

Stepping up green impacts with hybrid solutions

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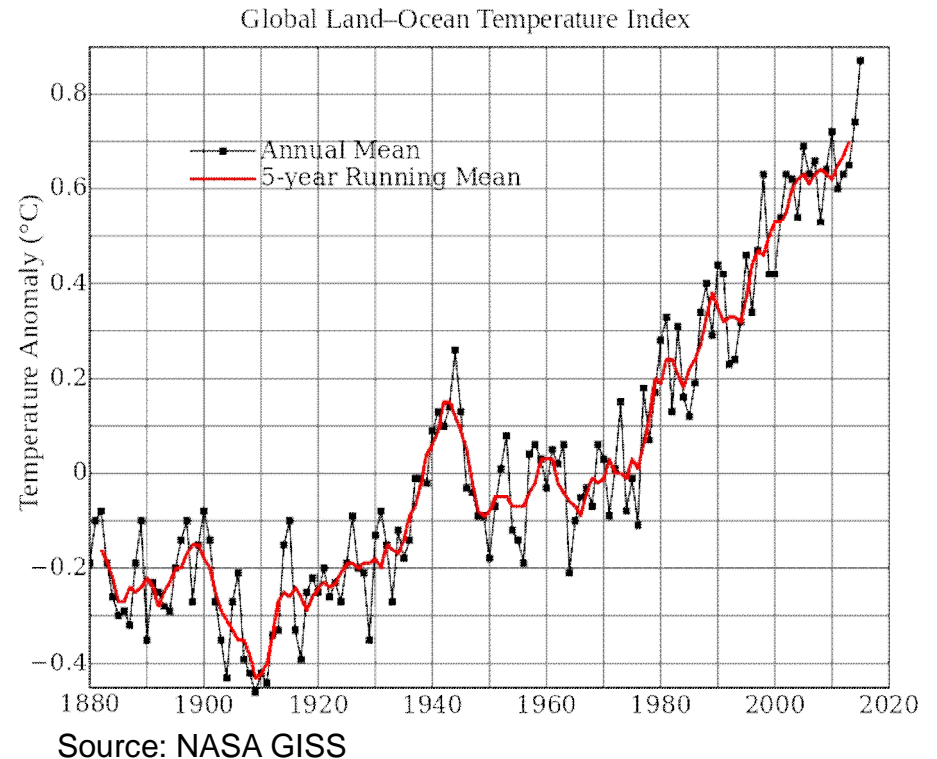


Workshop, Nordregio Forum 2016, November 23rd, Helsinki (FI)

Background



- Limitation of global warming to 2K (or below) is considered one of the most important global problems (see international conferences in Paris and Marrakesh)
- Renewable energies → key factor in reduction of greenhouse gas emissions



*„If we fail to act, we will end up with a different planet.“
(Jim Hansen, director of the Nasa Goddard Institute for Space Studies)*

Overview on Renewable Energies



Solar

Wind

Biomass

Water

Geo-
thermal

What are our options?



Energy storage

Improved Energy
Transport

Hybridisation of
Renewable Energy
Technologies

Demand Side
Management

IEA Bioenergy Task 41 Project 7 „Bioenergy RES Hybrids“



- IEA Bioenergy is an international collaboration to achieve substantial bioenergy contributions
- Objectives of the project:
 - Review and evaluate information on the current state of bioenergy RES hybrids
 - Identify those areas – applications and sectors – in the future energy system where such hybrids have a strategic role
- Participating countries: Finland, Austria, Germany
- First seminar June 15th 2016 at EU Sustainable Energy Week in Brussels
- Country reports for participating countries already published
- Final report is currently being finalized

Agenda for today

- **State of art in bioenergy hybrids**
Elina Hakkarainen, VTT (10 min)
- **Smart district heat via solar thermal hybrids**
Miika Kilgast, SavoSolar (15 min)
- **Distributed renewable CHP-based solutions**
Michael Laho, Volter (15 min)
- **Role of bioenergy in low-carbon Helsinki**
Juuso Loukola, Helen Oy (15 min)
- **Value of integrated hybrids and closing thoughts**
Ilkka Hannula, VTT (20 min)
- **Discussion**
- **15.00 Closure of the seminar**

Smart Bioenergy – innovations for a sustainable future
Come and join us!

Contacts

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