

PtX Technology (online)

Course Introduction

Power-to-X converts and stores electrical energy into an energy carrier (gas, fuel or raw material) or a product (basic material, feedstock). It is a collective term for Power-to-Gas, Power-to-Liquid, Power-to-Fuel, Power-to-Chemicals and Power-to-Product. Hydrogen plays a crucial role in PtX as it is the main building block to achieve all types of PtX.

This Energytics Training course introduces the concept of PtX and its importance in the energy transition. The course explains the potential applications of PtX, how it could be implemented, and its advantages and disadvantages. Several case studies will be presented in this course to familiarise the participants with the analysis of different PtX systems.

This training course will highlight the following:

- PtX's role in the energy transition
- PtX Applications
- Technology, Advantages and disadvantage
- Economics of PtX

Course Objectives

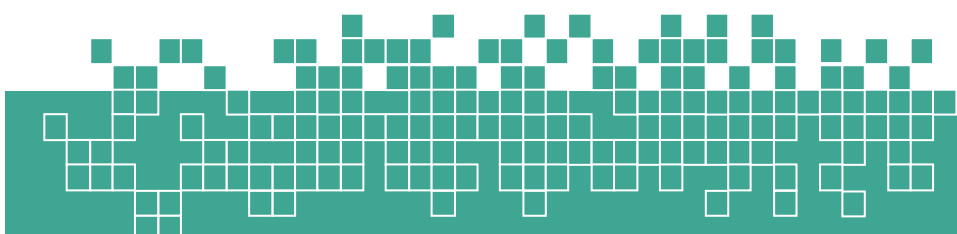
Familiarise course participants with

- PtX's role in the energy transition
- PtX and the concept of sector coupling for
- Potential applications for PtX
- Barriers to PtX technologies
- Apply the newly gained knowledge in several case studies

Why You Should Attend

Besides achieving the course objectives, the course is

- Flexible for busy people who want to advance their careers and gain new knowledge without disrupting their professional lives
- Course materials are updated continuously to reflect the latest trends in the industry
- Course material extracted from companies that work in the hydrogen industry reflects the applied knowledge besides the theoretical knowledge
- The course lecturer is an expert with hands-on experience, has carried out several studies, and has published in world-class energy research institutions



At the End of the Course, You Will Be Able To

This course will develop different skills of the participants and enhance their careers by

- Explain PtX's importance in the future energy system
- Differentiate between different applications of PtX
- analyse the efficiency of different PtX applications
- Calculate the production costs for different types of PtX applications

Who Should Attend?

This course is suitable for a wide range of professionals but will greatly benefit:

- Individuals who want to learn about hydrogen technologies
- professionals who work in the oil and gas and refining industry
- Experts in energy systems
- Enthusiastic persons about decarbonisation technologies
- Persons who want to learn about the future of energy systems

Course lecturer

The lecturer boasts an impressive 15-year track record of expertise in distributed power, co-generation, waste heat utilization, energy efficiency, and renewable energy. With multiple master's degrees, he's a well-rounded expert who can cover the topic from technical, policy, and economic perspectives with ease.

The Expert has worked with renowned national and international organizations such as the EU, GIZ, MEDREG, RCREEE, UNIDO, and UNDP, which is a testament to his outstanding abilities. He has contributed to numerous national and international projects, including energy audits, long-term energy planning for multiple countries, developing national renewable energy action plans (NREAPs), national energy efficiency action plans (NEEAPs), and techno-economic assessments for hydrogen projects.

Apart from lecturing at Cairo University, the lecturer has published several exceptional works in both Arabic and English languages. His publications showcase cutting-edge technologies in the renewable energy and energy efficiency fields, along with the latest policies and regulations. For instance, the expert's latest publication on hydrogen development in Egypt with the world-leading research institute, The Oxford Institute for Energy Studies, is a testament to his ability to produce high-quality research and studies.

Course Syllabus

Day 1: Introduction PtX	
Session 1 (7:00 - 8.45)	• Introduction to Energy Transition • Challenges of Renewable Energy • What is PtX? • Sector Coupling
Session 2 (8:45 - 10:30)	• PtX and Power sector • Technology, Advantages, Disadvantages. • Case Study
Day 2: Green Hydrogen Production and Applications	
Session 1 (7:00 - 8.45)	• PtX and Ammonia • Technology, Advantages, Disadvantages. • Case Study
Session 2 (8:45 - 10:30)	• PtX and Methanol • Carbon Capture • Technology, Advantages, Disadvantages. • Case Study
Day 3: Economics	
Session 1 (7:00 - 8.45)	• PtX and Other Applications (e.g., Aviation Fuels, e-methane) • Technology, Advantages, Disadvantages. • Case Study
Session 2 (8:45 - 10:30)	• Production costs of PtX • Cost Gap for PtX • Case Study

Course mode: Interactive Online¹

Course duration: 10-11 hours

Course fees: 400 USD

For any inquiries, please get in touch with info@energytics.net

¹ Face to Face course could be organised

