

# **Engineering & Technical Complex "AVTOMATIKA"**

We spare no energy, so you  
don't waste your energy



# **Cool Energy**

**long-term solar energy storage**

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# Introduction

Mass production of solar energy has caused an imbalance in electricity generation and usage during the day and night.



# Problem

Existing energy storage solutions are expensive, have a limited resource and durability.

# Technology

The storage of excess solar electrical energy takes place in the form of ice of a special form, obtained using known refrigeration units and / or the COOL ENERGY plant tested by us.

The resulting ice is stored in an ice accumulator and used at night to cool the water supplied to the air conditioning and cooling systems of buildings.

# Possible additional COOL ENERGY functions

**1** Making ice with the COOL ENERGY unit from the freezing air of the high latitudes and high mountains, the Midwest states and after the evaporators of air source heat pumps (AHP) heating systems.

**2** Use in frosty regions of the heat of water crystallization (333 kJ/kg) for air heating in front of ventilation, air conditioning, heating systems at AHP to temperatures below minus 5°C.

**3** Transportation from frosty regions of produced ice 20-400000t in thermally insulated containers to any distance by land and water (\$ 0.05 t/km).

**4** Increasing the efficiency of solar PV panels by cooling them



# Current stage of the project

We created, tested, and patented a core technology. There is an experimental prototype of an ice-maker and scientific publications in Ukraine and the USA.

Our next steps are design, production and testing of the full COOL ENERGY prototype.



**Thank you!**

**Contacts**

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