

To illustrate the role of bioenergy in Switzerland's energy supply, we compare the energy content of the sustainable biomass potential to the Swiss primary energy consumption. We close by discussing the main factors that could in the future constrain or drive the use of biomass resources.

The introduction of biomass molecules with redox active groups, the application of dynamic and adaptive coatings, and the design of complex three-dimensional hierarchical porous structures are all effective control strategies to construct advanced biomass materials for zinc-ion battery electrodes.

o Renewables make up 22 % of Switzerland's total energy supply in 2019. The renewable energy share in final energy consumption is 28%². Around 30% of renewable energy originates from biomass and renewable fraction from waste. o Solid biomass represents around half of bioenergy; the use of renewable MSW for energy is high

The "Bioenergy" research programme supports innovative and relevant themes for Switzerland in the production of energy from biomass. The programme coordinates application-oriented research at the national level, exploits synergies and secures international networking.

The Swiss Federal Institute for Forest, Snow and Landscape Research (WSL) examined relevant woody and non-woody biomass quantities (cubic meters, fresh-, dry weight) and their energy potentials (in Petajoules: primary energy and biomethane) with a similar methodological approach.

The biomass-battery includes a flexible Power-to-X production chain with a green energy storage capability. In the current analysis, the biomass-battery uses biogas or biomethane in a combined heat and power plant to produce electricity, when there is a lack of renewable power. ... in a Swiss context, i.e. Pumped Hydro Storage (PHS) and Power ...

biomass and renewable fraction from waste. o Solid biomass represents around half of bioenergy; the use of renewable MSW for energy is high in Switzerland, representing a third of total bioenergy. o The use of solid biofuels compared to the domestic forest area in Switzerland is modest and there is room for increased mobilization.

AbstractThe development of a rechargeable battery that can produce valuable chemicals in both electricity storage and generation processes holds great promise for increasing the electron economy and economic value. However, this battery has yet to be explored. Herein, we report a biomass flow battery that generates electricity while producing furoic acid, and store electricity ...

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In 2018, renewable energy accounted for 23 percent of Switzerland's end energy consumption, while biomass accounted for around 25 percent of the utilised renewable energy. It is therefore the second most commonly used form of renewable energy after hydropower.

To enable the energy transition in Switzerland, SCCER BIOSWEET assessed the current and future potentials of primary energy from the different woody biomass types in Switzerland; developed and implemented innovative technologies for biomass utilization in the fields of heat, electricity and fuels; and investigated the future role of woody ...

biomass provides 5.5% of the total energy consumed in Switzerland, while its share in electricity production is around 2.9%. With regard to renewable heat 68% is from biomass of which 52% comes from wood combustion alone. It is estimated that 10% of the final Swiss energy consumption could be

The WSL team estimates that in theory, all that biomass could be used to produce 209 petajoules (PJ) of energy each year - roughly equivalent to the energy content of 4.8 million tons of crude ...

1. Introduction. The conversion of biomass residues into bio-based materials can provide opportunities for biomass-based industries by reducing costs and even creating value from their by-products [1,2,3,4]. Biomass-derived activated carbons (ACs) can be obtained with tailored properties to meet the tremendous need for low-cost, high-performance, porous ...

Swiss startup Swiss Clean Battery (SCB) AG said this week that it will build a gigafactory to produce pure solid-state batteries at its headquarters in Teufen, Switzerland. "With production scaling from 1.2 GWh to 7.6 GWh, SCB AG will serve both the Swiss domestic and international markets with sustainable battery storage from 2024," the ...

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