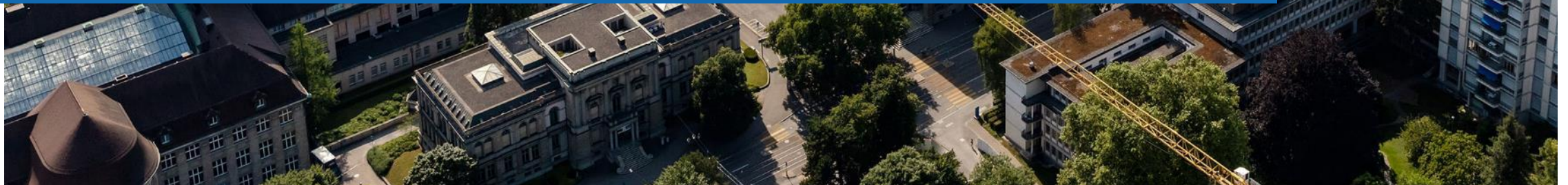


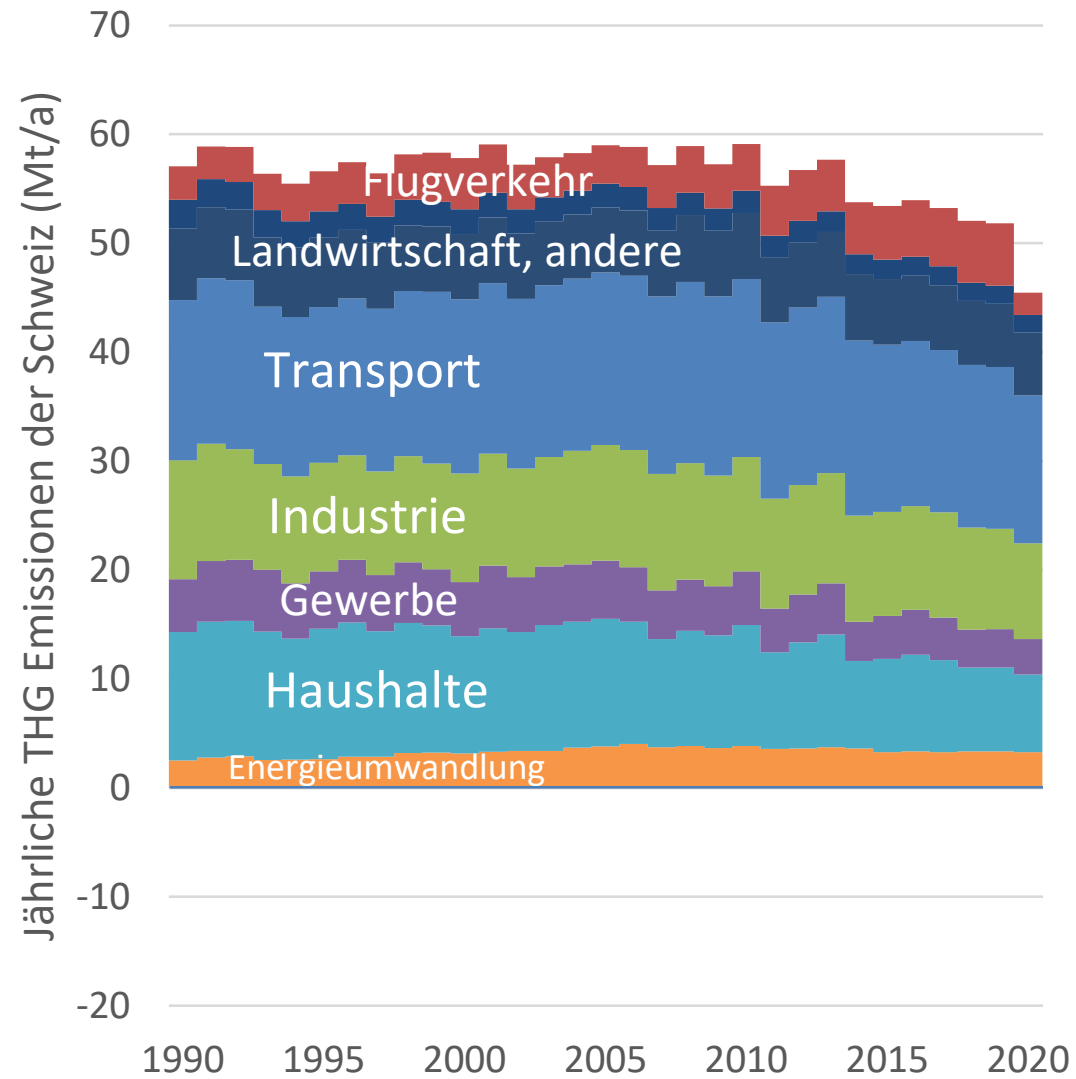


Putting net-zero scenarios into practice

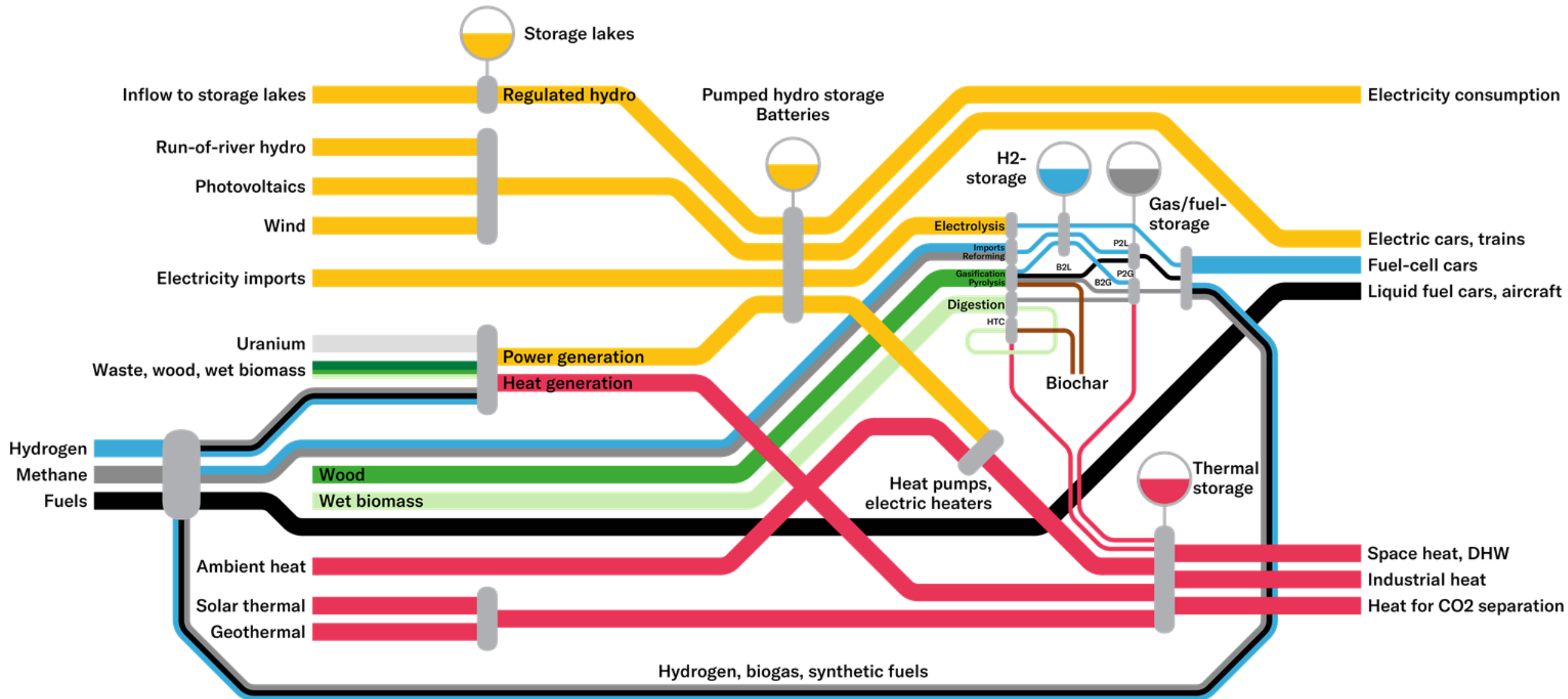
Dr. Gianfranco Guidati
Energy Science Center



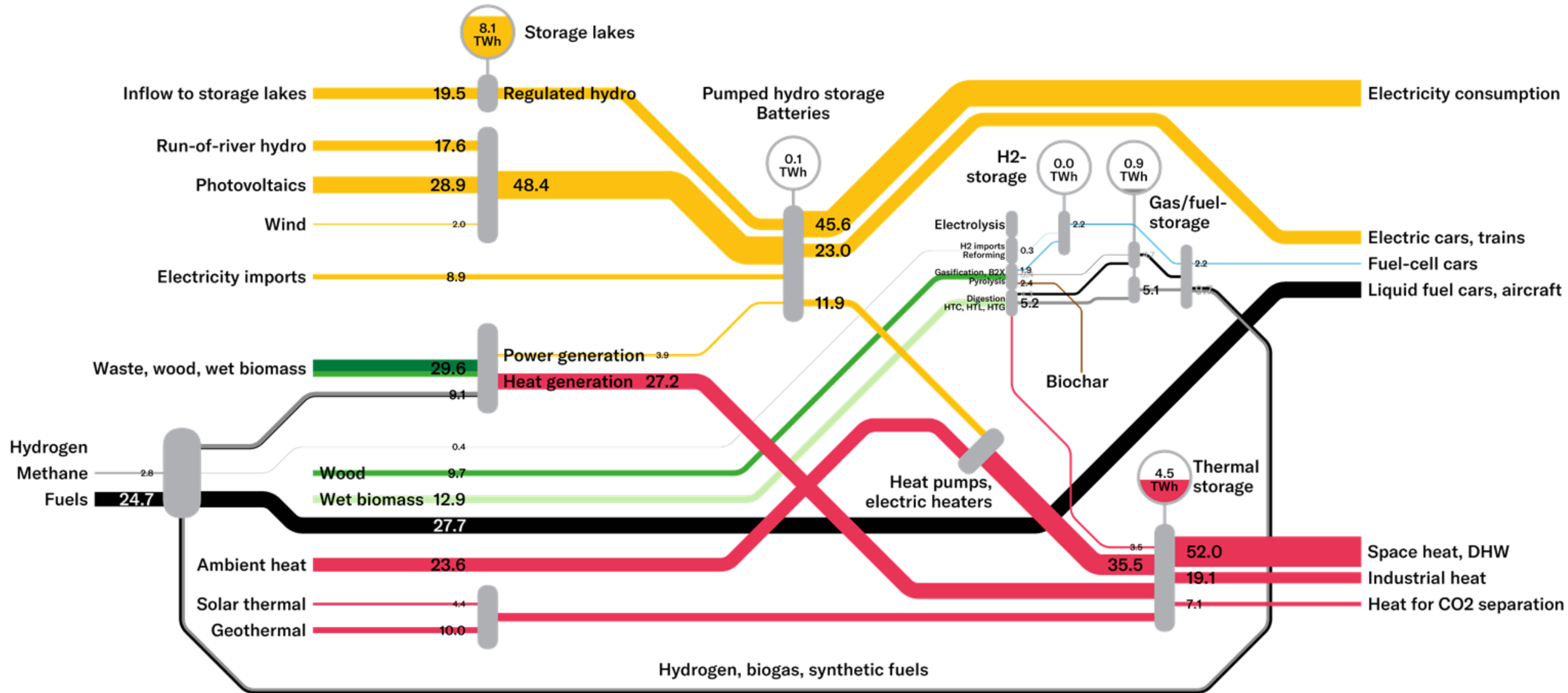
The net zero objective



The energy system – a network of energy streams



A possible net-zero scenario for 2050 (TWh/a)



What needs to be done in practice?

Build a lot of photovoltaics on buildings, on fields (agri-PV) and in the alps, approx. 25-30 GW



Deploy flexibility options: (dis-)charging of EVs, heat pumps with thermal storage, batteries, etc



Balance seasonal energy demand: increase lake volumes, power-to-X, integration with Europe



And a lot more: biogas production, industrial & building efficiency, CO2 storage, etc.





Thank you for your attention!

Dr. Gianfranco Guidati

Gianfranco.guidati@esc.ethz.ch

ETH Zurich

Energy Science Center

Sonneggstrasse 28

8092 Zurich, Switzerland