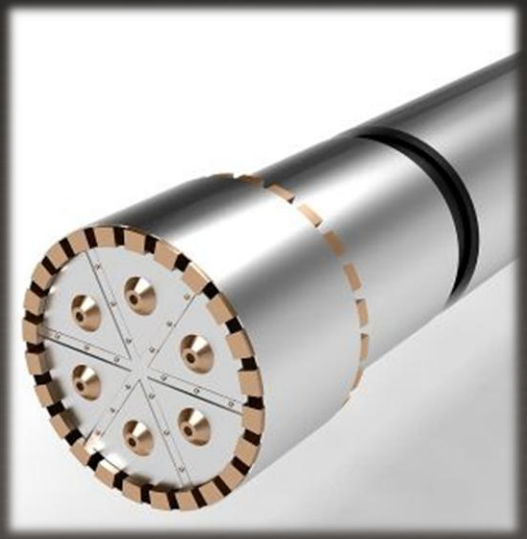
GEOTHERMAL ANYWHERE
ULTRA DEEP DRILLING TECHNOLOGIES

PLASMABIT

Technology Presentation

We are developing a groundbreaking drilling system PLASMABIT™ capable of drilling to deep depths more than:

- 5 times **CHEAPER** than any of today's methods
- 4 times **FASTER** than other drilling procedures
- 3 times **LARGER** diameter at the bottom
- 2 times **DEEPER** than common drill hole
- 1 **PROCESS** for casing and drilling
- 0 **TRIPPING** and drilling bit replacement



Geothermal Anywhere enables utilization of identified oil and gas deep reservoirs and 90% of global geothermal energy that are not accessible today

EXECUTIVE SUMMARY

Type of business	**Deep drilling technology** ▪ Clean tech - renewable green energy: Enhanced **geothermal** systems. ▪ **Oil & gas** drilling. ▪ Intelligent **mining and tunneling**.
Company stage	Start-up in the fourth year in the drilling field with secured financing €9 MM.
Mission	To combine original unique technological knowledge, expertise and management skills to **create a cost-effective deep drilling system** for accessing and utilizing vast sources of energy, stored several kilometers under the Earth's surface.
Technology	▪ Patented, game-changing innovative **deep drilling system PLASMABIT™** ▪ **Rock disintegration** technology and related solutions ▪ **Non-contact drilling device** based on robust plasma generator ▪ To efficiently reach sources up to **10 km / 35000 ft** deep
Market	▪ Demand for new cost-effective drilling solutions is **pulled by existing market**. ▪ Estimated **energy market** will be **US$ 800 billion** in 2020. ▪ Estimated **oil and gas drilling** market **US$ 87 billion** in 2011.
Company contact	Igor Kocis, CEO Geothermal Anywhere (GA) Email: Igor@geoany.com

To bring energy to everyone. Anywhere!

CHARACTERISTICS OF PLASMABIT UNIQUE SOLUTION

What it's all about?

- **Radically innovative plasma drilling system PLASMABIT™**
- Geothermal Anywhere enables **real drilling revolution**

What is different?

- **Cost-effective drilling for deep wells** (3-10 km)
- **Linear increase of cost** per depth in contrast to exponential
- **Large constant diameter** along the well
- **Continuous casing-while-drilling** system ContiCase – well stability

What does it mean for the market?

- Efficient extensive **deep hydrocarbon reservoirs access**
- Cost efficient **Enhanced geothermal systems, clean energy**
- **Onshore and offshore, any geographical location**

Why have others not done it, but we can?

- **Interdisciplinary expert team** covering **all necessary fields** on top level with necessary resources and laboratories
- We built up networked **Research Center for Deep Drilling** with leading **industry, university and academia partners**

PLASMABIT deep drilling system

PLASMABIT™ CORNERSTONES

Benefits	Key Features
Cost effectiveness **Higher drilling speed**	Non-Contact drilling No friction, No wear and tear Energy efficient melting process
Reducing nonproductive time **Enhanced well stability**	No tripping Casing/sealing while drilling (CwD) Measurement while drilling (MWD)
Higher production fluid flow	Large non-tapering diameter of the well
Drilling depth 5 - 10 km **Suitable for offshore drilling**	No mechanical drilling connection between surface and underground High temperature, high pressure conditions (HTHP)
Improved safety	Full automation

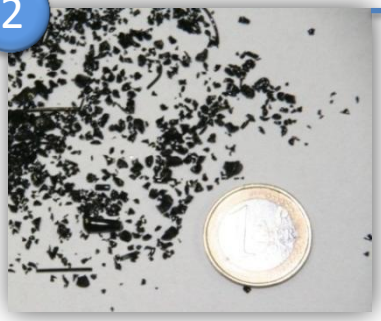
PLASMABIT technology process description

1

Thermal rock processing regardless of rock type

- Intensive heat flow generated by electrical plasma
- Water steam heated inside the electrical arc (>5 000 K)
- Heat flow thermally processes the rock and changes the phase of the rock

2



Fragmentation process based on rapid cooling

- Thermally processed rock cooled with water in the controlled way
- Controlled process of fragmentation, 98 % of fragments bellow 1 mm
- Different physical processes based on rapid cooling of thermally processed rock

3

Rock fragments removal

- Water transport of fragments from PLASMABIT bottom
- Interface to existing mud system

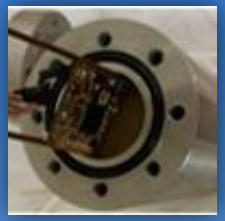
Our breakthroughs – achieved and future milestones

Dec 2010

2nd generation of plasmatron scale 1:10, pulsed mode

Non-contact drilling

Aug 2011



High pressure and temperature protective vessel (up to 1000 Bar)

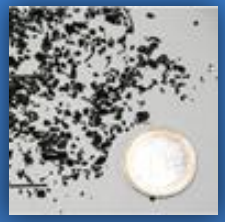
HPHT environment

Dec 2011

Plasmatron startup in water environment

HPHT environment

May 2012



Thermo-hydraulic rock fragmentation

Speed and efficiency

Aug 2012

Continuous casing while drilling Proof-of-the-concept

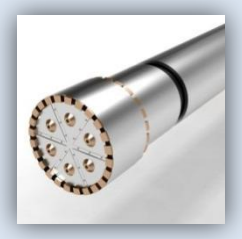
Casing while drilling

Oct 2012

PLASMABIT Field Prototype

Demonstration

Dec 2012



Multiphase laboratory plasmatron with wider diameter

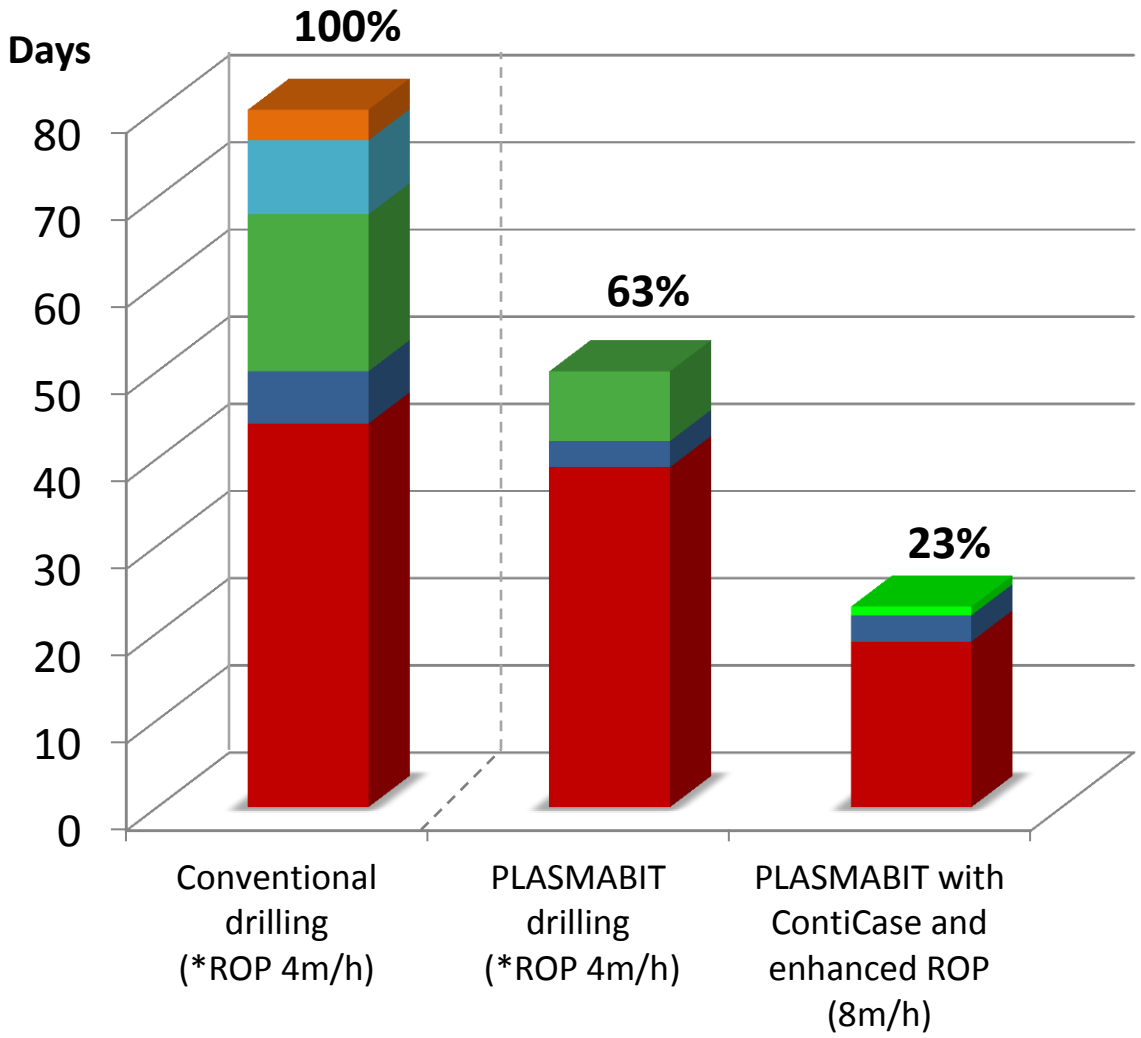
Drilling speed

Sep 2013

PLASMABIT Drilling System Pilot Well

Pilot project

Drilling Costs - PLASMABIT Savings

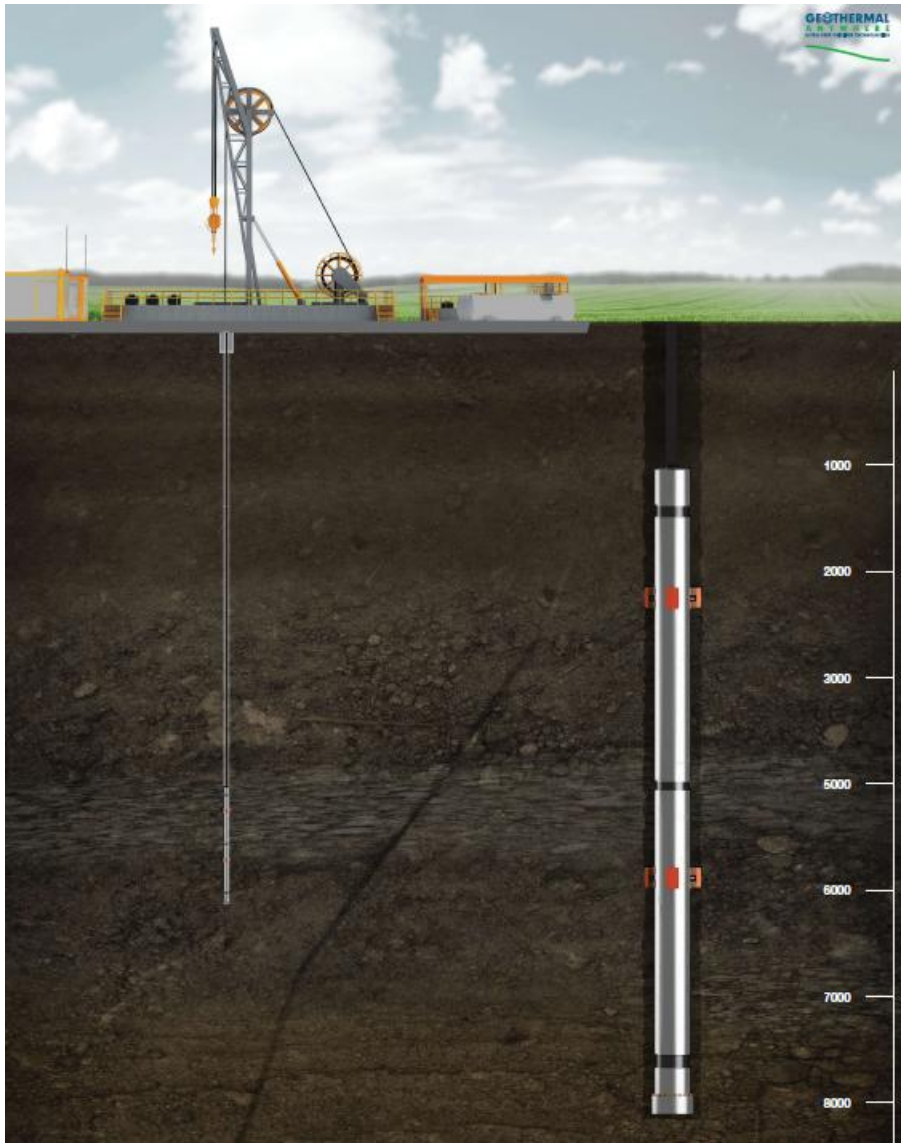


- **Length of the borehole:** 4.5 km / 15,000 ft
- **Conventional drilling cost:** $6.5M
- **PLASMABIT with ContiCase and enhanced ROP cost:** $1.7M
- **Additional fixed savings:** ~$600k

*ROP – Rate of penetration

Drilling using PLASMABIT

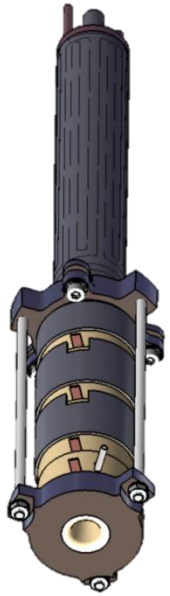
1. Eliminates **Tripping** costs
2. Increases Rate of penetration (**ROP**) – constant speed
3. **No weight** on bit
4. Reduces **drilling rig complexity**
5. Decreases requirements on **Mud**



INTELLECTUAL PROPERTY RIGHTS

- GA has finalized and applied for a **set of patents protecting the PLASMABIT IPR**

Patent	Patent Overview	Patent Stage
New drilling concept	Equipment for excavation of deep drill holes in geological formation and the manner of energy and material transportation in the drill holes	PCT/SK2008/050009; EU EP08767327.3 US 12/666,224; Slovak PP5087-2007
Advanced drilling platform	Equipment for realization of deep boreholes and method of realization of deep boreholes	PCT/SK2010/050002; EU EP10703136.1 US 13/148,032; Slovak PP 5011-2009
Advanced drilling method	Method and equipment for disintegration of materials	PCT PCT/SK2010/050016; Slovak PP 5062-2009
Virtual water plasma generator	Virtual water plasma generator and method for generating of electric thermal plasma	Slovak PP 5046-2011
Thermo-mechanical drilling method	Breaking up rocks with its melting, and interaction of water streams	Slovak PP 5045-2011
Parallel thermal plasma generators	Thermal plasma generation system for parallel generation of thermal plasma and process of parallel thermal plasma generation	Slovak PP 5044-2011
Electrode movement	Autonomous governor of the plasma generator electrodes movements	Slovak PP 5048-2011
Method of rock disintegration	Method of rock disintegration and equipment for performing of disintegration	Slovak PP 5047-2011



- Another two utility models applications in filing process
- New patent applications in preparation

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To bring energy to everyone.

Anywhere!

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