

DeCarbCH Newsletter May 2022



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DeCarbCH Newsletter

May 2022

Dear DeCarbCH Partners,

This is the 5th Newsletter of SWEET DeCarbCH.

The focus is on [Work Package WP04](#) Energy demand profiles of industry and the potential for renewables integration and negative emissions.

We present an exclusive interview with Prof. Dr. Beat Wellig from [HSLU-TEVT](#).

In addition, we report on current research activities in the field of process integration (e.g. Pinch Analysis) in several new articles.

On April 5, Dr. Jonathan Chambers gave a well-received [Lunch Talk on Perspectives on Thermal Grid Modelling under Uncertainty](#).

On April 25 and 26, the [DeCarbCH Networking Conference](#) took place in Sursee, which was the first occasion to meet in person and an overall success.

This week, Dr. Gianfranco Guidati presented an interesting [Lunch Talk on Negative Emission Technologies](#).

The next Lunch Talk will take place on June 7, where Prof. Armin Eberle from ZHAW presents the [Case Study - DeCarb Zurich](#). Take a look at the contents and [register online](#). We hope to see you then.

If you missed the past Lunch Talks, you can still view them 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 und Uncertainty](#)
- [Negative Emission Technologies](#)

We hope to see you at the Lunch Talks.

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

All the best!

[The DeCarbCH management team](#)

This Newsletter offers the following content:

1. [Interview with Prof. Dr. Beat Wellig from HSLU-TEVT](#)
2. [SFOE Research Project DeCarb-PUI](#)
3. [Support for Pinch Analysis by the SFOE](#)
4. [Economic Energy Efficiency Improvement by Pinch Analysis](#)
5. [Industrial Waste Heat Usage in Thermal Grids](#)
6. [Further Developments of Methods and Tools](#)
7. [Saving Energy and reducing CO2 Emissions with Pinch Analysis](#)
8. [Building an Industrial Temperature Database with UNIGE-EE](#)
9. [Continuing Collaboration with HEIG-VD/IGT](#)
10. [The History of Thermal Networks in Switzerland](#)
11. [SWEET-CROSS \(CooRdination of Scenarios and Data in SWEET\)](#)
12. [YouTube Videos of Lunch Talks](#)
13. [SWEET DeCarbCH Networking Conference](#)
14. [Lunch Talk - Case Study DeCarb Zurich](#)

Interview with Prof. Dr. Beat Wellig from HSLU-TEVT

Beat is leading the WP04: Energy demand profiles of industry and the potential for renewables integration and negative emissions

HSLU Lucerne University
of Applied Sciences
and Arts



WP 04

Question: Could you describe the topic of your WP?

Answer Prof. Beat Wellig: Work Package 4 deals with the identification of energy demand profiles of Swiss industrial companies using existing Pinch Analysis, as well as the development of practical tools and methods to guide users in industry in obtaining their own profiles. These energy demand profiles will transparently show how companies can increase their energy efficiency, integrate renewables into their heating and cooling systems optimally, as well as identify both their potential for excess heat utilization and the inclusion of negative emissions technologies into their processes. The work will also address the efficient cold generation, the cooling potential by using locally available free cooling, and feeding excess heat to thermal grids and buildings, and integrating recooling heat into processes and infrastructure.

Question: What are the main objectives?

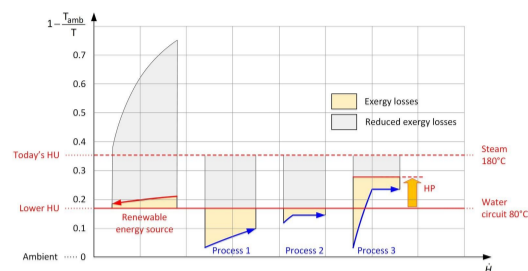
B. Wellig: In industry, there is a need for analysis and design methods based on a holistic view. The systematic overall optimization of processes and energy systems is called Process Integration, whereby the best-known tool is Pinch Analysis. Pinch Analysis allows to establish the minimum heating and cooling requirements for the case of maximum heat recovery of a system. It is also possible to determine how this condition can be achieved economically with the implementation of energy efficiency measures (EEMs). Further, the holistic and systematic approach of Process Integration is a prerequisite for the proper integration of renewables.

The main objective of WP04 is to enhance the understanding of the energy demand profiles (quantity, quality, temporal) of industrial processes to facilitate successful integration of renewables. The Work Package is developing tools to drive and broaden the application of important Process Integration techniques such as Pinch Analysis, which continue to play a crucial role in decarbonizing industry, for both larger companies and SMEs.

(Interview continues)

[read more](#)

NEWS from WP04: Energy demand profiles of industry and the potential for renewables integration and negative emissions



SFOE Research Project: Decarbonization of industrial processes through redesign of the process-utility interface (DeCarb-PUI)

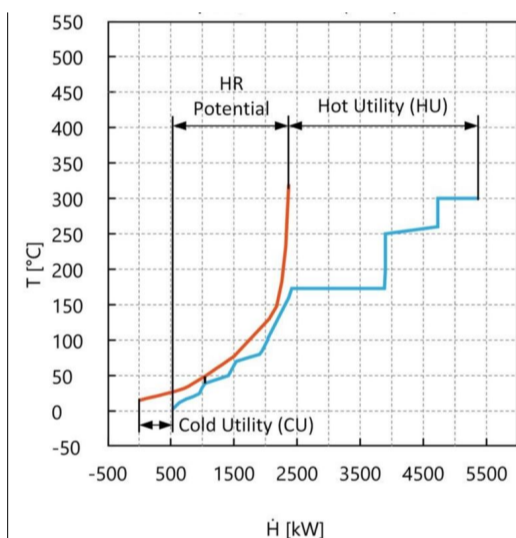
In a resource constrained world: think exergy, not energy (Science Europe 2016).

[read more](#)

Support for Pinch Analysis by the SFOE

Support programs for the conduct of Pinch Analysis projects are available.

[read more](#)



Economic Energy Efficiency Improvement Potential using Pinch Analysis

Based on Pinch Analysis studies, the achievable economic energy savings are at least 3 TWh/a and the CO₂ reduction is approximately 0.5 million t/a.

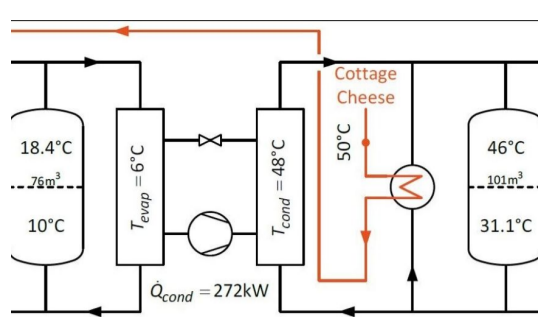
[read more](#)



Industrial Waste Heat Usage in Thermal Grids

"Selling waste heat instead of inefficiencies"

[read more](#)



Further Development of Methods and Tools

In addition to the work carried out in DeCarbCH, HSLU-TEVT has further developed methods and tools using Process Integration.

[read more](#)



Saving energy and reducing CO2 emissions with Pinch Analysis

Training courses to conduct Pinch Analysis.

[read more](#)



UNIVERSITÉ DE GENÈVE

INSTITUT DES SCIENCES DE L'ENVIRONNEMENT

Building an Industrial Temperature Database with UNIGE-EE

UNIGE-EE contributes in the construction of the database of temperature levels for the industrial processes in WPO4.

[read more](#)

HEIG^{VD} IGT
Institut de Génie thermique

Continuing collaboration with HEIG-VD/IGT

HEIG-VD contributes toward WPO4 by providing practical process data and advising the way industrial site and processes should be documented.

[read more](#)

FURTHER NEWS



The History of Thermal Networks in Switzerland

Thermal networks (including district heating, local heating, or district cooling) have a long tradition in Switzerland – almost 100 years!

[read more](#)

sweet swiss energy research for the energy transition
CROSS

SWEET-CROSS (CooRdination of Scenarios and Data in SWEET)

SWEET-CROSS is a part of the four consortia DeCarbCH, EDGE, PATHFNDR and SURE and coordinated by the Energy Science Center in ETH Zurich. The website www.sweet-cross.ch was launched.

[read more](#)



Networking
Possibilities



Informative
Presentations



Sharing
Issues & Questions

The **Lunch Talks** on

- [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](#)

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

25/26 April 2022

**SWEET DeCarbCH
Networking Conference
2022**

The Networking Conference 2022 was the first occasion to present the research findings of the SWEET DeCarbCH project in more detail. Overall, it was a successful event!

[More details](#)

[All the News on the Website](#)

[EVENTS](#)

- Lunch Talk -

[Case Study Zurich](#)

This Lunch Talk is taking place online on **June 7, 2022**.

[REGISTER](#)

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



DeCarbCH has received funding from the SFOE in their [SWEET](#) programme.

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