GRADUATE SCHOOL SOLAR ACADEMY

Sustainable Developement Week

11 – 15 October 2021, Le Bourget du Lac, France

Monday 11/10/2021

8h15 – 12h15 : Group work on Poster preparation

13h30 – 15h00

Life Cycle Assessment : Methods and Applications

Thomas Jusselme ▪ Professeur, HES-SO ▪ Haute école d'ingénierie et d'architecture de Fribourg

He is part of the Energy Institute (https://www.heia-fr.ch/fr/recherche-appliquee/instituts/energy/) and the Smart Living Lab (www.smartlivinglab.ch). He supervises a multidisciplinary research team whose work focuses on the integration of environmental performance indicators over the entire life cycle of buildings. He is also co-founder of several engineering companies, among them Vizcab (https://vizcab.io/), a start-up which aimed at supporting decision-makers for the low-carbon building sector.

(online)

15h15 – 16h45

LCOE & LCA of PV systems (*to be confirmed*)

Nouha GAZBOUR, PhD, PV Sustainability Advisor, CEA, Department of Solar Energy (DTS)

(onsite)

Tuesday 12/10/2021

UNITA-Day, Université de Torino, Department of Cultures, Politics and Society

(online)

8h15 – 9h45

Dario Padovan Energy, fossil capitalism, and energy transition

10h – 11h30

Stefano Magariello Sociotechnical imaginaries for the energy transition

Andrea Taffuri Circular bioeconomy for energy communities

13h30 – 15h00

Alessandro Sciullo Energy communities as a strategy of energy transition

Winston Gilcrease Frontier cases of energy communities

15h15-16h45

Osman Arrobbio Commoning, commons et renewables energies

Anna Grignani Community cooperatives for energy transition

Wednesday 13/10/2021

10h : récupération et fixation des posters

11h00-12h00

Critical raw materials for the energy transition

Aude Pommeret, Professeur, IREGE, USMB

Renewable energy generation and storage requires specialized capital goods, embedding critical raw materials (CRM). The scarcity of CRM therefore aects the transition from a fossil based energy system to one based on renewables, necessary to cope with climate change. We consider the issue in a theoretical model, where we allow for a very costly potential substitute, reectinga backstop technology, and for partial and costly recycling of materials in capital goods. We characterize the main features of the ecient energy transition, and their dependence on the relative abundance of CRM and on the recycling technology. Recycling reduces the cost of the transition. It also calls for having a large stock of recyclable CRM embedded in specialized capital at the time of adoption of the backstop technology. Moreover, we consider constraints on policy tools and myopic regulation, and show how abstracting from the scarcity of CRM, or tightly linking subsidies for renewables to the carbon tax revenue, is misleading in designing climate policy.

(onsite)

12h00 – 13h00

Solar panels and economic growth: implementation, recycling and recovery

Giuseppe Di Vita

Photovoltaic modules have an economic life of *about twenty-five years, after this period of time it is necessary to replace them and correctly dispose of the exhausted PV. The recycling of end of life solar panels is useful to avoid at the same time as the disposal into the environment of hazardous and dangerous waste, and the exhaustion of some natural resources. A theoretical model is usefull to consider the recycling of PV as a whole, and the dismantling and reuse of part of exhausted PV.*

(onsite)

13h30 – 15h00

Are rooftop photovoltaic systems a sustainable solution for Europe? - A life cycle impact assessment and cost analysis

Giorgios Martinopoulos, Grèce, Thessalonique, International Hellenic University

(online)

Thursday 14/10/2021

8h15 – 9h45

Wastes and biofuels market

Mohammed TAHERZADEH, Hogskolan I Boras, Sweden

(online)

10h – 16h30

Sustainable development challenges in industry - Case studies

Maria Popkowska, corporate advisor

(onsite)

Friday 15/10/2021

8h30-10h00

Climate change : From mechanisms governing global climate to scenarios for futures climates

Isabelle Couchoud, Paléoclimatologue, Edytem, USMB

(onsite)

10h30-12h30 Poster presentations – 5 min/poster + discussions

(onsite)

Students posters

1	LCA (life cycle assessment): the method and possible variants (consequential LCA, dynamic LCA…)
2	LCA (life cycle assessment): different performance indicators
3	"Carbon footprint" concept and its application to solar systems
4	The concept of « embodied energy » and its application to solar systems
5	Environmental and Economic review of solar energy systems in the built environment
6	Sustainable development goals of United Nations and Solar Energy
7	Raw materials for solar energy systems: where are the deposits? What are the stocks of available resources? geostrategic stakes
8	Where are produced and where are used the basic components for renewable energies? (Industrial geostrategy)
9	Solar panels and circular economy