

# Syllabus: Inclusive Energy Systems - Exploring Sustainable Energy for All

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## 1. Course overview

The course Inclusive Energy Systems - Exploring Sustainable Energy for All is focussing on the social and institutional dimension of achieving Sustainable Development Goal (SDG) #7: Clean and affordable energy for all. Currently about 1 billion people lack access to electricity, and a staggering 2.8 billion people lack access to clean and affordable cooking fuels.

## 2. Learning objectives

So, what will you actually learn in this course? At the end of this course, you will be able to:

- Describe and recognize the continuous change in (the social and technological nature of) energy systems in terms of balancing 4A's of energy services;
- Identify the key characteristics of universal access to energy services;
- Determine related major implications for society;
- Analyze the security of supply and reliability of service of operations in various energy systems and the related short-term versus long-term considerations;
- Evaluate the consequences of change(s) in the energy system for affordability and energy poverty, in various user environments;
- Value trade-offs and their legitimacy with regard to the roles and responsibilities of all parties in the energy system.

### **3. What we expect from you**

As an online student, we expect you to be an active participant in this course by contributing to a positive atmosphere. We want you to question, share and help others by engaging in meaningful discussions.

Regarding deadlines, we expect you to keep on track in order to benefit from learning within a community. This course is meant to be a place where you learn with and from others. In this sense, we would like you to experience collaboration and peer-feedback, so please make sure you follow along with other participants in order to enrich the overall learning experience.

You are expected to [follow forum](#) and [collaboration guidelines](#). Respect the course policies, academic integrity and most importantly your fellow students.

### **4. What you can expect from us / the course team**

The moderator will guide you throughout the course, launching the weekly content, promoting and engaging in discussions, and providing feedback regarding your performance after each week. Guidance and support will happen on a regular basis. Our course team will be in the discussion boards each day.

Response Time: We will try to respond to all your questions and posts within 24-48 hours. If this not possible for any reason, we will let you know.

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## **5. Course structure**

The course is organized in 6 modules or weeks. A brief summary of each unit is presented below. Detailed instructions and resources will be provided during the course.

### **1. Introduction to the course and the 4A Framework**

You will be introduced to the four crucial conditions for an inclusive energy system: Access to energy services as well as Availability, Affordability and Acceptability of energy services.

In the Getting Started section you'll get to know the course structure, get familiarized with the virtual learning environment, complete your profile, meet your fellow students and the moderator. These introductory tasks should be completed in the beginning of the course, after your first login.

### **2. Access**

You will review the indicators for energy access, identify key institutional characteristics of universal access to energy services and come to understand how the definition of energy access changes with economic development.

### **3. Availability**

You will be provided with indicators to assess the availability of energy services at different time scales, and be introduced to examples of technological and institutional interventions for improving the reliability of energy services and the security of energy supply.

### **4. Affordability**

You will be introduced to the metrics of affordability of energy services and learn to evaluate the consequences of changes in the energy system for affordability and energy poverty, in various user environments.

### **5. Acceptability**

You will come to understand how changes in the energy system hinge on environmental as well as social acceptability of energy services provision, including issues of energy justice.

## **6. Wrap up and Strategic Plan**

In the course wrap up you will be challenged to value trade-offs between the four A's and their legitimacy, and to identify the roles and responsibilities of all actors in the energy system of your choice.

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## **6. Resources, Tools & Browsers**

All educational resources will be available in the course. They consist of short videos and readings to support you in the completion of the weekly learning activities.

We support the following browsers: Chrome, Firefox and Safari.

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## **7. Assessment & Certificate**

Only verified participants have access to graded assignments. In order to successfully complete the course you need to will need to score 60%. Assessment criteria for the assignments are detailed in the course. Verified participants can check their score at any time under the course's Progress page.

- Draft Plan - 15%

- Quizzes - 25%
- Case Studies - 20%
- Strategic Action Plan - 40%
- Self Reflections - ungraded
- Practice activities - ungraded

Upgrade to a Verified Certificate gives you:

- a certificate if you successfully completed the course;
- access to graded assignments;
- access to the archived course after the end date.

These certificates will indicate you have successfully completed the course, but will not include a specific grade. Certificates will be issued by edX under the name of DelftX, designating the institution from which the course originated.

Do you need financial assistance? EdX offers up to a 90% discount on our verified certificates to learners who cannot afford to pay full price. [Check the edX support page for financial assistance.](#)

### **Generating an ID verified certificate**

Verified certificates will be issued a few days after the end of the course, to verified participants who successfully completed the course. Certificates can be downloaded from your Student Dashboard (look for the Download button next to the name of our course). An ID verified Certificate of Achievement is available for \$50 US dollars. You can Upgrade on your edX Dashboard to Verified during the course. Once produced, a certificate cannot be reissued, hence it is very important that you verify the way in which your name appears. Check that, in your edx.org account, your name is correctly spelled, since it will appear on the final certificate.

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## **8. Open Courseware**

Most TU Delft MOOCs are published as Open Courseware a few weeks after the first run. You can find readings and videos on [TU Delft's Open Courseware website.](#)

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## **9. License**

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