time is made available for the Supplier to plan, design, obtain consents, install and commission the scheme. It may be necessary to further define the contractual implications in the event that the Supplier does not meet the start date. This can be included as a schedule to the Contract.

#### **4.5 Heat load and heat profiles**

The Customer should state the annual average heat load and include a schedule to the Contract that shows how this was calculated. This information is crucial to the technical and financial offer that the Supplier develops and the Customer secures. The Customer should obtain professional advice in developing and completing this

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information. The Customer cannot decide on what % of the total heat load must be met by the Biomass Equipment.

#### **4.6 Heat Supply and Measurement**

The Supplier will install heat meters, but the Customer should ensure they are satisfied they are located to accurately record the amount of heat supplied by taking independent advice. It is recommended that the ITT specifies the location of the heat meters, so that proposed tariffs are provided by Suppliers to a common basis. It is recommended that Customers and their advisors consider using the International Performance Measurement and Verification Protocol (IPMVP). The IPMVP library of documents consists of the various volumes of the International Performance Measurement and Verification Protocol (IPMVP). The IPMVP provides an overview of current best practice techniques available for verifying results of energy efficiency, water efficiency, and renewable energy projects in commercial and industrial facilities. It may also be used by facility operators to assess and improve facility performance. The IPMVP is published and available for free download from:

[http://www.evo-world.org/index.php?option=com\\_content&task=view&id=272&Itemid=279](http://www.evo-world.org/index.php?option=com_content&task=view&id=272&Itemid=279)

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#### **4.7 Installation and Commissioning**

The Customer should seek a clear and costed proposal for the biomass equipment from the Supplier via an ITT.

#### **4.8 Operations and Maintenance**

The Customer should verify that the Supplier has the capabilities to provide the O&M services.

#### **4.9 Existing Heating Plant and Fuel**

The seasonal efficiency of the existing plant should be calculated by the Customer and stated in the Contract. If that calculation is an overestimate then the Supplier could be entitled to claim costs as the plant was not operating as planned – and vice versa. To avoid disputes the Supplier may therefore wish to include a schedule to the Contract that deals with how any differences in the seasonal efficiency are accounted for in payments.

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#### **4.10 Lease or license of the site**

Under Irish tenancy law where a 3<sup>rd</sup> party has occupation on part of a site for more than 7 years they can claim ownership of this land. The Customer should obtain legal advice if they plan to grant a lease longer than 7 years, or consider a license arrangement.

#### **4.11 Capital Contributions - Optional**

The Customer can agree to make a capital contribution of up to 100% of the value of the biomass fired heating plant. In this Contract there is a simple provision for the Customer to pre-determine the amount of that contribution and state that in the Contract.

The Contract could be varied to allow the Suppliers to define the capital contributions they would seek to fix the contract duration and costs of heat at pre-determined levels. Under any well designed tender and procurement process using an ITT this could be developed so that the Suppliers are asked to price a contract that already included a defined % saving over existing heating bills over a defined contract period. It would then be for the Suppliers to state the capital contribution required to deliver this.

The Customer should seek professional advice on the likely economics of this before configuring their requirements through a procurement process.

#### **4.12 Payments and Invoicing**

All heating fuels are subject to the lower rate of VAT (currently 13.5%), this also applies to steam where steam is sold (as a heating fluid) from producer to user. However the Department of Finance has taken the view that this will not apply to water used as a heating fluid. This means is that heat sold to domestic and state bodies will be subject to the full rate of VAT (currently 23%) under contracts such as this biomass fuel energy services contract.

The background to this is that EU law provides that energy be charged at the standard rate of VAT, which in Ireland is 23%. However, Ireland is one of 8 Member States to apply a reduced rate of VAT on energy. Ireland applies the 13.5% reduced VAT rate to various supplies of energy and these are listed in paragraph 17 of Schedule 3 to the VAT Consolidation Act 2010. The reduced rate applies in this case in accordance with Article 118 of the VAT Directive. Article 118 allows the continuation of reduced rate application (at a rate of no less than 12%) where a reduced rate applied to such goods or services on 1 January 1991. All those goods and services listed in Part 4 of Schedule 3 to the VAT Consolidation Act owe their reduced rate status to the historic nature of having been reduced rated on 1 January 1991. These are known as parked items and the Department of Finance advise it is not possible to include new goods or services at this parked rate, such as energy in the form of hot water. Customers should take specialist advice on VAT.

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#### **4.13 Biomass Fuel Supply**

Customers could extend the scope of the terms of the supply to encompass issues such as long term sustainability and fair pricing to local growers. This could include the provision for and request of a fuel supply methodology from the Supplier. These are matters that impact upon the tender and procurement process and could be included in the ITT.

#### **4.14 Delivery of Biomass Fuel**

The Customer should define the periods that fuel can be delivered.

#### **4.15 Insurances**

The Customer should decide upon suitable levels of insurance.

#### **4.16 Penalties for non delivery of heat**

The Customer shall be entitled to decide upon the level of penalty paid for a failure Supplier to deliver heat. The Customer may decide to set the penalty at a level that is commensurate with the losses that are incurred as result of the loss of heating. Bearing in mind that the Customer has no such benefit under their current heating arrangements (if the heating fails they cannot secure compensation) and that punitive penalties transfer financial risk to the Supplier, the level of such penalties should be set with care. It may also be hard to prove loss –especially in warmer seasons.

#### **4.17 Schedules to the Contract**

##### **Schedule 1 – List of Equipment/scope of work.**

The Customer should provide 3-phase power at a suitable location for connection and a water connection at a suitable location. This will need to be agreed with the Supplier and the costs of this met by the Customer. The Contract has provisions for the Supplier to pay for the costs of using power and water.

The Customer should obtain professional advice on the proposals submitted by the Supplier and satisfy themselves they meet their own requirements.

The ITT should set out the requirements that the Customer has for the biomass equipment and the O&M services via and then insert these in Schedule 1.

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### Schedule 2 – Existing Heating Plant

The Customer shall insert a full technical description of the existing heating plant. This should cover its make, specification, age and condition as defined by a professional expert. Records of the maintenance and servicing should be included if available. This should include ancillary equipment such as oil tanks. This shall take the form of written records, photographs and scaled plans and sections.

### Schedule 3 – Heat load and consumption calculations

A good practice method has been drafted in Schedule 3 to allow a competent engineer to define the heat baseline and other relevant technical analysis and recommendations.

### Schedule 4 – Method of Indexation.

The Customer should obtain professional advice on the method and period of indexation they intend to use. The most important issue is the number of years that this method is applied over.

At its maximum the Customer can define this period to match the Capital Charge Contract period. This is likely to be 10 or even 20 years. At its minimum it could be set at zero years, so that in effect the costs are fully open book and changed each year in line with actual cost changes.

**Defined indexation period:** The heat charges will be adjusted under the Consumer Prices Index. Whilst this has no direct relationship to the costs of biomass fuel, fossil fuels and maintenance services the CPI is the most stable and predictable index. It effectively transfers most risk to the Supplier and would if applied over a number of years cause the day one heat price to be higher to cover the risks.

If the Customer wishes to set the defined indexation period over a 3 to 5 years it would probably set a reasonable balance between Supplier/Customer risks and secure some degree of future price certainty. This approach would probably offer much greater price certainty than is available by existing methods of oil/LPG purchasing. It is not recommended that the defined indexation period is set higher than 5 years unless in unusual circumstances as it transfers too much commercial risk to the Supplier and would result in uncompetitive heat tariffs.

At the end of the defined indexation period the Customer and the Supplier shall negotiate a new heat charge. That negotiation shall occur on an open book cost change basis.

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## **5.0 Biomass Energy Supply Contract Template**

### **5.1 Parties to the Contract**

The Customer shall insert their full head office address. The Supplier shall insert their full head office address. The Supplier can be asked to provide the names of the main subcontractors involved in the contract. This is an optional clause, but its inclusion can help clarify how the Supplier will secure key services such as biomass fuel and O&M services.

### **5.2 Background to the Contract**

The Customer should take independent professional advice in order to verify that the proposed biomass equipment is suitable for its purpose.

The Customer must define the temperature of the hot water or steam required; and state any other requirements.

### **5.3 Basis of the charges**

By separating the capital charge from the O&M and metered heat payments the Supplier is securing capital payments irrespective of the amount of heat the Customer uses. As the capital costs are fixed this payment does not need to be indexed. This enables the finance element of the contract to be 'bankable' as it is wholly independent of the heat and O&M services that the Customer purchases. A separate bespoke financial agreement should be developed to account for this.

The heat payment and O&M charge must be indexed to account for changes in cost of fuels and maintenance services.

### **5.4 Date and Term of Contract**

The Customer shall decide upon the duration of the Contract. They should obtain professional advice on the duration of the Contract and fix this in terms of the level of revenue savings they are hoping to secure. Contracts can last any length – but are typically 5 to 20 years.

The Customer can decide upon the start date of the Contract, or leave this open until the contract is concluded with a Supplier. If the Customer decides to specify the start date they should take professional advice so that sufficient time is made available for the Supplier to plan, design, obtain consents, install and commission the scheme. It may be necessary to further define the contractual implications in the event that the Supplier does not meet the start date. This can be included as a schedule to the Contract.

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## 5.5 Heat load and heat profiles

The Customer should state the annual average heat load and include a schedule to the Contract that shows how this was calculated. This information is crucial to the technical and financial offer that the Supplier develops and the Customer secures. The Customer should obtain professional advice in developing and completing this information. If the information provided by the Customer is shown to be incorrect (the heat load and its profile) then the Supplier could be entitled to change the costs. The Customer must decide on what % of the total heat load must be met by the Biomass Equipment and include this in the contract. It would be impractical to set this at 100%, and it would be normal to consider 75% to 95% of the total annual heat being supplied by the Biomass Equipment.

## 5.6 Heat Supply and Measurement

The Supplier will install heat meters, but the Customer should ensure they are satisfied they are located to accurately record the amount of heat supplied by taking independent advice. It is recommended that the ITT specifies the location of the heat meters, so that proposed tariffs are provided by Suppliers to a common basis. It is recommended that Customers and their advisors consider using the International Performance Measurement and Verification Protocol (IPMVP). The IPMVP library of documents consists of the various volumes of the International Performance Measurement and Verification Protocol (IPMVP). The IPMVP provides an overview of current best practice techniques available for verifying results of energy efficiency, water efficiency, and renewable energy projects in commercial and industrial facilities. It may also be used by facility operators to assess and improve facility performance. The IPMVP is published and available for free download from:

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## 5.8 Operations and Maintenance

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At the end of the defined indexation period the Customer and the Supplier shall negotiate a new heat charge. That negotiation shall occur on an open book cost change basis.