

Title (en)

SELF-SUSTAINING PRODUCTION SITE PROVIDED WITH CARBON-NEUTRAL THERMAL AND ELECTRIC ENERGY

Title (de)

MIT KLIMANEUTRALER THERMISCHER UND ELEKTRISCHER ENERGIE VERSORGTE, AUTARKE PRODUKTIONSSTÄTTE

Title (fr)

SITE DE PRODUCTION AUTONOME ALIMENTÉ EN ÉNERGIE THERMIQUE ET ÉLECTRIQUE NEUTRE EN CARBONE

Publication

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Application

EP 22738544 A 20220703

Priority

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Abstract (en)

[origin: WO2023280438A1] The invention relates to a self-sustaining production site (1) according to figure 1 which is supplied with carbon-neutral thermal and electric energy, comprising at least one system (2) which comprises - a sector-coupled photovoltaic system (2.1) with a watt peak of 1 to 10 MWp under standard test conditions (STC) with the following parameters: cell temperature = 25 °C; irradiation intensity = 1000 W/m²; and sunlight spectrum according to AM (air mass) = 1.5 and at least one sector-coupled wind turbine (2.2) with a nominal output of 500 to 3000 kW for a wind speed of 13 m/s and a rotational speed of 19 U/m as the two different sector-coupled systems (2.1; 2.2) for generating electric energy, - an electric line (E1) from the two sector-coupled systems (2.1; 2.2) to the production site (1), - an electric line (E2) to at least one electrolysis system (3), - a water electrolysis system (3) or at least one electrolyzer (3) with a cathode chamber (3.1) for generating hydrogen (H₂) and an anode chamber (3.2) for generating oxygen (O₂), - a hydrogen line (3.1.1) from the cathode chamber (3.1) of the electrolyzer (3) to a hydrogen store (4), - a hydrogen line (4.1) from the hydrogen store (4) to the combustion chamber (5.1) of the at least one combined heat and power plant (5), - an oxygen line (3.2.1) from the anode chamber (3.2) to an oxygen store (3.2.2), - an oxygen line (3.2.3) from the oxygen store (3.2.2) to the combustion chamber (5.1) of the combined heat and power plant (5), - an electric line (E3) from the device (5.2) for generating electric energy in the combined heat and power plant (5) to the production site (1), and - a waste heat line (H) from the combined heat and power plant (5) to the production site (1), wherein - the sectors (2; 3; 4; 5) are coupled together so as to transmit energy.

IPC 8 full level

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