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BUSINESS SUMMARY

DELIVERABLE D 6.1

TV4NEWOOD PROJECT

AGREEMENT NUMBER:
ECO/12/333079/SI2.653690

Co-funded by the Eco-innovation Initiative of the European Union

MANAGEMENT OBJECTIVE ORIENTED

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Business Plan

WDE MASPELL SRL

UPDATE M36 31ST AUGUST 2016

MANAGEMENT OBJECTIVE ORIENTED

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1. Executive Summary

This document is intended as milestone for WDE business strategy and might be tailored for specific purposes, adapting its contents in terms of communication styles to different addresses.

Its aims to:

- Orient the decision-making processes of management
- Provide the investor information for the evaluation of the economic convenience in investment
- Present methods of use of resources and how these will support the achievement objectives

Its main exploitations are:

- strategical: define competitive positioning, future objectives, risk assessment
- planning: define resources needs (knowledge, financial, organisational, partnerships), tasks and goals
- control: monitoring the correct implementation and defining corrective actions

It will identify future financing needs and is usually a necessary step in raising external finance.

Generally, it stems from the strategic planning process which is the evaluation of a business's competitive advantage and opportunities. This business plan develops more in detail the broad action points derived from strategic planning, establishing corporate goals, setting objectives, evaluating the operating environment and producing ways to measure their successful achievement.

For WDE the business plan is a useful ongoing tool, as it will be used to measure progress as well as to communicate between management, staff and existing investors/bankers. To achieve this it must be kept up to date as the business moves through different stages, from start-up to rapid growth and maturity. A company's strategy must also change along with its objectives.

Business description and opportunities

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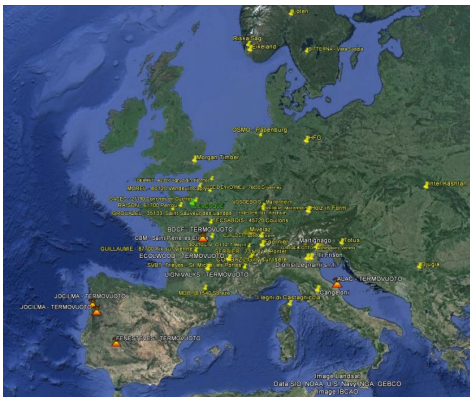
WDE core business is in designing and manufacturing of wood dryers and devices for heat treatment of wood. Our market is international, and we export most of our machines, both in European and overseas countries.

The image below shows where our devices are mainly located at European level.



Our customers are SMEs for the treatment of wood, providing drying and heat treatment services. Their main and most typical applications are in cladding and building sector (outdoor).

2. Business Summary

Our effort is to design and make available the most green, economic and flexible process for thermal wood modification.

Our actual business vision is addressed to develop both the market segments for drying systems and Thermo Vacuum Treatment. In particular we consider Thermo Vacuum as absolutely strategic innovative solution for developing competitive positioning. Drying market is a mature one, even if wood applications are slightly growing worldwide, but it is characterised by very high competition, specially from the most emerging countries.

The TVW (Thermo Vacuum Wood) produced by our innovative technology might be considered as a “new wood”, with high interesting technical characteristics, exceptional green footprint and low cost, able to revamping the local (poor) essences use instead the tropical or more costing ones.

Our strategy is intended to develop market demand for new TVW material, so that Thermo Vacuum machine demand will come consequently. Thanks to the Eco Innovation initiative our effort was addressed to determine process and product characterisation, demonstration and related certification that – at the moment – our technology represent the most environmental friendly process available on the market for wood modification, producing the most ecological treated wood.

Process and products certification were keystones of our strategy because, making reference to the first draft of the market analysis, our technology appears to be one most able to treat different essences (the others are adopted for one up to three / four essence mostly).

2.1.1 Company Summary

From the beginning of the 1900s, numerous attempts were made to develop a wood vacuum drying process. Despite all the various studies carried out, the process was never industrialized.
In **1962**, in Turin, Vincenzo Pagnozzi began his original research on the wood vacuum drying process that ended in **1965** with a registered patent.

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A company was founded based on this invention and it grew constantly, producing machinery and developing new technologies that generated 89 patents over the first few decades of operation.
In **1972**, Vincenzo's son Ernesto, the firm's present-day owner, began working at the company. Ernesto received an Electronic Engineering degree at the Polytechnic University of Turin and his experimental thesis was based on research involving a mathematical model of wood vacuum drying.
In **1975**, the company acquired an international outlook through its participation in the Hannover tradeshow in Germany, granting construction licenses in Japan and the United States (www.vacutherm.com) and creating a sales organization that presently operates in and serves all continents.
In **1994**, with the birth of **W.D.E.** (**WOOD DRYNG ENGINEERING**), production increased significantly as production processes were optimized, raising the vacuum dryer construction standards to the highest quality levels.
Since its foundation, the company has built more than 5,000 drying systems.
In **1997** this company model merges with the tradition of wood vacuum drying taking the name **WDE-MASPELL**, a leader in the sector, counting over 5,000 customers worldwide.
Since **2000** the WDE MASPELL construction and distribution network on the Chinese market avails itself of the partnership of **G.M.I. TIMBER DRYING EQUIPMENT MANUFACTURING LIMITED** (www.sesione.cn) , directed by Mr. Raymond Yuen.
In **2002**, following the needs of the market, **WDE MASPELL BRASIL** is founded, a totally Brazilian company directed by Mr. Arnaldo Swolkin.
In **2008** WDE-MASPELL technology forms a partnership with the Egyptian market and encounters the **VAC** (www.vac-egypt.com), a company led by Mr. Gehad Zakaria.

In **2012** WDE has patented his technology for Thermo Vacuum Treatment of wood, and in 2014, thanks the support of the European funding the patents were extended in EU/USA/Brasil/China/India and Eurasia. Further patents registration have been extended to other countries during the Eco Innovation project duration in order to secure an adequate rights protection.

In **2016** at the end of the Eco Innovation project we have registered the name of wood obtained by Thermo Vacuum processing: **VacWood**

Our innovative solution is born to overcome the most critical market barriers for treated woods, that are characterising the competitor technologies:

1) final wood products without odour and/or pollutant residues
2) wood modification process significantly cost savings compared to alternatives
3) wood modification process flexible in wood species treatments

Our Thermo Vacuum devices must be over BAT level, high quality manufactured for safe and continuous production warranty, electronically advanced for remote monitoring, control and assistance.

WDE was and still is a very small enterprise with a very fund knowledge in drying and wood treatment, and despite of a worldwide market reference, our entrepreneurial approach remained not "industrial" with an approach to the market very tailored to the customer needs. At our third generational transition of entrepreneurs, we believe is time for change management, and for a different competitive positioning at global level. That's one of the reasons why we decided to invest our resources in Eco Innovative programme with the strategical participation of international partners.

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First draft of market analysis indicate an extremely interesting opportunity to get in the wood market, supplying TVW able to substitute tropical woods, to catch market share of concurrent alternative treated woods, to be preferred to "normal" non treated woods thanks to higher technical performances for specific applications at an affordable price.

Wood sector have had a strong reduction during the past decade, most due – specially at European level – to the building sector crisis. But the market trends show a recovering situation, specially out of EU 28 countries, and in addition, tropical wood imports are still slowing down, thanks to the restrictive norms adopted at European level and eastern EU / Russia exports. For that reasons, tropical wood consumptions are progressively substituted with alternatives (engineered wood products, alternative materials) and local wood products having equivalents technical performances. Moreover TVW is intended to be use in alternative applications where competitors are not present yet, or if they are, with costly and surface treated wooden materials.

Further market analysis were performed by WDE with reference to the potential utilisation of VacWood for engineered wood products, some technical tests were made achieving very interesting results, so that new perspectives and business opportunities are arising and they provide strategic view for future development.

Market Segment were primarily identified:

1) Building sector – indoor and outdoor: including claddings, external joinery (windows, doors, fences, landscaping and garden equipment like decking, pavin pools, road equipments, etc. and for indoor: parquet floors, panelling, insulations.
2) Furniture industry: furnishings for houses, nautical furnishing

Details of market demand at European level are in the market analysis and are based on the market analysis made, including those referred to the new potential applications.

2.1.2 Management Summary

WDE due the recent crisis has restructured his organisation and focused on the core business activities, in fact has outsourced the manufacturing and assembling process to selected suppliers while has invested in internal engineering and project management.

Actual organisation is very flexible and based on very selected skills for core business management.

Organisational Structure is very short and include:

Ernesto Pagnozzi: CEO, Technical Manager and Sales Manager. Electronic engineer, has spent his life in designing and developing new technologies for wood dryers. He has the direct control of main managerial processes.

Umberto Pagnozzi: master degree in Communication, has developed his experience in the WDE company as responsible for Marketing and Communication, in fact he directly involved in website company and project development. He is also involved in project management coordinating relationships between technical department and supplier until commissioning at the customer site.

Matteo Arcangeli: engineer in Science of materials, is Production Manager, he overview the designing activities, the technical purchasing process and relationships with suppliers.

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Mauro Morelli: Electronic designer, software programmer, he follows from "cradle to grave" all electronic and software matter related to design and manufacture for dyeing and thermo treatment systems.

Samuel Mostarda: Mechanical engineer, he has 15-year work experience in plants, testing for notified certification body. He is the WDE reference for customer technical assistance and plan maintenance programmes.

Paolo Pierini: bachelor in mechanical design, with over 20 years of experiences in designing of carpentry, structural analysis, numerical simulation in mechanical field

Marco Giardinieri: bachelor degree in mechanics, he is the Assistance and Maintenance Service Manager. He has matured 4 year of experiences in other mechanical companies with the same role. He is involved in claim and emergency management.

Francesco Salvati: over 25 years of experience matured in administrative and financial field. He is the Administrative and Financial Manager, involved in all export procedures, he has the direct control of bank relationships, payments, and humar resources procedures.

Adriano Sbrenna: over 25 years in electronic and plant engineering, he is one of the referents for Maintenance Services and electronic devices programmation.

Valter Darbe: master degree at Polytechnic of Torino, has over 25 years of broad managerial and advisory experiences addressed to achieve organisational change management processes. Certified Management Consultant ICMCI (International Council of Management Consulting Institutes) and lead assessor at IRCA and CEPAS. International high management experience in UK (as Quality Group Manager at Daily Mail, Evening Standard, Sunday Evening) and India (market analysis; due diligence and risk analysis; company start up and control by the organisational structure, evaluation, selection and staff and Management recruitment and MBO). He is the Project Manager for the Eco Innovation project.

2.1.3 Products and Services

The WDE business related to TV4NEWOOD proposal refers to a specific thermal treatment under vacuum for wood modification. Wood thermally treated for a certain period with temperature over 190°C, changes its internal structure (molecular change) becoming a new material feasible for multiple applications.

The market of dried and/or modified wood, is quite wide and growing overall, due to the need of improving wood characteristics for special applications. In general, wood market requires high quality wood, stiff and durable, for indoor and outdoor uses. To improve wood performances, wood is submitted to different treatments: some include impregnation or chemical treatments; others prefer thermal treatment with or without chemical additives. In both cases, original wood is modified and mechanical / physical characteristics are improved.

Application of "modified woods" are very different: from outdoor (like cladding, external joinery, road equipment, poles for telecommunication, buildings) to indoor uses (like furnishings and parquets, interior woodworks).

WDE deal with the drying systems for wood modification, and its offer is based on 6 lines of different products, all integrating the wood treatments at different stage and related to the wood drying processes.

VACUUM DRYING WITHOUT HEATING PLATES (patented)

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This type of the drying is performed with cylindrical cell or square cell, operating either with a discontinuous vacuum or continuous vacuum , where heating is generated through ventilation.

ADVANTAGES
- Drying wood stacks with spacer sticks.
- Loading wood stacks with fork-lif.

CAPACITY
From 5 m³ a 100 m³ per cell.

VACUUM DRYING WITH HEATING PLATES (patented)

Based on a cylindrical drying cell operating with heating plates and a continuous vacuum, the updated version includes a pressure system of 10 tons/m² on the wooden boards during cycle (to avoid any wood distortion normally occurring during drying processes)

ADVANTAGES OF THE PRESS MODEL
- improves drying quality
- straightens warped boards
- increases drying speed.

CAPACITY
From 0,3 m³ to 10 m³ per cell

HIGH TEMPERATURE TREATMENT (patented)

It is the most recent development of WDE, referring to the TV4NEWOOD technology. The technology is used for developing chemical and molecular structure changes in wood fibres. This is achieved by high temperature (close to combustion = 180° C - 230° C) and vacuum treatment conditions. The output are treated woods with improved overall performances in terms of stiffness, durability from chemical and bio agents. The technology was developed in collaboration with CNR Ivalsa

ADVANTAGES
- very high performances
- technology perfectly fits with any wood essence
- no chemicals additives
- treatment 50% cost saving compared with best competitor alternatives

HEAT TREATMENT (ISPM-15)

It is represented by a high tememperature dryer supplied with a suitable quantity of probes to measure air and wood temperature which, connected to a PLC control system, enables a simple and intuitive management, to monitor, store and finally print out every cycle performed by the user, in accordance with the regulations ISPM-15 for wood disinfestations.

WOOD AUTO-VAPORIZATION SELF VAPORIZATION

Vaporization is a process that consists in submitting to the action of saturated vapor green wood stacked inside a cell, to increase the temperature around 100 ° C, to change the natural colouring of some woody species (e.g. Beech, Cherry, Walnut and many tropical species).
The cell of the WDE-MASPELL vacuum drying, being by nature an absolutely watertight adiabatic chamber, can become an ideal environment where obtaining saturated vapor at all temperatures between 60 °C and 100 °C through an environmental management of vacuum and temperature, without the need to inject steam in the cell from the outside, but

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using the same steam produced by the water extracted from the wood, thus generating a process of self-vaporization, which combines the excellent aesthetic result with a low operating cost and a great operational flexibility.

VACUUM DRYING WITH HEATING PLATES (patented)

Based on a cylindrical drying cell operating with heating plates and a continuous vacuum, to exert a pressure of 10 tons/m² on the wooden boards during cycle (Pagnozzi patent).

ADVANTAGES OF THE PRESS MODEL
- improves drying quality
- straightens warped boards
- increases drying speed.

CAPACITY
From 0,3 m³ to 10 m³ per cel

WDE is – essentially – an engineering company, developing advanced technological solution for wood drying.

WDE also provides maintenance services both direct on site / on demand and via intranet, because all recent dryer devices are integrated with PLC and continuously monitored during production. Maintenance services are provided as after sale service only and include troubleshooting.

For any other information please write to

Tv4newood@wde-maspell.it