Introduction

December 2021

Make use of the outstanding geothermal potential of the Carpathian basin
Company Introduction

- MS Energy exists since 2007 and is a dynamically developing innovation company that develops technological innovations primarily in the field of earth sciences. It provides permanent engineering services to hydrocarbon companies in Central and Eastern Europe and plays an active role in professional support for geothermal investments in the region.
- The special base of the company consists of earth science and energy specialists, as well as reservoir engineers and drilling specialists. The activity is complemented by economic and project management competencies related to the projects.
- The company has been operating successfully in the hydrocarbon industry since the beginning and is also as a result of its services related to large geothermal investments.
- In 2021 MS Energy established MS Energy Internationals Ltd. in Romania, at Cluj Napoca.
Company Profile

GEOTHERMAL ENERGY PORTFOLIO
- SUPPORTING OF GEOTHERMAL PROJECTS AND PROGRAMS-CONSULTANCY
- geoDH PROGRAM AND PROJECT DEVELOPMENTS
- THERMAL WATER BASED SYSTEM-GEOTHERMAL EXPLORATION
- PETROTHERMAL BASED PROGRAMS-WEHEAT SYSTEM
- SECONDARY USE OF DEEP DRY HOLES AND IDLE WELLS

R&D PROJECT DEVELOPMENTS
- WEHEAT SYSTEMS
- SUPPORTING ENERGY TRANSITION SOLUTIONS (hydrogen storage; CCUS...etc)
- ENERGY PRODUCING FROM DEPLETED HC FIELDS
- SPECIAL TOOLS FOR SPECIALUSES: DEEP BOREHOLE HEAT EXCHANGERS; TOOL FOR RADON ACTIVITY MEASURING

GENERAL SUPPORTING PORTFOLIO
- PERMITTING AND LICENCING FOR DEEP DRILLING PROJECTS
- WASTE (DRILLING MUD) DISPOSAL
- MINE SURVEYING
- SUPERVISOR/ TECHNICAL INSPECTOR FOR DEEP DRILLINGS

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Geothermal Energy Portfolio
Main Credentials by MS Energy Solutions Ltd. In Hungary

Geothermal project GYŐR (AUDI)

The geothermal heating system of MOSONMAGYARÓVÁR

BUDAPEST-in progress

MÁTÉSZALKA
geoDH project

The FIRST WEHEAT PROJECT

✓ Salgótarján
✓ Kecskemét
✓ Ózd
✓ Tőalmás
✓ Szolnok
✓ Tompa

KISKUNHALAS
Thermal opportunites for geoDH

✓ Szeghalom
✓ Ráckeve
✓ Nagylengyel
✓ Kecel
✓ Nagykőrű
✓ Hómezővásárhely
✓ Berettyóújalu

SZANK
Secondary use of depleted or dry (no HC’s) wells

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About the WeHEAT technology

The WeHEAT technology is a DEEP geothermal probe operated in a fully closed loop system, implemented in the wellbore structure of deep dry holes or specially designed new deep drills.

VALUE PROPOSITION

- Cost-effective solution with a one-time investment and minimal operation and maintenance requirements
- By installing the system, the cost of recultivation of existing wells can also be saved
- Predictable and stable heating system with fully automatized modern control
- Fast and flexible installation, complete system in a few days
- No water extraction, water treatment risks and costs, no hazardous materials in the closed loop system, no drilling*
- The technology is zero waste, zero carbon technology providing sustainable energy, which contributes to the achievement of zero carbon targets of the EU

300-900 kW* automatic and programmable heating system with modern control, providing green energy without CO₂ emissions

No need for expensive drilling of new wells, the technology can be installed in existing 1.5-2.5 km idle deep wells, the technology allows for deep dry holes and depleted deep wells to be reused again for energetic purposes.

Heating of large buildings and industrial halls
Heating of sports facilities and residential parks
Greenhouse heating, agricultural technological heating

The produced geothermal heat can be used for heating with a >96% efficiency and can be adapted to existing and new heating systems.

It is a fully closed system with normal water circulation and without extraction of the underground water.

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The Fully Closed Cycle

- No perforation, no connection to the subsurface reservoir
- Cased hole with cement plug at the bottomhole.
- Simple heat centre at the wellhead.
- Closed secondary pipeline for heating facilities
- Inlet temperature and flow rate influence system capacity
- Optimal energy design begins at the surface-secondary system/heat consumer
EXISTING AND WORKING TECHNOLOGY