GA Drilling

Leader in Bringing 21st Century Technology to the Drilling Market

Our Mission

- To combine unique knowledge, expertise and leadership skills to create a ground-breaking plasma technology
- To ensure all our customers derive real business benefit from our sustainable technology

Four Key Themes of our Strategy

- Excellent people and capabilities
- PLASMABIT solution for oil and gas well abandonment and intervention market
- World class research and development projects
- Diversified portfolio of advanced technology technology services for sustainable clean energy applications

Content

PLASMABIT REPRESENTS SLOVAKIA

EXPO MILANO

SK EU2016 Slovak Presidency of the Council of the European Union

Rio2016

Igor Kocis
Chairman

Chairman's Biography

Igor is a co-founder of GA Drilling and brings more than 20 years of engineering, business development and managerial leadership experience to the company. Before that Igor built from scratch to 50 employees a technological company ARDACO and managed it as Chairman and CEO for 7 years. Igor was recently selected as one of the TOP 100 innovators in Central and Eastern Europe.

Chairman's Message

„Many key industry sectors have experienced radical technological and operational changes in recent years. However, the geological based hydrocarbon and energy acquisition industries have yet to experience significant application of disruptive technologies. These sectors are now facing increasing challenges and there is a urgent need for "game changing" technology applications.
For example, such innovations are needed for the decommissioning of depleted wells or for providing access to the new energy resources within the deep geothermal layers.

Our company is founded on the desire to discover, develop and bring to the market new technologies that will deliver a step change in efficiency and improve HSEQ performance. As an example our PLASMABIT technology creates a fundamentally new way of material disruption with a sophisticated combination of proven physical, chemical and mechanical procedures. Several global oil & gas companies have recognised the incredible potential of this technology shift and have joined our journey to a market ready product.

The first applications of PLASMABIT technology are being prepared for testing in real conditions, in the field with our partners. Customers and partners of GA Drilling are together creating a decisive shift in the upstream industry. This will enable them to be the first to improve procedures and processes as well as the reliability, profitability and safety of their operations.

We are passionate about our vision and we are proud of the creativity and dynamics of our multidisciplinary team of 110+ professionals. We have created a company with a long term future and are ready for meaningful mutually beneficial cooperation for our partners as well as for clean and sustainable energy for mankind.

Our People

110+ employees

20+ PhDs

60+ master engineers

Team

Our Leadership Team

Dusan Kocis
Managing Partner

Dusan as a co-founder brings over 18 years of experience in the R&D and business development. Dusan is a main driving force of the equity investment rounds and financing in the company. Prior to GA Drilling, Dusan had spent 7 years as a Member of the Board and COO of the ARDACO Company.

Tomas Kristofic
Chief Technology Officer

Tomas is a co-founder of GA Drilling and has more than 20 years of experience in R&D management. He is highly skilled in the areas of process automation, electronics and embedded system communication for preserving reliability in harsh environments.

Ivan Kocis
Chief Scientist

Ivan is a President and Chairman of the Advisory Board and engineering and industry veteran with 40 years of experience in leading positions with large organisations and successful start-ups. Ivan is a member of scientific bodies of EU technological platforms.

Marek Gebura
Head of R&D

Marek has almost 15 years of experience in R&D of various technical fields. He is skilled in materials engineering with focus on materials degradation in extreme environments, on rock mechanics and systems engineering.

Nigel Jenkins
Business Growth Director

Nigel's recent engagement was leading Decom North Sea to become the representative body for the UKCS decommissioning industry. He brings board level experience from a variety of sectors, including onshore and offshore oil, gas and process, nuclear, environmental, and manufacturing.

Advisory

Our Advisory Board

Gerald Grohmann

Business Strategy

Gerald has been Chairman of the Executive Board and President of Schoeller-Bleckmann Oilfield Equipment AG, the global market leader in high-precision components and leading supplier of oilfield equipment. The main focus is on drilling string components and hi-tech downhole tools for drilling and completing directional and horizontal wells.

Ted Halstead

Geothermal Energy Division

American climate expert and policy maker, co-founder and CEO of the Climate Leadership Council, an international research and advocacy organization for climate solutions. He is a co-author of the plan called "The Conservative Case for Carbon Dividends" with respected USA politicians and business leaders.

Jules Shoenmakers

Well P&A Expertise

Recognised industry leader with 30 years experience. Longtime Shell Global Prinicipal Expertise Holder for Well abandonment campaigns, designs and standards. With such deep knowledge and an extensive C level network, Jules connects us with end users, service partners and regulators, ensuring the success of our technology.

Mikhail Gelfgat

Technology Development

Mikhail has 50-years work experience in the petroleum industry. He has contributed a lot in realisation of scientific ultra-deep wells drilling projects, development of retractable drill bits and hard rock coring technology. Mikhail has published more than 50 papers and has tens of inventions.

Iain Pittman

Product Development

Iain specialises in engineering design primarily focused on abandonment and re-abandonment operations. He is also engaged as an instructor for well abandonment across the well engineering and C&WI disciplines. He provides technical support for the development and deployment of our technology.

Our Values

Trust

Giving and receiving trust is fundamental for us.

Creativity

We always think big and seek for ways which others don’t.

Exceptionality

We are the best in things that really matter.

Courage

Striving for success, learning from failures. Getting through anything.

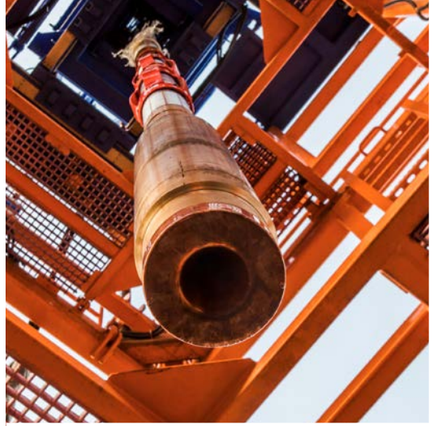
Ownership

Personal accountability for own actions and results.

Our Management Team

Company Achievements

- The Company is operating in Slovakia, United Kingdom, USA, and United Arab Emirates
- 9 years in the R&D for drilling, well construction and intervention; certified with EN ISO 9001:2015 and EN ISO 14001:2015
- Our intellectual property consists of 6 Granted Patents, 3 US Patent Applications, 4 EU Patent Applications, 6 priority Slovak Patent Applications, 2 Industry Designs and 1 international registered trademark
- 20+ doctoral level empoyees, 60+ master level engineers
- Repeatedly ranked among the best European innovative companies and continuously supported by the European Union Framework Programs
- Cooperation with world leading universities and institutes
- Developing and commercializing the PLASMABIT technology
- The PLASMABIT Joint Industry Project set up in 2013 with major oil & gas operators and oilfield service companies
- The first ever plasma milling underwater
- The first ever plasma milling in high pressure and high temperature (HP/HT) environment
- The PLASMABIT technology currently in prototyping stage, first applications under preparation for onshore and offshore field tests in a short-time period
- Proven performance for continuous milling of oilfield tubular



Our History

2008

- **GA Drilling formed as Geothermal Anywhere**
- Full focus on PLASMABIT drilling technology for geothermal applications

2009

- **First successful laboratory drilling completed**
- First public grant won with the total amount of over €2.5M contracted

2010

- GA Drilling opened a laboratory in the premises of the Slovak Academy of Sciences
- **Demonstration of the 1st generation of PLASMABIT drilling technology**

2011

- GA Drilling certified to the ISO 9001:2008
- **Additional large infrastructure** grant projects won in fierce competition

2012

- First PLASMABIT test pre-prototype **successfully accomplished**
- GA Drilling among the best 25 European high-tech companies within the European Venture Contest

2013

- Joint project with Weatherford
- Rebranding to GA Drilling
- **Joint Industry Project with major oil & gas companies**
- Investment and cooperation agreement with Schoeller-Bleckmann Oilfield Equipment

2014

- **Drilling and milling testing in different environments**
- GA Drilling ranked as one of the most dynamic technological innovators within the CEE region

2015

- Multidisciplinary R&D team strengthening
- GA Drilling at EXPO Milan as a technology innovator
- **The first ever plasma milling underwater**
- **The first ever plasma milling in HP/HT environment**

2016

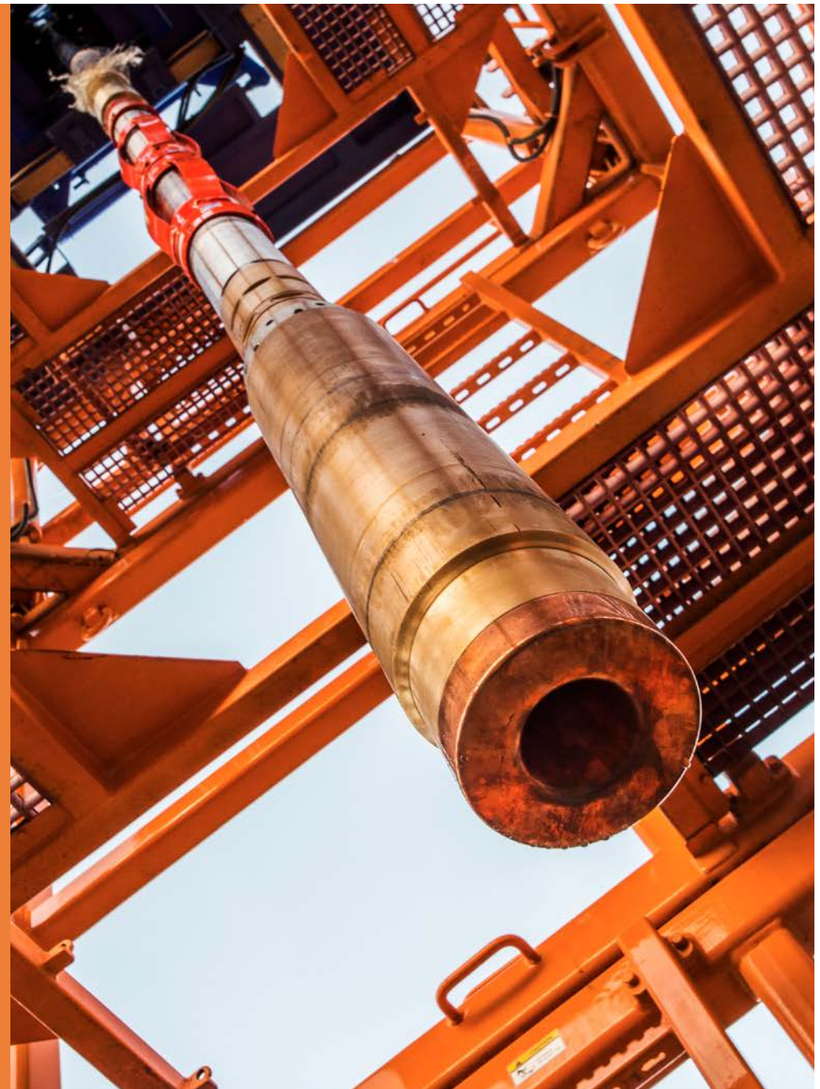
- **Proof of the concept in high pressure environment – at 42 MPa**
- **Win the investment backing from group of financial investors for PLASMABIT prototype development**
- PLASMABIT presented at the EU Council Residence in Brussels

2017

- **Statement of Feasibility for PLASMABIT milling** by the world's leading O&G certification company DNV GL
- Proven performance for **continuous milling of oilfield tubular**

Technology PLASMABIT is Real Ground-breaker

- A high power rotating electric arc that reaches the temperature of the sun (6,000°C), yet it is safe to operate
- PLASMABIT drilling/milling tool disintegrates any materials – rock, steel, cement – without any physical contact
- PLASMABIT performs exceptionally well in hard rock, resulting in an order of magnitude greater rate of penetration
- Unlike conventional drilling tools, our bit has no moving parts, which means there is minimal wear and tear
- The tool enables a real-time data acquisition with an immediate feedback during the whole process
- Accredited for offshore decommissioning by DNV GL, the leading global oil and gas accreditation organization
- Design of core technology systems completed and protected by patents in 10 countries of the world



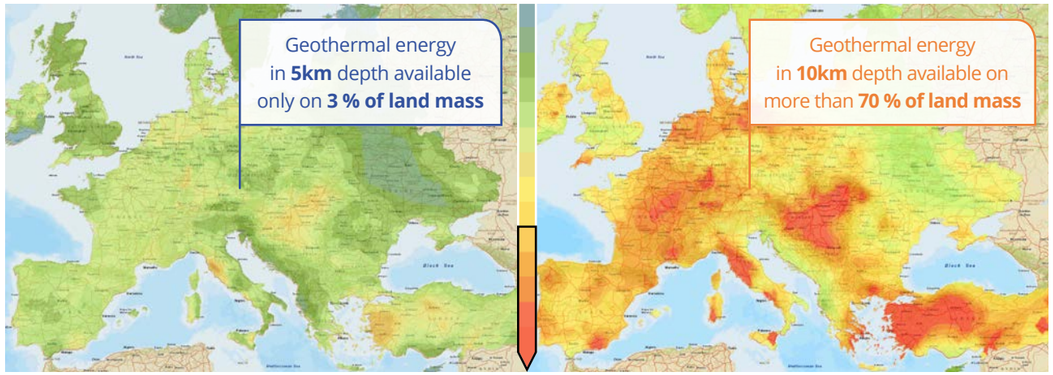
PLASMABIT Ultra Deep Drilling Application

Geothermal energy is the only renewable source of clean and baseload energy, available 24/7/365. It works regardless of weather conditions or the day-night cycle. It is so clean and compact that geothermal power plant could be built nearby cities.

Despite its tremendous promise, geothermal power is held back by one overwhelming limitation: the cost of conventional drilling grows exponentially with depth, limiting the economic viability of geothermal power to relatively shallow depths, available in only 3% of the populated world. PLASMABIT overcomes this by offering much faster drilling – at linear costs – to depths of up to 10km, unlocking clean, inexpensive, baseload power in 70% of the world.

PLASMABIT technology also significantly reduces the economic risk of geothermal exploration by tapping the constant heat available at greater depths, instead of searching for isolated pockets of heat at shallow depths. PLASMABIT drilling to greater depths also means higher temperatures, making energy production considerably more efficient, which also reduces the cost of energy (LCOE).

The end result of revolutionary PLASMABIT drilling technology is a dramatic environmental and economic double-play: the most promising and abundant new source of clean energy is also the least expensive.



Enabling high power

PLASMABIT Milling Application

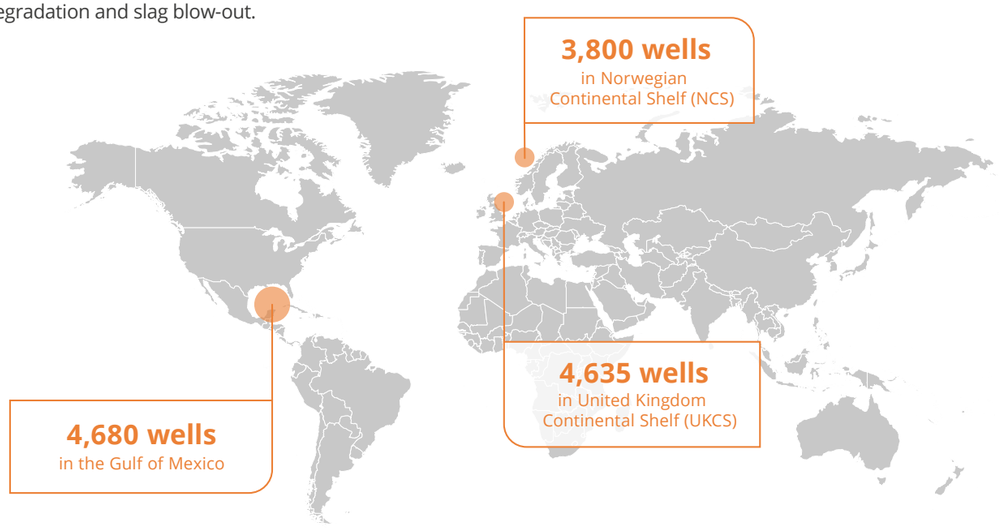
30 000 wells worldwide have to be decommissioned in the next 15 years. The operation is based on milling key sections of casing and production tubing, then plugged to create a safe environmental barrier.

Conventional approaches are slow, costly and environmentally damaging. PLASMABIT technology utilizes a high temperature plasma stream for rapid steel structural degradation and slag blow-out.

This reduces the time and cost to decommission each well by 35% to 50%.

Contactless plasma milling reduces energy need downhole and brings minimal wear and tear. It removes multistring well tubing as well as casing or control line, all at once. PLASMABIT technology with a rapid, efficient mobilization and deployment enables multiple wells closed in short time.

Besides well plug and abandonment, our technology can be more efficient and productive than traditional methods for various well intervention operations: slot recovery, side- tracking, pipe recovery, fishing and others. PLASMABIT technology brings significant cost reduction and HSE improvements.



PLASMABIT Spin-off Applications

Reservoir Stimulation
Plasma technology can generate a wide area of electro pulses utilizing short high-energy plasma peaks of megawatts power. The process leads to the generation of a pressure wave with reduced water consumption. This eco-friendly method can be used for drilling to allow the extraction of shale gas, tight gas, tight oil and coal bed methane.

Mining and Tunneling
Today's high cost valuation of megaprojects is closely linked to the productivity of tunnel boring machines (TBM's) and their availability to provide real time data. Plasma technology uses thermal rock weakening. In combination with high energy pulses it may induce new cracks within intact rock material. It changes hard-rocks to soft-rocks with all the related benefits. Application is designed for mining and tunneling market.

Raw materials
Raw materials demand is booming due to proliferation of batteries and other new products. PLASMABIT tool provides Real Time Data Acquisition while drilling with on-line spectroscopy and unique 3D mapping for more efficient mineral exploration.

Water desalination and purification
By accessing greater heat at greater depths with PLASMABIT technology, ultra-deep geothermal can provide excess heat for efficient water desalination and purification. This can help meet the ever-growing demand for drinking water in developing countries.

Getting through Anything

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