GT2
2.2 QUALITY REFERENTIAL LABEL + TRAINING MODULE

Task Leader: AVEBIOM

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QUALITY REFERENCIAL LABEL

Leader	Partners involved	Realization date
AVEBIOM	CBE, UM2, C2A, CENER all partners contribute	On going 

Actions already achieved and OUTCOMES
• Kick off questions ✓
• Proposal of ENERMASS certification model of evaluation of experience and knowledge to ensure the professionalism related to biomass. ✓
• Proposal of ENERMASS COMPANIES ACCREDITATION SYSTEM (accession to Code of Ethics) ✓
• Analysis of International and national standards on quality services analysis ✓
• Search of Code of ethics/conduct for biomass companies and consultancy companies ✓
• Request biomass companies opinion (Survey) 
• Initial Analysis of the Biomass Installer Certification 

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CERTIFICATION OPTIONS

SELECT ION OF THE BEST OPTIONS TO DEVELOP WITH SURVEY RESULTS
(We need UM2 data)

1 PROJECTS LABELLISATION ✖

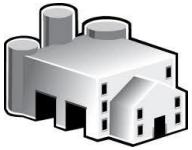
Project labelling is not a useful tool if ENERMASS label couldn't facilitate access to funding. ENERMASS couldn't compete with pôles de Compétitivité

2 TRAINING CERTIFICATION

EXPERIENCE & KNOWLEDGE

TRAINING ➡ EXAM ➡ LABEL

3 COMPANY ACCREDITATION



INDUSTRY RECOGNIZED BEST PRACTICES

ACCESION TO CODE OF ETHICS

4 BIOMASS INSTALLER'S CERTIFICATION

5 BIOMASS INSTALLATION'S CERTIFICATION

6 FINANCIAL QUALITY LABEL

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INITIAL ANALYSIS OF THE BIOMASS INSTALLER CERTIFICATION

The biomass for heating and cooling in both domestic and industrial sector, has potential for development, but lacks skilled workers, and the Directive 2009/28/EC in article 14 states that Members will watch over the implementation of a qualification system for biomass installers.

DIRECTIVE 2009/28/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC
http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=Oj:L:2009:140:0016:0062:en:PDF

Article 14 Information and training

*3. Member States shall ensure that **certification schemes or equivalent qualification schemes** become or are available by31 December 2012 for **installers of small-scale biomass boilers and stoves**, solar photovoltaic and solar thermal systems, shallow geothermal systems and heat pumps. [..]*

*4. Member States shall make available to the public **information on certification schemes or equivalent qualification schemes** as referred to in paragraph 3. Member States may also make available the list of installers who are qualified or certified in accordance with the provisions referred to in paragraph 3.*

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INITIAL ANALYSIS OF THE BIOMASS INSTALLER CERTIFICATION

ANNEX IV Certification of installers

6. The certification schemes or equivalent qualification schemes referred to in Article 14(3) shall take due account of the following guidelines

(a) Accredited training programmes should be offered to installers with work experience, who have undergone, or are undergoing, the following types of training:

(i) in the case of biomass boiler and stove installers: training as a plumber, pipe fitter, heating engineer or technician of sanitary and heating or cooling equipment as a prerequisite;

[..]

*(b) The **theoretical part of the biomass stove and boiler installer training** should give an overview of the market situation of biomass and cover ecological aspects, biomass fuels, logistics, fire protection, related subsidies, combustion techniques, firing systems, optimal hydraulic solutions, cost and profitability comparison as well as the design, installation, and maintenance of biomass boilers and stoves. The training should also provide good knowledge of any European standards for technology and biomass fuels, such as pellets, and biomass related national and Community law.*

[…]

*(e) **The installer certification should be time restricted, so that a refresher seminar or event would be necessary for continued certification**.*

EUROPEAN PROJECTS REFERENCES

QualiCert addressed the requirement of the RES Directive on training by defining a **common European approach to certification and equivalent qualification, designed to help Member States either making their current schemes compatible, or setting up schemes that would recognised more easily and more quickly at EU level.** The common approach is the selection of crucial features to certification and equivalent qualification schemes and requirements which should be applied in all EU schemes.

The project was designed in anticipation of article 14.3 of the DIRECTIVE 2009/28/EC

QualiCert has produced a manual compiling the state of the art, the matrix with ranked success criteria reliable and comprehensive document which has been endorsed by main industry representatives at EU level and national endorsement in 5 Member States

http://www.qualicert-project.eu/fileadmin/Qualicert_Docs/Docs/Final_Publishable_Report/QUALICERT_PUBLISHABLE_REPORT_WEB.pdf#!

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EUROPEAN PROJECTS REFERENCE

EUVET
transferring EUropean VET structures to cover biomass skill needs

http://euvet-project.eu/

BIOMASS EUVET will identify the necessary skills and competences that a biomass boilers installer should have to develop a VET (vocational education and training) structure for the biomass sector, which allows the establishment of a qualification system for the future, in accordance with the needs of the market.

EUROPEAN CURRICULUM

Using the VET and curriculum transferred from previous Leonardo da Vinci project SolTec, and based on the EU Biomass competence profile, the European curriculum was created as a summarized collection of the structure and contents of the European module (training units).

I INSTALLATION:
PLANNING OF THE INSTALLATION/SAFETY AND ENVIRONMENTAL PROTECTION /EXECUTION OF THE INSTALLATION

I.1. ANALYSIS OF THERMAL NEEDS, AVAILABILITY OF THE FUEL AND CONTEXT (8h)
I.2. PLANNING OF THE BIOMASS SYSTEM CONCEPT ACCORDING TO THE THERMAL NEEDS AND BIOMASS FUEL ANALYSIS (24h)
I.3. LEGAL, FORMAL AND TECHNICAL OBLIGATIONS (8h)
I.4. PLANNING OF THE EXECUTION (8h)
I.5. SAFETY AND ENVIRONMENTAL PROTECTION (8h)
I.6. PREPARATION OF THE INSTALLATION (8h)
I.7. PRACTICAL EXECUTION (48 h)
I.8. TECHNICAL AND LEGAL DOCUMENTATION (8 h)

II SERVICE AND MAINTENANCE: MAINTAINING, INSPECTING AND TROUBLESHOOTING/ REPAIRING.
II.1. PLANNING OF THE MAINTENANCE ACTIVITY (16 h)
II.2. EXECUTION OF MAINTENANCE (24 h)
II.3. SAFETY AND ENVIRONMENTAL PROTECTION IN MAINTENANCE ACTIVITIES (16 h)
II.4. MAINTENANCE DOCUMENTATION (8 h)
II.5. PLANNING OF THE REPAIRING ACTIVITIES (8 h)
II.6. EXECUTION AND VERIFICATION (8 h)
II.7. SAFETY AND ENVIRONMENTAL PROTECTION IN REPAIRING ACTIVITIES (8 h)
II.8. REPAIRING ACTIVITIES DOCUMENTATION (8 h)

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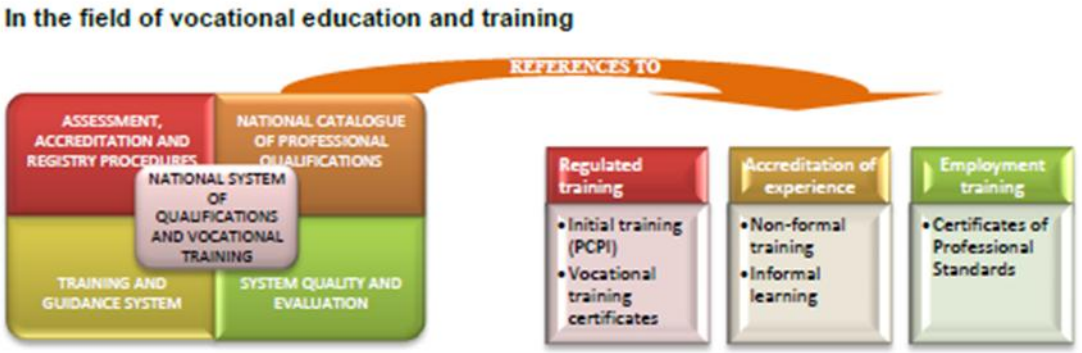
TOTAL OF TRAINING HOURS INSTALLATION 120 SERVICE AND MAINTENANCE 96

EUROPEAN PROJECTS REFERENCES

BUILD UP
energy solutions for better buildings

Build Up project will define any competence or training gaps that exist between the current situation and the predicted needs for 2020

http://www.buildupskills.eu/



Buid Up Skills. Energy Training for Builders. National Roadmap Spain
http://spain.buildupskills.eu/sites/default/files/D4.1_Roadmap_report_ES_0.pdf Project coordinator Fundación Laboral de la Construcción

National_RoadMap_PORTUGAL
http://www.buildupskills.eu/sites/default/files/National_RoadMap_PORTUGAL_April2013.pdf
Project coordinator LNEG (sinergies with ENERMASS?)

Feuille De Route Build Up Skills France
http://france.buildupskills.eu/sites/default/files/Feuille%20De%20Route%20Build%20Up%20Skills%20France_30%20ao%C3%BBt%202013_0.pdf Project coordinator Alliance Villes Emploi

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TRAINING

Leader	Partners involved	Realization date
AVEBIOM	CBE, UM2, C2A, CENER, CB&E all partners contribute	On going 

Actions already achieved and OUTCOMES
• BASIC GENERAL TRAINING MODULE CONTENT (THEORETICAL PART) ✓
• BASIC GENERAL TRAINING MODULE CONTENT (PRACTICAL PART) 
• Feasibility of the courses in English and about the possibility of e-learning **(UM2)** ✗
• UM2 "**pilot experience**" ?
• Development of the contents of the "Financial and Economic module" (5h) for BASIC GENERAL TRAINING MODULE **(CBE)** ?
• Development of the contents of an Economic specialization module ✓
• Request biomass companies opinion (Survey) 

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BASIC GENERAL TRAINING MODULE CONTENT (THEORETICAL PART)

TOPIC	Duration (h))	SKILLS	Country Expert (YES/NO)
Introduction to political, regulatory, social , economic context and policies (European & national level)	6	Knowledge	FR ES PT
Position of biomass in Renewable Energy mix and managing of energy mix (storage production, storage conversion)	3	Knowledge	FR ES PT
Sustainability development and impact limitation	9		
- Measuring the GHG impact and optimization carbon footprint	3	Calculation and optimization carbon footprint	FR ES PT
- Hierarchy of uses and integrated management	1,5	Knowledge	FR ES PT
- Contribution to the energy self-sufficiency	1,5	Knowledge	FR ES PT
- Impact limitation (soil, biodiversity, air, water, etc.)	1,5	Knowledge	FR ES PT
- Carbon and Nitrogen cycle management (minimising CO2 emissions)	1,5	Knowledge	FR ES PT
Biomass sources and availability	3	Elaborate Biomass Procurement Plan	FR ES PT

BASIC GENERAL TRAINING MODULE CONTENT (THEORETICAL PART)

TOPIC	Duration (h))	SKILLS	Country Expert (YES/NO)
Biomass production and transformation technologies and processes (technological barriers)	14,5	Knowledge	FR ES PT
Global evaluation of production processes (efficiency)	3	Knowledge	FR ES PT
Practical implementation of market biomass technologies	5	Knowledge	FR ES PT
Risk management and assessment (Specialization Module???)	**5**		
- Financial aspects		Knowledge	FR ES PT
- Economic barriers - Funding sources		Knowledge	FR ES PT
Promoting innovative projects	1.5	Knowledge	FR ES PT
Total (h)	**50**		

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CONTENTS OF AN ECONOMIC SPECIALIZATION MODULE (50 H)

PART I.- Understanding finance. How investors and banks think about projects. (20 hours)

A RISK AND RETURN

1 Returns: Basic concepts. Mean returns.

2 Risk: Total risk. Risk and return: Portfolios

3 Risk (II): Diversification. Systematic risk. The CAPM and the cost of capital

4 Risk and return: The three-factor model. Downside risk. Risk-adjusted returns. Portfolio optimization. The long term.

B VALUATION

5 Stocks: The dividend discount model. The WACC model. Other DCF models. Reverse valuation.

6 Bonds: Prices and yields. Default risk and market risk. Duration and convexity.

7 How to value a company: Introduction. Time value, risk and statistics. Intrinsic Value. Relative valuation. Life cycle and valuation (Young growth companies, Growth companies, Mature companies, declining companies, cyclical and commodity companies, companies with intangible assets)

C OTHER IMPORTANT TOPICS

8 NPV and IRR. Real options. Corporate value creation. Options. Futures and forwards. Currencies

D STATISTICAL BACKGROUND

9 Summary statistics: Normality, Non-normality, Regression analysis

II.- Energy sector (5 hours)

10 Historical perspectives. Investment opportunities in Energy. Cash flow and liquidity. Capital Structure and Capital Markets. Quarterly earnings.

11 Crude oil and natural gas as a reference. Reserves. Markets and Production. Refining. Integrated Majors. Oil juniors. OPEC. State-Owned Companies.

III: Non fossil energy: renewable and bioenergy (25 hours)

12 Hydroelectric Power. Nuclear. Geothermal and Wind Energy. Solar energy. Biofuels and ethanol. Cleaner coal

13 Opportunities and challenges in Green Energies.

14 Power Project Economics Regulated Utilities. Evaluating a Power Plant. Financing a Power Plant. Hedge Providers. Opportunities with Distressed Renewable.

15 The Challenges of Renewable Power Projects. Tax Issues. Special Exemptions.

16 Risk Assessment for Power Projects. Project Risk Assessment and Risk Mitigations

17 Exploiting Profitability of Distressed and Abandoned Municipal Power Plants.

18 Biomass Energy and Biomass Power Plants. Wood Waste. Economics of Biomass.

19 Comparative Costs of Energy. Cost Estimates

20 Energy Efficiency and Smart Grid. Demand-Side Management. Advanced Meter Infrastructure.

21 Finance in Bioenergy. Figures and data.

22 Funding instruments: business angels, venture capital, private equity, crowdfunding

23 Highlights in a loan agreement. Warranties and conditions.

BASIC GENERAL TRAINING MODULE CONTENT (PRACTICAL PART)

DURATION

10 hours is logical considering that the theoretical part is 50 hours but 10 hours will only give possibility to organize short visits

Maybe we should established at least 1 day site visit and a 1 day practical training, which means **16 hours**.

TECHNICAL VISITS

- CENER headquarters in Sarriguren:
  - o Biomass lab
  - Solar PV lab
  - Solar Thermal lab
- - CENER 2nd Generation Biofuel Centre in Aoiz
  - Biomass Pretreatment
  - Torrefaction Unit
  - Gasification Unit
  - Biochemical Process Unit

- AVEBIOM member's installations

Biomass Power Plant

Pellet production Plant

Biomass thermal installations in services buildings (ESCO installations)

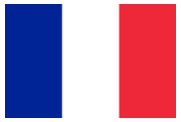
· CBE facilities: Biomass lab

· LNEG facilities: Biomass lab and pilot installations

· Biomass Power Plant

· Pellet production Plant

· Biomass thermal installations in services buildings (ESCO installations)



APESA technical plant in Pau

Practical training visit: "Validation of technical parameters of a biogas project through pilot testing"

BASIC GENERAL TRAINING MODULE CONTENT (PRACTICAL PART)

PRACTICAL TRAINING AREAS

It could be good idea focusing the practical training on the different training areas:

- **Industry**: visits to industrial plants
  - Pellet production plant
  - Biomass combustion plant for electricity production
  - Biometanization plant
  - Liquid biofuels production plant
    - § Microalgae
    - § 1st generation
  - Biomass boilers and stoves
  - **Other??**

- **R&D:**
  - Advance biofuels production plant.
  - Pyrolysis
  - **Other??**

- - Economic/Legal aspects **how to include practical part of these?**

UM2 PILOT EXPERIENCE

Basic course content?

Duration?

ENERMASS certification for assistants?

Online in English?

Target of assistants?

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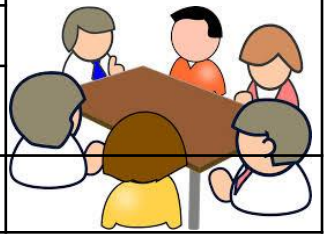
QUALITY REFERENCIAL LABEL

NEXT actions	DUE DATE
• Request biomass companies opinion (Survey). Similar number of answers per country	After Montpellier's Meeting Discussion 
• Selection of the best certification options to develop with survey results analysis	
• Request Certification experts opinion	
• Development of ENERMASS certification system and quality referential criteria.	
• Partners Search	

TRAINING

NEXT actions	DUE DATE
• Close ENERMASS course content	After Montpellier's Meeting Discussion 
• Request biomass companies opinion about training (duration, online vs offline, basic vs specialization, etc)(Survey). Similar number of answers per country	
• Partners Search	

QUESTIONS to be treated during the meeting concerning your task force
How get a similar number of surveys per country?
How improve cooperation with UM2 (survey analysis, etc)?