SWEET DeCarbCH

Decarbonisation of Cooling and Heating in Switzerland

Full-scale Kick-off meeting, 1 June 2021

Martin Patel, Beat Wellig, Stefan Bertsch, Gianfranco Guidati
(Management team)

Full-scale Kick-off meeting DeCarbCH

Tuesday, 1 June 2021, 8:30-10:30
https://unige.zoom.us/j/91412739142

Agenda

- 8:30-8:40 Welcome (Martin Patel, Laura Ding - BFE)
- 8:40-9:10 Summary of content of proposal (Martin Patel)
- 9:10-9:20 Poll on way of collaboration (Cooperation partners)
- 9:20-10:00 Breakout sessions (All)
  - Thermal grids (Gianfranco Guidati, Martin Patel)
  - Industry (Beat Wellig, Stefan Bertsch)
- 10:00-10:30 Plenary (All)
  - Wrap-up (Gianfranco/Martin, Beat/Stefan)
  - KTT (Cordin Arpagaus)
  - Open discussion (All)
  - Next steps (Martin)

Schweizerische Eidgenossenschaft
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Confederazione Svizzera
Confederaziun svizra

Swiss Federal Office of Energy

sweet swiss energy research for the energy transition

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SWISS ENERGY RESEARCH FOR THE ENERGY TRANSITION
OVERVIEW CONSORTIA MONITORING

DECARBCH KICK-OFF MEETING▪ LAURA DING, SFOE ▪ 01.06.2021

SWEET OFFICE

Nathalie Rüegg
Administration, contracts, communication

Dr. Laura Ding
Evaluation, monitoring

Dr. Andreas Haselbacher
Strategic planning

Dr. Carina Alles
Review panel, head of programme Industrial Processes

COLLABORATION BEYOND MONITORING

- SWEET office + review panel experts
  - SFOE's representatives: research programme managers/managers of other sections
  - Experts from industry/private sector
  - Experts from research/academia
- Objectives
  - Assess the quality of the work delivered, progress towards achievement of the objectives
  - Provide feedback and recommendations on the research directions and on the implementation to maximize impact and align with global SFOE's objectives
  - Find synergies and avoid duplication with other SFOE's funded projects (e.g. other SWEET calls)
  - Disseminate: scientific part of reports available to the public via SFOE's ARAMIS platform
- Format & timing
  - Annual reports due end of March, site visit in April, specific reports at end of projects
  - Annual SWEET SFOE conference: first edition in 2022 with 4 consortia from call 1-2020

www.bfe.admin.ch/sweet

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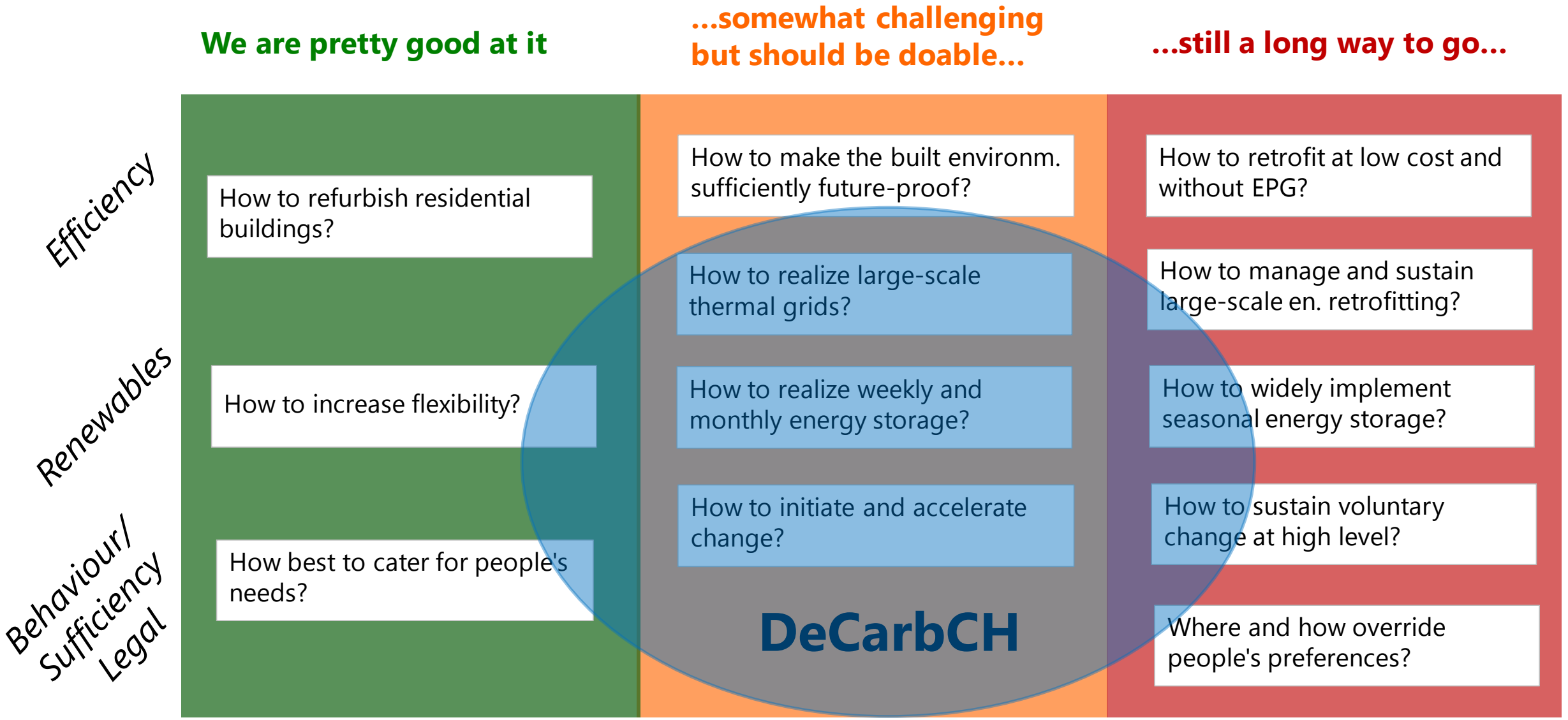
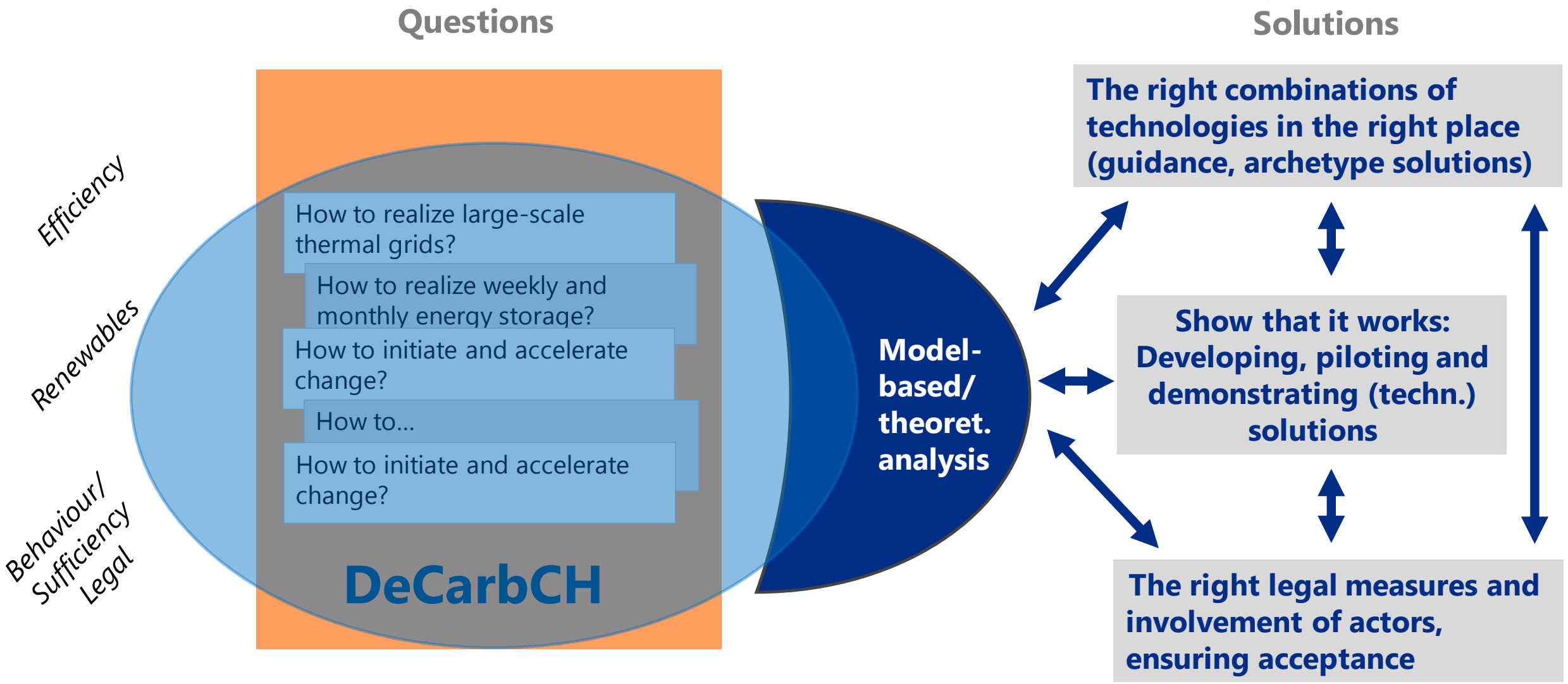
Positioning of DeCarbCH

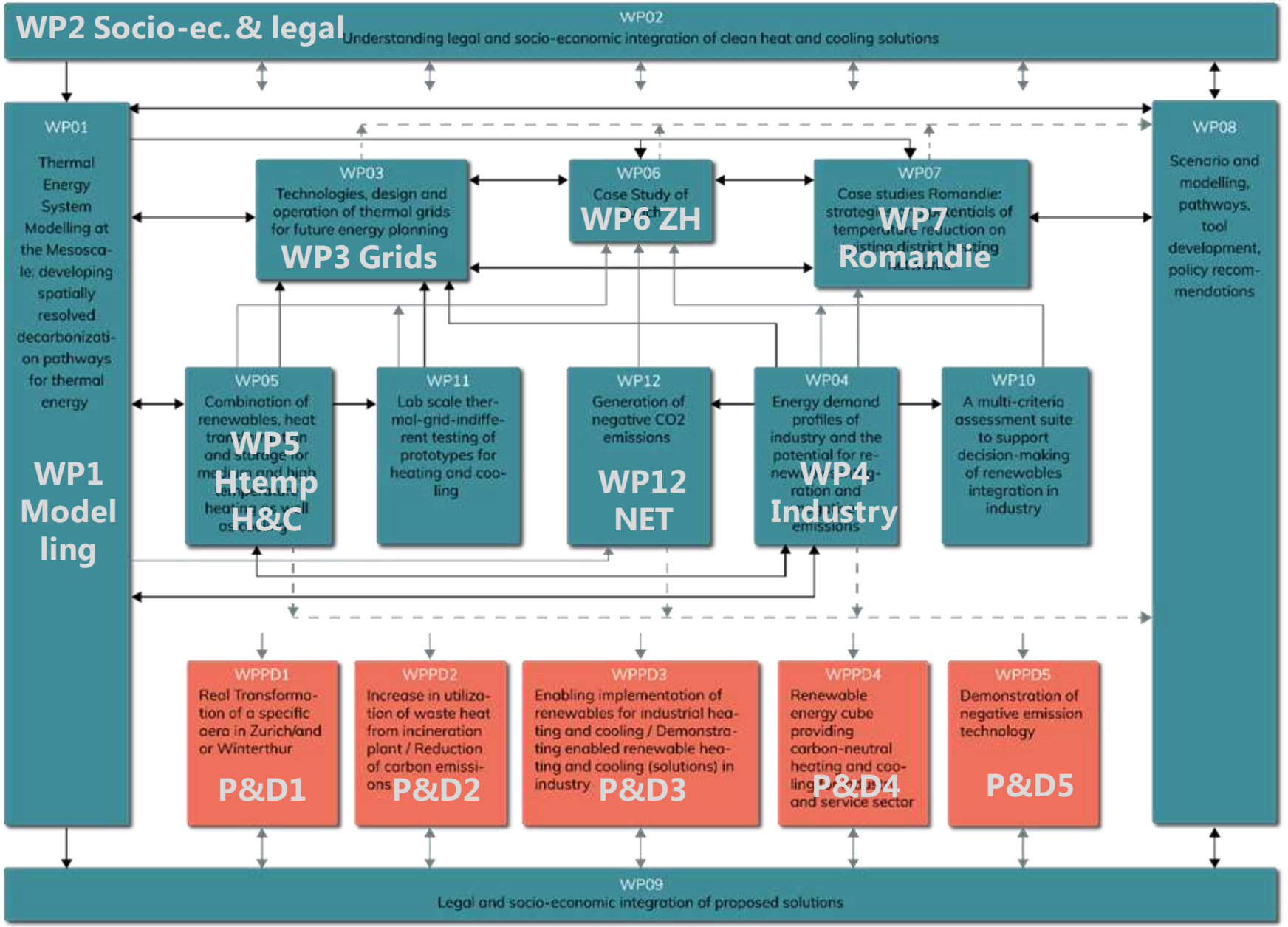


DeCarbCH in a nutshell



➔ **Targeted impact:** **Facilitate, speed up and de-risk** implementation of renewables for heating and cooling in i) **residential sector** and ii) **service and the industry sector**

DeCarbCH by WPs



Core, associate and cooperation partners

10 Core

1	Université de Genève	UNIGE (UNIGE-EE, Patel)
2	Eidgenössische Material- und Prüfungsanstalt	EMPA (Orehounig)
3	Eidgenössische Technische Hochschule Zürich	ETHZ (Guidati)
4	Hochschule Luzern	HSLU (HSLU-IGE, Mennel/Sommer)
5	Hochschule Luzern	HSLU (HSLU-TES, Worlitschek)
6	Hochschule Luzern	HSLU (HSLU-TEVT, Wellig)
7	OST Hochschule für Technik Buchs	OST (OST-IES, Bertsch)
8	OST Hochschule für Technik Rapperswil	OST (OST-SPF, Rittmann-Frank)
9	Zürcher Hochschule für Angewandte Wissenschaften	ZHAW (ZHAW-INE, Eberle)
10	Zürcher Hochschule für Angewandte Wissenschaften	ZHAW (ZHAW-ZOW, Abegg)

6 Associate

11	Centre de Recherches Energétiques et Municipales	CREM (Ragers)
12	Haute Ecole d'Ingénierie et de Gestion du Canton de Vaud	HEIG-VD-IGT (Duret, Krummenacher)
13	Institut für Nachhaltigkeits- und Demokratiepolitik	INDP (Bolliger)
14	Scuola universitaria professionale della Svizzera italiana	SUPSI (Curti)
15	Université de Genève	UNIGE (UNIGE-GE, Moscariello)
16	Université de Genève	UNIGE (UNIGE-SE, Hollmuller)

Cooperation Partners (1/2)

Cities

- City of Zürich
- City of Wintherthur

Associations

- Swissolar (Swiss Solar Energy professionals Association)
- VFS/ASCAD (Verband Fernwärme Schweiz, L'Association Suisse du chauffage à distance)
- VBSA (Verband der Betreiber Schweizerischer Abfallverwertungsanlagen)
- VSG (Verband der Schweizerischen Gasindustrie)
- CADB (Société cooperative de chauffage à distance à bois de Marais-Rouge)
- EnAW (Energie-Agentur der Wirtschaft)
- energie-cluster.ch

Public sector – Industrial

- Verein für Abfallentsorgung Buchs (VfA Buchs)

Public sector – Urban

- GSG (energienetz GSG AG, St. Galler Stadtwerke)
- energie360° AG (e360)
- Energie Wasser Bern (ewb)
- Services Industriels de Genève (SIG)
- Viteos
- Technische Betriebe Wil

Public sector – Transport

- SBB AG

Cooperation Partners (2/2)

Privat sector – Engineering firm

- Abicht Zug AG
- Amstein + Walthert AG
- Anex Ingenieure AG
- eicher+pauli Olten AG
- Weisskopf Partner GmbH
- Lauber IWISA AG

Privat sector – Consulting

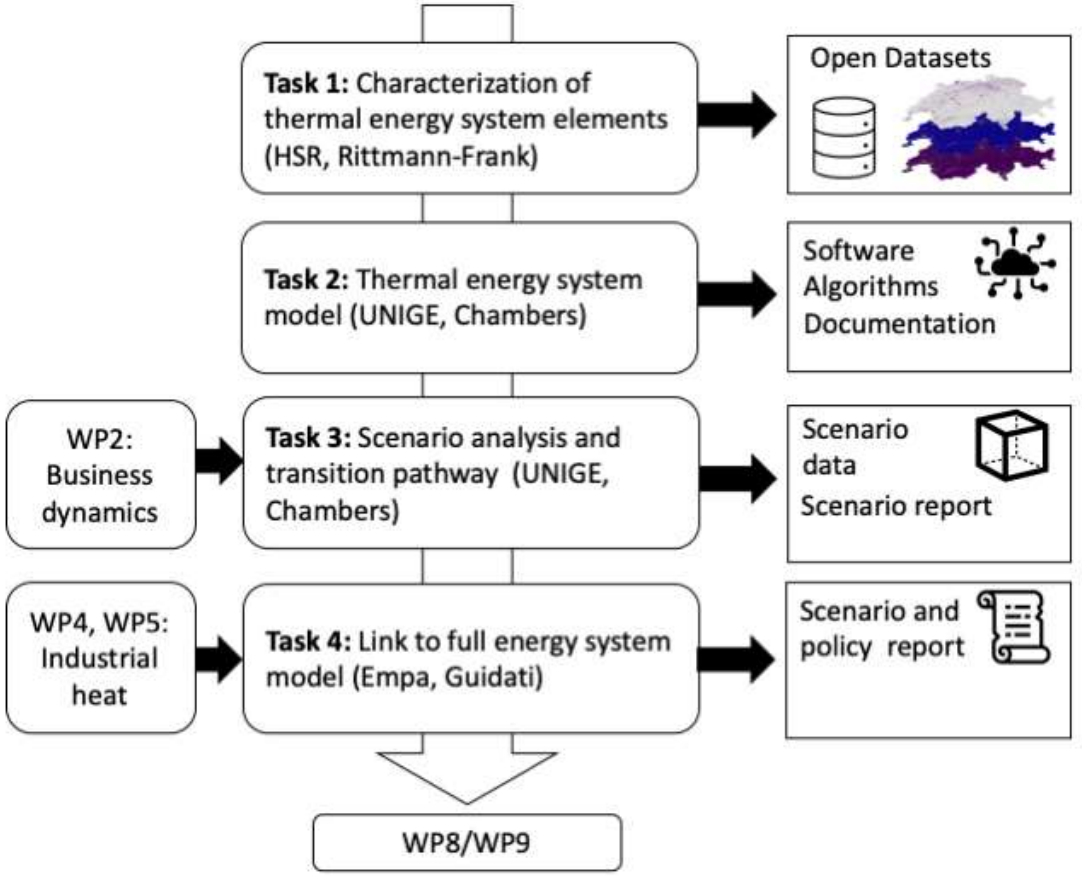
- INFRAS AG
- Helbling Beratung + Bauplanung AG

Privat sector – Industrial

- BASF Schweiz AG
- Juracime SA
- Emmi Schweiz AG
- Coop Genossenschaft
- Migros-Genossenschafts-Bund
- Feldschlösschen Supply Company AG
- Belimo Automation AG
- Sika Manufacturing AG
- Sefar AG
- Cowa Thermal Solutions AG
- Schenk AG
- Casale SA
- Nestlé
- Danfos

WP01 – Thermal Energy System Modelling at the Mesoscale: Spatially resolved decarbonization pathways for thermal energy

- Lead: Jonathan Chambers (UNIGE-EE)
- Team: M. Rittmann-Frank (OST-SPF), G. Guidati (ETHZ), Silvia Ulli-Beer (ZHAW-INE), Andrew Bollinger (Empa), Andrea Moscariello (UNIGE-GE)



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- Objectives
  - **System-level model** of thermal energy service provision
  - Explore **decarbonization pathways** with different technical, economic, policy impacts
  - Quantify the value of both renewable heating and cooling as well as of **negative CO_2 emissions**.
- Approach
  - Collect technical and cost **data** on different technology options
  - Develop techno-economic model at **high spatial resolution** integrating a range of technologies
  - Test **technology, policy options** using model
  - Link with **whole energy system model** and explore implications

WP01 – Thermal Energy System Modelling at the Mesoscale: Spatially resolved decarbonization pathways for thermal energy

Complementary Innosuisse project:

Geo-spatiotemporal ENErgy Analysis and Planning (GENEAP): accelerated design and planning of district heating and low carbon thermal energy systems

Development of multi-scale geospatial thermal energy modelling tool to support the planning of district thermal networks (heating and cooling), taking into account local availability of energy sources and the evolution of building stock incl. retrofit

Coordination: Jonathan Chambers, UNIGE

Partners:

- SIG
- Viteos
- Geoimpact
- UNIGE, Group Pierre Hollmuller

WP02 – Understanding legal and socio-economic integration of clean heating and cooling solutions

- Co-Lead: Silvia Ulli-Beer & Matthias Speich (ZHAW-INE)
- Team: Andreas Abegg et al. (ZHAW-ZOW), Luca Baldini et al. (ZHAW-Arch), Beat Wellig et al. (HSLU-TEVT), Mercedes Rittmann-Frank et al. (OST-SPF), Roman Bolliger (INDP)
- Cooperation partners: analogous to technical and case study WPs

- Objectives
  - Understand the **actor ecosystem and value network** in local heating / cooling systems and the socio-technical system
  - Identify the **perceived drivers and barriers** for implementation of different solutions under different (structural, socio-economic) contexts
  - Identify **suitable, context-specific strategies** for the implementation of clean and efficient heating / cooling systems
  - Analysis of **legal requirements** on the building permit & the exclusive use of thermal infrastructure and recommendations on **procedures**
  - Proposals on **more efficient procedures** / how to **increase acceptance** regarding building thermal / cooling infrastructure
- Approach
  - Empirical data collection methods (e.g. Delphi surveys, focus groups, expert interviews)
  - Value Network Analysis
  - Link to socio-technical transition frameworks
  - (Social / Business model) Innovation
  - System Dynamics Modeling
  - Identification of the applicable law on thermal infrastructure, suggestions on new regulation

WP02 – Understanding legal and socio-economic integration of clean heating and cooling solutions

Complementary SFOE-funded project: Swiss Federal Office of Energy SFOE

RENEW-HEAT: Approaches for facilitating a switch to renewable energy based heating systems

Coordination: Roman Bolliger, INDP

Partners:

- University of Basel
- FHNW
- OST (Buchs)
- University of Geneva

WP03 – Technologies, design, and operation of thermal grids for future energy planning

- Lead: Tobias Sommer and Stefan Mennel (HSLU-IGE)
- Team: M. Berger (HSLU-TES), F. Ruesch (OST), A. Bollinger/M.Sulzer (Empa), L. Baldini (Baldini), V. Curti (SUPSI), M. Wetter (LBNL)
- Cooperation partners: Fernw. Schweiz, Belimo, A&W, Helbling, anex, eGSG, e+p

- Objectives
  - Define representative cases for thermal networks in Switzerland
  - Develop technical solutions for **storages and renewables** in future thermal grids
  - Develop new **control algorithms** for future thermal grids to form a base for energy planning
- Approach
  - Find representative cases using GIS-based approach in collaboration with WP01
  - Select technology options for storages and renewables according representative cases
  - Define efficient and robust control algorithms and test them in simulations
  - Test control strategy in **Lab-Environment** (NODES-Lab)
  - Transfer control algorithms into **energy planning tool**
  - Transfer knowledge to **P&D** case in Zurich, Winterthur (WPPD1, Armin Eberle)

WP04 – Energy demand profiles of industry and the potential for renewables integration and negative emissions

- Lead: Beat Wellig (HSLU-TEVT)
- Team: M. Patel (UNIGE), G. Guidati (ETHZ), S. Bertsch (OST-IES), M. Rittmann-Frank (OST-SPF), S. Ulli-Beer (ZHAW-INE), P. Krummenacher (HEIG-VD)
- Cooperation partners: Emmi, Coop, Migros, Sika, Sefar, BASF, EnAW, several engineering firms, etc.

- Objectives
  - Understand and obtain **energy demand profiles** at company level and sector level
  - Gain a solid understanding of how to exploit **NETs potential** in industry
  - Quantify opportunities for **implementing** energy efficiency measures, integrating renewables, implementing fuel substitution, exploiting NETs potential, and utilizing excess heat
- Approach
  - Collect, collate, and evaluate plant **data of industrial companies** using a systematic evaluation framework based on a top-down/bottom-up approach
  - Develop practical **methods and tools to guide industry** in obtaining their own energy profiles
  - Adopt **Process Integration techniques** for both the creation of energy demand profiles and integration of renewables

WP05 – Combination of renewables, heat transformation and storage for medium & high temperature heating & cooling

- Lead: Stefan Bertsch (OST-IES)
- Team: M. Rittmann-Frank (OST-SPF), J. Worlitschek (HSLU-TES), S. Ulli-Beer (ZHAW-INE), A. Abegg (ZHAW-ZOW), M. Sulzer (EMPA), B. Wellig (HSLU-TEVT)
- Cooperation partners: Jenni Energietechnik, FAFCO, Sunamp Heat LTD, EPFL, Scheco, Viessmann, KVA Buchs, Feldschlösschen, …

- Objectives
  - Develop solutions for **heat supply at** medium **80-200°C** and **high** temp. **+ cooling**
  - **Showcase systems** including solutions for policy, legal aspects, business models,…
  - Optimal matching with respect to spatial and temporal demand
  - Develop **tool** to identify optimal combination of renewables, storage & heat transformation
- Approach
  - Develop solutions based on WP01 and patterns from WP04
  - Combining **digital twins** and time series for analysis of various systems
  - Publication of case studies to push faster market uptake
  - Investigation of systems with **long-term storage**

WP06 – Case Study of Zurich

- Lead: Armin Eberle (ZHAW-INE)
- Team: M. Speich et al. (ZHAW-INE), A. Abegg et al. (ZHAW-ZOE), M. Sulzer (Empa-UES), T. Sommer (HSLU-IGE, phase 2), R. Bolliger (INDP)
- Cooperation partners: Stadt Zürich, e360, (Stadt Winterthur)

- Objectives
  - **Apply, test, validate tools** and results from other WP
  - Integrate findings in real environment of a city, interaction with the projects of the city
  - Gain insights into the **barriers and success factors**
  - Learnings for other cities, scaling up/multiply results
  - **Feedback to other WP**, backward and forward
- Approach
  - Identification of current challenges and research contributions with respect to the challenges of the city and the planned transformation of a district
  - Results, learnings for scaling
  - Thermal grid technologies for the City of Zurich

WP07 – Case studies Romandie: strategies and potentials of temperature reduction on existing district heating networks

- Lead: Pierre Hollmuller (UNIGE)
- Team: A. Duret et al. (HEIG VD - IGT), J. Rager et al. (CREM), A. Eberle et al. (ZAHW - INE), A. Abegg et al. (ZAHW - ZOW)
- Cooperation partners: Confirmed: SIG (Genève), Coopérative CAD « Le Marais-Rouge » (Les Ponts-de-Martel), Viteos (Neuchâtel); possibly also: SATOM (Monthey), CAD Verbier, CAD Haut-Lac (Villeneuve)

- Tasks:
  - Task 7.1: **Temperature reduction** in existing DH **substations** (UNIGE-SE, HEIGVD-IGT)
    24 months (Year 1-2)
  - Task 7.2: Impact of different temperature lowering strategies **at the level of DH networks** (CREM, HEIGVD-IGT)
    9 months (Year 3)
  - Task 7.3: Interaction between temperature reduction strategies and **other energy policy** measures (CREM, HEIGVD-IGT)
    13 months (Year 3-4)
  - Task 7.4: Comparison of different measures and **governance** arrangements for the implementation of temperature reduction strategies (ZHAW-INE, ZHAW-ZOW)
    34 months (Year 2-4)

WP12 – Generation of negative CO_2 emissions

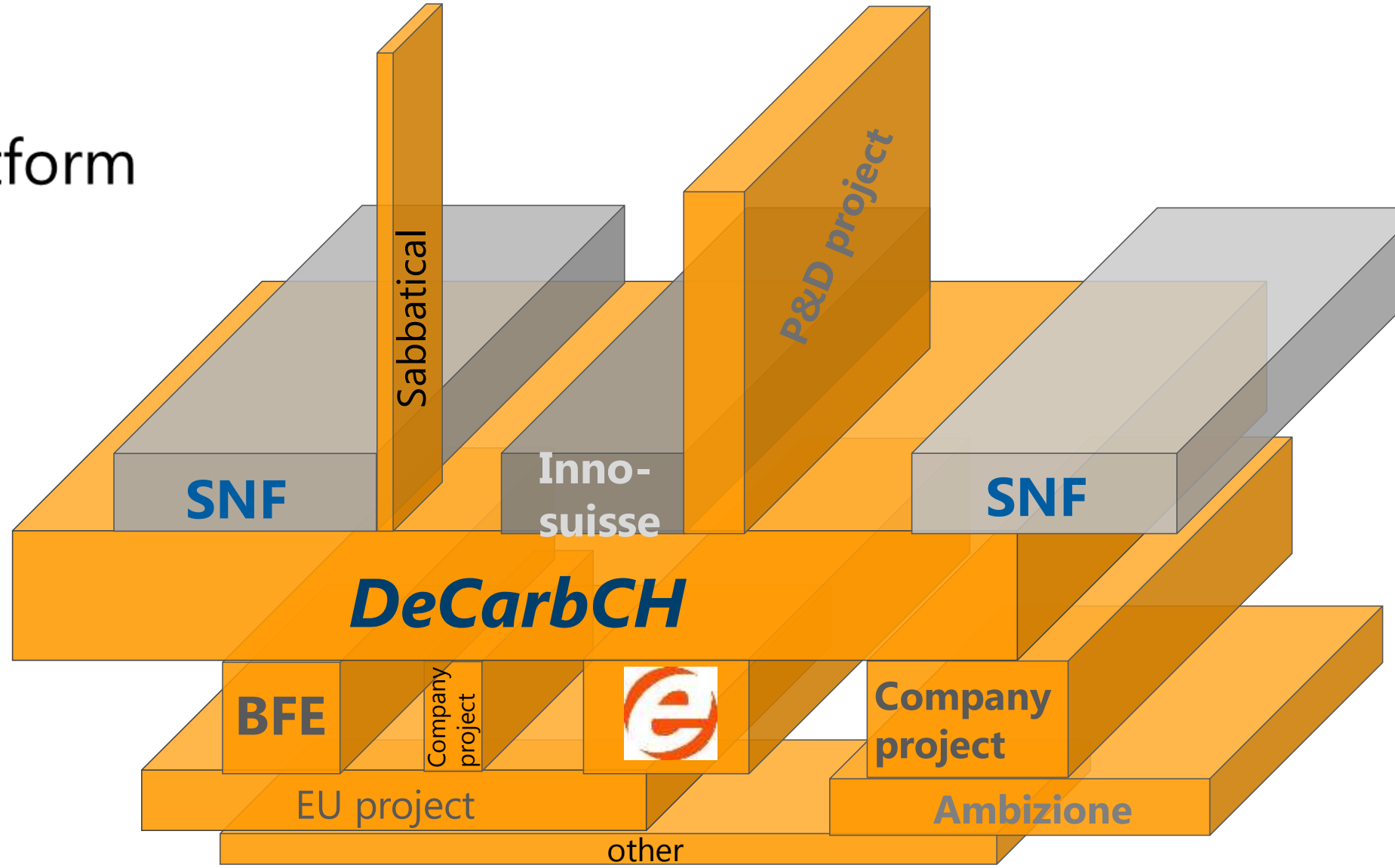
- Lead: Gianfranco Guidati (ETHZ)
- Team: ETHZ (linking to PATHFNDR, Marco Mazzotti), Beat Wellig, Benjamin Ong (HSLU)
- Cooperation partners: Casale, VBSA, VSG, SBB

- Objectives
  - Negative emissions, i.e. the extraction of CO_2 from the atmosphere, are needed to compensate emissions from sectors that are difficult to tackle (e.g. agriculture)
  - WP12 studies the **various options** in the context of concrete **case studies** with customers and suppliers
  - Based on this assessment, a **P&D project is defined** for the second half of DeCarbCH

- Approach
  - Connect to other SWEET projects to find synergies and avoid double work
  - Identify stakeholders and organize workshops
    - **Gasification of biomass** to hydrogen and CO_2: technology provider (Casale), operators & end-customer (e.g. SBB)
    - Biological conversion of biomass to biogas and CO_2: operators of waste water treatment plants, green waste fermentation, rural manure
    - **Combustion of biomass with CO_2 capture**: industry in general, **cement** and **waste incineration** plants
    - Direct air capture: link to PATHFNDR activity

How to make a success out of DeCarbCH?

- Platform



DeCarbCH cooperation partners

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DeCarbCH

	Cooperation Partner Legal Name	Short name	Type of Organization	Contact	Contact in DeCarbCH
17	City of Zürich	Stadt Zürich	City	Silvia Banfi Frost	Armin Eberle, Martin Patel
18	City of Winterthur	Stadt Winterthur	City	Michael Künzle	Armin Eberle
19	Swiss Solar Energy Professionals Association	Swissolar	Association	Daniel Stickelberger	Florian Ruesch
20	Swiss District Heating Association	VFS/ASCAD	Association	Andreas Hurni Othmar Reichmuth	Tobias Sommer
21	Verband der Betreiber Schweizerischer Abfallverwertungsanlagen	VBSA	Association	Robin Quartier	Stefan Bertsch
22	Verein für Abfallentsorgung Buchs	VfA Buchs	Public sector - Industrial	Urs Brunner	Stefan Bertsch
23	Verband der Schweizerischen Gasindustrie	VSG	Association	Daniela Decurtins	Gianfranco Guidati
24	Société coopérative de chauffage à distance à bois le Marais-Rouge	CADB	Association	Didier Barth	Pierre Hollmuller
25	Energie-Agentur der Wirtschaft	EnAW	Association	Jacqueline Jakob	Armin Eberle
26	energie-cluster.ch	energie-cluster	Association		Cordin Arpagaus
27	Services Industriels de Genève	SIG	Public sector - Urban	Marcel Rüegg	Pierre Hollmuller, Martin Pa
28	energienetz GSG AG, St. Galler Stadtwerke	GSG	Private sector - Urban	Simon Schoch	Stefan Mennel
29	energie360° AG	e360	Private sector - Urban	Ruth Happersberger	Armin Eberle
30	Energie Wasser Bern	ewb	Private sector - Urban	Michael Samboni	Martin Patel
31	Abicht Zug AG	Abicht	Private sector - Engineering Firm	Daniel Kaufmann	Stefan Mennel
32	Amstein + Walthert AG	A+W	Private sector - Engineering Firm	Matthias Mast	Matthias Sulzer
33	Anex Ingenieure AG	Anex	Private sector - Engineering Firm	Matthias Kolb	Florian Ruesch
34	eicher+pauli Olten AG	eicher+pauli	Private sector - Engineering Firm	Andrea Grüniger	Beat Wellig
35	Weisskopf Partner GmbH	Weisskopf	Private sector - Engineering Firm	Thomas Weisskopf	Mercedes Rittmann
36	Lauber IWISA AG	Lauber	Private sector – Engineering firm	Sandro Werlen	Martin Patel

DeCarbCH cooperation partners

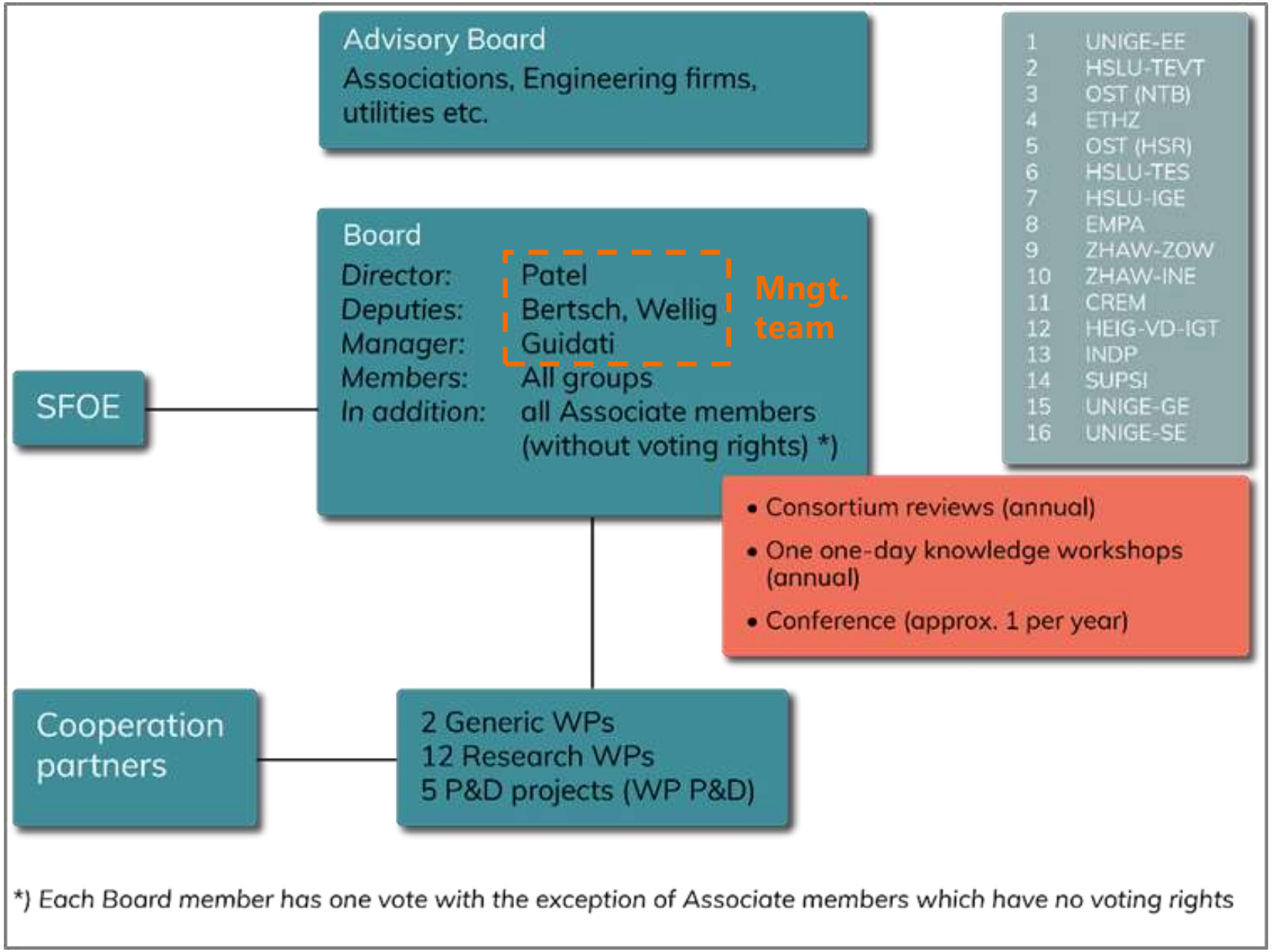
sweet swiss energy research for the energy transition
DeCarbCH

	Cooperation Partner Legal Name	Short name	Type of Organization	Contact	Contact in DeCarbCH
37	INFRAS AG	INFRAS	Private sector - Consultant	Martin Soini Jürg Füssler Rolf Iten	Martin Patel
38	Helbling Beratung + Bauplanung AG	helbling	Private sector - Consultant	Christian Bürgin	Tobias Sommer
39	BASF Schweiz AG	BASF	Private sector - Industrial	Olivier Enger	Cordin Arpagaus
40	Juracime S.A	Juracime	Private sector - Industrial	Christophe Veuve	Martin Patel
41	Emmi Schweiz AG	Emmi	Private sector - Industrial	Gerold Schatt	Beat Wellig
42	Coop Genossenschaft	Coop	Private sector - Industrial	Salome Hofer	Beat Wellig
43	Migros-Genossenschafts-Bund	MGB	Private sector - Industrial	Florian Brunner	Beat Wellig
44	Feldschlösschen Supply Company AG	Feldschlösschen	Private sector - Industrial	Thomas Janssen	Stefan Bertsch
45	Belimo Automation AG	Belimo	Private sector - Industrial	Stefan Mischler	Tobias Sommer
46	Sika Manufacturing AG	Sika	Private sector - Industrial	Reto Badertscher	Beat Wellig
47	Sefar AG	Sefar	Private sector - Industrial	Christoph Ellenberger	Beat Wellig
48	Cowa Thermal Solutions AG	COWA	Private sector - Industrial	Remo Waser	Jörg Worlitschek
49	Schenk AG	Schenk	Private sector - Industrial	Peter Schenk	Jörg Worlitschek
50	Casale SA	Casale	Private sector - Industrial	Michal Bialkowski	Gianfranco Guidati
51	SBB AG	SBB	Public sector - Transport	Daniel Fuhrer	Gianfranco Guidati
52	Viteos	Viteos	Public sector - Urban	Yann Oberson	Pierre Hollmuller
53	Technische Betriebe Wil	TBW	Public sector - Urban	Marco Huwiler	Stefan Bertsch
54	Nestle	Nestle	Private sector - Industrial	Vincent Grass	Stefan Bertsch
55	Viteos	Viteos	Public sector - Urban	Drew Turner Jonas Hamann	Stefan Bertsch Stefan Bertsch
56	Azienda Elettrica di Massagno	AEM	Public sector - Urban	Raulo Rossi Daniele Farrace	Gianfranco Guidati

DeCarbCH cooperation partners

- Invited to Kickoff, annual DeCarbCH conference, lunch lectures
- **DeCarb contact person** gets in touch with Cooperation partner **2x per year**
- Cooperation partner contacts **DeCarb contact person** if DeCarbCH can help
- **DeCarb contact person** in charge is always informed (e.g. in case of activities with other Research partners)
- Exploit opportunities for developing **additional projects**

DeCarbCH project



Poll on way of collaboration

How would you like to collaborate with DeCarbCH?

Multiple choice in Zoom (you can choose more than one option):

1. I have a concrete need (e.g. specific tool) or suggestion.
2. I would like to interact with other cooperation partners with similar interests (e.g. storage in grids).
3. I am anyway in close contact with one or more DeCarbCH researchers who is/are planning concrete activities.
4. For now, I want to follow DecarbCH and take some time to better understand how we can collaborate.

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  - KTT (Cordin Arpagaus)
  - Open discussion (All)
  - Next steps (Martin)

Summary of Breakout session «Thermal grids» (1/2)

General needs:

- Many partners feel need to stay connected/up to date with latest developments as technology, funding, policy, and business aspects are all evolving quickly.
- Need for simplified planning (tools/approaches), taking into account community, other 'soft' constraints
- Wide expectation of large (at least 2-3x) increase in heat delivered by grids. How to double or triple district heating?
- Need to address ambitious CO2 law goals, e.g. use of waste heat but also negative emissions – implies carbon capture etc.
- Integration of different energy sources e.g. Solar (thermal, PV) - interest from industry groups to both contribute own knowledge and develop new knowledge
- How to realize sector coupling (electricity sector, gas grid, other)?

Summary of Breakout session «Thermal grids» (2/2)

Specific needs:

- Need for thermal/temperature profiles
- Temperature reduction (3rd gen, 4th gen, Anergie networks)
- Standardisation – technical/industrial, norms/guidelines (e.g. in collab. with SVGW and Distr. Heating association)
- Efficient integration of CCS efficiently while not compromising heat supply to grids
- Support for planning: Simple concepts, guidelines and tools (e.g. to reduce gas peak load; sizing of storage)
- Consideration of soft factors (e.g., socio-economic)

Summary of Breakout session «Industry» (1/2)

- Thomas Weisskopf for Enaw: Staring new customer service roadmaps for decarbonisation – pilots are on the way – efficient grid, renewables, CSS, CCU, etc. geared towards implementation. Hope for new impulses. Nothing specific, but to work out new solutions
- Martin Dorn BASF: several energy transformation projects, interested in PINCH, integration of renewables, integration of heat pumps, internal grid *(Stefan Bertsch will contact.)*
- Olivier Enger BASF-CH: locally how do we manage decarbonisation for multi owner sites i.e Schweizer Halle. How to align everyone? *(*S. Ulli-Beer *can help)*
- Gerold Schatt: Spray drying up to 200°C, biomass shortage, different solutions at different sites, what is the correct mix of technologies? How to retrofit existing processes? (*Beat, Mercedes: solutions addressed in WP5 and WP4, Hybrid-solutions, how to combine them?*)
- Florian Brunner (Migros): gone from steam to hot water in some cases – often question of responsibilities; currently installing heat recovery, we have 80-120°C needs, we are looking for solutions there.
- Vincent Grass (Nestle): Methods tools to map heat sources and sinks, pinch is a tremendous effort – we need simpler tools; we are interested in open cycles; we need roadmaps to solutions.

Summary of Breakout session «Industry» (2/2)

- Thomas Janssen (Feldschlösschen): Has heat pump in 500 kW range, looking at multi benefit solutions, combination of heating and refrigeration, wood based energy. How to have a smart combination.
- Christoph Ellenberger (Sefar): has storage for residual energy – reusable plus thermal grid: wants to optimize the systems in the future. Would heat pump be a solutions? Could we produce cool air with waste heat? Temp range: Temp 80-90°C- water, air: 120°C, wants cooling at around 20°C (30-50% humidity)- contact with Beat and Stefan
- Michal Bialowski (Casale): sharing experience with decarbonisation, helping Swiss industry to move towards more sustainable technology. Has a good toolkit for scaling of technologies. We see trend to connect chemical with power industry – more decentralized solutions.
- Jacqueline Jakob (ENAW): We are looking at the problems you are looking at, determining an energetic fingerprint.
- Reto Badertscher (Sika): Implementing state of the art measures. We do not have solutions for oil heating to 270°C or steam generation. Hope to get some ideas.
- Andreas Abegg (ZHAW legal): We would be happy to know about legal problems, and help you

KTT (Knowledge and Technology Transfer)

- Website
  - www.sweet-decarb.ch
  - website is under construction, launch expected by the end of July 2021
  - with information/links to DeCarbCH partners
- Contact information
  - generic e-mail address to be defined, contact-form on website
- Let us know about your complementary projects
  - to be shared over News Channels (Linked-In, Twitter, Newsletters)
- Lunch lectures as information channel for specific topics
  - about 20 min + 10 min discussion
  - about 10 lectures per year (schedule and topics to be defined)
  - primarily for DeCarbCH partners but can be public (to be decided case by case)
  - start with internal speakers (later possibly external)
- Wiki database
  - for sharing data, inputs for simulation studies, living database, bottom-up approach

Next steps and important dates

- Contracts will be finalized in June 2021 (subsidy contract UNIGE-SFOE, consortium agreement between all research partners)
- 0.5 complementary position for scenario analysis (offered to all SWEET consortia); total new budget: CHF 8'116'500.
- First payment will take place in June 2021
- Kickoff meetings of individual work packages underway; subsequent meetings to be planned

Year	Date	Item
2021	1 June	Full-scale kickoff meeting
	Fall	Joint SWEET KTT workshop
2022	March	First annual reports (financial, scientific and status)
	April	Site visits
	June	Joint annual conferences with other SWEET
	June	DeCarbCH conference

Full-scale Kick-off meeting DeCarbCH

Tuesday, 1 June 2021, 8:30-10:30
https://unige.zoom.us/j/91412739142

Agenda

- 8:30-8:40 Welcome (Martin Patel, Laura Ding - BFE)
- 8:40-9:10 Summary of content of proposal (Martin Patel)
- 9:10-9:20 Poll on way of collaboration (Cooperation partners)
- 9:20-10:00 Breakout sessions (All)
  - Thermal grids (Gianfranco Guidati, Martin Patel)
  - Industry (Beat Wellig, Stefan Bertsch)
- 10:00-10:30 Plenary (All)
  - Wrap-up (Gianfranco/Martin, Beat/Stefan)
  - KTT (Cordin Arpagaus)
  - Open discussion (All)
  - Next steps (Martin)

Official project start: pending

…but we're on our way already!

Thank you!!!

Never hesitate to contact us!

Martin Patel, Beat Wellig, Stefan Bertsch, Gianfranco Guidati
(Management team)