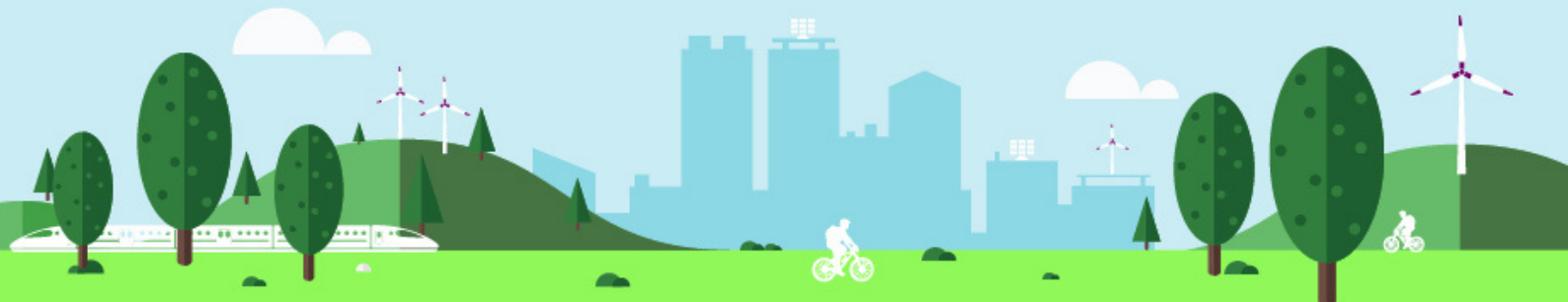




**Issue 7**  
**March 2021**

# **A holistic and Scalable Solution for research, innovation and education targeting Energy Transition**

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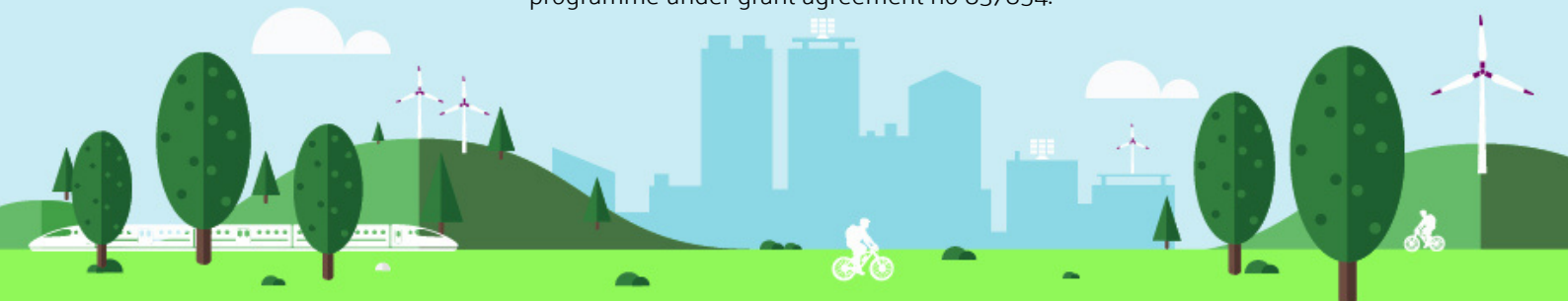


## What's on this issue?

- ASSET and Education Catalogue
- Meet our Ambassadors- Cristina Rioja from Artech
- New collaborations with PANTERA & EIRIE
- Scientific publications & practice cases
- Get the results of Train the Trainers workshop
- ASSET in past events
- Upcoming events



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# ASSET and Education Catalogue



During 2020, ASSET prepared and delivered more than 30 educational programmes, including University courses, MOOCs, seminars and other programmes tailored to citizens and industry. The educational offer spans from engineering and technology topics to business and social science, thus covering the broad spectrum of skills and competencies needed to boost the energy transition. In the next page, you may find the overview of the educational offer currently available in the ASSET portfolio.

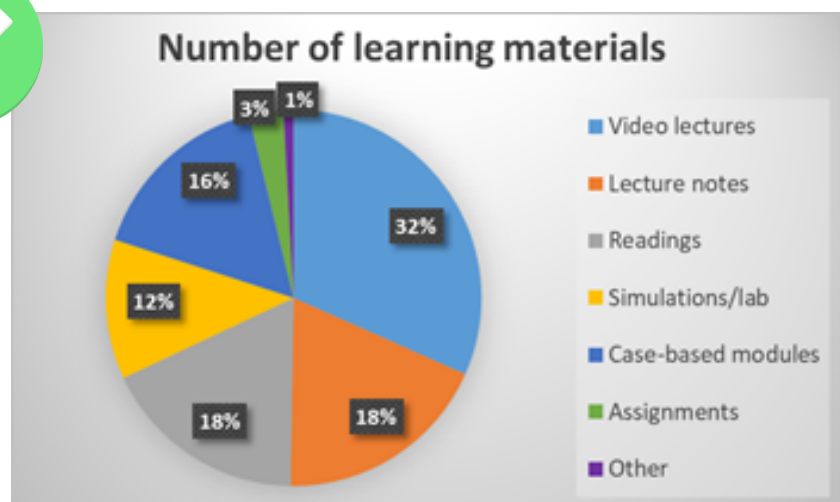
ASSET courses include a variety of learning material types, including lecture notes, videos, simulation experiments, case-based modules, devised to deliver theoretical concepts and hands-on experience while promoting student-centered activities. Thanks to the learning graph tool, learning materials can be re-used and combined to create customized courses.

You may find more details about the learning outcomes and learning materials of our courses in the ASSET website.

**enroll now!**



**Check the learning materials  
available  
for every student**



# ASSET and Education Catalogue



## DISCOVER THE VARIETY OF COURSES

ASSET Courses	Host Institution		
AC Microgrids	AAU		
Power Quality in Microgrids	AAU		
DC Microgrids	AAU		
Measurement techniques and distributed intelligence for power systems	RWTH		
Implementation of automation functions for monitoring and control	RWTH		
Maritime Microgrids	AAU		
Power Systems Dynamics	RWTH	Understanding responsibility in research and Innovation	RWTH
Optimization Strategies and Energy Management Systems	AAU	Economics of energy sources and the optimal integration of renewable energies and energy conservation measures	LS
Hydrogen as energy vector	UPV	Behavioral change as a powerful drive to minimize the energy consumption while providing the same level of energy service	LS
Energy and environment	UWA	Challenges and solutions in Future Power Networks	RWTH
New Materials for solar cells applications	UWA	Innovation and Diversity in engineering	RWTH
Innovation processes in the energy sector	OTEA	Renewable Energy Technologies	UNINA
Energy Efficient and Ecological Design of Products and Equipment	UWA	Electric heat pumps in the energy transition framework	UNINA
Multi-terminal DC grids	RWTH	Green professionalization and ethics	UNINA
Case study on distribution grid operation	RWTH	Corporate Communication and Corporate Social Responsibility	UNINA
Understanding responsibility in research and Innovation	RWTH	A holistic approach for Energy Transition: territory, networks, and sustainability	UNINA
		Train the trainer - part 1	OTEA
		Train the trainer - part 2	OTEA
		Software Defined Networks	UWA
		Mobile app development	UWA

and the Universities



ASSET Courses	Host Institution
New materials for solar cell applications	UWA
Ecological and Energy Efficient approach and thinking	UWA
Understanding Responsibility in the Energy Transition	RWTH
Energy Transition made clear	UWA
The technologies behind the energy transition	RWTH
Innovation processes and technologies in the energy sector	OTEA
Emerging technologies for the future smart grid	RWTH



# ASSET and Education Catalogue



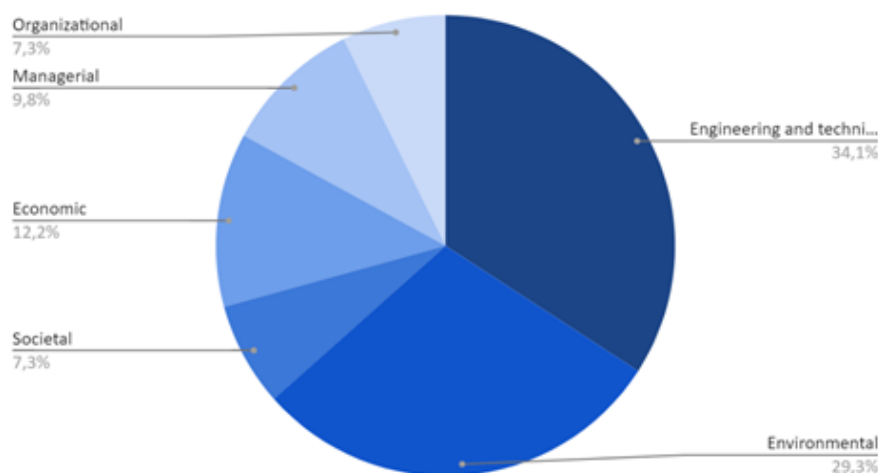
## MOOCS CATALOGUE



The delivery of the ASSET MOOCs was quite a success: our MOOCs were followed by more than 1772 users from more than 25 countries around the globe! Our statistics show that the interest around the energy transition is very distributed in terms of gender, age, profession. Enrolled participants were equally divided between males and females, with a large participation not only from younger generations, but also from senior people (over 27% enrolled users in the age class 45-64).

Not surprisingly, the most represented category is the one of the students. But MOOC participants also included teachers, researchers, managers and other professionals. Their interest is distributed around the different topics of the energy transition: engineering and environmental aspects are those capturing the largest attention, followed by economic, managerial and societal aspects.

Which of the following aspects are you interested in?



# ASSET and Education Catalogue

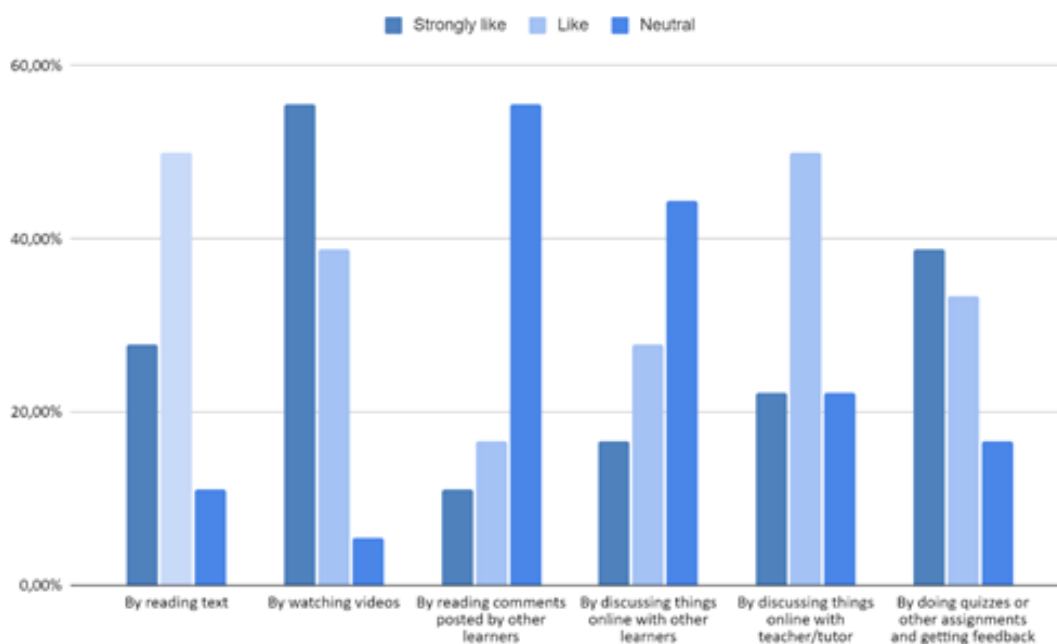


## MOOCS CATALOGUE



Enrolled learners were also invited to answer specific questions to detect their expectations and previous experience with MOOCs. Surprisingly, many of them were completely new to this teaching format, while the rest was generally satisfied with previous experiences.

Most of them enrolled the MOOC because they feel that video lessons and tutorials are an effective way to learn more about the energy transition. At the same time, filling out quizzes and receiving feedback from teachers is seen as an important way to assess their understanding.



### How you would like to learn on Energy Transition?



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# Meet our Ambassadors- Cristina Rioja

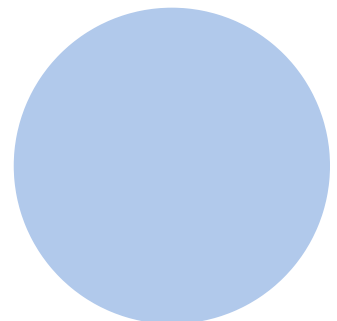
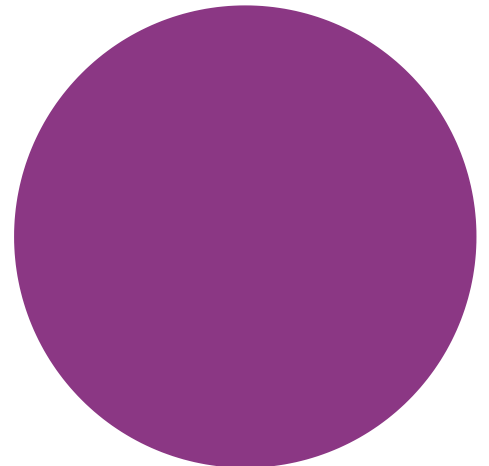


Cristina received a degree in Electrical Engineering from the University of Basque Country (UPV/EHU) in 2010 and a MSc in Renewable Energy Integration into the Electrical Systems in 2018. She works as an electrical system modelling and simulation engineer and holds a strong experience with power system analysis software in static, dynamic and short circuit studies, including contingency.

**She is now part of the ambassadors and ambassadors group, with her knowledge and experience she is helping ASSET project to maximize the outcomes provided along it.**

If you would like to know more about the impressions and comments about the project by Cristina, there is a video recorded and available in ASSET YouTube channel.

**[Watch the video!](#)**



Interview to ASSET Ambassador Cristina Rioja from Spain





## New collaborations with PANTERA & EIRIE



The European strategy and its latest key targets for 2030 focus on sustainability and energy efficiency. Reducing the CO2 emissions has become the highest environmental priority, which is a cooperative work of all social agents.

### What is our contributing to the EU strategy?

We have two goals: contribution to the establishment of a true Pan European energy community and make better energy-transition related courses while ensure everyone has access to them. In achieving these goals ASSET has set a unique strategy establishing a fruitful cooperation with the PAN European Technology Energy Research Approach (PANTERA) which is an EU project that will create a European Forum on energy related issues. They are contributing to the energy transition and especially the EU energy targets.



**JOIN NOW**

PANTERA will create a single point of reference for the Research & Innovation community such as policy makers, actors and experts active in the fields of smart grids, storage and local energy systems, via the EIRIE platform. You are welcome to join this R&I community as it is open to all stakeholders.

### Benefits of PANTERA:

- Peer-learning Networking with other EU projects and meet new consortiums
- Participation in unique events, workshops, webinars, etc. Seek new business and research opportunities
- And much more!!

**[PANTERA Web](#)**

**[PANTERA LinkedIn](#)**

**[@PanteraPlatform](#)**





## Scientific publications and Practice Cases

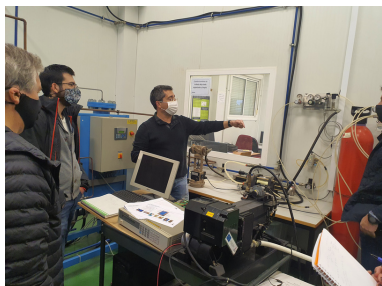


The Universitat Politècnica de València (UPV) has successfully completed its second edition of the **Hydrogen as an Energy Vector** course. This edition has been developed in blended format, combining the most theoretical online training through the EMMA platform with face-to-face on-campus sessions.

The blended course was attended by 45 students, places were limited to this capacity for reasons generated by the COVID-19, and there was a waiting list of 10 students. The course has attracted students from different technological master's degrees and PhD, and workers from companies such as IVACE, Iberdrola, or Diverxia. This has meant creating a very favourable academy-industry environment where the application of real cases applied to the industrial sector has been discussed and analysed.

The course has been developed as planned, with 6 face-to-face sessions. Between these sessions, two of them focused on the development of practical case studies that included the dimensioning of real installations. Two laboratory practices were also organised to analyse the real behaviour of the components that make up a hydrogen production system and a fuel cell.

And finally, 2 conferences of experts in the sector were held. The first was attended by José Antonio Gago, an expert in the gas sector who provided a very interesting view of the hydrogen value chain from the perspective of industrialisation and innovation. The second conference was carried out by Carlos Merino, head of the Applications Unit and responsible for the Vehicle Laboratory of the National Hydrogen Centre, to give a current vision of the hydrogen use in the transport sector.





## Scientific publications and Practice Cases



### Designing an innovative educational toolbox to support the transition to new technologies

**The UNIWA partners have contributed to a new article addressing challenges such as the definition of educative programmes, aiming at reusing contents and materials.**

They first defined a learning programme model so that programme designers can easily exchange and reuse programme structures and learning materials. The proposed model additionally enables easier creation of interdisciplinary programmes which is another need of today's market. Second, we deploy a web-based tool that adopts this model towards facilitating the reuse of structures and materials. Third, to reduce the time required for the training actors to sense the market needs, we propose the establishment of an educational programme marketplace. All three endeavors have been validated in the energy transition sector and (positively) evaluated by experts during an international workshop.

Authors: H. C. Leligou, F. Ponci, R. de Rosa, P. Karkazis and C.S. Psomopoulos,

Title: "Designing an innovative educational toolbox to support the transition to new technologies"

Venue: SSN Social Sciences, Springer Ed., 2021.



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# Scientific publications and Practice Cases



Electricity demand and carbon emission in power generation under high penetration of electric vehicles.

In the European Union, electric mobility has grown tremendously in the last decade. Specifically, more and more automobile industries are turning their interest in electric technology to replace conventional cars which they use internal combustion engine. This study tries to evaluate the impact of the electric vehicle penetration in the electricity demand and related emissions inside the EU.

Elsevier Energy Reports



Small scale Hybrid Photovoltaic Biomass Systems Feasibility Analysis for Higher Education Buildings.

Applications of renewable electricity in cities are mostly limited to photovoltaics, and they need other renewable sources, batteries, and the grid to guarantee reliability. This paper proposes a hybrid system, combining biomass and photovoltaics, to supply electricity to educational buildings.

MDPI Sustainability



Big Data and Advanced Analytics in Energy Systems and Applications

Energy systems are becoming more and more complex and advanced as new concepts of energy production and utilization arise from technological developments. The research work and many applications have proven the paramount importance of advancing big data analytics to improve the design, operation, and maintenance of energy systems and have led to new advanced energy application. This Special Issue intends to collect different applications of big data in energy systems and present the diversity of possibilities of new methods, ideas, and solutions for energy applications.

MDPI Energies



# Train the Trainers Workshop



The Virtual Train the Trainers Workshop was organized and delivered by OTEAcademy, via the platform ZOOM, on 03/02/2021 with 25 participants from 6 different countries (Greece, Italy, Germany, Denmark, Belgium and Spain).

The event had previously been announced to the public via OTEAcademy's and the consortium's social media channels. It was noticed with great interest, that there were many registrations for participation from outside the circle of ASSET consortium members, for example from companies of the insurance and telco sector or from ministerial offices.

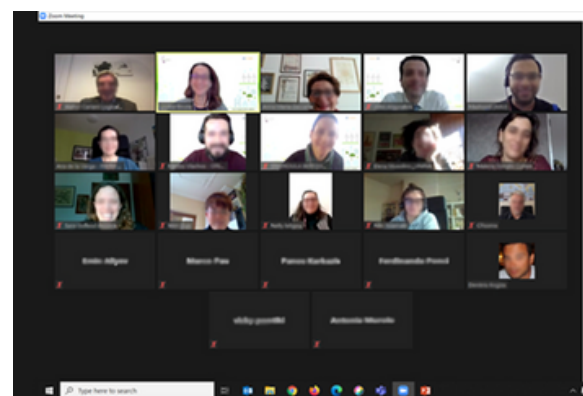
The aim of the Virtual Train the Trainers Workshop was, that ASSET partners who develop ASSET learning elements on disciplines outside technology (i.e. relevant to innovation, business and societal aspects) “teach” the rest on basic principles from these disciplines so as to include seeds of this knowledge in their courses to ignite their students interest in these aspects.

Topics that were presented and discussed:

- “Understanding Responsibility in Research and Innovation” Dr. Ana de la Varga, RWTH
- “Skills and Competences needed in the Energy Transition” Walter Cariani, LS
- “Innovation Processes in the Energy Sector” Louisa Bouta, OTEAcademy
- “Energy Efficient and Ecological Design of Products and Equipment” Prof. Constantinos S. Psomopoulos, UNIWA
- “Gender Perspectives in Energy Transition” Fabio Corbisiero, UNINA



**As confirmed by the participants, who filled in the evaluation form at the end of the Virtual Train the Trainers Workshop, the training event was of great success. The event met the educational goals of the program and received a score of 5.56 of 6**





## ASSET in past events



### 16th International Conference on Intelligent Tutoring Systems

Athens (Greece) / virtual event, 8-12 June 2020



### TMREES Conference Series: Technologies and Materials for Renewable Energy.

Environment and Sustainability, Athens (Greece) / virtual event, 25-27 June 2020



### eGrid 2020

Aachen (Germany) virtual event, 2-4 November 2020

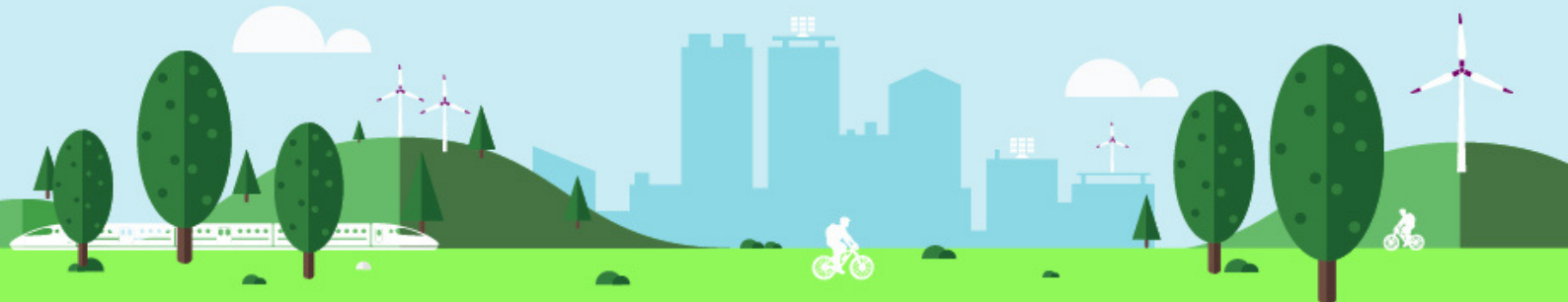


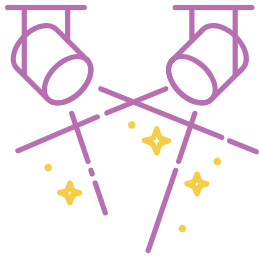
### IEEE Electric Power and Energy Conference

Edmonton (Canada) / virtual event, 9-11 November 2020

## STAY TUNED!

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## Upcoming Events



### ASSET Final Event

**Online event | 15 April 2021**

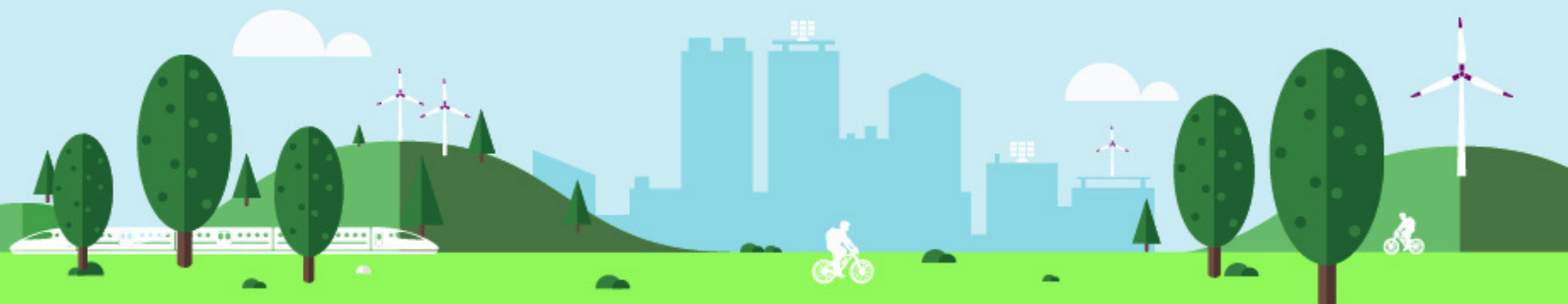
After two years of activity, the ASSET project – A holistic and Scalable Solution for research, innovation and education in Energy Transition is inviting its wider stakeholder community to join the project's Final Event on 15 April 2021.

In these two years, the project has been in touch with students, researchers, industry representatives, policy makers and civil society from all over Europe by setting up and animating a valuable ecosystem of interactions. ASSET has identified the gaps in education, research and innovation for energy transition and delivered comprehensive material to reduce those gaps.

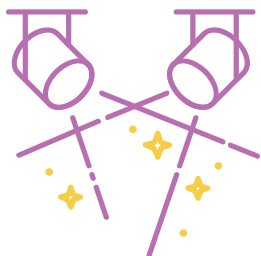
The event will take place online and will include presentations from project partners, external speakers and representatives from the European Institutions on the results achieved by the project and how they can benefit energy stakeholders. A panel discussion will tackle the topic of what to expect for energy transition education in the coming years, where the audience will be asked to interact by replying to poll questions.

**STAY TUNED!**

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## Upcoming Events



### IEEE International Forum on Smart Grids for Smart Cities

**17-23 March 2021**

RWTH Aachen University, one of the ASSET members, is organizing of the IEEE 3rd International Forum “Smart Grids for Smart Cities”. The event will be held 17-23 March 2021 and, due to current Covid restrictions, it will be fully virtual.

The conference will be a premier event with keynotes, tutorials and panel sessions, featuring about 50 notable speakers, each providing a unique international perspective on technology, applications, standards and policy pertaining to Smart Grids as enablers for Smart Cities and other Smart Community solutions.

Education is also one of the pillars of the event: the technical panel session “Education in the digital era for digitalization” held 23 March, 15:00-16:30 will feature an ASSET contribution.

**Find more information [here](#)**



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## About us

**ASSET team is a well-balanced consortium,  
consisting of eleven partners from six  
European countries.**



[Asset Project H2020](#)



[ASSET EnergyTransition](#)



[@Project\\_Asset](#)



[ASSET EnergyTransition](#)

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