



Objetivos Gerais (General objectives):

This training aims to address the complexities of climate change and energy transition, equipping learners with the knowledge necessary to contribute to sustainability efforts and implement effective strategies in the energy industry.

Successful achievement will allow personnel to work and understand climate change and Net Zero strategies.

Objetivos Específicos (Specific objectives):

Please see below.

Conteúdo Programático / Carga Horária por módulo (Program content / Workload per module)

To complete the Sustainability Training the mandatory unit must be achieved.

Unit Code: 1

Unit Title: Sustainability Training

OUTCOMES	CRITERIA
1 OUTCOME: ENERGY SUPPLY AND POWER GENERATION SECTORS THE LEARNER WILL UNDERSTAND:	1.1 DESCRIBE THE MAIN SOURCES OF ENERGY SUPPLY, INCLUDING: 1.1.1 OIL AND GAS, 1.1.2 NATURAL GAS, 1.1.3 RENEWABLES, 1.1.4 NUCLEAR POWER, COAL. 1.2 EXPLAIN THE MAIN ELEMENTS OF THE POWER GENERATION SECTOR (COAL, NATURAL GAS, COMBINED CYCLE GAS TURBINE, NUCLEAR, RENEWABLES, HYDRO AND TIDAL, BATTERY ENERGY STORAGE SYSTEMS, ETC.) 1.3 EXPLAIN THE IMPACT OF THE ENERGY SUPPLY INDUSTRY ON CO2 EMISSIONS
2 OUTCOME: KEY DRIVERS FOR ALTERNATIVE FUEL SOURCES THE LEARNER WILL UNDERSTAND:	2.1 CLIMATE CHANGE AND RATIONALE FOR NET ZERO EMISSIONS 2.2 THE SIX MAJOR GREENHOUSES GASES CONTRIBUTING TO CLIMATE CHANGE 2.3 THE MAIN SECTORS CONTRIBUTING TO CO2 EMISSIONS
3 OUTCOME: NET ZERO STRATEGY THE LEARNER WILL UNDERSTAND:	3.1 WHAT IS MEANT BY THE TERM 'NET ZERO EMISSIONS' 3.2 THE KEY AIMS AND OBJECTIVES OF THE PARIS AGREEMENT AND COMMITMENTS MADE BY NATIONS TO

	THE UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE (UNFCCC) 3.3 LOCAL GOVERNMENT'S ASPIRATIONS, PLANS AND RELEVANT LEGISLATION FOR ACHIEVING 'NET ZERO EMISSIONS'
4. OUTCOME: LONG TERM TRENDS IN PRIMARY ENERGY CONSUMPTION AND ELECTRICITY GENERATION MIX THE LEARNER WILL UNDERSTAND:	4.1 THE MAIN TRENDS IN THE ENERGY SUPPLY INDUSTRY FOR PRIMARY CONSUMPTION AND NATURAL GAS AND ELECTRICITY GENERATION 4.2 HOW TO EXTRACT INFORMATION FROM AVAILABLE DATA SETS (INCL. CHARTS, GRAPHS AND TABLES) TO IDENTIFY TRENDS IN ENERGY USE 4.3 THE ELECTRICITY, NATURAL GAS AND GENERATION MIX 4.4 REASONS FOR THE CHANGES IN PRIMARY ENERGY CONSUMPTION, ELECTRICITY AND NATURAL GAS GENERATION MIX OVER TIME 4.5 THE IMPACT OF THE ENERGY SUPPLY SECTOR ON CO2 EMISSIONS 4.6 THE NEED TO DE-CARBONISE THE ENERGY SUPPLY AND POWER GENERATION SECTORS 4.7 THE NEED TO PHASE OUT COAL, OIL AND GAS 4.8 THE MAIN SOURCES OF CLEAN ENERGY SUPPLY (RENEWABLES, NUCLEAR, ETC.) 4.9 ISSUES AND CHALLENGES WITH RENEWABLES AND NUCLEAR POWER GENERATION
5 OUTCOME: EXISTING AND POTENTIAL FUTURE USES OF HYDROGEN THE LEARNER WILL UNDERSTAND:	5.1 EXISTING INDUSTRIAL USES FOR HYDROGEN AND MAIN METHODS OF PRODUCTION 5.2 THE BENEFITS OF HYDROGEN TO POWER GENERATING INDUSTRIES 5.3 THE DIFFERENCES BETWEEN 'LOW-CARBON' AND 'HIGH-CARBON' HYDROGEN

	5.4 HYDROGEN'S USE IN THE CHEMICAL PROCESSING INDUSTRIES AND REFINERIES 5.5 HYDROGEN CONVERSION (AMMONIA AND OTHER SUBSTANCES) 5.6 THE DEVELOPING LOCAL HYDROGEN ECONOMY 5.7 POTENTIAL FUTURE USES OF HYDROGEN AS PART OF THE TRANSITION TO CLEAN ENERGY 5.8 THE SECTORS THAT COULD BE IMPACTED BY USING HYDROGEN AS AN ALTERNATIVE FUEL SOURCE 5.9 HYDROGEN 'BLENDING' WITH NATURAL GAS
6 OUTCOME: EXISTING AND POTENTIAL FUTURE USES OF CCUS THE LEARNER WILL UNDERSTAND:	6.1 EXISTING INDUSTRIAL USES FOR CCUS 6.2 POTENTIAL CCUS APPLICATIONS FOR CHEMICAL PROCESSING INDUSTRIES AND REFINERIES 6.3 THE EMERGING LOCAL CCUS INFRASTRUCTURE 6.4 POTENTIAL FUTURE USES OF CCUS AS PART OF THE TRANSITION TO CLEAN ENERGY 6.5 THE SECTORS THAT COULD BE IMPACTED BY USING CCUS APPLICATIONS
7. OUTCOME: EXISTING AND POTENTIAL FUTURE USES OF WIND POWER THE LEARNER WILL UNDERSTAND:	7.1 EXISTING INDUSTRIAL USES FOR WIND POWER 7.2 THE EMERGING LOCAL WIND POWER INFRASTRUCTURE 7.3 POTENTIAL FUTURE USES OF WIND POWER AS PART OF THE TRANSITION TO CLEAN ENERGY 7.4 SECTORS THAT COULD BE IMPACTED BY USING WIND POWER
8 OUTCOME: EXISTING AND POTENTIAL FUTURE USES OF SOLAR POWER THE LEARNER WILL UNDERSTAND:	8.1 EXISTING INDUSTRIAL USES FOR SOLAR POWER 8.2 EMERGING LOCAL SOLAR POWER INFRASTRUCTURE

	8.3 POTENTIAL FUTURE USES OF SOLAR POWER AS PART OF THE TRANSITION TO CLEAN ENERGY
	8.4 SECTORS THAT COULD BE IMPACTED BY USING SOLAR POWER

Forma de Organização da Formação (Training Organization Form)

In-person training.

Metodologias de Formação (Training Methodologies)

The training will be developed using the following methods: Expository, interrogative, demonstrative and active.

Metodologias de Avaliação das Aprendizagens (Learning Assessment Methodologies)

Learning assessment will be carried out using oral and written questions (written assessment tests).

Recursos pedagógicos / Espaços e equipamentos (Pedagogical resources / Spaces and equipment)

Audiovisual and technical material to be made available in each training: room with adequate furniture; videoprojector; blackboard and others.

Each learner will be given a Training Support Manual (Digital format).

Público-alvo (Target Group):

This Product is for personnel who are involved in or influenced by the energy transition in the oil and gas and renewable energy sectors, as it develops understanding of climate change and Net Zero

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strategies and identifies key sectors where alternative sources of energy can play a role in the transition to cleaner energy.

The product can also be used to provide understanding for those who are not directly involved with climate change and Net Zero projects

Duração Total do Curso (Total Training Duration):

Guided Learning Hours: 6h

Características Específicas da Formação (Specific Characteristics of Training):

a) Registration process

- **Place / time of the training** - The training takes place at the CEDROS facilities in Palmela (Rua Vale de Craveiros CCI 8807 2950-731 Quinta do Anjo). Training will take place between 8.50 am and 6.25 pm, any changes will be communicated. The learner should consult his email, where he will receive confirmation of his registration and details of the training.

- **Prerequisites** - The learner must consider the fulfillment of the prerequisites according to the training program of the course, when applicable.

- **Photographic Record Identification Document** - The learner must make sure that on the training day he / she brings with him a valid identification document (e.g.: citizen card, passport, etc.) to show the trainer at the beginning of the training and to do the recognition of the trainee.

- **Equipment** – Not applicable.

- **Overnight / Meals** - CEDROS has a partnership with local accommodation close to the training center (<http://www.casadaspipas.pt/>), where the trainee can stay (meals not included).

On the training day, CEDROS offers coffee breaks to the learners. Lunch is the trainee's responsibility, there are several local restaurants, on the day of the training more information will be given to the trainee's about the nearby restaurants.

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b) Equal training opportunities

CEDROS is committed to provide all trainees with equal opportunity with regard to access to training, regardless of gender, nationality, ethnicity, religious belief, political affiliation, marital status, age or disability. The following clarifies some conditions for access to training, considering particular situations.

- **Disability** - When a learner has some type of disability / physical limitation, he / she must inform CEDROS upon registration, so that we can provide the necessary support and follow-up during the training. However, there are courses in which some physical strength is required to carry out the practical component of the course, in which case the criteria must be analyzed and the effective possibility of compliance with the CEDROS technical team must be verified for health and safety reasons.
- **Literacy** - learners who have difficulties in terms of language / literacy, must communicate to CEDROS at the time of registration, so that it verifies the possibility of guaranteeing, during the training, the support through the presence of a designated person which will assist in terms of reading and / or writing, during the training and in carrying out the evaluation process.
- **Language / Language** - If the learner 's mother tongue is not the same as the one in which the training is given, they must have a minimum level of understanding and conversation to integrate the training. We recommend that the trainee has a B1 level, according to the Common European Framework of Reference for Languages (Levels: A1 / A2 Basic User | B1 / B2 Independent User | C1 / C2 Advanced User).

Evaluation review process:
The learner 's evaluation process can be revised whenever justified, it can occur at the trainee's request or if any non-conformity is detected. The review of the trainee's evaluation process is carried out as follows: the evaluation test is reviewed by another OPITO trainer of the respective course, and there may be the need to repeat the practical component, through the reassessment of the exercises with another trainer.