



**COMPANY
PRESENTATION**
April 2018

Including the Group's subsidiary companies



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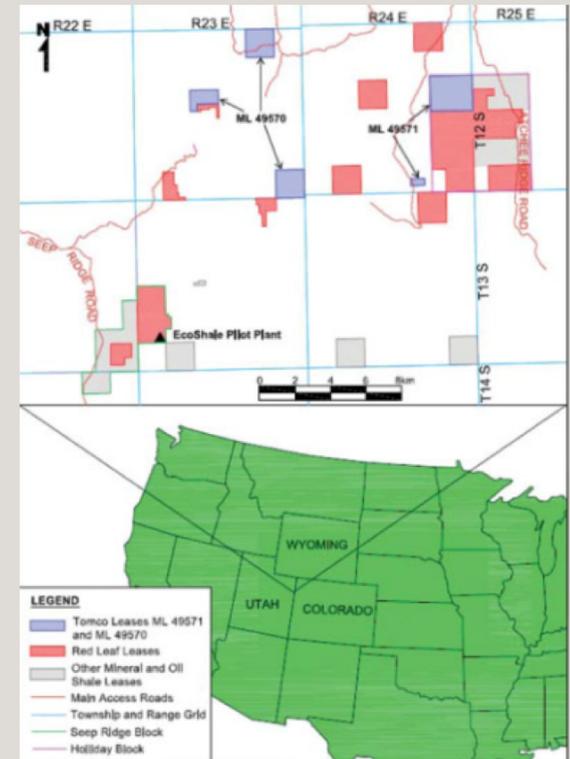
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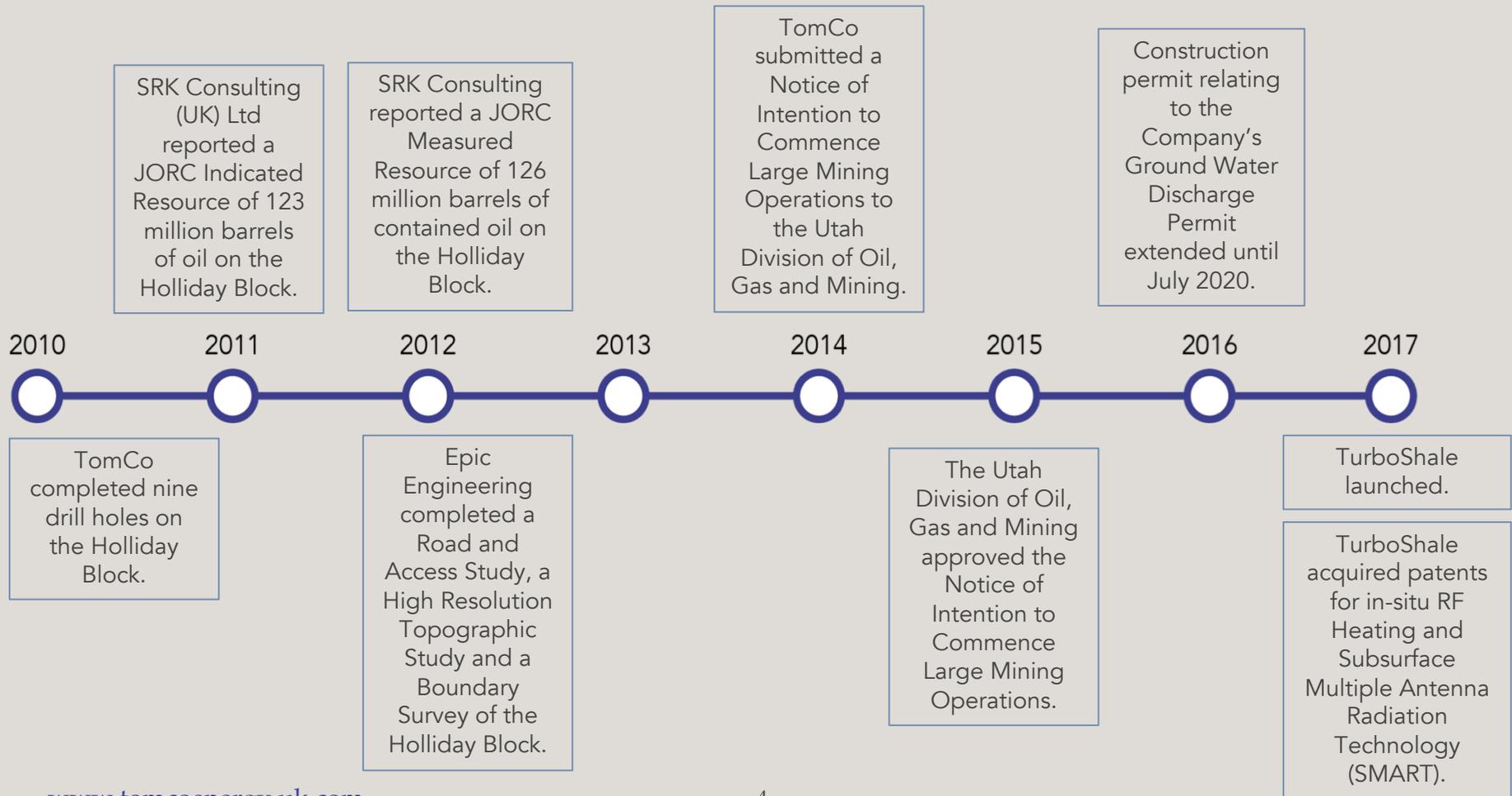
Background: TomCo's assets

- ❖ **The Oil Mining Company** (100% wholly owned):
 - ❖ TomCo's major assets are its Holliday Block oil shale lease covering 2,919 acres in Uintah County, Utah. Its largest lease has a JORC Measured Resource of 126 million barrels of recoverable oil and an estimated 12 million barrels on its second lease*
- ❖ **TurboShale™**
 - ❖ Incorporated in 2017, TurboShale Inc. ("TurboShale" or "TurboShale™"), is the Group's technology development company. It has acquired from JR Technologies, LLC (JRT) two key patents: Method and Apparatus for In-Situ Radiofrequency Heating, and Subsurface Multiple Antenna Radiation Technology



Note: * Whilst the JORC Measured Resource was based on the previous EcoShale™ Technology, the Directors continue to consider the Holliday Block to be prospective and are seeking alternative methods of extracting the shale oil through development of the TurboShale technologies

Achievements to Date



What is oil shale?

- ❖ U.S. western oil shale is carbonate rock, generally marlstone, that is very rich in organic sedimentary material called kerogen
- ❖ Oil shales are younger in geologic age than crude oil-bearing formations; natural forces of pressure and temperature have not yet converted the sediments to crude oil
- ❖ Kerogen can be converted to superior quality jet fuel, and other high value by-products
- ❖ The richest, most concentrated deposits are found in the Green River Formation in western Colorado, south-eastern Utah, and southern Wyoming
- ❖ About 1.8 trillion barrels of shale oil are thought to reside in deposits greater than 15 gallons per ton



The Green River Formation

The Team

Andrew Jones, *Executive Chairman*

Andrew has over 10 years' experience in capital markets and corporate finance as well as specialist experience in Technology & Media. Andrew joined the board of TomCo in mid 2015 and was instrumental in the Company's reorganisation and dramatically lowering its overhead costs. One of Andrew's priorities is to maintain good relationships with all of the key stakeholders and regulatory bodies associated with the Company.

John Potter, *Chief Executive Director*

Accomplished Chief Executive and project manager with many years' experience working within the energy sector.

Malcolm Groat, MA, MBA, FCA, FIoD, FRSA, *Non-Executive Director*

Malcolm has a wide range of experience in corporate life, with roles as Chairman, Non-Executive Director, Chair of Audit, CEO, COO and CFO for a number of companies.

Alex Bengers, BA (Hons), *Non-Executive Director*

Alex is an SME-focused Corporate Financier and Head of Business Development at Aviation & Tech Capital Limited.

The Team

Ray Kasevich – JR Technologies, LLC

Ray Kasevich is an expert in electromagnetic science and engineering, particularly radio frequency (RF) and microwave with 48 U.S. and foreign patents and 50 peer-reviewed papers. He has 35 years experience in advancing the state of the art and applying it in a wide range of military, healthcare, energy, environmental and industrial applications, including radar, military RF and microwave communication systems, high-energy electromagnetic pulse systems, microwave power systems, oil and gas recovery and environmental clean-up. Most recently, he has been developing, field testing and patenting technology for oil and gas recovery (e.g. high-power subsurface antenna systems for oil shale recovery, enhanced oil recovery (EOR), oil extraction from drill cuttings), environmental remediation (e.g. TCA remediation in fractured bedrock, PCB removal from mixed radioactive waste, RF-enhanced bioremediation), extractive and industrial processes (e.g. curing cement) and other areas (e.g. agriculture, thermotherapy, medical devices). Prior to founding his own consulting and engineering companies, Mr. Kasevich worked for two years at *Westinghouse Microwave Laboratory* and for 14 years as Principal Scientist at *Raytheon Advanced Development*. Mr. Kasevich received his M.S. in Electrical Engineering from *Yale University* and studied in doctoral programs at the *University of Michigan* and *MIT*.

Jeb Rong – JR Technologies, LLC

Jeb Rong is an expert with 25 years experience in high-power engineering, including applying radio frequency (RF) and other electromagnetic technology to defence and homeland security, oil/gas recovery, environmental, and industrial process problems. Originally from Inner Mongolia, Dr. Rong received his doctorate in High-Voltage Engineering from the *University of Stuttgart* (Germany), emigrated to the U.S., and began working on defence applications, including radar, shipboard systems, standoff radiation detection systems and advanced power systems for electron beam accelerators. Most recently he has been developing, testing and implementing RF technology for oil and gas recovery (e.g. electro-fracking of oil impregnated sandstones and RF applications in oil shale, oil sands/carbonates, and heavy oil), environmental remediation (e.g. bio-mass Torre faction), and industrial processes (e.g. concrete dewatering, electrical resistive heating systems). Prior to founding his own consulting and engineering companies, Dr. Rong worked for *Raytheon Integrated Defence Systems*, *Energy Sciences, Inc.*, and *KSN Energies, LLC* as Vice President of Technology. Dr. Rong received his B.S. in Electrical Engineering from *Tsinghua University* (Beijing) and both his M.S. in Electrical Engineering and doctorate in High Voltage Engineering from the *University of Stuttgart* (Germany). He is fluent in German, Chinese and English.

TurboShale™

- ❖ TurboShale, a recently incorporated Utah company and now in partnership with JRT, has acquired a process which builds upon the already proven use of Radio Frequency (RF) to produce oil from oil shale. The technology can be compared to a previous multimillion USD RF test programme (“BART Programme”) conducted in the early 1980s at a site in the same Uinta Basin as, and estimated to be within approximately 20 miles of, TomCo’s Holliday Block, Utah
- ❖ TurboShale plans to conduct a four to six month Field Test Programme on the Holliday Block property, subject to securing the necessary funding
- ❖ Ray Kasevich of JRT, was the Technical Director of the BART Programme and has considerable RF expertise as well as being one of the key inventors with patents originally developed and issued for the BART project (now expired)
- ❖ The Directors believe the results of the 1980s BART Programme were very encouraging – demonstrating low operating and production costs, with a good quality oil (low sulfur, high API, low pour point) being produced using this process

The TurboShale™ RF Process

- ❖ Radio waves are emitted from antennas in horizontal or vertical wells and deeply penetrate almost any material (permafrost, soils , rock)
- ❖ Absorption at molecular level occurs resulting in chemical bonds weakening; resonances, and desorption
- ❖ RF rapidly heats the pore and material bonded waters (connate, water of crystallization, capillary waters providing a controlled ‘fracturing’ in rock. As a result there are no water or chemical requirements for the fracturing process
- ❖ RF waves create oil / gas movement
- ❖ Antenna lengths from a few meters to tens of meters in vertical wells depending on frequency and layouts. Long antennas in horizontal wells also possible
- ❖ Portable and computer controlled operating systems
- ❖ Wide range of frequency choices and RF generator power range, typically up to 250 kW

TurboShale™ Advantages

- ❖ Minimum impact on the environment: No need for blasting or leaching rock
- ❖ True in-situ technology, similar to conventional drilling practices
- ❖ The 1980s BART study indicates reduced refinery costs: with the recovered oil having low sulfur, high API and low pour point
- ❖ No water requirement; only recycled water for equipment cooling may be necessary
- ❖ Higher quality oil & gas product with RF at lower temperatures
- ❖ RF gives precise temperature control for control of oil/gas yield and product characteristics

The BART Programme

- ❖ The objective of the six-year BART (Badger, Raytheon, Texaco) Programme in the early 80s was to apply RF energy to fracture and retort in-situ oil shale to minimum temperatures for oil & gas while using conventional oil & gas field techniques for site preparation and production
- ❖ Laboratory testing, theoretical analysis, and full-scale field testing at a Utah test site, resulted in a fundamental understanding of the production economics and oil shale's physical and electrical properties for recovery by a selective heating radiation process patented by Ray Kasevich
- ❖ Many aspects of the theory were confirmed through high power, full-scale prototype testing and low power scale model testing



BART Utah pilot test site, 55 miles south of Vernal, Utah and estimated to be approximately 20 miles NE from the Holliday block.

Potential Advantages

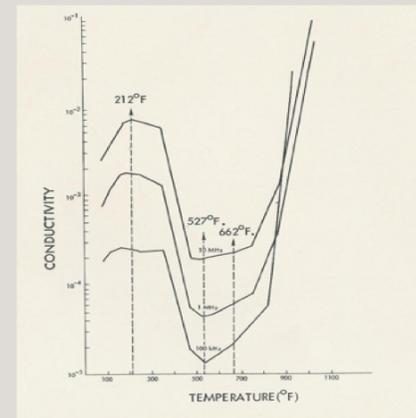
RF technology proven

- ❖ Minimum energy input
- ❖ No or minimal water requirement
- ❖ Scalable technology
- ❖ Better quality of oil produced
- ❖ At 1980s prices, low capex costs – both small- and large-scale economics attractive

RF equipment transferable



Oil shale samples in white ceramic discs after heat-up and measurements (Capacitive sample holder disassembled)



Dielectric data: Oil shale electrical characteristics vs temperature

Next Step: Field Test

- ❖ Build upon the successful BART Programme
- ❖ JRT has been conducting the initial design work for TurboShale™ and early indications have been extremely positive and in line or even exceeding Directors expectations
- ❖ Commence, subject to funding, a 4-6 month Field Test to commence work on the Holliday Block and provide a more accurate economic model for full-scale commercial work
- ❖ Subject to the outcome of the Field Test Programme, the Company will seek to move towards commencing commercial production with an optimum RF module
- ❖ The programme is budgeted to cost approximately £500k

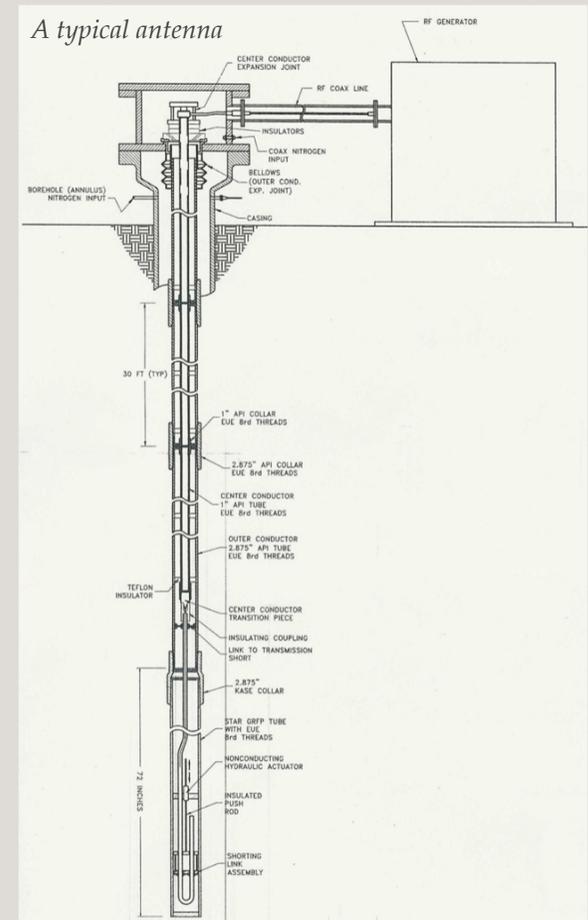


BART Utah Pilot Test Site

Field Test Objectives

The objectives of the proposed TurboShale™ Utah Test Programme are to:

- ❖ Estimate commercial oil production rates based on Field Testing
- ❖ Reconfirm the quality of the oil produced (low sulfur, high API, low pour point)
- ❖ Match or even improve upon the US\$4.50 - \$9 (at 1980s prices) per barrel production cost range achieved during the BART Programme
- ❖ Provide sufficient data to model the economics for the full-scale commercial application of the technology for the Holliday block
- ❖ Identify patentable equipment design data and methods such as power control related to selective heating for future commercial scale RF equipment for world wide application



Summary

- ❖ Proven in-situ RF technology could potentially unlock world's largest reserves of oil shale in the Green River Formation, USA
- ❖ On one of TomCo's leases alone, a JORC measured resource of 126 million barrels
- ❖ TurboShale's strategy has been simplified, significantly reducing its funding requirements to take it through to the completion of the Field Test Programme
- ❖ RF technology represents a cheaper, more environmentally friendly method of extracting oil from oil shale utilizing techniques more similar to conventional drilling practices and minimal water usage
- ❖ TurboShale's team include the key experts in RF technology
- ❖ The Directors believe there are near-term possibilities of entering into commercial production
- ❖ The Directors also believe there is the potential for licensing the technology to third parties