

ASSIGNMENT/COURSEWORK PROFORMA		
Module Code: ME5522	Assessment Title: Energy Evaluation of Company A with Recommendations of GHG Emissions Reduction Assessment set by Dr. V. Stojceska	Module Leader: Dr. V.Stojceska

MAIN OBJECTIVES OF THE ASSESSMENT:

To provide knowledge and awareness of energy evaluation techniques and analysis for company according to the current EU regulations and guidelines with recommendations to reduce GHG emissions.

BRIEF DESCRIPTION OF ASSESSMENT:

Students are asked to carry out an energy evaluation of Company A located near Ancona, Italy. The company is interested in improving of the energy use/ source and is committed to reduce GHG emissions of 100% (compared to 1990 levels) by 2050. As a result, the company proposed a new idea of Leaf Community (Figure 1) in order to create an environmentally sustainable integrated community with zero-carbon emissions. In 2016, the company generated 40% of the total electricity use from the own renewable sources (solar and hydropower) while 60% of the electricity was provided by the microgrid (ENEL), which controls the whole community. According to ENEL, only 43% of their energy production was carbon free.

You are provided with layout of the company (Figure 1) and data for the energy production for 2016 (available at ME5522/ BBL/ Assignment 2).

You are asked to carry out analyses of the data provided and propose practical improvements to the energy improvements of the company and reduction of GHG emissions.

It is recommended to use Energy management or Life cycle assessment software but it is not compulsory.

LEARNING OUTCOMES FOR THE ASSESSMENT

Demonstrate an understanding of main elements of relevant energy management and current legislation.

Use energy analysis methods to examine the energy use of the company.

Show an ability to analyse data to provide recommendations for improvement in the energy use

Present results concisely in an oral presentation and a written report

ASSESSMENT CRITERIA

The marking criteria for the assignment are the following:

1. Description of current legislation for energy management, obligations, incentives and benefits for businesses - 20%.
2. Description of the examined company and its energy use - 20%
3. Analysis and discussion of the results of energy use for the examined company - 20%
4. Recommendations for energy use improvements, cost saving and GHG emissions reduction: these should be the result of

	calculations to consider energy use and associated costs and GHG emissions – 40%
ASSESSMENT METHOD BY WHICH A STUDENT CAN DEMONSTRATE THE LEARNING OUTCOMES: Assignment in the form of : 1. Oral presentation (10% of the overall weight) 2. Written report (50% of the overall weight)	WEIGHTING: 60% of module

FORMAT OF THE ASSESSMENT/COURSEWORK: (Guidelines on the expected format and length of submission)

1. Oral Presentation: 3 mins with a Power Point presentation (PPT).
2. Written report with a length of maximum 2500 words, 1.5 line spacing (approximately 10 single sided A4 pages – to include everything such as diagrams, table of contents, reference list). The report should also include a title page, an executive summary, critical evaluation of the current state and recommendations for energy use/source improvements. The PPT of your oral presentation and written report should be submitted via Wiseflow. The deadlines are given below. The appendixes related to the assignment are available on the BBL: ME5522/ Learning materials/Data for the second assignment.

ASSESSMENT DATE(S)/SUBMISSION DEADLINE(S)

Deadline for submission is:

1. The PPT presentation to be submitted via Wiseflow by **4th March 2021**.
 1. Oral presentation: Monday, **8 March, 2021 / 3 min. (3-5pm, usual timetabled slot)**
 2. Written report to be submitted via Wiseflow by **18th March 2021**
- Please note that is your responsibility to submit assignment/ presentation on time.**

INDICATIVE READING LIST (all available in BBL and BUL's library – e books):

1. Data for the energy use of the company
2. ISO 50001: Energy management systems - Requirements with guidance for use, 2011
3. BRE IP 7, Energy Surveys and Audits, 2013, BRE
4. Carbon Trust, CTG055 Energy Surveys, 2011
5. Handbook of Energy Audit. Thumann et al. 2013
6. Energy, the Environment, and Sustainability. Michaelides, 2018.
7. Engineering Applications in Sustainable Design and Development. Chapters 8 and 10. Striebig et al. 2015



Figure 1. Leaf Community of Company A