

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**

Work Programme

Sunday, September 22nd

**Ristorante Belvedere
Via Piave 11, 21020 Ranco (Varese)**

19:45 - Welcome and Social Dinner

Monday, September 23rd

JRC Visitors' Centre

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 – 18:00 **Series of brief and inspiring presentations by JRC researchers** on extreme events and energy sustainability issues linked to climate change and the transition to renewables; focusing on:

- Energy infrastructures at risk: type of threats, interactions among systems and lifecycle of the events;
- 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 24th
JRC Visitors' Centre

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 25th

Coupling social and physical dynamics to study extreme weather events

Morning Session (JRC Visitors' Centre)

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)

10:30 – 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

Building 68 - JRC Crisis Room

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

14:30 – 16:30 ***Building 68 – JRC Crisis Room***
Simulation exercise on floods scenarios

Building 26a – Room 230 Leonardo
Simulation exercise on scenarios involving natural hazards, chemical hazards and power blackouts

Based on serious table-top role-play games

Building 68 - JRC Crisis Room

16:30-17:00 Coffee Break

17:00 – 17:30 **Theatre reading on extreme events** organised by the JRC theatre club

Thursday, September 26th
JRC Makers Space (Building 17, room 14)

Energy sustainability and transition to renewables

Morning Session

09:00 – 09:15 **Brief Introduction to the JRC Makers Space**

(Paulo Rosa, Joint Research Centre, European Commission)

09:15 – 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 27th
Building 101, room 1302

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