InnoEnergy Skills Institute
Managing Energy Data

The Internet of Things (IoT) revolution (e.g., the vast spread of smart meters worldwide) is generating massive amounts of energy data, drastically transforming the sector and current energy systems. This digital transformation gives rise to more intelligent ways of managing energy and brings about opportunities for energy companies to improve their business models and services.

During this certification, you will find out how to extract insights from energy big data in order to boost your business and create value-added services. You will learn how to develop and implement data science projects in energy businesses and will work with real-life cases that require data science.

Learning outcomes

Upon completion of the certification, learners will be able to:

- Explain how data science can bring value to the energy sector
- Evaluate the implications, challenges and benefits of implementing data science projects in an energy company
- Apply lessons learned from real-life business cases in which data science was applied to energy big data
- Supervise the development and implementation of a data science project and create new value with the available data
- Evaluate the impact of electrification on the system-wide peak electricity demand and the role that smart charging, demand management techniques and energy storage can play in mitigating these effects

Certification structure

The certification is delivered fully online and is self-paced, making it easy for participants to learn without having to take time off work.

The certification consists of six courses and is structured as follows:

Course 1: Introduction to Managing energy Data
- Get overview of the importance of data science along with an introduction to smart meters and the data they can provide.

Course 2: Exploratory Data Analysis and Data Pre-processing
- Any data science project needs to start with exploratory data analysis and data preprocessing.
- Find out the key steps to ensure the required quality of data in order to develop a valid data science model, and the focus of this course.

Course 3: Customer Segmentation
- Explore how by looking at consumption profiles and including other types of data, there is a massive opportunity to develop the right models that will let us know our clients.

Course 4: Energy Forecasting
- One of the most explored data science applications in energy-related data is forecasting.
- Look at applicability and advantages related to energy forecasting.

Course 5: Data Science as a Way to Create Value
- Explore the dynamics around energy businesses and the importance of advanced data analytics to improve customer engagement, namely by focusing on developing tailored services, ultimately increasing the potential to deliver value.

Course 6: Business Models Strongly Based on Data Science
- This course provides real-life insight on successful companies strongly based on data science, explaining how they have been able to deliver high value to their clients.

Instructors

The certification is led by experts from the EIT InnoEnergy ecosystem. Instructors on this certification are:

Henrique Pombeiro

Henrique is a co-founder and COO of Watt-IS and holds an MSc in Environmental Engineering and a PhD in Sustainable Energy Systems from MIT Portugal, EIT InnoEnergy and Fulbright programme. He has extensive experience in management, consumption behavior and data science (with a focus on modeling and optimisation), and has published several articles on related topics.

Miguel Carvalho

Miguel is a co-founder and CEO of Watt-IS and has extensive experience in the energy sector in both business development and data analytics. He has an ICT degree, an MSc in technology management and an executive MBA.

Carlos Silva

Carlos is a co-founder of WATT-IS and holds an MSc and a PhD in Mechanical Engineering from IST. He has published 30 papers on systems modeling and operations research in international peer-reviewed journals and has spoken at 80 international conferences.

How will you learn?

This is an online certification and can be taken at your usual study location. The certification consists of six courses and is self-paced.
Duration: 15 Hours

Is it right for you?

The courses in this certification are beneficial for:
- Senior operations personnel in energy utilities (distribution system operators, energy suppliers) and industry.
- Energy entrepreneurs looking to improve the value of their companies.

Prerequisites: In order to be able to follow and benefit from the Managing Energy Data course learners would need to have a basic knowledge of the electricity grid and the energy market.

Certificates of Achievement

We offer two pathways for issuing of certificates, **InnoEnergy Skills Institute Certificate** and **EDC (European Digital Credentials),** each with its own unique set of benefits, allowing your organization

to choose the one that best suits the objectives. **The Achievement recognition will be awarded at a >75% course assessment pass rate.**

InnoEnergy Skills Institute Certificates

What is it?
The InnoEnergy Skills Institute serves as the certificate issuer, verifying learners' progress and achievements with the course material.

What are the benefits?
InnoEnergy Skills Institute certificates are highly adaptable for recognizing various learning levels and achievements. We offer Participation, Completion, and Achievement certificates for learners who complete online courses through the Skills Institute platform.

What that means for you?
You will receive a digital credential that you can store in your personal digital credential wallet. You can also add and share these credentials on your social media platforms. The authenticity of the credentials can be verified online by anyone seeking credential verification.

European Digital Credentials (europass)

What is it?
European Digital Credentials provide an online record of an individual's personal achievements and qualifications. Recognized by employers across the continent, InnoEnergy Skills Institute can issue European Digital Credentials, which learners can add to their European Digital Credentials wallet. For this type of credentials, we only offer Achievement certificates, awarded at a >75% course assessment pass rate.

What are the benefits?
It allows learners to signal their skills and qualifications using the European Learning Model — a semantic standard that helps the recognition of qualifications and digital credentials across Europe. It also combats fraud, and greatly reduces administrative costs.

What that means for you?
You can be confident in the authenticity of your credentials and showcase your skills in a way that is understood in the context of the European Learning Model. You'll also be able to access everything quickly and easily via your online European Digital Credentials wallet.

Versioning

#	Version	Summary of Changes	Date
1	v1.1	Updated the formatting as per InnoEnergy Colour and Font styles	09-Dec-24