Conceptual, functional and technical requirements for the B2B and B2C web platform

Contents

1. GENERAL INFORMATION

This document describes the general concept and technical requirements for the designing and developing a web-portal intended to be a marketplace assembling the consumers of the biomass fuel from one side and heating systems suppliers from other side, as well as biomass fuel providers.

Apart from this marketplace the website is intended to be a comprehensive library of news and updates from this sector, information about the modern biomass-based heating systems, types of used fuel and other relevant information.

2. WEB PAGE REQUIREMENTS

The future website must be developed by the selected contractor based on this technical task description. It is intended to run on a platform that will be available 24 hours a day and 7 days a week without any human help or intervention. The only human intervention planned is for adding new content or updating the old one.

The project must be securely protected against attacks from exterior or from intentional or non-intentional introduction of erroneous information and deleting of the content by users with privileged rights in administration system.

Since the project is aimed to be complex it is very important to develop an intuitive navigation based on the logic on the main target group of visitors. This will be done through easily accessible sections of the main menu and a simple hierarchy of the website pages.

The graphical design of the website is meant to be easy to assimilate, but not necessarily simple, based on the simple structure of the pages described above. In tandem with the simple structure, the simple design would ensure a quick opening of the content from the user's end.

The website will need to provide the possibility to make the necessary modifications in the information structure by their authorized administrators. This is going to be done through a password protected administration panel that will be also described further on in these terms of reference.

A simple analysis of the target users of the website is showing the main categories of the future visitors that are:
- Public institutions and their employees;
- Individuals – household owners;
- Suppliers that activate in the field of bioenergy;

All these categories will use the website closely in the future, because basically the first two categories are meant to be the clients of the third category.

Of course all these visitors are from local Moldovan market and the usage of local languages: Romanian and Russian is strongly advised on the website, however the administration panel doesn't have to be in both languages, therefore it will be developed in Romanian only.

Using two languages on the website means that the search engine has to be developed accordingly, so the result of the search could be found either in Romanian, or Russian.

3. TECHNICAL REQUIREMENTS

The future website should be an informational resource with many levels consisting of two main languages: Romanian and Russian. The administrator of the website will be having the possibility to publish materials on both languages. This is going to be done through the administration area of the CMS.

The website will have two sides: public side and administration side. While all the visitors will access the public area, the administration area will be a restricted one. The access to the administration area will require the Beneficiary to use a username and password. These details will be a passed to the Beneficiary upon finalizing the project. The beneficiary must have the possibility to change these afterwards.

The website will be administrated with a different level of frequency by the selected staff from the Beneficiary side. The administrator will not need special abilities in design or programming fields in order to maintain the website, therefore the CMS should have simple tools and easy ways to add or edit content.

The final website structure will be decided by the Beneficiary after the project is finalized. Implemented CMS will make it possible, because adding new pages and restructuring the hierarchy of them will be the main action in their administration area.

The structure of the website will be divided in two main parts: informational section and catalogue section. Information section will present a lot of information regarding the biomass and bioenergy. This section is also planned to have a newsroom, which will concentrate all the events, novelties, innovations and exhibitions of the sector.

The catalogue section is intended to be as a fully comprehensive database of all the suppliers providing equipment and public/private consumers of biofuel. Main purpose of the catalogue will be to establish a connection between those two actors and possibly lead to future long-term collaborations.

As stated above, the website structure will be dynamic making possible adding new pages at a later stage, but for the start the following structure is required:

1. **Consumator**
   - Consumator casnic
     - Informatie tehnica despre cum sa calculezi consumul energetic
     - Lista auditorilor energetici autorizati
     - Lista producatorilor de biomasa
     - Lista furnizorilor de cazane
     - Instrumente financiare (AEE, 2KR, MOREFF, MOSEFF,etc)
   - Agent Economic
     - Cum sa te determini daca este profitabil?
     - Lista auditorilor energetici autorizati si managerilor energetici
     - Lista furnizorilor de cazane
     - Lista producatorilor de biomasa
     - Instrumente financiare (AEE, 2KR, MOREFF, MOSEFF,etc)
     - Lanseaza un tender pentru procurarea biocombustibililor sau cazanelor
   - Autoritate Publica
     - Cum sa te determini daca este profitabil?
     - Lista furnizorilor de cazane
     - Lista producatorilor de biomasa
     - Instrumente financiare (AEE, 2KR, MOREFF, MOSEFF,etc)
     - Plaseaza anuntul despre tenderul pentru procurarea biocombustibililor sau cazanelor
2. **Producator de bricheti si peleti**
   - Informatie generala despre potentialul regional al biomasei

- Reteta potrivita pentru un produs de calitate
- Ghidul calitatii
- Lista potentialilor furnizori de biomasa (materie prima)
- Furnizori de echipamente de balotare, brichetare
- Lista centrelor/agentilor de distributie a biomasei
- Intrumente financiare

3. **Furnizor de cazane**
   - Lista furnizorilor autorizati de catre AEE
   - Procedura de autorizare AEE
   - Instrumente financiare
4. **Producatori de biomasa/fermieri**
   - Organizeaza o afacere de biomasa (balotare, brichetare, peletezare, etc.)
   - Plante energetice
   - Lista producatorilor de peleti, bricheti
   - Furnizori de echipamente de balotare, brichetare
   - Ghidul calitatii
   - Instrumente financiare
5. **Biomass background**
6. **Noutati**
7. **Centru de consultanta**
   - Consumator
     - Pas cu pas despre cum sa devii consumator de biomasa
     - Lista auditorilor energetici
   - Producator peleti/bricheti
     - Alege reteta de materie prima potrivita pentru biocombustilul tau
     - Lista consultantilor de producere
   - Producator/fermier
     - Plante energetice
     - Lista consultantilor de producer
     - Calcul economic
   - Consultanta economico-financiara ale afacerii
     - Cum sa lansezi o afacere
     - Exemple de business planuri
     - Lista companii de consultanta economico-financiara
   - Legislatie – legi si acte normative
   - Standarde
   - Prezentari si rapoarte
8. **Testimonials**
9. **FAQ**

Every time the list of suppliers (boiler or fuel sellers, fuel makers or biomass sellers) is mentioned in the main menu, this item should be made not as a page but as a direct link to a pre-set of the filter in the catalogue. For example, if the link says "Boilers suppliers" then this link will take visitors directly to the catalogue where all these suppliers are shown on the map and the filter has this option already checked/selected. This functionality will be explained in details later on.

The catalogue is going to be the most updated section and is also expected to be the most visited one. Even if the page hierarchy above is showing a simple structure for it, the catalogue will not be simple, because the number of the pages in this section is directly proportional with the number of suppliers and consumers introduced in the catalogue.

Navigation on the website should be easy to find and use, therefore it will consist of the following parts:

1. **Main menu** – will show the main categories from the first level of the page hierarchy and will be placed in the top of every page, also known as header. This will allow visitors to be directed towards the most important content of the website. The main menu will be placed in the website header and will consist of the following sections:
   - About biomass;
   - Newsroom;
   - Catalogue.
2. **Secondary menu** – will contain the whole first level of the page hierarchy and will be placed on the bottom of every page, also known as footer.
3. **Category menu** – will contain the inner pages for each first level category and may have one or two levels. This menu will be accessible only when entering a first level category from the main/secondary menu. This menu might not be needed in some case or its interpretation is not a classic one, i.e. when it represents a filter or some sorting features.
4. **Breadcrumbs** – informs visitors about their location in the pages hierarchy and ensures references at superior levels automatically generated with corresponding link from categories and subcategories passed by user. Breadcrumbs represent numbers of elements separated by a divider symbol like „/" or „>", for example Homepage '>' Catalogue '>' Dealers and installers '>' One Company S.R.L. Each element of the breadcrumbs is not only a visual indicator but is also a direct link to that page. The position of this Element is mostly recommended to be in upper part of the page: in the header or below it.
5. **Small navigation elements** – are represented by some graphical or textual elements that are meant to help visitors in some specific action like:
   a. Ask a question box;
   b. Newsletter subscribe;
   c. Search box;
   d. Social networks icons;
   e. Copyright and legal pages links.

All navigation elements do not have a strict layout or position and must be sorted at the design stage by the Consultant, which should find the best solution for the case.

4. USED TERMS

The future website is a multitude of **pages** that are filled with different type of content: textual information, images in different formats (JPEG, GIF, PNG), Flash files, video and audio.

Each page consists of different **informational blocks**, which can hold different kind of content. They help to visually divide the page into pieces and as a result separating them by importance. For example, in describing a company there will be an information block containing its contact details.

All the above pages will be possible to be added through the CMS. The CMS must be built on a modular basis, which means that for adding each type of content a specific module is needed.

A module is a small application built as a part of the CMS, that allows administrators to differentiate all the types of contents placed on the website. Using modules in a CMS makes the workflow easier and quicker and also optimizes the database structure. An optimised database structure allows the website to load content faster and return search results quicker.

When a module handles a too complex task, it is divided in a few **submodels.** Each submodule is doing its task contributing to the general task of the parent module.

The modules that add every page type are called **working modules**. Modules can be responsible not only for adding pages, but also for other purposes, like administrating other website elements such as:
   - username and password for the administrator;

- Meta-keywords and Meta-description for SEO optimization (Search Engine Optimization);
- small blocks of content that cannot be set as a separate page;
- other such cases must be detected by the developer.

These modules are called **system modules**. Modules can be used not only for adding pages and small elements, but also for the administration of more specific items. Such a module can gather all subscribers' emails and create a list out of them which at a later stage can be used for mass mailing updates and offers. All the modules together make the CMS (Content Management System), which entitles the site administrator to add any content anywhere in the site, as well as to change it or delete it.

There are elements to which the administrator has no access - **system elements**. As an example of such an element is the *feedback form* used on the Contact page. The structure of such element is discussed in advance with the Beneficiary and then set once and for good. These elements can be however edited, but only with the Developer involvement and as a separate job.

FUNCTIONAL REGULATIONS

The site will run on a CMS build by the Developer for this specific project, which will be the main tool for the site administrator work – the person who will fill the primary site content and participate in its maintenance after the development is finished.

Because CMS consists of modules, one module provides the ability to add only one type of page on the website. The CMS will have as many modules as many there are the types of the pages. The list of modules will be given later with their according description.

The pages are of two types: simple and dynamic. **Simple pages** are added directly in the site menu and they usually contain only the name and content, however the content can hold different types of media, like images and/or video. It will be possible to add pages up to three levels. As an example of such pages can serve the "About Moldova Energy and Biomass Project", where the information is put once and for good. Of course, it can be edited at a later time, but this is not supposed to be done very often.

Dynamic pages - is the result of information input into modules, which can include a few different attributes. The division into attributes is done in order to be able to manipulate certain page element properties like position, font face, color or size. These attributes may include various types of web content. For example, let analyze the "News" module. One news item includes:
- Date (attribute type - date);
- Title (an attribute type - text);
- Short description (attribute type - text);
- Description or main content (attribute type - Word-like editor in which you can insert all types of web content);
- Attach pictures (type attribute - file).

All attributes together make one news item and accordingly a dynamic page. One module can have as a result more than one page. If we review the same "News" module, then there will be two dynamic pages assigned to it: News section homepage and one news item page. News section homepage will be displayed as a listing where each item of the list will show the title, date and a short description, while on the news item all the attributes mentioned above page are displayed. The same principle can be applied to other modules.

Based on the structure described in p.2, the CMS will have the following modules:
1. **Menu module** – will allow creating as many simple pages as needed by the menu hierarchy. This module will also allow creating the desired depth of the categories. To avoid too much complication in the structure of the website, this module will allow creating up to three levels of categories and

subcategories. A single page once created can be drag-and-dropped to another position. This will allow pages to jump from a category to another or get higher/lower depth in the page hierarchy. As per design reference attached to this document, the menu will have to be split in two parts since:

    a.   first one, gives visitors complete information on the biomass subject

    b.   second one helps them to identify themselves and find more specific information

More details on how this split is wanted will be presented in the module description later.

2. **Newsroom module** – will allow creating all types of news and events that will be presented in the section with the same name on the website. Newsroom section however will contain news and events not only inserted through this module, but also some that are parsed from the www.biomasa.md from the section with the same name. For this purpose the developer will have to program a script that will allow grabbing news and events from the mentioned website with a predefined periodicity (at least 24 hours).

3. **Catalogue module** – will handle the biggest load of data because it will keep all information about suppliers, their products and consumers. Since the catalogue has quite a complex structure, and for the administrator will be too complicated to maintain all the content at once, it will be divided in a few sub-modules. Each sub-module will cover different aspects of the catalogue, in the end making the data structure organised and full. The sub-modules of the catalogue will be:

    a.   **Suppliers and consumers** – holding all the information about the companies or organizations including name and description, services, contact information, position on the map;

    b.   **Product categories** – making distinct criteria for dividing products into categories;

    c.   **Products** – gathering all the products from all suppliers together with needed details like prices, descriptions and pictures.

4. **Tenders module** – will collect all tenders and allow them to be activated by the admin after approval or automatically close them on a set date.

5. **Settings** – the module that will bring together all the small bits of information that will contribute to the website functionality in layout. Among these bits we can encounter:

    a.   Administrator username, email address and password;

    b.   Meta description for the whole website;

    c.   Homepage headlines or messages depending on the design;

    d.   Maintenance works activation;

    e.   Footer disclaimer text;

    f.   Social network URLs;

    g.   Feedback form email address, if different from the administrator email address;

    h.   Other fields that come during the design or development process.

5. LANGUAGE VERSIONS MANAGEMENT

As stated above, the website will be available in two languages: Romanian and Russian. From one side, this means that a maximum number of future visitors of the website will be covered and from another side, it means that all the content on the website should and will be translated in both languages.

To switch between the languages, a toggle will be used. In terms of design, the language toggle will be placed in the website header, which will allow visitors to quickly find it and switch to their native language. The switch will be made as a redirect to the same page, but in the other language. In case the translation doesn't exist, the redirect will go directly to the homepage in the selected language.

In the administration panel, the language sensitive content must be very easy to edit. This means that the administrator will have the possibility to add both language versions of the added article, page or any module's item from the same place, without saving one language and then adding another one separately.

Since each module has a specific structure, it will have different fields to input information. Some of the fields are language sensitive and therefore they need to stand out so the administrator knows that those fields will

need to be populated twice when switching to another language. For such purpose each language sensitive field will need to be visually marked or have a language indicator like below.

When changing the input language, the page where the administrator works should not change. The switch between input languages is made via a toggle, similar to the one used on the website. The selected language in the toggle must be the same colour as the field indicator helping the administrator to detect the needed fields. An approximate idea of how the toggle looks like is shown below. The developer has the right to choose its own style for this feature, but keep the usability at a good level. The same is relevant to the indicator on the language sensitive fields shown in the above picture.

The Beneficiary should have the options to turn on or off some of the languages on the website. This is done because if at the start of the works only one language is ready, and the other one needs more time for translation, the Beneficiary will be able to start the website in one language only. This feature will be developed and placed in the Settings module together with other options described in p.4. The administrator will have the ability also to select which language comes first when accessing the website.

6. MODULES

Since all the content on the website is added through different modules, this section will describe all modules of the site and their attributes.

6.1. MENU module

Because the visitors will use the menu to navigate through the website, it will be the first module to be described. MENU - is the most important module and is the only one that allows to change the structure of the website at any time. As the main module, the menu will allow to:
- Change the position of categories, subcategories, pages and modules;
- Show and hide categories, subcategories, pages and modules.

The menu will allow the administrator to add unlimited number of *simple pages* and assign them to categories and/or subcategories. The categories represent the first level of the menu, while the subcategories are the second level of the categories. To avoid the website menu to be too complex and with too many levels, this module will allow to create only 3 page levels:
1. Categories (actually is the first level of the pages);
2. Subcategories (inner pages of a category, that has other pages under it);
3. Pages (last level in a category or subcategory).

All these three listed above are essentially the same kind of page, the difference being that the category stands above the subcategory and the page in the menu hierarchy.

The first level is not compulsory to have all possible levels. When a category has only two levels, the subcategory is non-existing.
As briefly described earlier, the menu will have to parts. As per design reference, the general information part will be represented as a traditional horizontal menu that will show its subcategories and pages on mouse over. The second, more specific part, will be organised around types of the biomass market players:
1. Consumers

2. Fuel makers
3. Boiler sellers
4. Biomass sellers

Each of the mentioned players will have a dedicated section with specific information for their business as well as a list of potential clients. While pages are added through the use of this module, the list will be placed just as a link that will take visitors to the catalogue page where the generated list is formed after filtering the whole catalogue to the need of a specific player.

When the module is used to create a page, it will be automatically dropped into the first level of the desired menu: *main menu* or *players menu*. This will make it to be a category, but it can be transferred by drag-and-drop, thereby changing its location and destination from category to a subcategory or to a page. Drag-and-drop method will be used to move the entire level with all subcategories and pages. Any page can be moved from one category or sub-category to another or itself to make such.

For each page in the menu, there should be options of edit, show/hide or remove.

In the first menu level, along with the categories, the site modules will come and that will be described later. Modules cannot be removed, as they have specific tasks and their removal can result in loss of data from these modules, but they can be hidden if necessary. The modules, as well as the pages can be moved in the menu levels, which will result in the change of their hierarchical position.

In the whole list of pages each menu will be made separate one from another and highlighted in green and blue per say, for a better distinction.

Producatori de biomasa/fermieri

> **Organizeaza o afacere de biomasa (balotare, brichetare, peletezare, etc.)**
>
> **Plante energetice**
>
> **Lista producatorilor de peleti, bricheti**
>
> **Furnizori de echipamente de balotare, brichetare**
>
> **Ghidul calitatii**

Biomass background

Noutati

Centru de consultanta

> **Consumator**
>
> > Pas cu pas despre cum sa devii consumator de biomasa
> >
> > Lista auditorilor energetici
>
> Producator peleti/bricheti
>
> > Alege reteta de materie prima potrivita pentru biocombustilul tau

To add a page the administrator will need to enter the following fields:
1. Page title;
2. External link checkbox;
3. External link URL;
4. Page position (select main menu or players menu);

5. Page content;
6. Published/unpublished option.

In the case when in the menu there is a cross-link that will get visitors to another category or even external webpage, the "external link" option will need to be checked and the URL inserted in field 3. This will make field 5 disappear since the visitors will be taken to the page from the URL indicated. In this way a page will have only its name in the selected menu and the redirect URL. A good example of such page link will be the list of the *Fuel makers* in the *Biomass sellers* category of the *players menu* because it will take visitors directly to the catalogue where the filter is already applied and the map will show all *Fuel makers* only.

Fields 1, 3 and 5 will be language sensitive; therefore there will be doubled. The switch between languages will be done as described above. This will apply to all modules that have language sensitive fields and will not be mentioned any further.

Page content – must be an editor that will give the possibility to insert different type of content and arrange it in different possible ways by using tables, styles and even HTML code. This kind of editor is called WYSIWYG (What You See Is What You Get) and is a ready-to-use open-source product, which means it does not necessarily need to be built by the developer. The below pictures show how these editor looks like in a version available on the Internet.
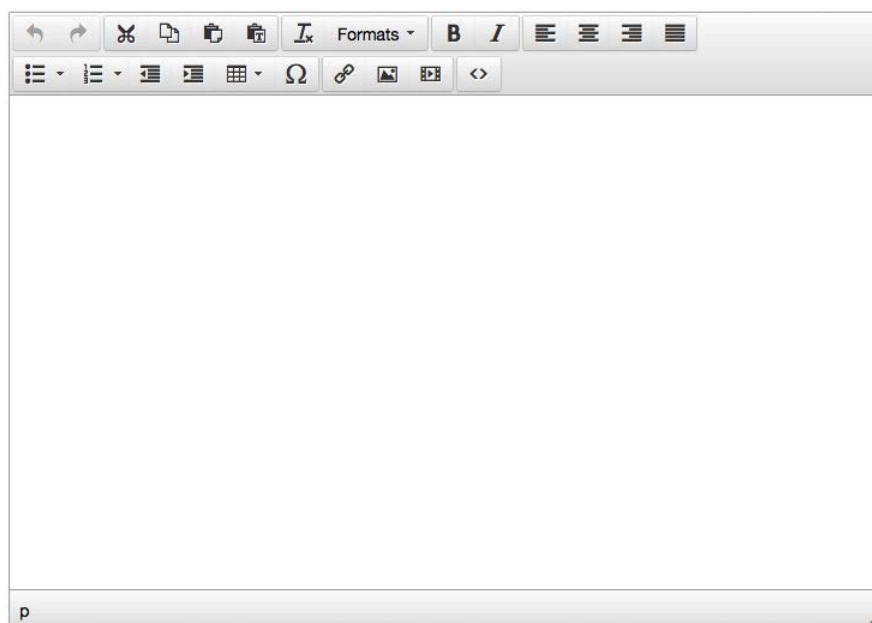
This module will be used to add the most of the pages on the website as well as a few cross-linked page. All these pages are mentioned in the *Website structure* section.

After adding a page and saving it the administrator is taken to the list of all pages where he clearly can see *Main menu* and *Players menu* divided as stated above. Here he can reorder the just added page, which by default will go to the end of the selected menu.

Other pages will be added to the website through the modules described below.

6.2. NEWSROOM module

This module will be used specifically for adding news and events in one of the subcategories of Newsroom category in the menu. When adding an article or an event, the administrator will have to fill in the following fields:
1. Title;

2. Date (automatic set for today);
3. Article type (select one of them);
   - News;
   - Exhibitions;
   - Press articles;
4. Short description;
5. Content;
6. Attach pictures (.jpeg, .png, .gif);
7. Attach files (.pdf, .zip, .rar);
8. Published and unpublished checkbox.

Since this module is used for adding articles into different Newsroom categories, the third field – Article type – is a select box, which will permit to select only one type. This will set the articles into 3 arrays and later on the website will generate 3 different section of content.

Some of the fields, as mentioned above, will be language sensitive. For this module these are nr. 1, 4 and 5. The same fields are also required for saving. If one of them is not filled in, a browser alert should pop up.

This module is also planned to have some automatic articles added to the News section of the Newsroom. This means that the administrator will not need to take any actions for those articles to appear on the site. The source for such articles is going to be the Biomass website and for that purpose, the developer will have to elaborate a small application called *parser*.

A **parser** in this particular case is a component that takes data (frequently text) from one web source and builds a data structure into another web source. In our case, the parser will be programmed to take news from the Biomass website with a predefined regularity and store them to the Bioportal database. From there, imported articles mixed with local ones will be shown in the News and Events category of the Newsroom. The parsing process should be done at least once in 24 hours to make sure all new articles are taken and placed to the destination website.

Uploaded photos should be prepared in advance, because their initial size is very big, if taken directly from a photo camera and most web hosting have a restriction of 2 MB for uploaded files. It is better to keep this restriction on because it will allow the CMS to run quicker and avoid longer response time of the server.

Depending on the design, developer will have to set the required size for the uploaded picture. In some cases the developer will have to save to the database two versions of the same picture: a smaller one for normal view and a bigger one for zooming feature. This has to be done on the server side automatically when saving, without involving the administrator.

In case an article has no translation into other language, it should be not displayed on that language version of the website. If in this case a user wants to change the language version of the website, he will be redirected to the parent category.

6.3. CATALOGUE module

This module will be used specifically for adding suppliers and consumers to the Catalogue category of the menu. Since the catalogue has a few aspects, as decided above, it will have a few sub-modules that will administrate the content of this section. Each module will allow managing the information about only one aspect of the catalogue. The mentioned aspects are:
1. Information about the suppliers and their consumers including name and description, services, contact information, position on the map.

2. All the products from all the suppliers together with needed details like prices, descriptions and pictures.

6.3.1. Suppliers and consumers sub-module

This sub-module will administrate all the suppliers, consumers and their relevant data. In order to obtain a catalogue with a good structure, this sub-module will have to divide all individuals into:

- Consumers
- Fuel makers
- Boiler sellers
- Biomass sellers
- Distribution agent

When adding a new individual, the administrator will have to fill in the following fields:

1. Company name;
2. Location county (select one from the list);
3. Company type (select one from the technology sellers, fuel sellers, technology and fuel sellers or clients);
4. Description;
5. Web address;
6. Telephone;
7. Fax;
8. Email;
9. Map position;
10. Attach pictures (.jpeg, .png, .gif);
11. Published and unpublished checkbox;

The map positioning functionality will be developed using Google maps. When creating a new item using this sub-module, the map will automatically have a pin placed in the centre of the map. The administrator will be able to drag-and-drop the pin to the desired position. The zoom feature provided by Google should be available as well for more precise positioning.

Fields 1, 4 are language sensitive. Also, fields 1, 4 and 6 are mandatory, when saving an individual, it brings up and alert if these are not filled in.

Attaching pictures feature was described in the previous module.

6.3.2. Products sub-module

This sub-module will gather all the products, and will allow visitors to see the products catalogue without accessing a seller.

1. Product name;
2. Product price;
3. Product type (select one of the type categories);
4. Short description;
5. Description;
6. Attach pictures (.jpeg, .png, .gif);
7. Published and unpublished checkbox.

Fields 1, 3, and 4 are language sensitive, but for saving a product fields 1, 3, 4 and 5 will be mandatory to avoid cases when the products don't have a picture to present to potential clients. Along with relevant images here should be uploaded also scanned certificates for fuels.

Attaching pictures feature was described in the NEWS module and the size of the saved images is defined by the design as well, depending on the image size in the catalogue page or in the product page.

The products displayed on the website can be of different types and therefore they need to be divided in different categories: heating systems, fuels, tools, accessories and many others. The developer together with the Beneficiary must decide on the number of these categories and create this list in advance to avoid creating a specific module for this purpose. All the categories will appear in the select box of the field nr.3 where only one will be possible to be selected.

6.4. TENDERS module

Since the website is intended as a market place, it should give companies and organizations the possibility to ask for business proposals from the suppliers. For this purpose a company would be able to place a request through the website for opening a tender.

Once a tender is placed it will not be automatically published on the website. First the administrator of the website will have a notification about this on his email and then, after analysing it, the tender can be accepted and published.

When placing a tender a company will need to fill in a form containing the following fields:
1. Company name
2. Tender title
3. Tender start date
4. Tender end date
5. Tender short description
6. Tender full description (restricted to attaching a .doc or .pdf file only)
7. Contact details (telephone or email)

In the case if a tender will need to have the end date extended the author will have to contact the website administration personally using the feedback form from the Contacts page or any other type of communication.

6.5. SETTINGS module

This module, as mentioned above, contains information that does not fall under the description of the rest of the modules. The first purpose of this module is to change the user name and password to access the CMS after the project is finalized and passed to the Beneficiary's use. CMS will not be able to add multiple users with different access levels, therefore the Administrator account must be possible to use by several people at the same time.

A special place here is set for the administrator email, which will be used for sending notifications to or emails from "Ask a question" and "Post a tender" options from the front-end of the website. If some notifications have different assignees, then this module will need to have a few email addresses stored.

The second purpose is to store the meta-description for the whole website. The customer himself will fill these details, as it relates to the correct formulation of the purpose of the site or its presentation. The content of this field is required and very important because it indicates the search engines what is the scope of the projects and helps in the formation of the site ranking over time.

As mentioned before, this module can contain many other information blocks like copyright text, disclaimers and many others that will be discovered while developing the project. Each block that would have to be administrable by the Beneficiary will be introduced in this module.

6.6. SUBSCRIBERS form

The website will collect all the emails left by visitors who want to be updated on events, news or offers. This is not a module but its functionality needs explanation therefore it is included in line with main modules of the CMS.

The website will not need a platform for sending out newsletters. This will be done through a third party platform such as Sendy. This service allows generating a special subscribing form that will be placed on the website and can be customized to the website visual needs.

Having all emails collected in one place allows the Beneficiary to send newsletters directly without involving additional costs for developing the newsletter platform and for upgrading the hosting with extra security certificates for sending out emails.

6.7. ASK A QUESTION form

Everywhere on the site the visitors can ask a question on every wanted matter. For this purpose the design should incorporate a visual ad that will be easy to find on every page in the header. This visual ad is mentioned in the design reference attached to this paper.

While pressed it opens a dialog box or takes visitors to a page with a form that allows them to write the desired question and send it. The message will be sent to the administrator's email address that is taken from the SETTINGS module described above.

 When posting a question, visitors will need to fill in the following fields in the form:
1. Your name
2. Your email (used for answer)
3. Message title
4. Full message

7. LISTS

This section will identify all pages that contain lists and describe how these lists will look like. In order to understand the list definition, it is enough to imagine the previously mentioned news section. This section will present all the news of the website. Therefore, this list should be laid out to look uniformly, like other similar lists, such as events.

Lists are related to the modules, since simple pages do not have lists, therefore further all the modules that contain lists will be described.

7.1. NEWSROOM

Newsroom will have a list of all the articles that the NEWSROOM module contains. Considering the volume of the list that may contain hundreds of articles, it should be divided into 10, 15 or 20 items per page depending on the design or on the developer's decision. To navigate between articles pages, a pagination element will be used – a navigation unit with arrows at the bottom of the list and numbers indicating all pages.

Each article from the list consists of a title, a date, a picture and a short description. Some of the articles may have a picture; hence it should be present in the list as well.

The NEWSROOM module has types, which lead for all the articles to be divided into three categories. These categories, depending on the design, should be listed as a submenu. It will allow visitors to jump between events, exhibitions and press articles.

When accessing the Newsroom, the list will contain all types of articles and only after accessing one of the categories in the submenu, the list will refresh, showing only the selected type of articles.

7.2. CATALOG

As the whole project is about bringing together the consumers and the suppliers, the common point for both of these are the products that one sells and the other buys. The catalogue idea here becomes a hybrid, once because it will have a listing of all the individuals, and second one it will contain all the products. These are separated lists even if they intersect, therefore further these will be described separately and will have mentioned their connection.

7.2.1. *Individuals*

The "Individuals" category of the catalogue is thought to be of a big help for the visitors; therefore it will have two different layouts. Each layout will involve its type of list.

First layout is going to be a map, which makes the list to be in an unusual style. Since individuals in this module are catalogued by a position on the map, this allows grouping them by counties. The map will show indicators of how many individuals can be found in each county. Pressing on this indicator, the map will automatically zoom-in dividing the main indicator in many others, dispersed on the map. This will help to show the precise position of each individual. Google Maps API will be used for this purpose, which has predefined functions for this case.
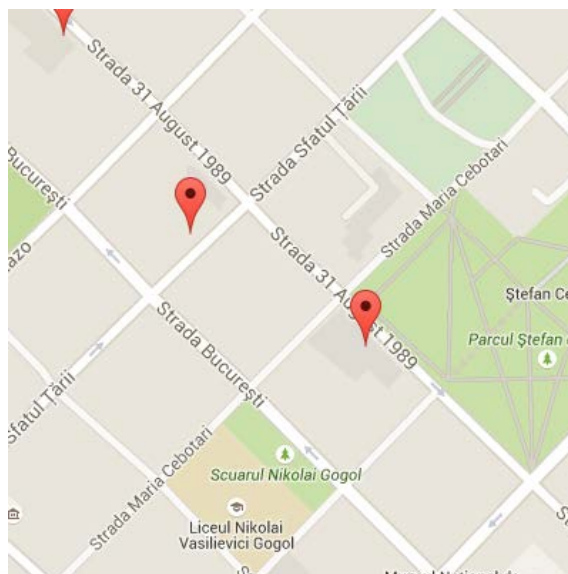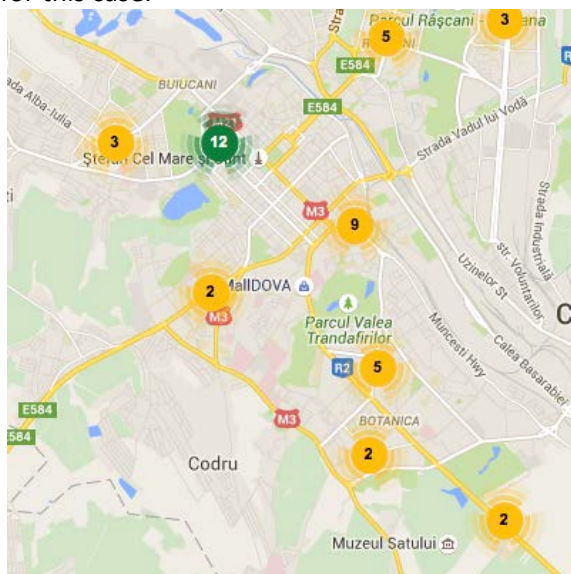
The map will also have a filter that will allow visitors to see only one type of individuals. On the map, each type of individual will have their own colour, which will make them distinctive.

The zoom-in can be made in a few steps and when reaching the last step, the pointer will look as on the second image. If this pointer is pressed, a pop-up window will show the name of the individual, their address and a "View more" button/link. When this button is pressed, the visitor will be taken to the description page, which will be described in the next chapter.

The second layout is going to be a simple table, showing all the individuals sorted A to Z. The list of the individuals will grow with time; therefore it will be divided in several pages. To navigate between these pages, the pagination element described previously will be used.

This list will have the following columns:
1. Individual name;
2. Individual type;
3. County;
4. Telephone number;
5. Web address.

The individual name will be presented as an underlined link. This will allow visitors to access detailed information about each individual.

This layout will have the same filter as the first one and will allow visitors to quickly find the needed individual. It will contain the following options:
1. Individual type select box;
2. County select box;
3. Filter button.

The filter will be activated only when pressing the button. This will allow visitors to select both options at once and will not need refreshing results after each select box use. The developer should avoid making the filter to work after each select box use. The filter will look similar to the following one.
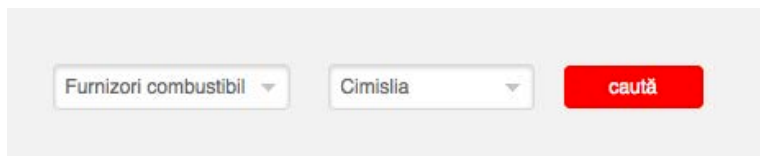
7.2.2. *Products*
Apart from the possibility for the companies to find new consumers, the catalogue is good for consumers to find the right product for them. On the website, the products category of the catalogue should be very well designed and made distinctive from the Individuals category.

Products, in comparison with Individuals, will have just one layout, that being a table layout. This is a standard representation for a products catalogue, but it should be performed according to the design implemented and represented as a grid of at least 3 columns and around 10 rows of items. This will make one page of the catalogue to contain 30 products. The quantity of the products can be changed using a special selector in the top of the list. It should contain options to change the quantity to 30, 60 or 90 items per page. Depending on the Products quantity, there will be as many pages generated as needed and for navigation among them the previously described pagination element will be used.

Each product in the table will contain three elements: a picture, the name of the product and its price.
As per Individuals part of the catalogue, products will need a filter to help visitors find the right product quicker. Depending on the design, this filter can be placed above the table or aside. Its structure is quite simple and will contain the following options:
1. Type of the product (category);
2. County;
3. Filter button.

Filter functionality will be the same as for the Individuals category of the catalogue.

More details about each product can be accessed through the link that is set to the block containing all three elements described above. Product page will be described below.

7.3. TENDERS

All tenders posted and accepted through the module with the same name are to be presented on the front-end in a common list. This list will have to be sorted first of all by status: open or closed. Open tenders will always be on top of the list making them quickly accessible for visitors. Closed tenders will be placed below the open ones. They will need to have a visual representation so visitors can easily distinguish them from the open tenders (different colour or opacity).

The open tenders will have to be sorted amongst them by which one ends quicker. These will be placed on top of the list so they can be spotted first.

In the list, a tender will be presented with the following set of attributes
   1. Tender title
   2. Company name
   3. Tender validity (start date – end date)
   4. Tender short description

7.4. SEARCH

Search, as a system module, finds results on the site and then show them as a list. This list will be divided into 20 results per page and like other lists, will contain the number of pages that will fit all these search results. One item of the list will contain the title of the page on which the search result is found, the first paragraph of the description and URL of the page. Title of the page will be used as a link for accessing a certain search result. The top of the list will always indicate how many results were found.

8. DESCRIPTION PAGES

All pages on the site represent some kind of content, whether it is information about a company or a description of some news. This representation is the content that the administrator inserts in all the fields when adding a page through the administration panel.

All pages with description must have tools for sharing in social networks: Facebook, Tweeter and Google+ excepting the lists pages described in chapter 7.

8.1. SIMPLE PAGE

Simple pages are added through the menu module and all their content on the site is presented in one information block. In this block, the administrator can insert different types of web content and use different elements to help formatting page like tables, paragraphs, headers, lists and so on. Each element should have a specific display style which is firstly identified and defined at the design stage and then prepared and implementing during the mark-up stage. For example, if the list element should have red bullet and this was defined at the design stage, this means that everywhere on the website the lists should have a red bullets. At the mark-up stage, the <li> element is defined to have this red bullet through the use of a specific CSS style, therefore, every time the list is created in the administration panel, the administrator and doesn't have to bother setting this bullet style. However in the administration panel, the list will show as usual, while on the website it will have the predefined style. This rule needs to apply at least to the following tags: <a>, <li>, <h1> to <h6>, <p>, <pre>. Other tags can also be stylized in advance and this depends on the design features used.

8.2. NEWSROOM ARTICLE PAGE

An article page is quite similar to a simple page because its content is inserted entirely by the administrator, which means he completely controls its look and the structure. This type of page has the same layout for all the categories of the Newsroom section. It will contain the title, date, description and the attached pictures. The visual alignment of these elements is totally defined by the design.

8.3. AN INDIVIDUAL PAGE

This page will present information about an individual inserted in the database through a sub-module of the Catalogue, described in chapter 6.3.1. A visitor is taken to this page while navigating through the catalogue and accessing such an individual. This page will have different blocks of information because the information varies, and its structure has to be very well thought at the design stage to make sure it brings the best usability and user experience.

The aim of this page is to bring together not just information about each supplier or consumer, but also the products they are selling. For the consumers, who are not selling, the products information will be not be relevant and therefore missing.

In both cases the page will start with the individual name represented as a heading of the page followed by its description. Because description of an individual can be quite long, it should be shortened visually to a limited number of words decided at the design stage followed by a "Read more" option. When this option is pressed, the rest of the description is automatically loaded or made unhidden. It is very important that the developer doesn't cut the description in the middle of a sentence or a word.

The description will also contain all the attached photos. These photos should be shown as a slider having arrows for navigation and a visual indicator of how many photos the slider has. When pressing a photo on the slider, it will pop up showing a bigger version of the same photo on a slightly dark background that will make a contrast for that photo against the whole view of the page. The navigation amongst photos is also possible in the pop-up mode. This mode needs a close button, and the closure is also happening while pressing outside the photo or the *Esc* button.

The contact information and position on the map should be separated and presented as different blocks of content. Their web address and email address have to be marked as hyperlinks and function as usual: the web address link opens the website in a new tab in the browser; the email link composes a new message in the mail client software with the email address already filled in.

The position on the map should be implemented via Google maps as in the catalogue and should have available the zoom and drag functions. Zoom via scroll should be disabled throughout the website.

In the case of a seller, this page will also contain all the products. This block will be represented as a list and it will repeat the same layout as the *Products* side of the catalogue. To avoid a case when an individual page is too long, at the design stage this can be structured as having two big tabs. First tab will contain the information about the company and the other about its products. As previously mentioned, in the case of a consumer page, these tabs will not show.

8.4. PRODUCT PAGE

This page will present information about a product inserted in the database through the *Products* sub-module of the catalogue described in chapter 6.3.2. A visitor is taken to this page while navigating through the catalogue and accessing a product. As the individual's page this page will have different blocks of information, but the accent should be on the Product name and its price. Product description will be placed immediately after that title. All the limitations for the description are to be followed as for the page described above.

Photos of the product should be shown exactly in the same way as photos of the company; however the position of the slider can be different.

It is very important that the price of the product is highlighted and differentiated from the rest of the content. A button that allows visitors send enquiries about this product directly to the seller should be placed close to the price. When this button is pressed, a small window will pop-up having four fields to be filled in:
1. Your name (visitors name);
2. Email address;
3. Telephone number;
4. Enquiry message.

This form sends all the data directly to the seller email inbox, indicating the subject of the message, the name of the product, what the enquiry is about, for example: *Question about "Viesmann DR–2109 dry pellets heating boiler"*. Fields 1 and 4 are mandatory, while for 2 and 3 only one of them is mandatory.

8.5. TENDER PAGE

A tender page is quite similar to a simple page because its content is inserted entirely by the company that requests the tender when posting it. Apart from the description of the tender it will contain the title, validity period and the attached file. The visual alignment of these elements is totally defined by the design.

9. RELIABILITY REQUIREMENTS

This site implies the placement of a big load of data on the Internet, as a result of this Developer might need to do some specific steps to configure the server. If a transition to more advanced hosting package or purchase additional traffic is required, the Beneficiary must be notified.

Administration panel will be password protected, but for additional security the hosting must have activated the automatic backup. The necessary dialogue with the hoster is done by the related IT department of the Beneficiary.

10. REQUIREMENTS FOR PAGE LAYOUT

All pages discussed in this document will be marked-up using valid HTML5 and CSS3. Valid HTML code meets certain rules which make it easier to interpret and process. It can be quicker analyzed and displayed in a browser and is more helpful for search engines and indexing systems.

At the same time a valid HTML has to be cross-browser compatible. Cross-browser mark-up is the HTML code that looks and works the same way in the currently popular browsers. The developer has to check and transfer to the customer a site that looks the same in the following browsers: Internet Explorer 9+, Google Chrome, Mozilla Firefox, Safari and Opera. All browsers except IE, have automatic updates, so cross-browser compatibility will be checked for the latest version.

The website is meant to be usable on the handheld devices like smartphones and tablets, thus the layout will be marked-up as responsive: this means that it will change the look and the page size depending on the device screen resolution. The pages will automatically change their structure in order to properly accommodate the content. The developer will make responsive layout designs according to 3 most used sizes: phone (iOS, Android, Windows Phone), tablet (iOS, Android, Windows) and a standard PC (1024 or 1280px wide, depending on the design).

The mark-up described above is only applicable for the website, but not for its CMS.

11. REQUIREMENTS FOR HOSTING

The developer will host the web-page for the period of contract. Hosting should run under LINUX operating system. It must have installed PHP version 5.3 or higher, and a database management system MySQL 5 or later versions.

12. FILLING IN THE CONTENT

The content upload will start during the development and will continue during the testing stage. All content will be inserted by the Beneficiary employee, who will receive instructions for each of the modules.