

MANNVIT

ENGINEERING



Tryggvi Jonsson

Manager of Marketing and Business Development



Mannvit – Facts

- Employees approx 350
- Employees in affiliated companies 50
- Employee-owned by 130 shareholders
- Headquarters in Reykjavík
- Turnover in 2009 was 5.000 mkr.



Services



Industry

Power intensive industry

Mechanical

Chemical Processes

Energy

Geothermal energy

Hydropower

Power
Transmission and
Distribution

Geothermal survey and research

Buildings

Structural

HVAC

Electrical services

Firesafety

Accoustic

Construction and Research

Project management

Construction management

Safety & Quality management

Geology

Soil Mechanics

Laboratory

Environment and Infrastructure

Environment

Transportation and urban planning

Infrastructure

Utilities

Information Technology

Telecommunications

Automation and Control

Software and System engineering



Our products Renewable Energy and Climate

- Geothermal energy
- Small hydropower
- Waste management
- Landfill Gas
- Bio Diesel
- Bio Ethanol
- Methanol by capture of CO2 emissions
- CO2 reduction
- Composting industry







Clear benefits ...

... of geothermal district heating and power Mannvit kft







Present

Future



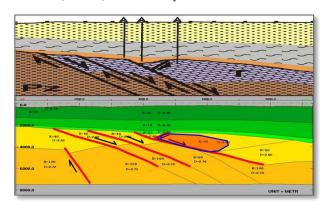


Project Milestones

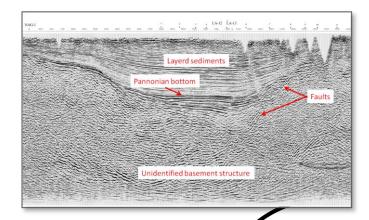
2007
Evaluation of potential geothermal areas in Hungary



December 2007 – May 2008 Geophysical survey -AMT/MT/Gravity



First part of 2008 Interpretation of seismic lines



End of 2008 Official opening of Mannvit's office in Budapest





The first geothermal well drilled – 2009

Results:

- The first well was successful
- Drilled depth: 1820 m
- Yield: 20 l/s
- Outflow temperature: 87°C
- Estimated heat output: 2,3 MW



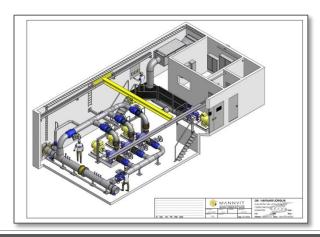
Szentlőrinc, SW Hungary





Next steps

- Preparation for construction of geothermal heating system (GDH) in Szentlőrinc
- Drilling of second well in Szentlőrinc
- Drilling of first well in Miskolc
- In other areas simultaneous preparation and performance of environmental licensing, well design and planning activities



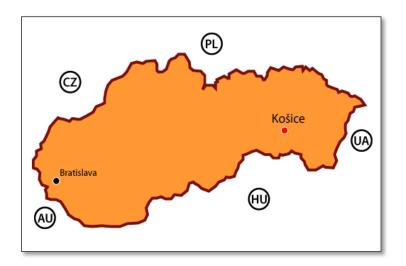






Electrical production - geothermal energy, Kosice, Slovakia





Mannvit's Role

- Project management and EPCM
- Evaluation of geological data, well siting
- Environmental Impact Assessment and licensing
- Well design, tender documents for drilling and contracting
- Reservoir engineering
- Feasibility study

Man



- Geothermal reservoir engineering
- Reservoir modeling
- Groundwater hydrology
- Surface runoff
- Environmental modeling

Vatnaskil

Land & Water Resource Consultants

- Geological and hydrological studies
- Water resources assessments



MANNVIT

GeothermalExploration

- Geothermal exploration management
- Geological, geochemical and geophysical surveys management and interpretation
 - Resource estimation
 - Cartography

GeothermalEnergy

- Pre-engineering
- Cost estimation
- Drilling supervision



- Geothermal development of lowenthalpy basins
- Reservoir modelling
- Well design and Drilling supervision
- CO₂ storage
- EGS technology



- Geothermal exploration and utilization of Hungary's Pannonian basin
- Geothermal exploration in Slovakia, Romania and Greece
- Drilling supervision



Mannvit UK

- Small hydropower
- Waste management
- Landfill Gas
- Bio Diesel
- Bio Ethanol
- Methanol by capture of CO2 emissions
- CO2 reduction
- Composting industry



Mannvit USA

- Geothermal energy
- Cooperation with Technip
- Two clients
- Exploration projects
- Corporate member of CANGEA
- Registered as "Qualified Person," under the Canadian Geothermal Code for public reporting.
- Design of a binary power plant will start this summer



Mannvit International Operation

- Turnover in 2009 was 440 mkr.
- Between 40 and 50 experts in Iceland working on projects
- Opportunities for advancement and growth
- Up to half of Mannvit's activities in 2015 overseas in Central Europe, UK and USA





telecommunications umferð umferð URBAN PLANNING umhverfismál ACOUSTICS VERKEFNASTJÓRNUN orkufrekur iðnaður