Greenland smart energy building

Can a new house improve indoor air quality in Greenland?
Significant energy savings and improvementsof indoor air quality were found in the new house when compared to the traditional one. Moreover,all the extra measures have a feasible payback time despite high prices of labor and transportation to Greenland. Procedia Engineering 146 (2016) 166 âEUR" 173 1877-7058 Â© 2016 The Authors.

Does Greenland have a future for renewables?
Although Greenland has made great strides in installing renewables,these changes have so far mostly benefited larger communities in the south of the country. Making cheap,accessible renewables work in Qaanaaq has the potential to "be good not only for this community,but for all Arctic areas",however remote,Oshima says.

Should Greenland invest in solar energy?
Even without a change in the one-price model, government investment in solar energy for communities around Greenland will lower Nukissiorfiit's dependence on fossil fuel which would help to reduce the associated large ongoing deficits incurred by Nukissiorfiit . Table 8. Annual cost savings in USD/ Year for Solar-BES-diesel hybrid scenarios.

Will improvements in foundation design reduce electricity costs in Greenland?
However,in the future,if improvements in foundation design can be made,the improvements may significantly increase the FLH and thus may offer lower electricity costs. FLH of wind power on all area of Greenland is 5665 h,or 26% higher than on ice-free only area.

Is Greenland a good place for offshore wind power?
However,a study on wind and wave power potential on 22 islands has found Greenland to be one of the best sites for offshore wind powerwith 4555-5450 full load hours (FLH) in addition to good conditions for wave power with 1050-4000 FLH . Satymov et al. found 5000-6000 FLH in the south of Greenland for an improved wave energy converter.

Is Greenland a potential E-Fuels hub?
Greenland's transition from a fossil fuels-based system to a 100% renewable energy system between 2019 and 2050 and its position as a potential e-fuels and e-chemicals production hubfor Europe,Japan,and South Korea,has been investigated in this study using the EnergyPLAN model.

In the future, a study assessing energy transition feasibility for Greenland divided into several nodes might be helpful, with accounting for differences between communities, ...

Some 650 people live in the hamlet of brightly colored wooden buildings, perched on a narrow stretch of bare land between the gargantuan Greenland Ice Sheet and the frigid waters of Baffin Bay.

Yet, using these energy efficient buildings, there is an opportunity to improve indoor climate, health and security towards extreme climate for the inhabitants in the Arctic areas.

Dive into the research topics of "Energy-efficient Building in Greenland: Investigation of the Energy Consumption and Indoor Climate". Together they form a unique fingerprint.

Description of the building The investigated building is a 122.2 m2 single family house located in Akia neighbourhood in Sisimiut, Greenland. The building was constructed as wooden house typical for Greenland.

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In the future, a study assessing energy transition feasibility for Greenland divided into several nodes might be helpful, with accounting for differences between communities, their current energy structures, and differences in electricity and heat profiles.

The article presents some measurements, analyses, and comparisons of theoretical simulations and some steps that were taken to improve the house with impacts on energy consumption. The results include energy consumption, temperatures, and ...

Cold Arctic conditions, winter months without sunlight, and 24 h sunlight in summer months present challenges and opportunities for renewable energy and a potential for a sustainable energy transition in northern Greenland.

With the decreasing cost and improving performance of small hydro installations, solar power, wind power, and energy storage systems, renewable energy is expected to supplement or replace existing diesel grids on islands and in remote areas.

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