

**Workshop on**

**Extreme events and energy transitions:  
tackling the challenges of climate change by integrating  
social and complex systems science**

**JRC Ispra site - Italy  
23-27 September 2019**

**Sunday, September 22<sup>nd</sup>**

**19:00 - Welcome and Social Dinner**

**Monday, September 23<sup>rd</sup>**

**Introduction**

***Morning Session***

**08:30 – 09:00 Welcome**

**09:00 – 09:30 Opening talk** (Nicola Labanca & Daniele Paci, Joint Research Centre, European Commission)

**09:30-11:00 PechaKucha presentation of research interests by participants**

**11:00 – 11:30 Coffee break with guided tour to the JRC Visitors' Centre**

**11:30-12:30 Core concepts of social practice theories** (Elizabeth Shove, Lancaster University, UK)

**12:30 – 13:30 Lunch**

***Afternoon Session***

**13:30 – 14:30 Addressing risks and crises: core concepts of complex systems science**  
(Jürgen P. Kropp, Potsdam Institute for Climate Impact Research, DE)

**14:30 – 15:10 Energy sustainability of the transition to renewables under a complex systems perspective** (Mario Giampietro, Universitat Autònoma de Barcelona, ES)

**15:10 – 16:00 Integrating social and complex systems science to advance in our understanding of extreme events and energy sustainability issues at stake with decarbonisation**  
(Nicola Labanca, Joint Research Centre, European Commission)

16:00 – 16:30 Coffee Break

16:30 – 17:30 **Series of brief and inspiring case study presentations by JRC researchers** on extreme events and energy sustainability issues linked to climate change and the transition to renewables; e.g. on:

- Earth observations and early warning systems for emergency mapping and disasters risk management
- Droughts, heatwaves, flash floods, convective storms, weather induced forest fires, snowfalls
- Mobility management
- Local communities and citizen engagement for the energy transition and social innovation
- etc.

**Tuesday, September 24<sup>th</sup>**

## **Taking social and complex systems dynamics into account when studying energy infrastructure failures**

### ***Morning Session***

08:30 – 09:30 **Power black-outs and 2015 Lancaster experience** (E. Shove, Lancaster University, UK)

09:30 – 10:30 **Electricity infrastructures, risk and resilience** (Antti Silvast, Norwegian University of Science and Technology, Norway).

10:30 – 11:00 Coffee break

11:00 – 13:00 **Exercise on the consequences of a power black-out happening during the workshop** (co-ordinated by Elizabeth Shove & Antti Silvast and with direct involvement of JRC facilities managers)

13:00 – 14:00 Lunch

14:00 – 14:30 **The habit of calmness: meditation as an intervention in stress reactivity**  
Zazen session by the JRC Anemos Club

### ***Afternoon Session***

14:30 – 17:30 **Structured reading groups and discussion sessions on energy infrastructures failures** (based on literature made available to participants in the previous weeks)

17:30 – 18:00 Coffee break and closure of the day

**Wednesday, September 25<sup>th</sup>**

**Coupling social and physical dynamics  
to study extreme weather events**

***Morning Session***

09:00 – 10:30 **Defining space-time dynamics of social and physical processes** for different types of extreme events (Isabelle Ruin, Institute for Geosciences and Environmental Research, FR and Marco Borga, Padova University, IT)

10:030 – 11:00 Coffee Break

11:00 – 12:30 **Group exercises on space-time characterization of critical physical and social processes constituting various high-impact weather events**

12:30-13:30 Lunch

***Afternoon Session***

13:30 – 14:30 **Visit to the JRC crisis room and presentation on crisis management tools and applications at the Joint Research Centre** (Alessandro Annunziato, Valerio Lorini, Milan Kalas, Joint Research Centre, European Commission)

14:30 – 16:30 **Simulation exercises on floods, flash floods and wind storm scenarios and ways to anticipate or manage them** (based on a serious table-top role-play game developed in the context of the European project ANYWHERE)

16:30-17:00 Coffee Break

17:00 – 18:00 **Theatre play on extreme events** organised by the JRC theatre group

## Thursday, September 26th

### Energy sustainability and transition to renewables

#### *Morning Session*

09:00 – 11:00 **The energetic metabolic pattern of the EU: quantitative characterization of social practices across different scales**  
(Mario Giampietro, Universitat Autònoma de Barcelona, ES)

11:00 – 11:30 Coffee break

11:30 – 13:00 **EU energy transition: concerns emerging from on-going research activities**  
(Mario Giampietro, Universitat Autònoma de Barcelona, ES)

13:00 – 14:30 Lunch

#### *Afternoon Session*

14:30 – 16:30 **Parallel exercises on multiscale integrated analysis of societal and ecosystem metabolism** (MuSIASEM) performed at households, national and EU level  
(Mario Giampietro and Raúl Velasco-Fernández, Universitat Autònoma de Barcelona, ES)

16:30 – 17:00 Coffee break

17:00- 19:00 **Walk and Wine Tasting at the JRC Club House**

## Friday, September 27<sup>th</sup>

### Wrap up

#### *Morning Session*

09:00 – 11:00 **Presenting the outcomes of the exercises** (all workshop participants)

11:00 – 11:30 Coffee break

11:30 -12:30 **Integrating complex systems and social science perspectives: feedbacks from the JRC workshop** (all workshop participants)

12: 30 – 13:30 Lunch and Congé