Ljubljana solar energy research and development

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Research; Services; Software; Applications; Members; Links; Laboratory of ...

Educational objectives of the LPVO and LPE are aimed at the transfer of ...

Modelling and simulations. Characterisation. PV system ...

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Globally, at least 16% of the world"s primary energy use is released as waste heat, with more than 63% of this heat occurring at very low temperatures below 100?C. Consequently, through this study, the authors highlight the critical need for more efficient use of waste heat, directly supporting several United Nations Sustainable Development Goals (SDGs).

Based on experimentally validated simulations in the COMSOL Multiphysics numerical simulation software, the authors found that a 16-stage system based on MD+STB has the potential to reduce capital costs by more than 70% per liter of produced water, making it more competitive with other modern solutions such as photovoltaics with reverse osmosis (PV+RO).

The research is extremely important, as water scarcity is becoming an increasingly serious global challenge, already affecting the lives of more than four billion people worldwide. Climate change further exacerbates water security, threatening both natural ecosystems and living conditions as well as economic development. Using renewable and sustainable energy sources, such as solar energy and waste heat, thus represents an effective solution for producing fresh water from existing terrestrial water sources.

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Integration of renewable energy sources for sustainable energy development in Slovenia till 2050

In the introductory part, an overview of energy use in Slovenia for the last typical year before the COVID-19, 2019, is discussed. Statistical data shows that Slovenia is at the level of primary energy still ~85 % dependent on fossil and nuclear energy sources with a total annual energy consumption of ~0.3 EJ (total world consumption ~606 EJ). One of the Slovenian peculiarities is that the share of energy consumption in the

transport sector is still constantly increasing and is significantly higher than the average in the EU, while the share of energy consumption in industry is decreasing.

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