



DeCarbCH Newsletter

August 2023

Dear DeCarbCH Partners,

This Newsletter provides an overview of the various [News](#), [Events](#) and [Lunch Talks](#) of the SWEET DeCarbCH project in 2023.

We have also compiled a list of [YouTube Videos](#) and [Publications 2023](#) in well-known journals and international conferences where DeCarbCH results have been published.

If you missed a Lunch Talk, you can still watch it on our [YouTube channel](#).

Future Lunch Talks will be announced soon.

Finally, we would like to draw your attention to upcoming Events:

- [5 September 2023, Conference on Energy and Sustainability Law, organized by ZHAW](#)

- [5 September 2023, Lunch Talk on Decarbonizing New Zealand Industry, presented by Prof. Michael Walmsley](#)
- [6 September 2023, 2nd SWEET Conference 2023 in Bern](#)

Don't forget to follow us on [LinkedIn](#) and [Twitter](#).

All the best!

[The DeCarbCH management team](#)

Next Events

Zürcher Hochschule für Angewandte Wissenschaften

zhaw School of Management and Law

AACSB ACCREDITED Seit 2015

Tagung zum Energie- und Nachhaltigkeitsrecht

Wärmeversorgung und Strom

Dienstag, 5. September 2023, 13.00 Uhr
PH Zürich, Lagerstrasse 2, Zürich

ts

Building Competence. Crossing Borders.

In Kooperation mit **sweet** swiss energy research for the energy transition
DeCarbCH

5 September 2023, Zurich Conference on Energy and Sustainability Law - Heat Supply and Electricity

The conference organized by ZHAW combines theory and practice and shows the challenges from a technical, planning, political and legal perspective.

[read more](#)

DECARBONISING NEW ZEALAND

by Michael Walmsley (UOW)

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LUNCH TALKS SERIES

5 September 2023
Lunch-Talk: Decarbonising New Zealand Industry through Process Integration and Renewable Energy Integration

Prof. Michael Walmsley from the University of Waikato presents his view on decarbonising New Zealand's industry through process integration and renewable energy integration.

[read more](#)

SWEET Conference 2023

Wednesday, 06 September — Eventforum Bern



6 September 2023, Bern 2nd SWEET Conference

The 2nd SWEET Conference will take place on 6 September 2023 at the Eventforum in Bern.

The conference is targeted towards researchers (from current consortia and those interested in responding to future calls) as well as stakeholders from the private sector, professional associations, the federal government, cantons, communes, and cities.

[read more](#)



SGVC
Schweizerische Gesellschaft der Verfahrens- und ChemieingenieurInnen
Swiss Process and Chemical Engineers
Société Suisse du Génie Chimique

26/27 Oktober 2023 SGVC - Supplementary Courses in Process Engineering 2023

The SGVC-VT Supplementary Courses in Process Engineering 2023 (Swiss Society of Process and Chemical Engineers) will be held at three Swiss Universities of Applied Sciences in Muttenz, Horw and Rapperswil

- *7/8 September 2023, Sustainability (H₂ and Power-to-X, Life Cycle Assessment, Carbon Capture and Storage, CO₂ absorption)*
- *14/15 September 2023, Process safety (valves, pressure relief, scale-up of a non-isothermal tube reactor, safety integrity levels)*
- *26/27 October 2023, Sustainability (vapor compression, pinch analysis, high-temperature heat pumps, visit ammonia refrigeration plant, algae reactor)*

[read more](#)

News Review 2023



2 February 2023

SWEET EDGE White Paper on Policies Targeting Household Solar PV in Switzerland

The white paper shows an extreme level of fragmentation of rooftop PV policy in Switzerland.

[read more](#)

Vortragsreihe

FASZINATION ENERGIE

10.11.2022 (Referent Stefan Bertsch)

Wärmepumpen - praktische Erfahrungen

26.01.2023 (Referent Markus Markstaler)

Photovoltaik zur Eigenstromproduktion

23.03.2023

Mobilität der Zukunft

01.06.2023

Wasserstoff und Power2X

23 March 2023

Lecture series "Fascination Energy" at OST

The Institute of Energy Systems (IES) revives the tradition of sharing its knowledge in a practical way with the public.

[read more](#)



Project management agency for the



Federal Ministry
for Economic Affairs
and Climate Action

20 April 2023

Webinar on "Climate Neutral Heating and Cooling: RD&D needs and perspectives for international collaboration"

This Webinar was organized under the auspices of the IEA Experts' Group on R&D Priority-setting and Evaluation (EGRD).

[read more](#)



14 September 2023

Heating networks are being installed in several Swiss cities but many cities have no plans to install cooling networks!

Due to global warming, researchers predict that the climate in Zurich in 2050 will be like that in Milano (Italy) today.

The campaign [#dontforgetcooling](#) by SWEET DeCarbCH is to make the Swiss population aware of the discrepancy between the temperature rise in cities and the lack of plans for cooling networks. The aim is to ensure that cooling

networks are higher on the planning priority lists of Swiss cities.

[read more](#)

Events Review 2023



SCIENTIFIC NETWORKING CONFERENCE

SWEET CROSS TO CO-EVOLUTION

SAVE THE DATE
JANUARY 18TH, 2023

Photo by David Pirony in Unsplash

Location: University of Bern
Registration opens in September 2022
Cost: Free (limited to 100 participants)
Contact: www.sweet-cross.ch

sweet swiss energy research for the energy transition
CROSS
Funded by the SFOE's SWEET programme

18 January 2023 **SWEET CROSS Final Event**

The SWEET-CROSS activity came to an end in December 2022. The main CROSS achievements and research results of the first 1.5 years of SWEET EDGE, PATHFNDR, SURE and DeCarbCH were presented.

[read more](#)

HSLU Lucerne University of Applied Sciences and Arts

Engineering and Architecture
CC Thermal Energy Storage

10th Swiss Symposium Thermal Energy Storage

Friday, 20th of January 2023

Register here
hslu.ch/ssstes



20 January 2023 **10th Swiss Symposium Thermal Energy Storage 2023**

The Swiss Symposium Thermal Energy Storage celebrated its 10th anniversary. The opportunity was taken to reflect on the past decade, review what has been achieved so far and decide together what to focus on in the coming years.

[read more](#)



27/28 February 2023

2nd DeCarbCH Networking Conference

The SWEET DeCarbCH Networking Conference enabled the exchange within the DeCarbCH community, with academic research partners and with industrial and public partners. The 1st day was dedicated to our collaboration partners. On the 2nd day, we started with input from our colleagues from other SWEET projects, namely PATHFNR, EDGE and CROSS. The 2nd day ended with parallel workshops on the eight active work packages.

[read more](#)

Organised and presented by 

2023 Webinar

1st March 13:30 to 16:30

Steam Generating Heat Pumps

Discover the state of the art of industrial heat pumps producing steam presented by some of the most knowledgeable companies in Europe as well as the latest advances in research.

WITH



register here


more info & ask question beforehand:
<https://fredericbless.wixsite.com/ost-webinar>

Image by rawpixel.com & Benjamin Davies on Unsplash

**1 March 2023
 Webinar on Steam-Generating Heat Pumps**


The webinar organized by OST-IES provided valuable insights into the latest advancements in steam-generating heat pumps. The webinar videos are available on the SWEET DeCarbCH [YouTube channel](#).

[read more](#)



**INVITATION
 HIGH TEMPERATURE HEAT PUMPS EVENT**

24 MARCH 2023 | ITTIGEN



**24 March 2023
 Event on High-Temperature Heat Pumps**

Experts presented the latest advancements for heating applications over 100 °C, energy integration methodology, and case studies. Various facets were discussed for the decarbonization industry. The presentations can be downloaded from the [website](#).

[read more](#)

Lunch Talks Review 2023

**DEEP GEOTHERMAL
 TO DECARBONIZE CH**

by UNIGE (L. Guglielmetti,
 Y. Makhoulfi, A. Moscariello)

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 for the energy transition
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 LUNCH TALKS SERIES

**STORAGE BUBBLE
 IN THE LAKE ?**

by Andreas Bohren (OST)

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 for the energy transition
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 LUNCH TALKS SERIES

29 November 2022

Deep geothermal energy as a solution to decarbonize the Swiss energy system

[Presentation given by Luca Guglielmetti, Yasin Makhloufi, Andrea Moscariello \(UNIGE\)](#)

This talk is about screening the potential for geothermal systems across the Swiss Molasse Basin. The potential is evaluated according to the publicly available subsurface and energy data to identify the most promising areas.

[read more](#)

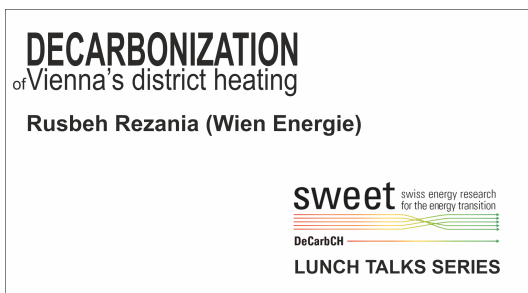
10 January 2023

Bubble in the lake, big thermal storage underwater?

[Presentation given by Andreas Bohren \(OST\)](#)

This talk is about investigating the option to store heat directly in big storages placed in lakes. The use of stored heat, would relieve the electric grid and make power available for mobility and other purposes where no alternatives are available.

[read more](#)




4 April 2023

Decarbonisation of heat supply of Vienna's district heating system

[Presentation given by Rusbeh Reznia \(Wien Energie\)](#)

This talk shows how Wien Energie is utilizing waste heat and deep geothermal energy for district heating systems getting a renewable share of 40% by 2030.

[read more](#)



2 May 2023

The right energy at the right place for the right use

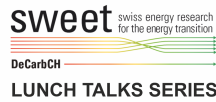
[Presentation given by François Vuille \(delegate to the energy transition, canton de Vaud\)](#)

This talk is about using renewable energy resources in an optimal way to increase energy independence.

[read more](#)

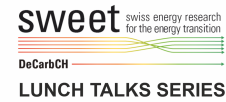
BEYOND the NUMBERS ProdUse SOUR

by Lukas Braunreiter (ZHAW)



RESHeat

by Pawel Oclon (Cracow
University of Technology)



6 June 2023

***Beyond the Numbers: Why
Energy Scenarios Often Fail to
Connect with Decision-Makers***

***Presentation given by Lukas
Braunreiter (ZHAW)***

*This talk is about the SOUR project
ProdUse, which attempts to provide
a holistic empirical evaluation of the
factors influencing the credibility
and usability of energy scenarios.
The talk provides an overview of key
results and take-home messages for
energy system modelers and
decision-makers.*

[read more](#)

4 July 2023

***RESHeat - system for heating,
cooling and domestic hot water
production for residential
buildings***

***Presentation given by Pawel Oclon
(Cracow University of Technology)***

*This talk is about the RESHeat
project developing an innovative,
zero-emission and autonomous
energy system based only on
installations using Renewable
Energy Sources (RES). The system's
innovations include integrated,
cooled solar panels and solar
collectors equipped with solar
tracking systems, as well as
advanced underground energy
storage systems.*

[read more](#)



Watch our previous Lunch Talks on our YouTube Channel

- [Pinch Analysis](#)
- [Socio-Economic Challenges](#)
- [Industrial Heat Pumps](#)
- [Thermal Networks](#)
- [Long-term Thermal Energy Storages](#)
- [Temperature Reduction in District Heating](#)
- [Solar Energy for Networks / Industry](#)
- [Perspectives on Thermal Grid Modelling under Uncertainty](#)
- [Negative Emission Technologies](#)
- [Case Study – Decarb City of Zurich](#)
- [Renewable Heat: Is it rocket science?](#)
- [Deep geothermal energy to decarbonize the Swiss energy system](#)
- [Bubble in the lake, big thermal storage underwater?](#)
- [Decarbonisation of heat supply of Vienna's district heating system](#)
- [Beyond the Numbers: Why Energy Scenarios Often Fail to Connect with Decision-Makers](#)
- [RESHeat - system for heating, cooling and domestic hot water production for residential buildings](#)

are available on [YouTube](#) and the presentation slides on our [DeCarbCH Website](#).

Publications 2023



See our list of publications

1. Sasso, F., Chambers, J., Patel, M.K. (2023): Space heating demand in the office building stock: Element-based bottom-up archetype model, *Energy & Buildings*, 295, 113264, <https://doi.org/10.1016/j.enbuild.2023.113264>
2. Altieri, D., Patel, M.P., Lazarus, J., Branca, G. (2023): Numerical analysis of low-cost optimization measures for improving energy efficiency in residential buildings, *Energy*, 273, 127257, <https://doi.org/10.1016/j.energy.2023.127257>
3. Wilczynski, E., Chambers, J., Patel, M., Worrell, E., Pezzutto, S. (2023): Assessment of the thermal energy flexibility of residential buildings with heat pumps under various electric tariff designs, *Energy and Buildings*, 294, 113257, <https://doi.org/10.1016/j.enbuild.2023.113257>
4. Speich, M., Ulli-Ber, S.: Applying an ecosystem lens to low-carbon energy transitions: A conceptual framework, *Journal of Cleaner Production*, Volume 398, 20 April 2023, 136429, <https://doi.org/10.1016/j.jclepro.2023.136429>
5. Mennel, S., Villasmil, W., Fischer, L., Tuohy, P. (2023): Decarbonising energy supply: the potential impact on district heating networks of the integration of thermal energy storage and substitution of peak load with base load, *CISBAT 2023*, <https://cisbat.epfl.ch>
6. Fumey, B., Weber, R., Baldini, L. (2023): Heat transfer constraints and performance mapping of a closed liquid sorption heat storage process, *Applied Energy*, 335, 120755, <https://doi.org/10.1016/j.apenergy.2023.120755>
7. Fiorentini, M., Heer, Ph., Baldini, L. (2023): Design optimization of a district heating and cooling system with a borehole seasonal thermal energy storage, *Energy*, Volume 262, Part B, 125464, <https://doi.org/10.1016/j.energy.2022.125464>

8. Stampfli, J.A., Ong, B. H.Y., Olsen, D. G., Wellig, B., Hofmann, R. (2023): Multi-objective evolutionary optimization for multi-period heat exchanger network retrofit, *Energy*, 281, 128175, <https://doi.org/10.1016/j.energy.2023.128175>
 9. Saini, P., Ghasemi, M., Arpagaus, C., Bless, F., Bertsch, S., Zhang, X.: Techno-economic comparative analysis of solar thermal collectors and high-temperature heat pumps for industrial steam generation, *Energy Conversion and Management*, Volume 277, 1 February 2023, 116623, <https://doi.org/10.1016/j.enconman.2022.116623>
 10. Sulaiman, A.Y., Cotter, D., Arpagaus, C., Hewitt, N.: Theoretical Evaluation of Energy, Exergy, and Minimum Superheat in a High-Temperature Heat Pump with Low GWP Refrigerants, *International Journal of Refrigeration*, available online 2 June 2023, <https://doi.org/10.1016/j.ijrefrig.2023.06.001>
 11. Arpagaus, C., Paranjape, S., Nertinger, S., Tietz, R., Bertsch, S.: [Review of Business Models for Industrial Heat Pumps](#), 36th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems (ECOS 2023), 25-30 June 2023, Las Palmas de Gran Canaria, Spain, <https://doi.org/10.52202/069564-0068>
 12. Arpagaus, C., Bless, F., Bertsch, S., Krummenacher, P., Flórez-Orrego, D.A., Pina, E.A., Maréchal, F., Calame Darbellay, N., Rognon, F., Vesin, S., Achermann, P., Jansen, C.: [Session Keynote: Integration of High-Temperature Heat Pumps in Swiss Industrial Processes \(HTHP-CH\) \(494\)](#), 14th IEA Heat Pump Conference, 15-18 May 2023, Chicago, Illinois, USA
 13. Ghasemi, M., Saini, P., Arpagaus, C., Bless, F., Bertsch, S., Zhang, X.: [Techno-economic comparative analysis of solar thermal collectors and high-temperature heat pumps with PV for industrial steam generation \(1166\)](#), 14th IEA Heat Pump Conference, 15-18 May 2023, Chicago, Illinois, USA
 14. Ayou, D.S., Arpagaus, C., Bertsch, S.S., Coronas, A.: Performance analysis of add-on large-temperature-lift heat pumps for pasteurization in the juice and dairy processing industries, ICR2023, 26th International Congress of Refrigeration, 21-25 August 2023, Paris, France, <https://doi.org/10.18462/iir.icr.2023.0505>
 15. Arpagaus, C., Bless, F., Paranjape, S., Bertsch, S.: Integration of High-Temperature Heat Pumps in Swiss Food Processes, ICR2023, 26th International Congress of Refrigeration, 21-25 August 2023, Paris, France, <https://doi.org/10.18462/iir.icr.2023.0367>
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All the News on the Website

Any question can be sent to info@sweet-decarb.ch



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