

Postgraduate Certificate Hydrogen Energy Market



Postgraduate Certificate Hydrogen Energy Market

- » Modality: online
- » Duration: 6 weeks
- » Certificate: TECH Global University
- » Credits: 6 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: www.techtute.com/us/engineering/postgraduate-certificate/hydrogen-energy-market

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01

Introduction

Hydrogen has been widely used in the industrial sector; however, in recent decades, its uses in the mobility sector, in the energy producer or its use and integration in buildings has accelerated its momentum. This, in addition to the growing need to initiate a decarbonization process to reduce atmospheric pollution. This in turn has led to a hydrogen energy market, which is evolving around the world with the focus on becoming indispensable in the not too distant future. Faced with this reality, this 100% online program is born, which provides the engineering professional with the most updated and comprehensive information on the operation of this sector, the need for hydrogen regulation, as well as the different international plans and strategies. All this, through an advanced and quality content, prepared by an excellent teaching staff with extensive experience in the hydrogen sector.



“

TECH compiles in this Postgraduate Certificate the most current and advanced knowledge about the Hydrogen Energy Market for you to obtain a distinctive boost in your professional career"

Since 1975, the traditional Hydrogen market has experienced a significant growth, especially due to its use in the oil industries, responsible for the production of ammonia and methanol, as well as in the steel industry. However, it has been in recent years and after the signing of the Paris Agreement, when this energy alternative has undergone a boost promoted by other sectors such as transport or energy production.

Therefore, this gas has become a key energy vector in the current decarbonization plans, which is in the process of technical, economic and regulatory development. Therefore, it is necessary that professionals who wish to enter this sector are aware of the main keys of the current Hydrogen Energy Market. For this reason, TECH has designed this 100% online program, which will lead you to obtain the most advanced knowledge thanks to the content developed by the faculty that teaches this program.

A university education, whose theoretical and practical syllabus will lead you to delve into the calculation of the selling price of hydrogen, the existing demand, the potential of the green hydrogen market and the need to homogenize the regulations governing the use of this gas, its transport and production. For this, the students have at their disposal innovative and attractive pedagogical tools, which will lead them to acquire intensive learning in a much more attractive and agile way.

In addition, thanks to the *Relearning* method, the graduate will be able to progress through the syllabus of this program in a natural way, with repetition of content, which will more easily cement the concepts worked on.

The professional has before them, a Postgraduate Certificate 100% online and flexible, which can be done comfortably, whenever and wherever they want. All you need electronic device with an Internet connection to be able to view, at any time, the syllabus hosted on the Virtual Campus. An ideal academic option to who seek combine a quality program with the most demanding responsibilities.

This **Postgraduate Certificate in Hydrogen Energy Market** contains the most complete and up-to-date educational program in the market. Its most notable features are:

- ◆ Case studies presented by engineering experts
- ◆ The graphic, schematic and practical contents of the book provide technical and practical information on those disciplines that are essential for professional practice
- ◆ Practical exercises where self-assessment can be used to improve learning.
- ◆ Its special emphasis on innovative methodologies
- ◆ Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- ◆ Content that is accessible from any fixed or portable device with an Internet connection



Stand out in a hydrogen sector that requires professionals who know perfectly its operation and regulation for the development of energy projects"

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If you have a computer with an Internet connection you can easily access the most advanced and current syllabus on the Hydrogen Energy Market"

The program's teaching staff includes professionals from the field who contribute their work experience to this educational program, as well as renowned specialists from leading societies and prestigious universities.

The multimedia content, developed with the latest educational technology, will provide the professional with situated and contextual learning, i.e., a simulated environment that will provide immersive education programmed to learn in real situations.

This program is designed around Problem-Based Learning, whereby the professional must try to solve the different professional practice situations that arise during the academic year. For this purpose, the students will be assisted by an innovative interactive video system created by renowned and experienced experts.

Enroll now in a program that will show you the roadmap and international plans for hydrogen integration and regularization.

This program will lead you to investigate the present demand for hydrogen derived from new uses.



02

Objectives

The pedagogical tools provided by TECH in this program will allow students to obtain the most advanced knowledge about the Hydrogen Energy Market. This way, at the end of the 6 weeks of this program, the graduate will be aware of the different business models based on renewable hydrogen, the current risks of the companies that implement it and the measures that are currently being established or are planned in the short term to mitigate them.



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With this university program you will analyze large-scale projects in the deployment phase in the USA, Japan, Europe or China"



General Objectives

- ◆ Knowledge of the current state of existing hydrogen markets
- ◆ Understanding of the factors affecting the business model
- ◆ Assimilation of the different strategies for the establishment of a hydrogen economy



This program will enable you to gain an in-depth understanding of hydrogen sales prices according to end uses and to integrate this information into your projects"

H₂



Specific Objectives

- ◆ Understand the different markets in which hydrogen can penetrate
- ◆ Understanding of hydrogen sales price bands according to end-uses
- ◆ Analysis of current hydrogen production and demand
- ◆ Understand hydrogen market expansion plans
- ◆ Assess actual hydrogen projects
- ◆ Explain the guarantee of origin system and the need for it
- ◆ Analysis of the import and export potential of different countries

03

Course Management

This academic program includes the most specialized teaching staff in the current educational market. They are specialists selected by TECH to develop the whole syllabus. In this way, starting from their own existence and the latest evidence, they have designed the most up-to-date content that provides a guarantee of quality in such a relevant subject.



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TECH offers the most specialized teaching staff in the field of study. Enroll now and enjoy the quality you deserve”

International Guest Director

With an extensive professional background in the energy sector, Adam Peter is a prestigious electrical engineer who stands out for his commitment to the use of clean technologies. Likewise, his strategic vision has driven innovative projects that have transformed the industry towards more efficient and environmentally friendly models.

In this way, he has worked in leading international companies such as Siemens Energy in Munich. In this way, he has held leadership roles ranging from Sales Management or Corporate Strategy Management to Market Development. Among his main achievements, he has led the Digital Transformation of organizations in order to improve their operational flows and maintain their competitiveness in the market in the long term. For example, he has implemented Artificial Intelligence to automate complex tasks such as predictive monitoring of industrial equipment or optimization of energy management systems.

In this regard, it has created multiple innovative strategies based on advanced data analysis to identify both patterns and trends in electricity consumption. As a result, companies have optimized their informed decision-making in real time and have been able to reduce their production costs significantly. In turn, this has contributed to companies' ability to adapt nimbly to market fluctuations and respond with immediacy to new operational needs, ensuring greater resilience in a dynamic working environment.

He has also led numerous projects focused on the adoption of renewable energy sources such as wind turbines, photovoltaic systems and cutting-edge energy storage solutions. These initiatives have enabled institutions to optimize their resources efficiently, guarantee a sustainable supply and comply with current environmental regulations. Undoubtedly, this has positioned the company as a reference in both innovation and corporate responsibility.



Mr. Peter, Adam

- ♦ Head of Hydrogen Business Development at Siemens Energy, Munich, Germany
- ♦ Sales Director at Siemens Industry, Munich
- ♦ President of Rotating Equipment for Upstream/Midstream Oil & Gas
- ♦ Market Development Specialist at Siemens Oil & Gas, Munich
- ♦ Electrical Engineer at Siemens AG, Berlin
- ♦ Degree in Electrical Engineering at the University of Applied Sciences Dieburg

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Thanks to TECH, you will be able to learn with the best professionals in the world”

04

Structure and Content

The great advances that have taken place in the hydrogen sector deserve to be known by engineering professionals who wish to be part of this industry. To this end, TECH has developed an intensive and advanced syllabus on the operation and international expansion of this market, in addition to the existing regulatory standards. This information is complemented by innovative multimedia resources, specialized readings and case simulations, which will serve to obtain a more complete learning in an attractive way. Also, thanks to the, *Relearning* system, students will be able to reduce the long study hours so common with other teaching methods





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A syllabus composed of multimedia resources that will allow you to delve into the Hydrogen Energy Market in an attractive way"

Module 1. Hydrogen Markets

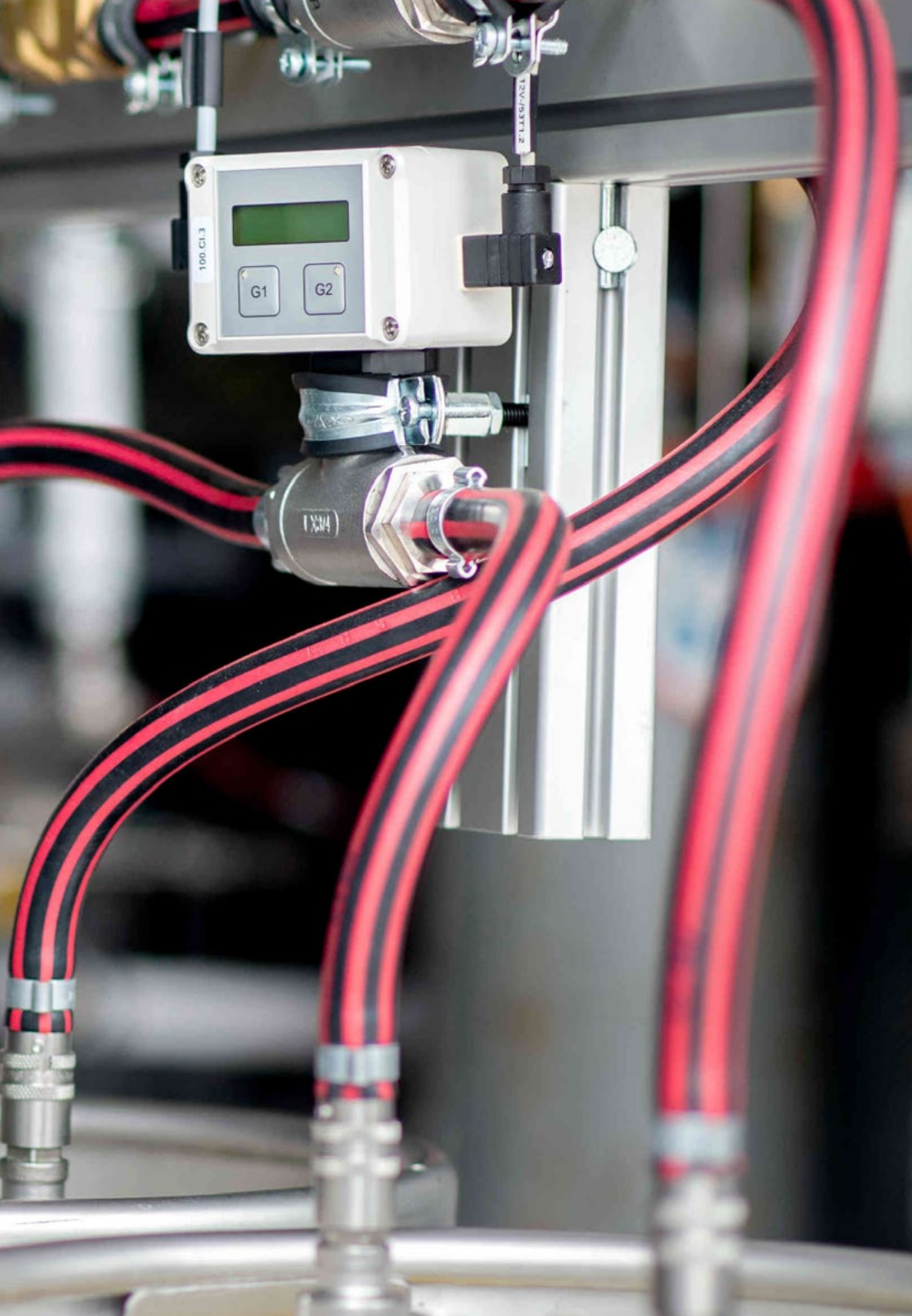
- 1.1. Energy Markets
 - 1.1.1. Integration of Hydrogen in the Gas Market
 - 1.1.2. Interaction of Hydrogen Price with Fossil Fuels Prices
 - 1.1.3. Interaction of the Hydrogen Price with the Electricity Market Price
- 1.2. Calculation of LCOHs and Sales Price Bands
 - 1.2.1. Presentation of the Case Study
 - 1.2.2. Development of the Case Study
 - 1.2.3. Resolution
- 1.3. Global Demand Analysis
 - 1.3.1. Current Hydrogen Demand
 - 1.3.2. Hydrogen Demand Derived from New Uses
 - 1.3.3. Objectives to 2050
- 1.4. Analysis of Hydrogen Production and Types of Hydrogen
 - 1.4.1. Current Hydrogen Production
 - 1.4.2. Green Hydrogen Production Plans
 - 1.4.3. Impact of Hydrogen Production on the Global Energy System
- 1.5. International Roadmaps and Plans
 - 1.5.1. Submission of International Plans
 - 1.5.2. Analysis of International Plans
 - 1.5.3. Comparison between Different International Plans
- 1.6. Green Hydrogen Market Potential
 - 1.6.1. Green Hydrogen into the Natural Gas Grid
 - 1.6.2. Green Hydrogen in Mobility
 - 1.6.3. Green Hydrogen in Industries
- 1.7. Analysis of Large-Scale Projects in the Deployment Phase: USA, Japan, Europe, China
 - 1.7.1. Project Selection
 - 1.7.2. Analysis of Selected Projects
 - 1.7.3. Conclusions



- 1.8. Centralization of Production: Countries with Export and Import Potential
 - 1.8.1. Renewable Hydrogen Production Potential
 - 1.8.2. Renewable Hydrogen Import Potential
 - 1.8.3. Transportation of Large Volumes of Hydrogen
- 1.9. Guarantees of Origin
 - 1.9.1. Need for a System of Guarantees of Origin
 - 1.9.2. CertifHy
 - 1.9.3. Approved Systems of Guarantees of Origin
- 1.10. Hydrogen Supply Contracts: *Offtake Contracts*
 - 1.10.1. Importance of *Offtake Contracts* for Hydrogen Projects
 - 1.10.2. Keys to *Offtake Contracts*: Price, Volume and Duration
 - 1.10.3. Review of a Standard Contract Structure

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This program will introduce you to the current hydrogen guarantee of origin system”



05

Methodology

This academic program offers students a different way of learning. Our methodology uses a cyclical learning approach: **Relearning**.

This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the **New England Journal of Medicine** have considered it to be one of the most effective.





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Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"

Case Study to contextualize all content

Our program offers a revolutionary approach to developing skills and knowledge. Our goal is to strengthen skills in a changing, competitive, and highly demanding environment.

“

At TECH, you will experience a learning methodology that is shaking the foundations of traditional universities around the world”



You will have access to a learning system based on repetition, with natural and progressive teaching throughout the entire syllabus.



The student will learn to solve complex situations in real business environments through collaborative activities and real cases.

A learning method that is different and innovative

This TECH program is an intensive educational program, created from scratch, which presents the most demanding challenges and decisions in this field, both nationally and internationally. This methodology promotes personal and professional growth, representing a significant step towards success. The case method, a technique that lays the foundation for this content, ensures that the most current economic, social and professional reality is taken into account.

“*Our program prepares you to face new challenges in uncertain environments and achieve success in your career”*

The case method is the most widely used learning system in the best faculties in the world. The case method was developed in 1912 so that law students would not only learn the law based on theoretical content. It consisted of presenting students with real-life, complex situations for them to make informed decisions and value judgments on how to resolve them. In 1924, Harvard adopted it as a standard teaching method.

What should a professional do in a given situation? This is the question that you are presented with in the case method, an action-oriented learning method. Throughout the program, the studies will be presented with multiple real cases. They will have to combine all their knowledge and research, and argue and defend their ideas and decisions.

Relearning Methodology

TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines 8 different teaching elements in each lesson.

We enhance the Case Study with the best 100% online teaching method: Relearning.

In 2019, we obtained the best learning results of all online universities in the world.

At TECH, you will learn using a cutting-edge methodology designed to train the executives of the future. This method, at the forefront of international teaching, is called Relearning.

Our university is the only one in the world authorized to employ this successful method. In 2019, we managed to improve our students' overall satisfaction levels (teaching quality, quality of materials, course structure, objectives...) based on the best online university indicators.



In our program, learning is not a linear process, but rather a spiral (learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically.

This methodology has trained more than 650,000 university graduates with unprecedented success in fields as diverse as biochemistry, genetics, surgery, international law, management skills, sports science, philosophy, law, engineering, journalism, history, and financial markets and instruments. All this in a highly demanding environment, where the students have a strong socio-economic profile and an average age of 43.5 years.

Relearning will allow you to learn with less effort and better performance, involving you more in your training, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation for success.

From the latest scientific evidence in the field of neuroscience, not only do we know how to organize information, ideas, images and memories, but we know that the place and context where we have learned something is fundamental for us to be able to remember it and store it in the hippocampus, to retain it in our long-term memory.

In this way, and in what is called neurocognitive context-dependent e-learning, the different elements in our program are connected to the context where the individual carries out their professional activity.



This program offers the best educational material, prepared with professionals in mind:



Study Material

All teaching material is produced by the specialists who teach the course, specifically for the course, so that the teaching content is highly specific and precise.

These contents are then applied to the audiovisual format, to create the TECH online working method. All this, with the latest techniques that offer high quality pieces in each and every one of the materials that are made available to the student.



Classes

There is scientific evidence suggesting that observing third-party experts can be useful.

Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.



Practising Skills and Abilities

They will carry out activities to develop specific skills and abilities in each subject area. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop in the context of the globalization that we are experiencing.



Additional Reading

Recent articles, consensus documents and international guidelines, among others. In TECH's virtual library, students will have access to everything they need to complete their course.





Case Studies

Students will complete a selection of the best case studies chosen specifically for this program. Cases that are presented, analyzed, and supervised by the best specialists in the world.



Interactive Summaries

The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



Testing & Retesting

We periodically evaluate and re-evaluate students' knowledge throughout the program, through assessment and self-assessment activities and exercises, so that they can see how they are achieving their goals.



06

Certificate

The Postgraduate Certificate in Hydrogen Energy Market guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Global University.





*Successfully complete this program
and receive your university qualification
without having to travel or fill out
laborious paperwork"*

This program will allow you to obtain your **Postgraduate Certificate in Hydrogen Energy Market** endorsed by **TECH Global University**, the world's largest online university.

TECH Global University, is an official European University publicly recognized by the Government of Andorra (*official bulletin*). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

This **TECH Global University** title, is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Certificate in Hydrogen Energy Market**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**



*Apostille Convention. In the event that the student wishes to have their paper diploma issued with an apostille, TECH GLOBAL will make the necessary arrangements to obtain it, at an additional cost.

future
health confidence people
education information tutors
guarantee accreditation teaching
institutions technology learning
community commitment
personalized service innovation
knowledge present quality
online training
development languages
classroom



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