The increasing energy request of our society combined with the environmental cost of the extensive use of coal and hydrocarbons requires an integrated and balanced management of energy resources. A wide range of solutions already exist. Some of those directly produce low carbon power, such as solar, wind, marine energies, hydrogen, hydraulic energy, biogas, geothermal and nuclear. While others, like CCUS, may help to sequester the greenhouse gas emissions from heavy industry. These different energy sources have distinct technical characteristics associated with advantages and disadvantages that must be gauged, compared and in some case combined. The development of the potential of each of these solutions requires a fundamental contribution from the geoscience disciplines. This summer school proposes a panorama of various geosciences. The training will alternate presentations with case studies that will be in the multidisciplinary team and the number of participants will be limited to 25. The fee is 300,00 € and includes enrolment and participation at the seminars and lectures, supporting teaching material, accommodation, one meal/day. Other expenses will be paid by participants. Please send your application before July 31st, 2021 to the following email address: ssenergy@unicam.it After your application will be validated, bank details will be sent by mail for the pre-registration fee of 150,00 €.

**THE ROLE OF THE GEOSCIENTIST IN THE ENERGY TRANSITION**

**Camerino, Italy 20 - 24 September 2021**

The school is dedicated to PhD and PostDoc student in geosciences. The training will alternate presentations with case studies that will be in the multidisciplinary team and the number of participants will be limited to 25. The fee is 300,00 € and includes enrolment and participation at the seminars and lectures, supporting teaching material, accommodation, one meal/day. Other expenses will be paid by participants. Please send your application before July 31st, 2021 to the following email address: ssenergy@unicam.it After your application will be validated, bank details will be sent by mail for the pre-registration fee of 150,00 €.

**Monday 20**

9.00 Opening of Summer School and welcome address by Authorities and Organizing Committee

10.00 Open Webinar
Present-day energy mix scenarios
Isabelle Moretti UPPA

12.00 - 13.00 Open Webinar
Ricerca per la Rilevanza
Carlo Dogloni President of INGV

15.00 - 18.00 GEO Technologies/Practical: Subsurface structural modelling, cross-section balancing and restoration
Stefano Mazzoli UNICAM
Matteo Basili UNICAM
Luca Mattioni Freelance

**Tuesday 21**

9.00 Open Webinar
Circular & Energy transition
Luca Meini Head of Circular Economy, Enel Holding

10.00 Decarbonized source of energy: geothermal
Roberto Gambini RE&E

11.30 - 13.00 Decarbonized source of energy: CCS
Sabina Bigi Sapienza, Università di Roma

15.00 - 18.00 GEO Technologies/Practical: Thermodynamics of a geothermal system
Roberto Gambini and Alessandro Lenzi RE&E
CCS exercises
Sabina Bigi Sapienza, Università di Roma

**Wednesday 22**

9.00 Open Webinar
The energy transition: developments in markets and politics
Lucia van Geuns Strategic Advisor Energy - The Hague - HCSS

10.00 - 13.00 Natural Hydrogen
Isabelle Moretti UPPA

15.00-18.00 GEO Technologies/Practical: Natural reservoirs of geofluids: from fracture to flow
Emanuele Tondi UNICAM

15.00 - 18.00 GEO Technologies/Practical: Thermodynamics of a geothermal system
Roberto Gambini and Alessandro Lenzi RE&E
CCS exercises
Sabina Bigi Sapienza, Università di Roma

**Thursday 23**

9.00 Open Webinar
Monitoring natural and industrially generated deformation processes
Davide Piccinini and Lauro Chiaraluce INGV

10.00 Biogas
Isabelle Moretti UPPA

11.30 - 13.00 Energy storage (Heat, gas, etc.)
Isabelle Moretti UPPA

15.00 - 18.00 GEO Technologies/Practical: Imaging of fluid in the subsurface: case studies
David Iacopini Unina

**Friday 24**

9.00 Open Webinar
Fossil Fuel and the Decarbonization
Massimo Nicolazzi Docente di Economia delle fonti energetiche UNITO

10.00 Waves Power and coastal dynamics
Chiara Invernizzi UNICAM

11.00 Wind and Solar
Davide Piccinini RE&E

12.00 - 13.00 Natural resource assessment
Roberto Gambini RE&E

15.00 - 17.00 Summer school closure
Organizing Committee

**Location**

University of Camerino, Italy