



PLANET – PPlan for Agriculture reNewable Energy Training

Table of Contents

1	BIOMASS MODULE DESCRIPTION	2
2	OUTLINE.....	2



UNIVERSITÀ
DEGLI STUDI
DI TORINO



Confagricoltura
We Grow Masterpieces



INFOR·ELEA
Smart Business Academy



TECSOL
Bureau d'études techniques en énergie solaire





PLANET – PPlan for Agriculture reNewable Energy Training

1 BIOMASS Module description

The Biomass training course consists of a technical part, operational management, raw material, design and economy, law, legal and safety issues and a site visit. The training content provides the student with a comprehensive, practice-oriented knowledge of the construction and operation of biomass local heating plants, starting with the basics of biomass heating plants, suitable ranges of raw materials and their extraction, the technical structure and their function, the operational management, the required contracts, safety and hazard information and compliance with the legal regulations. With the knowledge of the course the student get the ability to influence the design of a new biomass heating plant according the present framework to allow a sustainable economical operation of the plant.

2 Outline

Module 4	PLANET Biomass training course	Bloom Taxonomy level	Test type
Day1	Technic part 1		
LO1	Understand the set of biomass installations that are necessary and typical for biomass heating systems	understanding	
LO2	Understand the conversion process whereby biological material becomes heat through combustion or biofuel through chemical, thermal, and biochemical methods. - The power transmission systems that use the force of flowing liquids to transmit power.	understanding	
LO3	Understand the set of technologies that make a process, system, or apparatus operate automatically through the use of control systems.	understanding	Multiple questions
Day2	Technic part 2		
LO1	Operate sealed vessels which contain fluids which are heated or vaporized, not always up to boiling, for heating or power generation, such as in utilities. Ensure safe procedures by monitoring the blower auxiliary	applying	



PLANET – PPlan for Agriculture reNewable Energy Training

Module 4	PLANET Biomass training course	Bloom Taxonomy level	Test type
	equipment closely during operations, and identifying faults and risks.		
LO2	Monitor the flow of the workpieces on the conveyor belt as they are processed by the machine to ensure optimal productivity.	applying	Practical test
Day 3	Operation management		
LO1	Understand the preservation and restoration of products and systems and the methods and logistics of these practices.	understanding	
LO2	Understand the procedures to inspect a product or system to ensure that it is according to specifications and requirements.	understanding	
LO6	Use software tools to archive data by copying and backing them up, in order to ensure their integrity and to prevent data loss.	applying	
LO7	Selection of software that aids in estimating, managing and scheduling industrial processes such as design, workflow, and production improvement	applying	Practical operational test + multiple questions
Day 4	Raw material		
LO1	Understand the origins of wooden biomass products for energetic use.	understanding	
LO2	Understand the process used for reducing wood into wood chips.	understanding	
LO3	Understand logistic systems used to manage the reception and the transportation of the raw material.	understanding	



PLANET – PPlan for Agriculture reNewable Energy Training

Module 4	PLANET Biomass training course	Bloom Taxonomy level	Test type
LO4	Understand the quality and quantity measurement systems.	understanding	
LO5	Understand the different possibilities in the residue management field.	understanding	Multiple questions
Day 5	Design & Economy		
LO1	Know the practical process analysis and tools for designating financial resources of a biomass plant	remembering	
	Be able to analyse different kinds of information with regards to the management of a biomass plant business	analysing	
LO2	Understand how to synchronise the efforts, plans, strategies, and actions carried out in the biomass plant: the marketing and customer acquisition aspects	applying	Practical case
Day 6	Law		
LO1	Know the basic contract law, such as financing, lease, easement, raw material supply, community, heat supply contracts, etc.	remembering	Multiple Questions
Day 7	Legal and safety issues		
LO1	be able to interpret legal documents related to the Legal entity and liability issues	understand	
LO2	be able to issue construction and plant permission	applying	
LO3	To maintain liaison and exchange of information with regional or local authorities	applying	
LO4	Understand necessary health, safety, hygiene, and environmental standards and legislation rules in the sector of a particular activity.	understand	Multiple Questions



PLANET – PPlan for Agriculture reNewable Energy Training

Module 4	PLANET Biomass training course	Bloom Taxonomy level	Test type
LO5	Understand the regulations concerning fire and explosion prevention, and the equipment, systems, and methods used in it.	understand	
LO6	Identify operating problems, decide what to do about it and report accordingly	evaluating	
Day 8	Site Visit		
LO1	Understand the production process and how to assess product quality in a biomass plant	evaluating	report