GA Drilling

Leader in Bringing 21st Century Technology to the Drilling Market

Our Mission

We will

- Combine unique knowledge, expertise and leadership skills to create a ground-breaking plasma technology
- 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 O&G well abandonment and intervention market
- World class R&D 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 hydro carbon 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 80 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.

Teams

Our Leadership Team

We control and apply the power of plasma with the temperature of the Sun's surface.

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 organizations and successful startups. Ivan is a member of scientific bodies of EU technological platforms.

Dusan Kocis
Chief Operations Officer

Dusan as a co-founder brings over 18 years of experience in R&D and business development. He is a main driving force of the equity investment rounds in the company. He had spent seven 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 almost 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 Mostenicky
Sales Director

Ivan brings over 25 years of experience in international business and company leadership. He has been working in leading positions for several international foreign trade companies. Ivan is responsible for business development and the strategy for ultra deep geothermal drilling.

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. Marek is coordinating the development of the GA Drilling's technologies.

Our Advisory Board

GA Drilling Advisory Board comprises industry leaders and specialists who take an active role in delivering business success.

Gerald Grohmann

Member of the Board
Business Strategy

Gerald has been the President and Chief Executive Officer of Schoeller-Bleckmann Oilfield Equipment AG since October 30, 2001 and serves as the Chairman of Executive Board.

Ted Halstead

Member of the Board
Geothermal Energy Division

American climate expert and policy maker, co-author of the plan called „The Conservative Case for Carbon Dividends". President of Climate Leadership Council with excellent network with respected politicians and business leaders.

Jules Shoenmakers

Member of the Board
Well P&A Expertise

Recognised industry leader with 30 years experience. Longtime Shell Global Prinicipal Expertise Holder for Well abandonment campaigns, designs and standards.

Mikhail Gelfgat

Member of the Board
Technology Development

Mikhail has 50-years work experience in the petroleum industry. He has contributed a lot in realization of scientific ultra-deep wells drilling projects; development of retractable drill bits and hard rock coring technology.

Iain Pittman

Member of the Board
Product Development

Iain specializes in engineering design, primarily focused on abandonment and re-abandonment operations. He is also engaged as an instructor for well abandonments across the well engineering and C&WI disciplines.

Nigel Jenkins

Member of the Board
Business Growth

Previously CEO of Decom North Sea - the representative body for the UKCS decomissioning industry. He brings board level experience from a variety of sectors, including onshore and offshore oil & gas process.

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

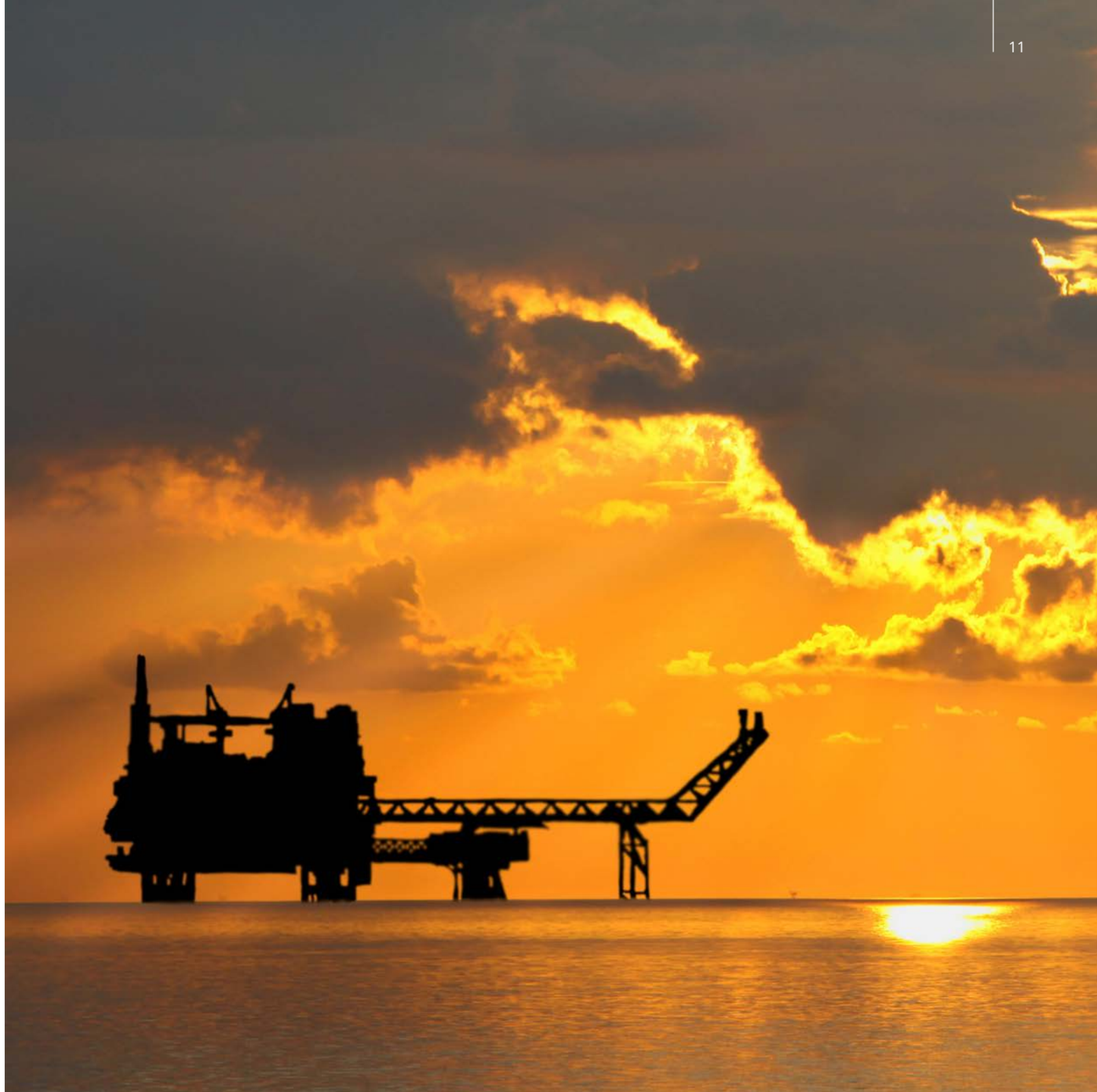
We are the best in things that really matter.

Courage

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

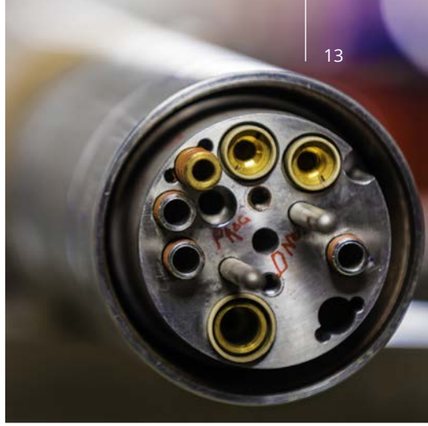
Ownership

Personal accountability for own actions and results.



Company Achievements

- The Company is operating in Slovakia, United Kingdom and United Arab Emirates
- 8 years in the R&D for drilling, well construction and intervention; since 2011 certified with ISO 9001:2008
- Our intellectual property consists of 2 Granted Patents, 3 US Patent Applications, 3 EU Patent Applications, 9 PCT Patent Applications and 2 Industry Designs
- 10+ doctoral level employees, 50+ 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



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

Technology PLASMABIT

Regardless of rock type or location, regardless of the purpose – geothermal energy, gas or mining – the quest for inexhaustible energy resource needs **a real ground-breaker**

Features and Parameters

- Contactless drilling and milling plasma-based tool for deep, high pressure and temperature conditions
- Plasma generated by electric arc rotating up to 800 times per second
- Fluids and power delivered via umbilical cable driven by coiled tubing unit

Benefits and Functionalities

- Robust disintegration of any material – rock / steel / cement – using unique features of plasma
- Reduction of heavy rig necessity/ mobilization - significant time savings for drilling and milling
- Generating shock waves enabling prompt material removal process
- Reduction of HSE related risks due to reduced tripping
- Real-time data acquisition using several methods including spectroscopy, volt-ampere characteristics, acoustic methods and others - immediate feedback during the whole process duration
- Generation of small cuttings reducing requirements for fluid management
- Low environmental impact due to simplified handling with drilled or milled material
- Increased sustainability of milling solutions and well P&A

Business Segments

Oil and Gas

Milling
Our plasma-based technology is more efficient and productive than traditional methods for a variety of well interventions when a section has to be milled. Target applications include well plug and abandonment within decommissioning, slot recovery, side- tracking, pipe recovery, fishing and several others with significant cost reduction and HSE improvements. The technology utilizes a generator producing a high temperature plasma stream for rapid steel structural degradation and slag blow-out.

Drilling
At present the drilling market is dependent on rotary technologies based on the direct contact of the drilling bit with a rock. The plasma-based tool is based on a non-contact approach. An electrical arc with surface temperatures of the sun is controlled and targeted at the objective and may disintegrate any rock or mineral regardless of its comprehensive strength.

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 acting as a "ram" 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

TBM enhancement
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.

Geothermal Energy

Geothermal Drilling
Geothermal energy in deep horizons still remains untouchable. Plasma technology can be applicable at a depth of 10 km which is the area suitable for extraction of hot geothermal reservoirs anywhere.The price of deep drilling is excessively high and therefore commercially non-applicable. Plasma deep drilling can challenge exponential cost growth and serve as an enabling technology for the whole geothermal segment to radically change today's energy mix with accessible 24/7 baseload green energy.

Getting through Anything

GA Drilling Bratislava (SK) | Aberdeen (UK) | Abu Dhabi/Masdar City (UAE)

+421 2 2092 0100

www.gadrilling.com