LS Control A/S in Cooperation on the Products of Tomorrow

We care about the environment and our mutual resources, therefore we closely cooperate with our customers to create ventilation products and heat pumps of the future.

We are also involved in projects concerning energy and clean air within other industries. Here you can read about 2 of the projects on sustainable energy and clean air.

We are always keen on hearing about projects and discuss if we could be of assistance.

Solar-powered refrigeration appliances for the food sector.
- The missing link in the food cold chain.

In many parts of the world the lack of electricity leads to lack of refrigeration facilities for food from all industries, like fishing, agriculture and in the food retail business. This lack of conservation facilities leads to an enormous waste of food which is both a serious barrier to economic development and also a huge negative impact on the CO_2 emissions to detriment of the environment.

The solar refrigeration project aims to develop robust and versatile refrigerators and freezers for photovoltaic systems that are adapted to the off-grid market.

The technology used is storing energy in an ice storage facility, which is keeping the refrigerator cold at night and during periods with very little sun. The ice is functioning as a sort of battery as no conventional battery is used.

Instead a technology to start the refrigeration compressor with electricity directly from the solar panels is used. A technology known as "Solar Direct Drive" (SDD). This technology has over the years been developed with great success through several R & D projects with support from the Danish Energy Agency and schemes such as EUDP.

The potential both environmentally and economically is very large and increases as developing countries experience economic progress. This project seeks to support economic growth in remote areas as it opens up market potentials.

We are proud to participate in this project with our broad knowledge on electronics and to be developing the electronics necessary for such a project to succeed.

Project participants: Danish Technological Institute (project manager), Vestfrost Solutions, **LS Control A/S**, DTU Mechanical Engineering, WWF World Wildlife Fund and Arla Foods amba.

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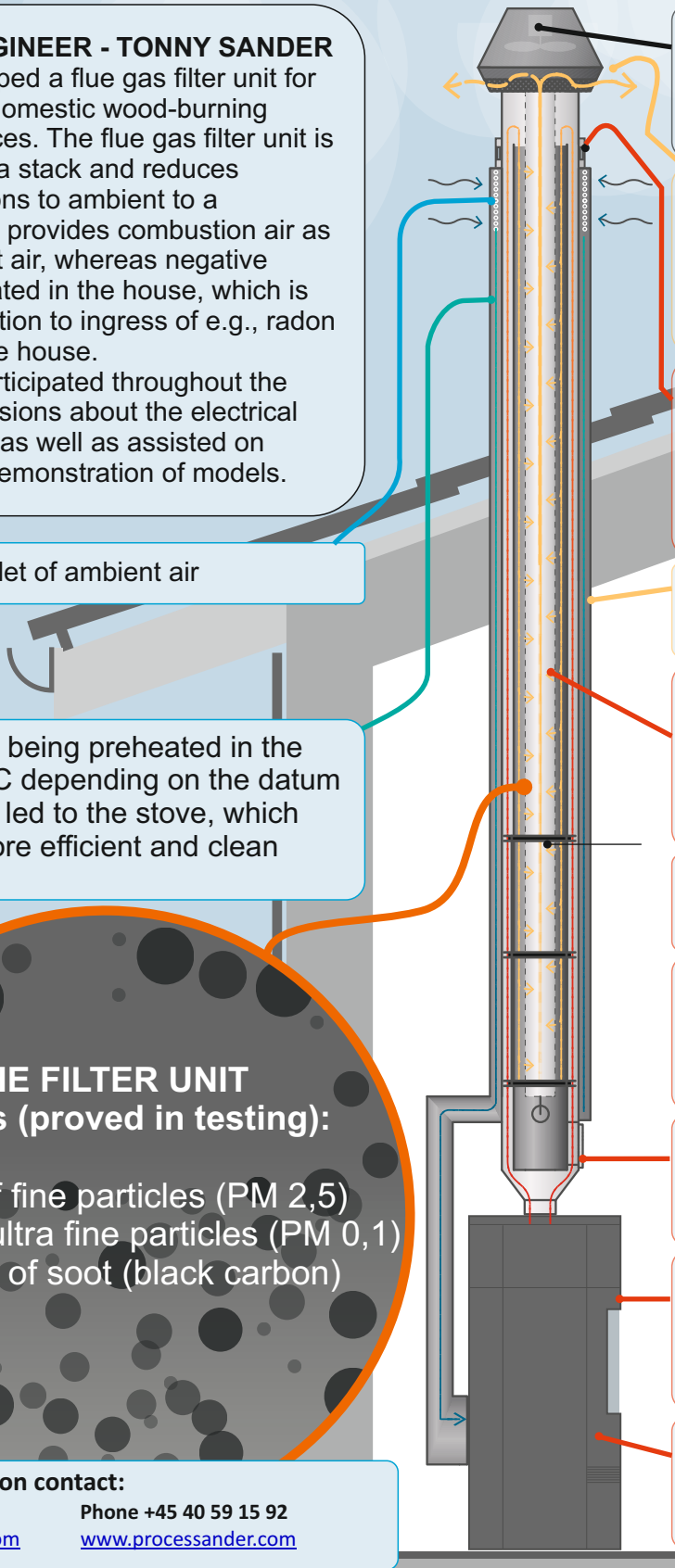
Smoke Cleaner

LSCONTROL

Get Connected

THE DANISH ENGINEER - TONNY SANDER HOLM has developed a flue gas filter unit for existing and new domestic wood-burning stoves and fireplaces. The flue gas filter unit is an integral part of a stack and reduces particulate emissions to ambient to a minimum. The unit provides combustion air as preheated ambient air, whereas negative pressure is eliminated in the house, which is problematic in relation to ingress of e.g., radon and moisture to the house.
LS Control has participated throughout the project with discussions about the electrical part of the system as well as assisted on building test and demonstration of models.



A FLUE GAS FAN creates the necessary draught for transferring the flue gases from the stove to the ambient and across the fabric type filter.

FLUE GAS is cooled and the heat is transferred to the combustion air, and thereby recovered for reuse in the house. The flue gas led to the ambient has a relative low temperature.

SAFETY OUTLET In case of an unintentional event e.g., a fire in the stack (measured by the provided temperature switches) the safety outlet shall automatically open and the flue gases are led to the ambient in a traditional way.

AIR INTAKE for inlet of ambient air

THE FILTER can be installed in an existing stack or supplied together with a new steel stack.

THE FABRIC TYPE FILTER is a proven technology utilized on mid and large sized power stations for decades. Depending on the operational conditions, the filter must be changed by the chimney sweeper at a frequency of 1-4 years.

AMBIENT AIR is being preheated in the stack to 50-100°C depending on the datum conditions and is led to the stove, which provides for a more efficient and clean combustion.

A CLEANING UNIT automatically cleans the filter unit in dependence on the actual needs.

DIFFERENT MODELS are developed for domestic houses and summer residences and may as well be installed in an existing stack in connection with an open fireplace.

THE FILTER UNIT
catches (proved in testing):

- 94 % of fine particles (PM 2,5)
- 98.6 % of ultra fine particles (PM 0,1)
- 99.6 % of soot (black carbon)

A FLY ASH BIN must be emptied manually on a regular basis - however, more seldom than the ash bin for bottom ash from the stove.

The stove hatch shall be provided with a sensor for safeguarding draught in the filter unit and thereby eliminating traditional ingress of flue gas to the house.

The filter unit and stack is compatible with standard and existing stoves - allowing for connection to either the top or the rear of the stove.

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