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## Programme

The SCCER School discloses the big picture of the energy transition and provides insights into how your research can shape it. You will...

- share first results and discuss challenges of the focus area of each competence center;
- underpin countries to reach their CO<sub>2</sub> reduction targets;
- examine in area-specific workshops trends and challenges towards the implementation of the Energy Strategy 2050.

The SCCER School is open for PhD and postdoctoral students of the ETH domain and Swiss universities, as well as for scientific assistants of universities of applied sciences, who are working in the field of energy research.

Three days full of interdisciplinary presentations, debates, and an excursion are awaiting you. Expand your network and gain fresh ideas!

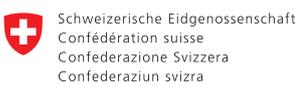
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SWISS COMPETENCE CENTER FOR ENERGY RESEARCH  
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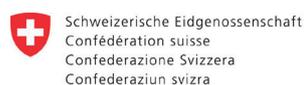
### With the support of



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Swiss Federal Office of Energy SFOE

## Tuesday, 11 June 2019

16:00	Registration	
16:30	Keynote lecture 1: Climate change - where are we heading for?	Erich Fischer, ETHZ
17:15	Keynote lecture 2: tbd	tbd
18:30	Icebreaker aperitif	
19:30	Dinner	

## Wednesday, 12 June 2019: Highlights and remaining challenges of the SCCER

08:30	Domenico Giardini, ETHZ	SCCER-SoE
09:00	Thomas Schmidt, PSI	SCCER-HaE
09:30	Matthias Sulzer, EMPA	SCCER FEEB&D
10:00	Frank Krysiak, UniBas	SCCER CREST
10:30	Coffee	
11:00	Konstantinos Boulouchos, ETHZ	SCCER Mobility
11:30	Mario Paolone, EPFL	SCCER-FURIES
12:00	Oliver Kröcher, PSI	SCCER BIOSWEET
12:30	Philipp von Rohr, ETHZ	SCCER-EIP
13:00	Lunch	
14:00	Anthony Patt, ETHZ	International prospects for the energy transition
14:20	Lukas Gutzwiller, BFE	Swiss Climate and Energy policy up to 2050
14:40	Daniel Sutter, ETHZ	Zero and negative emission technologies
15:00	Mario Paolone, EPFL	Scenario with 100 % electrical energy
15:20	Kornelis Blok, TU Delft	Insights into the more systemic aspects of the energy system and policy
15:50	Christof Knoeri, ETHZ	Make energy codes great again – innovative building energy code designs for decarbonising the building sector
16:10	Coffee	
16:40	Tobias Schmidt, ETHZ	Assessing the energy balance of electricity generation and storage technologies – a dynamic perspective
17:10	Martin Naef, ABB	SCCER in the post-2020 era
17:30	Domenico Giardini, ETHZ	Are we meeting the ES2050 targets?
18:00	Stefan Breit, GDI	New energy worlds: from shortage to abundance
18:30	Spare time	
19:30	Dinner	

## Thursday, 13 June 2019: Parallel workshops

08:30 - 12:30	<b>Workshop 1: Consequences of climate change</b>	Chair: Manfred Stähli, WSL
<p>Climate change not only impacts our environment, but also electricity demand and production. In this workshop, we will identify key consequences of climate change for the Swiss energy system, in particular hydropower, and develop arguments for an adaptation of our electricity supply system that can minimize related risks.</p>		
08:30 - 12:30	<b>Workshop 2: Work on business models for your technology!</b>	Chair: Barbara Bencsik, HSG
<p>Business models (BMs) are key for successful technology implementation. They may hence foster the contribution of technical SCCERS to the ES 2050:</p> <ul style="list-style-type: none"><li>• cases of different BMs for similar technologies,</li><li>• basic features of BMs,</li><li>• team work among participants to conceptualize potential BMs for own technology projects.</li></ul>		
08:30 - 12:30	<b>Workshop 3: Systemic thinking for long-term Energy Systems Analysis</b>	Chairs: Tom Kober, PSI and Gianfranco Guidati, ETHZ
<p>The energy domain encompasses many actors spread across different sectors (transport, building, energy utilities, etc.). This often causes inconsistencies (and conflicts) in finding sustainable solutions. This workshop aims to offer an understanding of 'silo' type energy solutions and emphasizes the need for systemic thinking for the long-term energy transition. We start with energy balance and emission flows, and introduce basic methods on the quantification of energy system interdependencies using energy economic models. Some case studies from Switzerland will be shown. In the group work, you will build and discuss your own energy scenarios in the context of lifestyle, technologies, regulations, etc.</p>		
08:30 - 12:30	<b>Workshop 4: Photovoltaic technology and system workshop</b>	Chair: Christophe Ballif, EPFL
<p>This workshop will give you insights into the challenges of the current research in photovoltaic technology (PV) as well as the potential of PV for a successful global energy transition toward renewables. In the practical part, you will learn to measure the important parameters of a PV module and, based on them, to optimize the sizing of a PV system.</p>		
12:30	Lunch	
13:30 - 17:30	<b>Workshop 5: Smart Grids</b>	Chair: Mario Paolone, EPFL
<p>This workshop focuses on challenges and research opportunities derived from the massive grid integration of distributed resources. Through a series of interactive presentations, participants will get informed about recent research progress at both transmission and distribution grid levels, and the important role of final consumers in the grid control.</p>		

13:30 - 17:30	<b>Workshop 6: The role of energy storage applications, technologies and interested stakeholders across the energy transition</b>	Chair: Daniel Parra, UNIGE
<p>Using real cases, this workshop offers an understanding of various applications which can be delivered by storage technologies to enable the further penetration of renewable energy technologies and the decarbonisation of heating and transport. The discussion will enable students to understand trade-offs and synergies among various storage deployment scales and interested stakeholders.</p>		
13:30 - 17:30	<b>Workshop 7: Dynamic modelling of the behaviour of the Swiss passenger transport system</b>	Chairs: Amin Dehdarian, ETHZ and Kirsten Oswald, ETHZ
<p>The Swiss transport system is complex as it depends on technological, social, economic, and political factors. Thus, it is extremely challenging to address problems arising from it. We will unravel this complexity and learn how this can aid in analyzing the potential impact of current and future policies for lowering emissions from transport effectively.</p>		
17:30	Summary and lessons learnt from the workshops	
18:30	Spare time	
19:30	Dinner	

## Friday, 14 June 2019: Parallel workshop and excursion

08:30 - 13:00	<b>Excursion: Rock laboratory of NAGRA with the geothermal experiment and the modern hydropower plant Grimsel 2</b>	Lead: Ueli Wieland, ETHZ
08:30 - 13:00	<b>Workshop 8: Developing a vision for the Swiss energy system 2050</b>	Chairs: Konstantinos Boulouchos, ETHZ, Gil Georges, ETHZ, Amin Dehdarian, ETHZ and Kirsten Oswald, ETHZ
<p>What will the future energy system in Switzerland look like? What will its generation capacity be based on? How will it promote the energy transition and climate goals? Based on the gathered inputs and defined energy scenarios, we will check options, their feasibility and create a common vision for the future Swiss energy system 2050.</p>		
14:00	Closure	

## Registration

Starting in January 2019. Closing on 28 April 2019.

[Click here to register.](#)

When registering, participants have to choose which workshops on Thursday and Friday they will attend (first come, first served). There will be no waiting lists.

## Capacity limits

160 participants in total. 60 per workshop on Thursday. 30 for the workshop on Friday.

## ECTS credit

PhD students can obtain 1 ECTS credit if they:

- attend the full SCCER School,
- and complete one of the following tasks:
  - a. Present the key learnings of a workshop on Thursday. Form: group work (max. 3 PhD students per group, max. 1 group per workshop). Result: oral presentation on Thursday evening (5') and written report.
  - b. Summarise the results of the vision workshop on Friday. Form: group work (one group of max. 3 PhD students). Result: written report.

## Contact

Ueli Wieland: [uwieland@retired.ethz.ch](mailto:uwieland@retired.ethz.ch)

## Costs

300 Swiss francs per person. This includes three overnight stays with full board and all School activities.

Transport to Flüeli-Ranft and back is not included.

## Payment

Credit card only.



## Location

Hotel Paxmontana

Dossen 1

6073 Flüeli-Ranft

[www.paxmontana.ch](http://www.paxmontana.ch)

Flüeli-Ranft can be reached by train in

- 50 minutes from Lucerne,
- 2 hours from Zurich,
- 2.5 hours from Berne and Basel,
- 3.25 hours from Lugano,
- 4 hours from Geneva.

