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## Zenith Energy Ltd.– Update Note

10<sup>th</sup> July 2018

**Indonesian oil deal set to boost annual revenues to US\$50m in which we expect to finally catalyse a strong stock price re-rating.**

Zenith Energy Ltd. (“Zenith”) is a dual listed LSE & TSX Venture Exchange oil & gas development and production company. In 2016 the company vastly expanded its oil and gas portfolio via a substantial acquisition in Azerbaijan. Now, the team has bagged a cracking deal in Indonesia which should help to propel Zenith towards gaining a mid-cap oil company valuation.

### ■ Sumatran oil project adds 1,050 bopd rising to 2,000 bopd in 15 months

Indonesia represents a mature oil producer with high quality oilfield services available in the capital Jakarta. Zenith looks set to acquire 2 producing oil fields with good growth opportunities. These structures are shallow & with easy geology which complements the deep and complicated environment seen in Azerbaijan & where complex workovers have tested investors’ patience.

### ■ Funds to really unlock the value in Azerbaijan with workovers and drilling

It has not been plain sailing at the huge 642.4km<sup>2</sup> Muradkhanli Block. Funds being raised will allow substantial value to be properly unlocked in a highly systematic fashion at the largest onshore oil/gas concession in Azerbaijan. Production of 1,000 bopd is expected in 12 months, but the potential here is far greater as previously 15,000 bopd was achieved with old Soviet technology.

### ■ Attractive discount to E&P universe on compelling peer comparisons

Zenith shares trade on an EV/2P ratio of just 30p (US\$0.40) per barrel against a peer median of £2.11 (US\$2.78). This starkly illustrates the stock’s potential upside once there is further evidence of successful oil development in Azerbaijan from drilling in early 2019 and as further details emerge from the Indonesian assets over coming months.

### ■ Heavily risked DCF analysis suggests 739% upside

Valuing the Azerbaijan, Italian and now Indonesian assets using a conservative DCF model gives a new sum-of-the-parts valuation of 34.4p per share. **We remain buyers with a reiterated Conviction Buy stance.**

*Table: Financial overview. Source: Company accounts & Align Research*

Year to end March	2016A	2017A	2018A	2019E
Revenues (C\$m)	0.79	4.42	5.02	59.62
Pre-tax profit (C\$m)	(9.22)	571.74	(9.92)	12.83
EPS (c)	(0.11)	8.15	(0.07)	0.04

*This investment may not be suitable for your personal circumstances. If you are in any doubt as to its suitability you should seek professional advice. This note does not constitute advice and your capital is at risk. This is a marketing communication and cannot be considered independent research.*

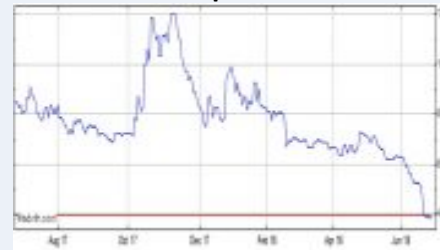
## CONVICTION BUY – Price Target 34.4p



### Key data

EPIC	ZEN
Share price	4.10p
52 week high/low	12.63p/3.75p
Listing	LSE/TSXV
Shares in issue	214.09m
Market Cap	£8.8m
Sector	Oil & Gas

### 12 month share price chart



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## Business overview

### Zenith Energy's operations

- **Azerbaijan** – Zenith operates the largest onshore oilfield in the country, with a total of 75 wells across three fields. In 2016 Zenith entered a 25-year REDPSA (Rehabilitation, Exploration, Development and Production Sharing Agreement) with SOCAR (State Oil Company of the Azerbaijan Republic), granting Zenith an 80% participation agreement in current and future production over three oil fields – Muradkhanli, Zardab and Jafarli. **Proved and probable 2P Reserves have been independently assessed at approximately 31.7 million barrels of oil (March 2018) net to Zenith.**

- **Italy** – Zenith has a broad portfolio of interests in onshore natural gas production and exploration assets across the country. The production portfolio consists of interests in six operated and three non-operated gas production concessions. **The company also holds an operated production permit for the Montalbano concession and has submitted three exploration permit applications awaiting the approval of the Italian government.**

- **Indonesia** – Zenith signed an agreement in late-March 2018 which covers the acquisition of a 100% working interest in an oil production licence comprising two onshore blocks with a combined total acreage of around 65 km<sup>2</sup>. Existing production of 1,050 bopd comes from just one of the fields. **Oil produced is transported by pipeline directly into the national oil sales system, with a reported all-in average production cost of US\$18 per barrel.**

### Oil and Gas reserves

AZERBAIJAN Reserve category	Light and Medium Oil	
	Gross MSTB	Net MSTB
PROVED		377
Developed Producing	634	0
Developed Non-Producing	0	3,511
Undeveloped	6,079	
TOTAL PROVED	6,713	3,887
TOTAL PROBABLE	63,637	27,847
TOTAL PROVED + PROBABLE	70,350	31,735

ITALY Reserve category	Natural Gas		Natural Gas Liquids	
	Gross MMscf	Net MMscf	Gross Mbbl	Net Mbbl
PROVED				
Developed Producing	1,196	1,196	15	15
Developed Non-Producing	220	220	0	0
Undeveloped	0	0	0	0
TOTAL PROVED	1,416	1,416	15	15
TOTAL PROBABLE	14,984	14,984	242	242
TOTAL PROVED + PROBABLE	16,400	16,400	257	257

*Tables: Summary of Zenith Energy's oil and gas reserves on forecast prices and costs as at 1<sup>st</sup> April 2018, as evaluated by Chapman Petroleum Engineering date. Source: Company*

## Operations

Zenith Energy Ltd. is a dual listed Main Market London Stock Exchange and TSX Venture Exchange oil & gas development and production company. In 2016, the company vastly expanded its oil and gas portfolio via a substantial acquisition in Azerbaijan which we continue to believe could propel Zenith towards having a mid-cap oil company valuation over the coming years. This has recently been followed by an opportunity in Indonesia becoming available.

Today, Zenith operates the largest onshore oil field of Azerbaijan through a fully owned subsidiary. The company also has gas producing assets in Italy which include the production of electricity and of condensate. We intend to focus on the Azeri assets and the new Indonesian acquisition in this note, as we believe it is an order of magnitude more valuable than the Italian assets.

## Azerbaijan

In September 2015 Zenith Energy Ltd opened an office in Baku, Azerbaijan as part of management's nascent expectations to become an operator in the country. Within a month, a presidential decree was issued instructing SOCAR to negotiate a PSA with Zenith. This directed SOCAR to negotiate a REDPSA with Zenith over rights to an onshore oil concession known as the Muradkhanli-Jafarli-Zardab field which is located in the Lower Kura Basin and 240km inland from Baku. The Muradkhanli field is vast and represents the largest onshore oil and gas concession in the country, covering 642.4km<sup>2</sup> with three under-developed oil fields, the Muradkhanli, Zarbad and Jafarli Fields and both development and exploration upside.

### Oil agreements background

The oil and gas industry around the world operates in accordance with a number of different types of agreements. **These agreements generally fall into one of four categories (or a combination of the categories): risk agreements, concessions, production sharing agreements (PSAs, also known as production sharing contracts, PSCs) and service contracts.**

Traditionally, concession agreements were granted pre-1940 for large areas and sometimes even for the whole countries e.g. Iraq. These grants were for long periods (50 to 99 years) and gave International Oil Companies (IOC) total discretion and control over exploration and subsequent development decisions.

This structure was seen to cause developments to be delayed, postponed or indefinitely postponed, with no actions taken, against the host government's best interests. The contracts rumbled on and there was no structure to force relinquishment of non-explored areas and worse still, from the perspective of the host state, the concession agreements granted petroleum "in situ" to the international oil company with both market and pricing powers. Negotiated royalty structures, tax structures and bonus structures have all now been called into question.

After World War II, matters began to change as host governments relocated the economic rent costs, with the aim of increasing passive profit sharing. Towards the 1960s and 1970s governments moved further too, demanding more active profit sharing through National Oil Company (NOC) joint ventures (JV) participations.

In a participation agreement, the NOC is carried by an International Oil Company (IOC) with the NOC effectively burdening the IOC by not fully compensating the IOC for the risks assumed during the exploration phase which is necessary to making a commercial discovery. In this structure the IOC faces the full losses, which pushes the IOCs to look for only the biggest prizes or safe areas with high success rates. The IOC benefits by having the NOC as a partner when faced with nationalistic treats but the pendulum had swung too far, and many assets and areas became sub-material targets to the majors and countries were being bypassed for investment.

So, starting in Africa and Asia, Participation Agreements (PSA) or Production Sharing Contract (PSC) structures were developed between the National Oil Companies and the International Oil Companies to develop new oil and gas fields, for which NOCs had limited experience and/or financial resources.

Zenith's REDPSA is almost a new 'third generation' PSA whereby the company is participating in a 'field-revival' (redevelopment) PSA which brings inward investment, technical ability and modern environmental implementation for the country/national partner, but does not over-burden the IOC.

**In a nutshell, Zenith has secured the working-interest rights to a 25-year development and exploration concession with a potential option for an additional extension.**



*Map of oil and gas fields in the Caspian Sea region. Source: Company*

## Negotiation and Handover

Negotiations took a while to process as agreements had to go through various legal processes but essentially by July 2016 an agreement had been reached, a new law passed through the Parliament of the Republic of Azerbaijan and the whole process signed into law by the President of the Republic of Azerbaijan.

Under the agreement Zenith would receive all the rights and obligations associated with an 80% participating interest, including current and future production when technical transfer of the operatorship could be completed. Operatorship on the block has been transferred to a new SPV, Aran Oil Operating Company Limited ('Aran'), which is jointly owned by Zenith Energy Ltd. (80%) through its 100% owned subsidiary Zenith Aran Oil Company and by local NOC SOCAR (20%). SOA is the SPV formed by SOCAR in the joint operating group with Aran.

In August 2016 the handover was finally signed off, with Aran taking over full operatorship of the three fields and the defined block. As Aran took over the existing commercial assets of the Muradkanli INM, the previous producing unit of SOCAR, the transfer was regarded as a business combination under IFRS guidelines and the independently measured net fair-value of Zenith's net acquisition was recorded in the profit and loss of Q1 FY2017 under IFRS 10 reporting.

The complications of corporate combination and accounting aside, the new joint entity Aran became the operator of the block, with Zenith the majority (80%) shareholder in its new partnership with SOCAR (20%). **This is one big task completed, and a huge result for a minnow of a company in an environment populated by majors and supermajors.**

## Country profile

Azerbaijan is a Former Soviet Union (FSU) country located in the south Caucasus region, bordered by the Caspian Sea to the East, Armenia and Turkey to the west, Russia to the north and Iran to the south.

Since independence from the Soviet Union in 1991, Azerbaijan has established itself as one of the more stable and affluent countries in Central Asia with a population of roughly 9.5 million people, mostly of Turkic ancestry. Due to the Soviet legacy, and subsequent affluence from petroleum revenue, literacy and other human development indices are relatively high, albeit that as a FSU country it would also be fair to say that its democratic, commercial and financial institutions are still evolving. Azerbaijan has an established oligarchy where political and commercial powers are concentrated in line with the systems evolved throughout Asia after the fall of the Soviet Union.

Despite the control maintained by the ruling elite on political and economic matters, the country enjoys relative stability because of the wealth gained from petroleum production, even though distributed unevenly, as is consistent in the region. However, the stability of the political, operational and economic structure has realistically allowed the country to attract continued investment to develop the extensive energy reserves. Citizens also largely enjoy civic liberties, unlike many of the surrounding Arab and central Asian republics.

Outsiders frequently perceive there to be higher inherent risks in doing business in Azerbaijan than is actually the case. In essence the salient facts are:

- **Azerbaijan has an important place in the global oil and gas industry being a key hub on alternative transportation routes for central Asian oil and gas outside of Russian territory. This hub has been fully-functional and reliably engaged with the international markets for more than 20 years without major dispute.**
- **Native Azerbaijani production has fuelled Europe's energy needs.**
- **Azerbaijan's international partners appreciate the geopolitical importance of the country and are keen to help maintain its stability.**
- **Azerbaijan's relatively secular populace and government provide an important bulwark against the Islamic militancy that has created regional chaos.** This is especially important given Azerbaijan's location just to the north of Iran. For this reason, the Azerbaijani regime receives explicit and implicit support from most Western quarters.

### **Oil and Gas Production**

**Azerbaijan has some of the earliest recorded petroleum production and is even referenced back to the chronicles of Marco Polo.** As early as 1842, 136 wells were producing around 24,000 barrels of oil per annum and by the 1870s there was a full-scale oil boom, with a concession system introduced. Russian, Anglo and Dutch companies competed for and controlled oil production in the country. By 1901, Baku produced 212,000 barrels of oil per annum, around half of the world's production at that time.

After World War 1, the short-lived Democratic Republic of Azerbaijan was annexed by the Soviet Union, mainly in a grab for its oil assets. Having been a source of fuel for the inter-war and WW2 eras, oil production started to decline as a result of over-production and under investment. Significant discoveries were made onshore, but Soviet technologies were not adept at exploring deep offshore waters.

During the last 20 years of the Soviet regime, investment was increasingly diverted from Azerbaijan to western Siberia, which further precipitated production decline, with production only recovered to the peak rates of Soviet times in 2005. In more detail, petroleum and other liquids production in Azerbaijan increased from 315,000 bopd in 2004 to slightly more than 1 million bopd in 2010. However, production has generally declined since then, falling to about 850,000 bopd in 2015.

### **Exports and Pipeline Capacity**

Azerbaijan has three crude export pipelines although the country also exports small amounts of oil by rail. The completion of the Baku-Tbilisi-Ceyhan (BTC) pipeline has significantly transformed Azerbaijan's oil industry, unlocking an outlet to world markets for crude oil.

Most of the oil produced in Azerbaijan, is medium-light, sweet crude and is exported through the BTC pipeline, marketed as BTC blend (36.8° API gravity, 0.15% sulphur). The BTC pipeline allows for exports of lighter and sweeter crude than Russia's Urals blend and provides capacity out of the Caspian region circumventing the congested Turkish straits and avoiding Russian territory.

The smaller Baku-Supsa pipeline carries a similar grade of oil, which is marketed as Azeri light (35.2° API gravity, 0.14% sulphur) while small volumes of lower-quality oil are exported through the northern export pipeline to Russia. This oil is blended in Russia and marketed as Urals blend. The quality of Urals blend can vary, but the oil is generally a medium, sour crude.

Azerbaijan exported c.707,000 bopd of crude oil in 2014, according to the Azerbaijan's State Statistical Committee. The country's crude oil exports peaked in 2010 when they averaged slightly more than 900,000 bopd but exports have fallen every year since then as production has declined. **The REDPSA issued is really part of the national strategy to diversify away from the majors alone and test smaller private enterprise capacity for growing production.**

In July 2010, near the peak of ACG production and Azerbaijani exports, the BTC pipeline transported slightly more than 1 million bopd of oil. However, the pipeline has recently run with significant spare capacity, exporting 720,000 bopd on average in 2015, considerably below its capacity of 1.2 million bopd. SOCAR has proposed reversing part of the Northern Route pipeline - from Baku, Azerbaijan to Makhachkala, Russia - to bring more Russian oil to Baku for transport through the BTC pipeline to Ceyhan. This change would allow the Russian oil to bypass the crowded Turkish straits. Russian authorities have dismissed the idea as uneconomic.

The oil produced by Zenith and the other onshore fields is categorized as Urals and is transported through the Baku Novorrsysk pipeline, delivering the oil to buyers in the Black Sea. Ural crude oil is one of the most traded oil types in the world.

### **Oil majors operating in Azerbaijan**

BP is the largest foreign investor in Azerbaijan and the largest shareholder in the Azerbaijan International Operating Company (AIOC) which was formed to develop the offshore Azeri-Chirag-Gunashli (ACG) complex of fields. Other companies with an interest in the ACG fields are Chevron, Inpex, Statoil, Turkiye Petrolleri, ExxonMobil, SOCAR, ITOCHU, and ONGC Videsh. The current production-sharing agreement (PSA) expires in 2024, but negotiations to extend it until 2040 or later have recently been completed.

### **State Oil Company of the Azerbaijan Republic (SOCAR)**

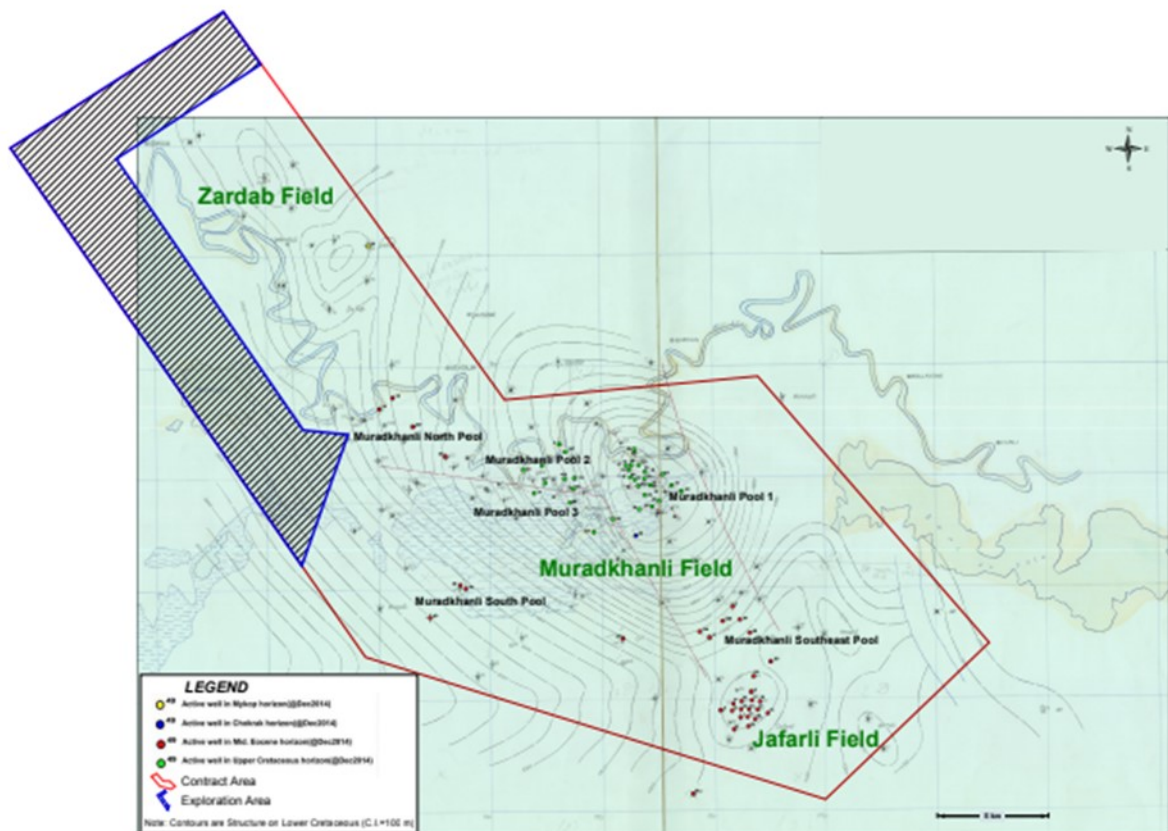
The Ministry of Energy formulates state energy policy and regulates the national oil company, SOCAR. The Ministry is also tasked with attracting foreign investment and conducting negotiations on pipelines and production-sharing agreements.

SOCAR, Zenith's partner in the country, is directly involved in exploring and producing oil and natural gas in Azerbaijan, producing around 164,000 bopd, or about 20% of Azerbaijan's total oil output. SOCAR also operates the country's two refineries, runs the country's pipeline system, and it manages the country's oil and natural gas imports and exports. In addition, much of Azerbaijan's oil is marketed by the SOCAR's Geneva-based subsidiary, SOCAR Trading, which has been operating since 2008.



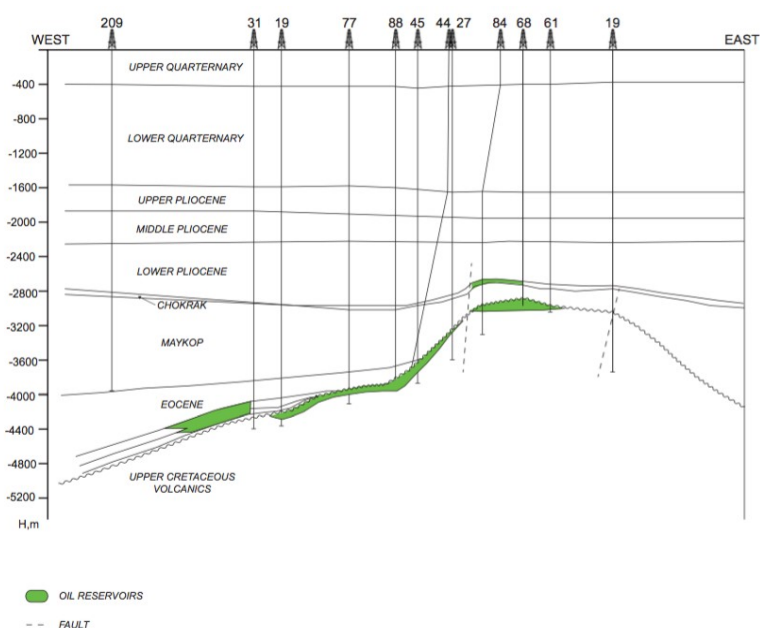
## Zenith's Azeri asset: Muradkhanli

The block has 5 separate fields/oil pools, with 2 ring-fenced out of the REDPSA agreement.



*Location map illustrating well and locations and relative locations the named oil pools/fields.  
Source: Company/Chapman Engineering*

The three fields now under Zenith's operatorship are the Muradkhanli, Jafarli and Zardab Fields. Gravity, magnetic and seismic surveys in and around the land area were undertaken in the 1960s, with several structures selected for drill-testing and discovery wells spudded in the 1970s & 1980s. The site is of very low topographical relief in a featureless landscape with shallow marsh areas that desiccate in the summer months. **Much of the area is largely unexploited and although the ability to drill horizontal wells has not been tested in the area, we do not foresee many challenges ahead with rig mobilisation.**



*Cross-Section of the Muradkhanli Field. Source: Company/Chapman Petroleum Engineering*

## Muradkhanli Field

The majority of current production and the currently recognised reserves are attributed to the Muradkhanli field, while the Jafarli and Zardab fields are both relatively under-exploited. Discovered in 1971, the Muradkhanli Field has predominantly produced from an unconventional Upper Cretaceous volcanic reservoir first brought into production in 1972, with additional oil produced from a sedimentary Eocene reservoir zone on the flanks of the structure discovered in 1972. The Eocene section was brought into production in 1975.

In aggregate, the field has produced over 17.6 million barrels of 27° API gravity crude oil, 16 million barrels from the volcanic reservoir zone and 1.6 million from the Eocene section from 45 wells. The two smaller associated oil pools were discovered post the major development stage of the main pool in the 1980s, now named the Jafarli and Zardab Fields.

## Jafarli and Zardab Fields

The Jafarli Field, located 12km to the south of the Muradkhanli Field has 19 currently productive wells and has produced 1.73 million barrels of 27° API gravity crude to date from a similar Eocene reservoir to the main field. Production commenced in 1984. The Zardab Field, located to the northwest of the main Muradkhanli Field was discovered in 1981 but has seen only minor production because of sanding issues - a problem in the past but assessed to be relatively simple to address with modern gravel-pack completions.

## REDPSA

Zenith will be the operator of the concession for an initial 25 years, having an 80% working interest with SOCAR (through SOA) retaining a 20% working interest. As part of the agreement Zenith will pay SOA's 20% of costs until production reaches 620 bopd, or twice the 2014 average production, for a period of 12 months. After this, opex and capex recovery may be made from SOA's share of cost and profit oil under the production sharing agreement.

Zenith will deliver compensatory petroleum to a total of 315,000 barrels at a rate of 5% in the first year and 15% thereafter until the total is met. This is effectively a royalty charge in the early years of Zenith's operatorship. The company will be entitled to recover its costs from production (after the compensatory petroleum). Operating costs can be recovered in full with capital costs accrued to a maximum of 50% of remaining production. All unrecovered costs can be carried forward with interest charged against the unrealised returns until fully recovered.

Profit oil is shared between SOCAR and the joint operating company (Aran) as determined by an R-factor calculation which is broadly a function of the cumulative capital expenditure on the redevelopment area (the exploration area forming a separate cost pool). When capital expenditure is high, the profit share to the contractor group is low at 25-55%. This however increases in increments up to 80% once the capital expenditures are fully recovered.

Within 12 months of the effective date of transfer, a new fund was planned to be agreed and set aside to provide for the future abandonment of the field, with contributions to the fund drawn from the operating cost pool within the REDPSA.

## Current production

Zenith's first goal is to bring production up to the level which triggers the start of the 12-month period before SOA are fully effective working interest partners. **This means bringing production up to 600+ bopd as rapidly as possible, a task which we believe is relatively straightforward and now in hand.** Currently, production is around 300 bopd, but management is convinced that within a matter of months this level will be significantly boosted. Progress made in the program of workover is shown in the table overleaf.

The price paid for the company's oil is in US dollars, with the Urals blend being one of the most frequently traded types in the world. Zenith receives what equates to a 1.5 – 2.5% discount to the Brent Crude price, with production pooled and sold along with other operations. There are additional costs of around 1.5%, which consist of a 1% commission for measuring, storing & trading and 0.5% transportation costs by pipeline. Payment is fairly swift (within 37-40 days) and the oil is collected twice a month, which means that there is regular cash flow and no long delays in waiting to get paid. With many operators reducing production in the area, there scope to increase oil sales significantly.

**Zenith has plans to workover 11 wells in the current financial year, with the first new well scheduled to be drilled in early 2019. In all, moving ahead there are likely to be 40 or so out of the 56 wells on the Muradkhanli and Jafarli Fields likely to be on workover in the current three-year period (when Zenith acquired the project only 42 wells were on production).** The highest return wells will be targeted first, followed by the medium wells, then the five Maykop-type wells in the Zardab Field will be brought on – here sanding issues need to be addressed (most likely with gravel pack completions).

Current engineering plans, as detailed in the CPR, foresee Zenith initially upgrading the oil gathering system and the central gathering facilities to improve safety, efficiency and fluid handling and these costs are accounted for in our model. These steps will be important in fulfilling the environmental terms of the appointment, as local standards have, to date, fallen below those that would be accepted internationally. This we expect will be carried out in the early phase of the field redevelopment in preparation for the later drilling phase.

## Italy

Zenith's entry into Italy was on an invitation to bid for a concession from the Italian Ministry of Economic Development back in 2009. The application was accepted in 2011 on the basis of the company's strong technical presentation which outlined how Torrente Vulgano, formerly held by ENI, could be returned to production. An owned subsidiary of Zenith, Canoe Italia Srl, was established in 2011 as an SPV to accept Italian licenses.

The company has six operated onshore gas production concessions: Masseria Grottavecchia (20% working interest (WI)), San Teodoro (100% WI), Torrente Cigno (45% WI) in natural gas production: 100% ownership of four gas powered electricity generation units), Misano Adriatico (100% WI), San Andrea (40% WI) and Masseria Petrilli (50% WI). In addition, there are three non-operated onshore gas production concessions: Masseria Acquasalsa (8.8% WI), Lucera (13.6% WI) and San Mauro (18% WI).

Looking at exploration permits, the company holds one operated production permit for the Montalbano, with a 57.15% WI, but is in the process of acquiring a 100% WI. There are also three exploration permit applications that the company has submitted which are awaiting approval from the Italian government for the following concessions: Serra dei Gatti (100% WI), Villa Carbone (50% WI) and Colle dei Nidi (25% WI).

The bulk of Zenith's licence portfolio was acquired from Mediterranean Oil and Gas Plc's (MOG) Italian subsidiaries in 2012. Most of the Italian properties are located in the South of Italy in the Puglia, Basilicata Molise, Abruzzo and Marche regions, covering an aggregated total area of 1,285,41km<sup>2</sup> all associated with the Apennine Foredeep Basin.

**At the point of acquisition by Zenith MOG's gas licenses were producing approx. 13,800 SMC/day, whereas in recent years three of the production concessions have delivered gas with present average monthly net production as high as 250,000 SMC (8.83 MCF) of gas and 12.5 tons of condensate.**

In late-2015 Zenith acquired co-generation equipment and facilities from the owner of a plant that treats gas from the Masseria Vincelli 1 well in the Torrente Cigno concession in Italy. The acquisition has enabled the company to produce electricity from the gas produced by the Masseria Vincelli 1 well which it sells directly into the national energy grid in Italy.

Indeed, the Torrente Cigno License demonstrates Zenith's entrepreneurial spirit in that the formerly cheap, below average town-gate priced sour-gas is now used to supply the wholly owned co-generation electricity plant which Zenith acquired in October 2015, with electricity generated at approximately 880 MWh per month. Production in Italy over the last couple of years has averaged around 55 bopd.



# Indonesia

The expansion into Indonesia was announced on 28<sup>th</sup> March 2018. The company has signed an exclusivity and option to purchase agreement for the possible acquisition of an oil producing asset on the island of Sumatra in Indonesia. At the moment the details of this acquisition are a bit sketchy as there is a lot of interest in Indonesian oil projects. It is not unknown for a competitor to attempt to thwart these kind of deals as on the outside it does look like it could be a cracking acquisition.

## Country

### Introduction

Indonesia is the largest archipelago in the world with 261 million inhabitants spread over 1.6 million km<sup>2</sup>. The country's capital and largest city is Jakarta which is located on the island of Java and has a population of around 10 million. The first democratic presidential elections were held in 2004 and in 2014 a rank outsider President Joko "Jokowi" Widodo was elected with a mandate to ensure economic prosperity and development.

The country is seen as one of the most attractive of the so called "emerging markets" and has seen sustained GDP growth year-on-year with 5% being recorded in 2017. Indonesia has the largest economy in Southeast Asia and is member of the G20 major economies. In addition, the country is one of the MINT countries (Mexico, Indonesia, Nigeria and Turkey) which are well tipped for economic success.

The country has an abundance of natural resources including: oil, natural gas, copper and gold; as well as being the world's leading producer of palm oil. **However, the oil industry is a cornerstone of the Indonesian economy with proven oil reserves totaling 3.31 billion barrels.** The country has had a long history of OPEC membership. Its membership was suspended initially in 2008 when the country became a net importer of crude oil due to burgeoning energy consumption. Subsequently, membership was restored but Indonesia went onto suspended membership again in 2016 due to the decline in oil prices and OPEC demands to cut production by 5%.

The country's government is seeking to attract billions of dollars of oil investments to boost domestic crude oil production which has slumped over the past twenty years. At the same time such a move will reduce Indonesia's dependence on imports.

At present, Chevron is the country's largest oil producer at 40% of national production. Other major plays include: the state-owned Pertamina, Total, ConocoPhillips, PetroChina, CNOOC, Medco, BP, Kodeco, and Exxon Mobil. Being a mature oil province with a long history of oil production, means that Indonesia has a lot of brownfield sites that are available to Zenith, which is a rehabilitation specialist. The long-term development of the oil industry means that there is a lot of technology, geology and oil field services available in the capital Jakarta. Investors should realise that this is not Niger or Mali.

## Project

**The acquisition agreement covers the acquisition of a 100% working interest in an oil production licence comprising two onshore blocks with a combined total acreage of around 65 km<sup>2</sup>.** Existing production is 1,291 bopd which comes from just one of the fields and is transported by pipeline directly into the national oil sales system with a reported all-in average production cost of US\$18 per barrel. The acquisition is a Technical Assistance Contract (TAC) which is a form of PSA with the Indonesian state oil company Pertamina.

The oilfields are located in a prolific oil and gas basin with a proven petroleum system. Reserves total 10 million 2P which have been certified internally by the seller. Zenith cannot publish these figures due to Canadian securities laws which require the company to issue an NI 51-101. Within 90 days the reserves are expected to be certified by Zenith and the required NI 51-101 published. At present, only one of the two oilfields is producing. **The second oilfield is expected to be capable of significant production by drilling new wells and performing workovers on existing wells.**

Drilling activities can be performed at relatively low-cost and without significant delay. The average total depth of production wells in the licence area is between 350 to 750 metres, with an average depth for most of the wells of 450 metres, so it is a very shallow structure with an easy geology that consist of sandstone. The oil is classic Indonesian light 48° API, it is very light and sweet (not sour) with a selling price that equates to Brent Crude plus US\$1 per barrel. A pipeline takes the oil which is blended by Pertamina and sold internationally. **Importantly, the operator is able to sell all production.**

Production currently comes from eight wells which have been drilled over the last 3 years. Looking at costs, apart from the \$18/bbl lifting costs, there is G&A which is modest as the ancillary company that is being purchased (for an additional US\$100,000) employs 26 people, of which 5 are working in the office, and so represents quite low overheads.

Drilling costs, operating costs and capex are all tax deductible. The prevailing tax rate is 44% and after this cost has been deducted Zenith also receives 27% of net profits. There looks to be scope here for the operations in Indonesia to bear some head office costs, which would serve to enhance the profitability of the company.

## Acquisition Terms

**The acquisition will cost US\$6.6 million and also require the company to assume US\$6.9 million of debt, which makes a total of US\$13.5 million.** The main terms of this acquisition are as follows. The company has until 30<sup>th</sup> April 2018 to undertake due diligence. After that, there is a 30-day period in which to exercise the option for a total consideration of US\$6.6 million. This is to be paid by stage payments: 50% within a week and the remaining 50% within three months. Importantly, Zenith has exclusive rights on the acquisition for 90 days from 23<sup>rd</sup> March 2018. CEO Andrea Cattaneo made a down payment of US\$100,000 on 13th April 2018. The US\$6.6 million is intended to be raised part in equity and part in debt.

## Strategy for growth

Zenith is seeking to significantly increase oil production revenue in Azerbaijan by undertaking a series of systematic high-impact well interventions across its 642.4km<sup>2</sup> contract area. At the same time there are well-developed plans to continue to build up levels of revenue from the Italian gas assets.

### Azerbaijan

**The board is masterminding the unlocking of value from the US\$1.81 billion of 2P net reserves which have the scope to provide outsized returns.** Currently, production is around 300 bopd, which is not that much higher than when the interest was acquired. However, the production numbers belie a large reorganisation of the operations that is ongoing on the ground.

Heading up the workover operations is Mike Palmer and four managers from Calgary whom are deemed to be one of the best teams in the area. **These individuals have a proven track record in substantially boosting oil production in similar sorts of fields in Azerbaijan which have been neglected due to lack of investment since the collapse of the Soviet Union.**

**Management believe that Zenith is on track to increase production to the 1,000 bopd level by the end of this year.**

The new ESPs are expected to add 219 bopd. In addition, workovers are beginning in the much more unexplored and very young Zarbad oilfield which is expected to result in some much higher per well production figures - these wells had produced 500 bopd using old Soviet technology to control sand before being plugged and abandoned.

**It has not been plain sailing and a number of these workovers have been found to be a lot more challenging than expected. Over the coming months, 3 or 4 of these wells in the Zarbad oilfield will be worked over, which is expected could result in increased production of 100 bopd per well.** These are the most complicated workovers that Zenith has carried out and so are being undertaken by its own specialist teams, which allows for substantially lower costs than would result from bringing in a major international contractor. Experience so far is that workovers are averaging US\$30,000 per well. The ongoing weakening of the Azerbaijan manat also means that costs on the ground can be reduced on an ongoing basis.

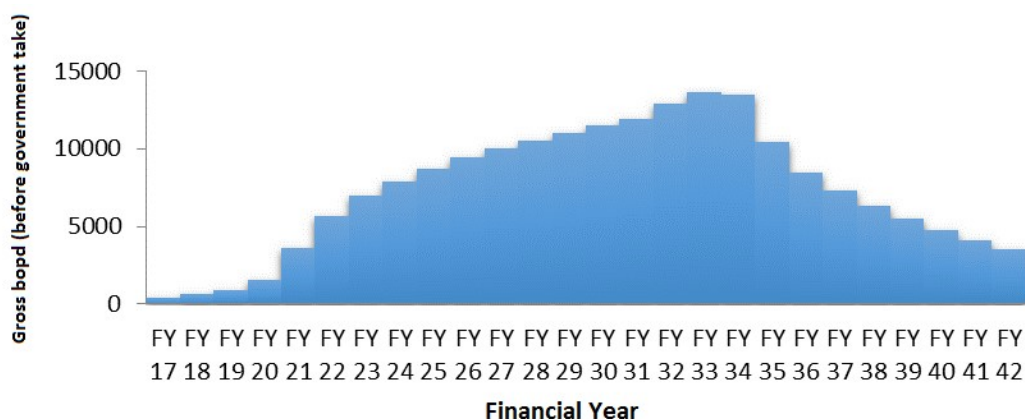
Progress might have been slower than hoped. It has not also been helped by deliveries of equipment being delayed, the state of the roads and the weather. However, everything under the power of management seems to have happened as scheduled and the board is confident that the 1,000 bopd target will be achieved. Located onshore, costs are quite low, currently US\$19 per barrel. **These are however estimated to fall to US\$13 a barrel when production hits 1,000 bopd, delivering a good profit at current oil prices.**

In the year-ending 31<sup>st</sup> March 2019, 12 well workovers are planned, together with the first of three new development wells. Even as a low-cost operator, each new development well will cost around US\$4 million to drill using a rig that the company will be leasing. This option has been chosen as it will ensure that Zenith has the most modern US\$15.5 million high-tech rig, quicker operation and faster mobilisation with no debt. By leasing this rig the company will be able to drill new wells at a fraction of the cost of bringing in outside contractors. **It is a tough time for local contractors and so management is able to negotiate delayed payment deals where the drilling costs can largely be paid out of cash flow from the success of the well.**

The first new development well is planned to be drilled shortly prior to future horizontal well-developments. It is estimated that the three wells drilled would average production of 450 bopd per well. Estimated costs of US\$4 million per well are low by international standards, which means that even a marginally successful well of 250-280 bopd would still represent an economic success.

Progress is expected to continue at this pace in the subsequent year, with 15 more workovers planned together with the drilling of three more development wells. **By 31<sup>st</sup> March 2020 oil production is expected to be boosted towards a target level of 3,000 bopd, with each of the three development wells drilled once again estimated to produce 330 bopd.**

**There could however be significant further potential beyond the 3,000 bopd targeted for late 2020.** In the past, the level of production from Zardab was 15,000 bopd and that was using old Soviet technology. The team is ensuring that the latest technology is being employed, including state-of-the-art ESPs which are being customised to suit the characteristics of each well and which have already shown dramatic results. From 2018 onward in the CPR version of the plan, 3D seismic programs are anticipated to fully delineate the pools and optimise drilling locations. The average daily production envisaged from full-field development after these future works, is shown in the chart below.

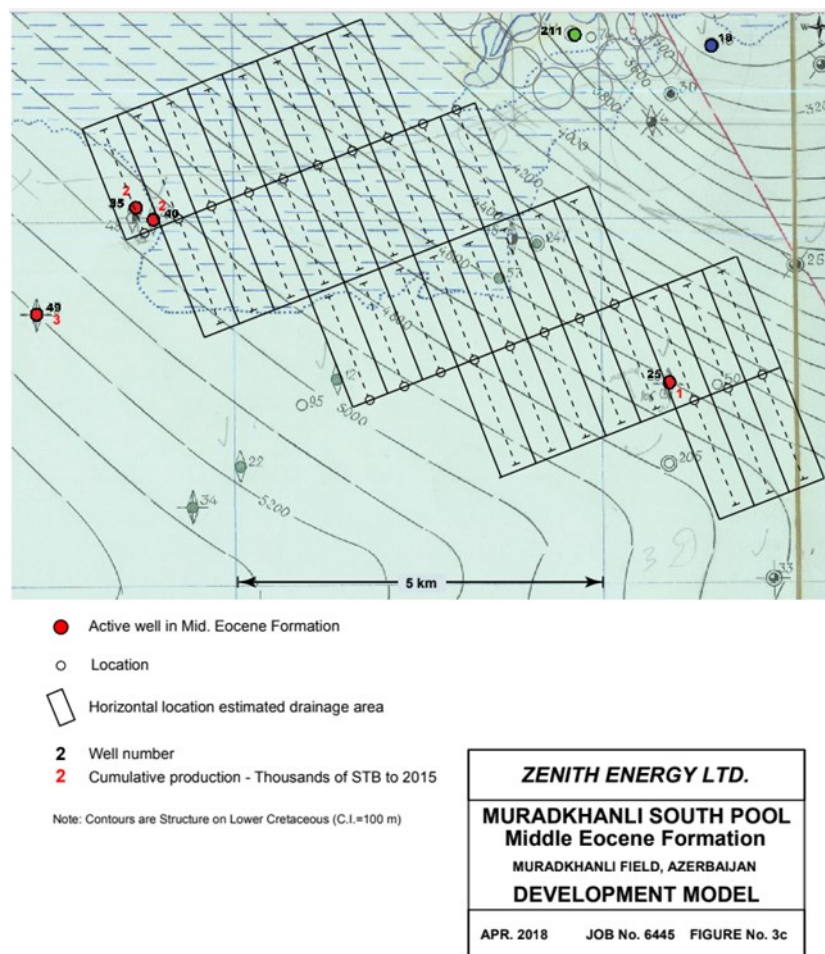


*Chart - Full field production curve projection (gross barrels). Source: Company.*



The re-development of the Zardab field is being advanced by drilling work that the engineers estimate will require a total of 142 development wells in all, across the three oil pools on the block. This includes, for the first time, 58 horizontal wells. **It is in the fulfilment of this long-term plan that Zenith will be able to capture the value from more than 70 million of net barrels that engineering projects have shown may actually be recovered from the field.**

**These projections seem to be realistic in our view although they might represent big numbers for a small company they just involve straight-forward step-outs of a development front drilled within an existing oilfield.** The diagram below illustrates the well spacing and drainage pattern for a suite of 36 horizontal wells from 21 pads to develop the mid-Eocene section of the 'south' oil pool. These sorts of works have been commonplace in the US for many years.



Source: Company, CPR.

Zenith has been working hard on complex workovers on its huge 642.4km<sup>2</sup> Muradhkanli Block. With quite small sums of money available to fund operations this has meant that the company has been limping along. This is the largest onshore oil/gas concession in Azerbaijan and really needs a budget to match its potential. So, it is good news that the bulk of the £10 million anticipated fund raise will be employed on this flagship asset. These funds will allow management to be able to purchase new equipment, re-interpret seismic logs and probably have a proper dedicated team of geologists. All of these are important elements which will allow Zenith to be able to properly unlock the value here in a highly systematic fashion. This sort of budget does give the company a good chance of being able to match previous levels of production of 15,000 bopd, which have not been seen since Soviet times and were achieved with inferior technology.

## Italy

**Overall, Zenith has an ambitious program to enhance the Italian daily gas production rate in the Puglia Region by 100% through a technical program employing additional workovers that will be financed using local cash flow.**

The company's technical team has conducted in-depth geological, geophysical and engineering evaluations on all the Italian properties. Drilling plans for side-track drilling operations at the Masseria Petrilli property and drilling of a new well at the San Teodoro field are being evaluated.

The current development programme seems to be focused on the Torrente Cigno concession, where the team has been evaluating the potential of sidetracking the Masseria Vincelli 2 well to restore production. **The CPR that was included in the London IPO document stated that a successful sidetrack could produce 1,000 MCF equivalent per day (equating to 167 boepd), at an estimated net cost of US\$1.5 million.**

The improvement of facilities at San Teodoro will be completed by the tie-in of new dehydration equipment. While the field has been capable of production, a lack of regional infrastructure had limited additional expansion in the past.

At Torrente Vulgano, the company has entered the final permitting stage for the activation of this concession which was previously operated by the leading Italian oil company ENI. This field benefits from good infrastructure with connections already in place to the national gas network. In the past, two wells in the concession produced 247MCF/d (equivalent to 41boepd)

There are also plans to rehabilitate the San Teodoro and Masseria Petrilli concessions. Currently, both these projects are non-producing but residual reserves could be accessed by sidetracking existing wells.

With regard to the exploration licenses, Zenith's technical team has evaluated and ranked the geological, geophysical and engineering prospects of each of the properties and will, in due course, formalise plans to either participate directly in potential works or farm-out its interests to third parties, most likely on a carried basis.

Electricity being generated from the big reserves of sour gas from the Masseria Vincelli 1 well in the Torrente Cigno concession could begin to provide a larger contribution to the company. Three years ago, Zenith bought five turbines and the final payment instalment will be made in May 2018. Monthly revenue is around €25,000 currently but repayments of €15,000 per month need to be netted off against that figure. Moving ahead, the economics of the electricity generation interests should be significantly improved.

## Indonesia

Zenith management has demonstrated proven ability in targeting and acquiring material assets being divested internationally where technical field rehabilitation skills can add long-term value. Sound oil and gas expertise and operational experience has been well-documented in Italy, Argentina and Azerbaijan in both oil and gas, and which gives the company real credibility within the industry. Being able to show that Zenith is a highly successful and competent operator internationally is a very compelling factor, which has obviously helped in winning the latest deal in Indonesia.

The acquisition in Indonesia fits in well with Zenith's strategy of being opportunistic and not be restricted by geological focus. The Indonesian acquisition lies in sharp contrast to the assets in Azerbaijan. In Indonesia, the structure is mainly 350 – 500 metres deep, so very shallow in easy geology of sandstones. This is complementary to Azerbaijan where there may be lots of reserves but in a very deep reservoir with complicated geology consisting of carbonate fracturing. Like the company's existing asset in Azerbaijan, the Indonesian project has very strong growth potential and the scope to generate significant profits from its sizeable existing low-cost oil production.

The approved development programme for the licence area, involving the drilling of new wells and the introduction of new oil production technology, is expected to double current production from the proposed acquisition by 2020. Here the drilling campaign is reasonably easy to be successful and will really establish the company's credibility after the succession of problems that have been encountered in Azerbaijan.

The reservoir is so shallow here that a lower powered drilling rig designed to drill water wells can actually be used. To drill and complete a well costs US\$700,000. Workover costs in the region are US\$60,000 – 80,000 however, the programme in Indonesia is to drill 8 more wells this year where each new well is expected to generate 200 bopd. **So, it looks as though 2,000 bopd could be achieved within the next 15 months.** The company does not want to make a rod for its own back, but the vendor had planned for a more rapid escalation of production. Year 2 is expected to see a minimum of another eight wells drilled and so there is the scope for multi-year improvements in oil production.

These oil fields in Indonesia do look like a good location for which Zenith can establish credibility in drilling and operating hydrocarbon assets whilst generating considerable revenue. Current production from Indonesia is enough to take annual revenue over the US\$30 million mark, whilst the twelve-month production target could see annual revenue in excess of US\$50 million. **With few junior oil plays on the London market providing that sort of annual revenue, we believe this acquisition looks like it could have the power to trigger a strong re-rating of the shares.**

## Financials & current trading

Zenith was established in 2007 and in 2010 acquired two oilfields in Argentina. In 2011 the company established its Italian subsidiary, which was the first step towards acquiring natural gas interests in that country. Revenues were from hydrocarbon production in Argentina and Italy until 2016 when the company vastly expanded its oil and gas portfolio via the Azeri acquisition. The Argentinian interests were disposed of in early 2017.

<b>Y/E 31 March C\$'000</b>	<b>2014A</b>	<b>2015A</b>	<b>2016A</b>	<b>2017A</b>	<b>2018A</b>
Revenue	4,109	4,784	791	4,424	5,019
Pre-tax profit/loss	4,876	-2,277	-9,220	571,741	-9,918
Net profit/loss	-6,318	-2,376	-7,675	576,378	-9,496

*Zenith's five-year trading history. Source: Company accounts*

### Results for the year to 31<sup>st</sup> March 2018

This represented a period when Zenith managed to successfully achieve a series of important milestones. During the year, the company produced 94,383 barrels of oil (for an average of 258 bopd) and sold 81,745 barrels of oil from Azerbaijan. It should be noted that during this period production from a number of the wells was suspended during Q3 for rehabilitation operations which involved the installation of ESPs and well interventions. Plus there were sales from Italy which totalled 16,909 mcf natural gas, 1,589 barrels of oil and 7,5975 MWh of electricity.

For the financial period Zenith reported a pre-tax loss of C\$9.918 million compared with a profit of C\$571.74 million in the previous year, which was largely due to a gain on the business acquisition of the assets in Azerbaijan of C\$578.995 million. The total comprehensive loss for the year came out at C\$9.496 million which equated to a basic loss per share of C\$0.07.

### Recent developments

In February 2018, there was a good update on the high impact work overs of wells Z-21 and Z-28 in the Zardab field. With this field being so neglected there has been little reliable historical data on these two wells, which has made the work challenging. So, these two workovers have had to proceed with the team relying on gathering this information as they have gone along with the work. But the good news is that Zenith has the technological solutions available to them and is confident that production can be achieved successfully from these wells. **Andrea Cattaneo reaffirmed the 1,000 bopd initial target by 31 Dec 2018 in the Feb update.**

In late March 2018, the company announced an exclusivity and option to purchase agreement for the possible acquisition of an oil producing asset on the island of Sumatra in Indonesia. The acquisition agreement covers the acquisition of a 100% working interest in an oil production licence comprising two onshore blocks with a combined total acreage of around 65 km<sup>2</sup>. Existing production is 1,050 bopd, which comes from just one of the fields and is transported by pipeline directly into the national oil sales system.



In April 2018, there was news concerning record oil production revenue from Azerbaijan. This announcement also brought investors up to speed with the Electrical Submersible Pump (ESP) upgrade programme, the commissioning of a geological study, operating cost reductions and equipment upgrades.

The final phase workover of the Z-21 well in the Zarbad Field has begun. Already the well has seen coiled tubing intervention which has successfully cleaned out the entire tubing string to a depth of 3,670 metres, circulating and drilling out mud and debris that had accumulated in the well since it last produced 30 years ago. The casing has also been cleaned out from 3,670 – 3,688 metres, but no further due to the restricted diameter of the tubing. So, the plan is to now pull the whole tubing string and clean out the casing to the well's total depth of 3,982 metres. This should properly sort out the problem and allow the well to be put on production.

Record oil production revenue was generated in Azerbaijan in the month of March 2018. The company's revenue from this country, gross of commissions and transportation expenses totalled around US\$575,000 for oil production, with an Urals market price around US\$67 per barrel. Followed by US\$505,000 in April 2018.

In May 2018, in an updated on the Zarbad oilfield, there was news that the in order to maximise the potential of the ongoing workovers, that the geological study had been expanded to concentrate on Z-21, Z-28, Z-3, Z-14 and Z-4. The primary objectives of this study is the location of high-value drilling locations and possible workovers at Zardab.

Preliminary finds of the geological study had encouraged the company to increase the scale of its operations in Zarbad, along with providing the management with the confidence to consider deepening the Z-21 beyond the Maykop formation and into the Eocene by drilling 300 metres deeper (4270-4300 metres). This move is being considered due to Z-21's proximity to the Z-3 well which was spudded in 1979 and drilled to a depth of 4,300 metres in the Eocene and Upper cretaceous formations and tested 2,900 barrels of mixed hydrocarbons a day before the well bore collapsed.

In June 2018, Zenith signed a six-month rental agreement with B Robotics W S.r.l, a leading Italian drilling rig manufacturer, for a BD-260 type Robotics drilling rig. The BD-260 is a 1200 HP drilling rig with a static hook load capacity of 260 metric tonnes and will be used to complete the planned workover and drilling activities in Zarbad and Muradkhanli fields for a six-month period. Certainly, the ongoing in-depth geological study has led to the identification of several highly attractive near-term drilling opportunities, which Zenith is keen to exploit. The BD-260 rig is planned to complete the workover of Z-21 and if satisfactory rate of production is not achieved, the plan is to proceed to deepen the well. The rig is expected to be delivered to the field by early September 2018.

In late-June 2018, the company raised £2.167 million in a placing of 54.172 million shares at 4p each. The proceeds are planned to be used entirely for operational development, where the strategic focus remains on Azerbaijan. This funding followed the signing of a US\$2.0 million two-year Non-Convertible Loan Facility a month earlier.

## **Risks**

### **Geological risks**

There are a series of technical risk factors concerning the amount of understanding of the geology of the project areas, the mineralisation style being targeted and the distribution and magnitude of the indicators that have been identified in exploration work.

### **Political risk**

There are political risks involved in companies operating in Azerbaijan. The oil industry is arguably the most susceptible sector of the market to political risks largely due to its importance to the host country's economy.

### **Oil price risks**

Oil prices are highly cyclical and changes in the price could have a negative or positive impact on the valuation of the company's projects and revenue from the sales of hydrocarbons. Over the past decade the price of oil has been highly volatile, trading in the range of \$140 to \$28 a barrel. Currently, Brent Crude trades around the \$75 level.

### **Exchange rate risks**

Movements in the value of currencies will have an effect on the company's accounts on translation from the Azeri manat, euro and the Indonesian rupiah into Canadian dollars. Fluctuations in the value of the Azeri manat, euro and the Indonesian rupiah against the Canadian dollar and in the Canadian dollar against the pound may have an effect on the valuation Zenith is awarded by the UK stock market.

### **Future funds**

The market for raising funds for small cap companies may have improved from the worse conditions seen around two years ago, however the equity market does continue to be difficult, especially for resources companies. Some recent fund raising in the oil sector has seen share prices being undermined by incoming investors demanding substantial discounts to provide the necessary capital.

## **Board of Directors**

### **Dr. José Ramón Lopez Portillo - Chairman**

Dr. José Ramón Lopez Portillo is the former Chairman of FAO (the United Nations agency for food and agriculture) and a leading researcher on Mexican energy security. He was Vice-Minister of Evaluation (Ministry of Programming and Budget) of Mexico from 1980 until 1982. From 1982 to 1989 he was the Permanent Representative of Mexico to the United Nations Organizations in Rome, Italy. He served as Chairman of the Council of the Food and Agriculture Organization of the United Nations from 1993 to 1998. He has a Doctorate (D. Phil) in Political Sciences and International Relations from Oxford University. In 2002, he founded the Centre for Mexican Studies at Oxford University and has established a large network of international contacts throughout his career.

### **Andrea Cattaneo - CEO and President**

Andrea Cattaneo graduated from the University of Genoa in June 1978, achieving a “pieni voti” in Economics. He studied Tax Law as a post graduate at the University of Bologna. He started to work trading with the USSR and when he started banking in London was assigned to lending with socialist countries before being headhunted by LFC London Forfaiting Company where he started to visit socialist countries meeting sovereign borrowers.

With this attitude he arranged the first loan in history to Vietcombank, the Bank of Foreign Trade of the Socialist Republic of Vietnam in 1987. Later, the relation with Vietnam led him to leave banking to take a more entrepreneurial role trading textiles, hides and crude oil from Asia and Africa. This finally brought him into a lead role in oil trading, exploration and production businesses, advising emerging countries at a governmental level. He also has experience in manufacturing.

### **Luigi Regis Milano - Managing Director of Zenith's Italian Operations**

Luigi Regis Milano is an oil Chemist by education and has 35 years of oil industry experience. He has served as a Director/owner of a large oil refining, processing and trading company and as director of listed company, Autostrada dei Fiori S.p.A., Currently, he is also a Director and part owner of Dpl Lubrificanti SPA, a private bio-diesel refining company based in Italy, and managing Director of Canoel Italia S.r.l., Zenith's Italian subsidiary.

### **Dr. Dario Sodero - Non-Executive Director**

Dr. Sodero received a Doctorate in Geological Sciences (Hons.) from the University of Torino, Italy in 1967. He has served as an Independent Non-Executive Director of Zenith Energy Ltd. since June 2009 and is an experienced energy industry executive with 40 years of experience. Currently head geologist of Zenith Energy Ltd. he has held management positions with various publicly traded Canadian companies since 1980, mostly as CEO.

**Erik Sture Larre Jr. – Non-Executive Director**

Erik Sture Larre, Jr., served as Deputy Chairman of Sparebanken Nord-Norge (branded as SpareBank 1 Nord-Norge). He specialises in real estate, banking and finance and has experience in oil & gas. He has wide geographical experience in many countries in East Europe, Southern Europe and the Middle East and was both a former Director & the Chairman of the audit committee of Sparebank, Norway. An Independent Non-Executive Director of Zenith Energy Ltd., Larre is an Engineer and holds a Master's Degree in Civil Engineering from Milan Polytechnic University.

**Saadallah Al-Fathi - Non-Executive Director**

Saadallah has served as Head of the Energy Studies Department, Organisation of Petroleum Exporting Countries (OPEC) in Vienna, Austria. He has also served as OPEC Representative to the Executive Council of the World Energy Council and Member of its Studies and Developing Countries Committee. He has advised several governments and corporations on energy matters, and is an award-winning oil and gas industry researcher and columnist. He holds a BSc degree in Mechanical Engineering from the University of Manchester. He writes weekly oil price and energy commentary for a newspaper in the Gulf.

**Sergey Borovskiy, Non-Executive Director**

Sergey Borovskiy has over 25 years of experience in business management in China and Hong Kong. He has lived and worked in China since 1991 and is fluent in Russian, English and Mandarin. Sergey is CEO of Sanju Environmental Protection (Hong Kong) Limited, overseeing the international projects of controlling shareholder Sanju Group, a company specialised in energy purification and environmental protection technologies listed on the Shenzhen Stock Exchange. He is CEO and Chairman of General Transactions Inc., an oil & gas consulting, engineering, trading, seismic research and exploration services company. Sergey also serves as Chairman of the Board of Directors at Petro Chemical Solutions and South China Heavy Industries Group. Sergey studied in both China and Russia and holds a degree in economics.



## Forecasts

We have updated our coverage of Zenith Energy with forecasts for the current financial year 2019. We have included a contribution from the potential Indonesian assets which we believe could add around C\$38 million of revenue. We estimate a pre-tax profit of C\$12.834 million. This is the after payment of a share of profits to the Indonesian government, in line with the terms of the PSA and also the payment of 44% tax on net profits generated in that country. Factoring in the new shares arising from the £2.17 million fund raising gives earning per share of C\$0.04.

(000' Canadian Dollars)

Year End 31 March	FY2016A	FY 2017A	FY 2018A	FY 2019E
<b>Revenue</b>	<b>791</b>	<b>4,424</b>	<b>5,019</b>	<b>59,622</b>
<b>Cost of Sales</b>				
Production costs	(809)	(3,033)	(5,160)	(15,498)
Amount payable under Indonesian PSA	-	-	-	(20,790)
Depletion and depreciation	(270)	(1,299)	(2,221)	(2,500)
<b>Gross Profit/(Loss)</b>	<b>(288)</b>	<b>92</b>	<b>(2,362)</b>	<b>20,834</b>
Administrative expenses	(2,757)	(4,155)	(6,767)	(7,000)
<b>Operating Profit/(Loss)</b>	<b>(3,045)</b>	<b>(4,063)</b>	<b>(9,129)</b>	<b>13,834</b>
Fair value movements	(303)	427	-	-
Gain – on business combination	-	578,995	-	-
Impairment	(5,025)	(2,985)	-	-
Net interest expense	(847)	(633)	(789)	(1,000)
<b>Profit/(Loss) for the year before taxation</b>	<b>(9,220)</b>	<b>571,741</b>	<b>(9,918)</b>	<b>12,834</b>
Taxation	1,514	-	-	(4,768)
<b>Profit/(Loss) for the year from continuing operations</b>	<b>(7,706)</b>	<b>571,741</b>	<b>(9,918)</b>	<b>8,067</b>
Profit/(Loss) from discontinued operations, net of tax	31	(4,363)	-	-
<b>Profit/(loss) for the year</b>	<b>(7,675)</b>	<b>(567,378)</b>	<b>(9,918)</b>	<b>8,067</b>
<b>Other Comprehensive Income</b>				
Items that may be subsequently reclassified to profit or loss:				
Exchange differences on translating foreign operations, net of tax	(142)	1,595	422	-
<b>Total Comprehensive Income for the year attributable to the owners of the parent</b>	<b>(7,817)</b>	<b>568,973</b>	<b>(9,496)</b>	<b>8,067</b>
<b>Earnings per share (C\$)</b>				
Basic profit/(loss) for the year	(0.23)	8.15	(0.07)	0.04
Weighted average number of shares	29,292,000	69,626,000	132,880,000	208,915,168
Total shares plus options and warrants	73,233,304	177,573,138	201,409,202	230,971,363

Source: Company/Align Research

## Valuation

We have determined a sum-of-the-parts valuation for Zenith Energy. Our financial model has been largely based on the Competent Persons Report (CPR) published by Calgary-based Chapman Petroleum Engineering Ltd, dated 1<sup>st</sup> April 2018. In valuing Zenith's assets the bulk of the value lies within the Azerbaijan oil interests which have rather eclipsed the Italian assets.

### Azerbaijan

Looking at the oil assets in Azerbaijan we created a model of the cash flow derived from the annual oil revenue, costs and profits share with SOCAR contained in the CPR. Our timeframe is from 2018 onwards over the life of the licence and the valuation is split into the better known near-term development and the riskier full field development. This was done to be able to allow for differing ranges of geological and economic parameters that impact the commerciality of a project in our analysis.

The **near-term development** of the oil assets is represented by the current ongoing well-redevelopment program. This focused on extracting the oil which lies within the Proven Developed Producing, Probable Developed Producing and Probable Developed Non-Producing Reserves. Developed Reserves are where reserves are expected to be recovered from existing wells, Developed Producing Reserves where the reserves are expected to be recovered from completion intervals open when the estimate made and Developed Non Producing Reserves, where reserves have either not been on production, or previously been on production but have been shut-in and the date when production will be resumed is not known. **We estimate total cash flows of US\$181.096 million over the near-term field development period (until 2034) and which discounted at 10% gives a Net Present Value of \$64.603 million.**

	Undiscounted US\$ million	NPV(10) US\$ million
Near term development	181.096	64.603
Full development	1,626.718	404.575

*Table: Valuation of Azerbaijan assets. Source: Align Research and the Company*

Over the longer term, the **full field development (24 years)** work on the oil assets is captured by the proved plus probable cases – essentially drilling new wells. The full field development of the oil assets is focused on extracting the Undeveloped Reserves (Proved Undeveloped and Probable Undeveloped), which are those reserves which are expected to be recovered from known accumulations where significant expenditure above and beyond drilling a well is required to make them available for production. **The forecast total cash flows of US\$1.626 billion discounted again at 10% discount rate gives a Net Present Value (10) of US\$404.575 million.**

We can appropriately risk this full development case independently of the short-term case by stripping out the proven plus probable value from the aggregate figure. This allows us to risk the possible case (the longer-term development plan) alone as it is netted-out. Doing so and risking the geological chance of the plan's success quite harshly at 50%, before seismic works are completed, and horizontal wells are tested on site, we then chose to carry a highly conservative 10% of that value, or US\$20.711 million into our company sum-of-the-parts calculation.

By approaching the valuation in this way, some measure of the inherent value in the full field attributable to the company is recognised now. The longer-term plans will need to be sanctioned for active development and funding solutions (reserves based lending most likely) for the proposed development works put in place before a fuller 'carry' of their value can be brought into the company valuation hence us carrying a materially risked figure of just 10% here in our valuation.

**We believe this valuation is fairly conservative as the numbers are based on the CPR.**

## Italy

For the Italian gas assets we once again created a model of the cash flows derived from the annual gas and condensate revenues, costs and working interest profit share contained in the CPR from 2017 onwards over the life of the licence. Separating the various categories of reserves allows them to be treated differently by varying the chances of success and weighting in later analysis.

Developed Reserves come from existing wells, Developed Producing Reserves come from existing completion intervals and Developed Non Producing Reserves come from wells not on production or shut-in.

	<b>Undiscounted US\$ million</b>	<b>NPV(10) US\$ million</b>
Proven	3.075	2.244
Probable Developed	4.747	1.632
Probable Undeveloped	71.856	9.850

*Table: Valuation of Italian assets. Source: Align Research and Company*

The total annual cash flows from Proven at the Misano Adriatico, Torrente Cigno, Lucera and San Mauro concessions totalled US\$3.075 million and were discounted at 10% to give a Net Present Value (10) of US\$2.244 million.

The total annual cash flows from Probable Developed at the Misano Adriatico, Torrente Cigno, Lucera and San Mauro concessions totalled U\$4.747 million and were discounted at 10% to give a Net Present Value (10) of C\$1.632 million.

The total annual cash flows from Probable Undeveloped at the Torrente Cigno concession totalled US\$71.856 million and were discounted at 10% to give a Net Present Value (10) of US\$9.850 million.

**Once again it should be pointed out that we believe this valuation is fairly conservative as the numbers are based on the CPR. As such, a number of the same reasons that were expressed in the section dedicated to the valuing the Azerbaijan assets also apply.**

## **Indonesia**

We have sought to create a financial model to assess the value of the Indonesian assets that are planned to be acquired. Below we have set out our basic assumptions.

### **Timing**

The timing and payment dates have been taken from the acquisition terms. It looks as though the company will need to exercise the option by mid-May 2018 and pay the first half US\$3.3 million within seven days. The second payment of US\$3.3 million would need to be paid by mid-late August 2018, although it might well be paid all at once out of the proceeds of the proposed financing.

### **Production**

Existing production is 1,050 bopd which comes from just one of the fields. The company is seeking to raise production to the 2,000 bopd level within a 15-month period. Each new well drilled is expected to provide 200 bopd of additional production. We have assumed that three wells are drilled in the remainder of 2018. Looking further had we envisaged a further 8, 5 and 5 new wells being drilled in 2019, 2020 and 2021 respectively. So, there is the scope for substantial multi-year improvements in oil production. In the analysis of the Indonesian assets we have used a flat oil price of US\$70/bbl for Brent Crude.

The oilfields are located in a prolific oil and gas basin with a proven petroleum system. Our production profile has been focused on production from the total 2P reserves of 10 mmbbls, which have been certified internally by the vendor (work which will be reduplicated by Zenith with 90 days). So, we have modelled this over the near term (2018 – 2022) and intend to extend this timeframe in the future once the CPR becomes published following the acquisition when the visibility over many of the current unknowns moving ahead maybe known with a higher degree of certainty. Good pressure has been reported from the reservoir and so decline rates are thought to be pretty good at 6% per annum.

### **Lifting costs**

Oil produced is transported by pipeline directly into the national oil sales system with a reported all-in average production cost of US\$18 per barrel.

### **Drilling costs**

The reservoir is shallow and so drilling costs are reasonably low at US\$700,000. Just for information, workovers are expected to cost in the region of US\$60,000 – 80,000, but we have not factored any as they do not seem to be in the management's current plans.

### **Taxation**

Drilling costs, operating costs, capex are all tax deductible. The tax rate is 44% and the company's PSA allows them also to receive 27% of net profits under the PSC. There looks to be scope to re-allocate certain head office costs to the new operation in Indonesia, which would reduce the tax bill in this country and serve to enhance the profitability of the company, but no such allowance has been factored in.

At this stage, we have attempted to place a realistic value on the oil interest in Indonesia, although it might be some time until the reserves have been internally verified by Zenith and further details are announced regarding this project. Moving ahead, our model will need to be updated as further information becomes available. However, for the time being, we believe that it provides a fairly conservative illustration of the value that could well be added with this exciting deal.

### Sum-of-the-parts valuation

To determine a value for Zenith Energy the NPV(10) values from the various assets were weighted using a Geological Chance of Success (GCoS) in order to risk the various categories of oil and gas reserves. These assets are then risked once more using a commercial weighting.

Assets	Undiscounted cash flow US\$m	NPV(10) US\$m	GCoS weighting	Carried Value US\$m	Commercial weighting	Carried Value US\$m
<b>Azerbaijan</b>						
Near term	181.096	64.603	100%	64.603	100%	64.603
Full development plan	1,626.718	404.575	50%	202.287	10%	20.228
Sub-total						84.831
<b>Italy</b>						
Proven	3.075	2.244	100%	2.244	100%	2.244
Probable Developed	4.747	1.632	90%	1.468	90%	1.322
Probable Undeveloped	71.856	9.850	50%	4.925	50%	2.463
Sub-total						6.029
<b>Indonesia</b>						
Near term	35.016	26.625	100%	26.625	100%	26.625

*Table: Valuation of Zenith' assets. Source: Align Research*

The valuations of Zenith's assets were input into the sum-of-the-parts calculation.



	US dollars US\$ million	Canadian dollars C\$ million	UK pounds £ million
Azerbaijan	84.831	112.825	64.105
Italy	6.029	8.019	4.556
Indonesia	26.625	35.411	20.119
Sub-total	117.485	156.255	88.831
Cash (current) estimated		2.300	1.306
Cash from placing (£2.166 million)		3.813	2.167
Acquisition cost - Indonesia	(6.600)	(8.580)	(4.875)
Debt (current) estimated		(4.800)	(2.727)
Debt (to be assumed from Indonesia)	(7.000)	(9.310)	(5.289)
<b>Sum-of-the-parts valuation</b>		<b>139.678</b>	<b>79.413</b>
Currently in issue (214,094,217)		C\$0.65	37.1p
Fully diluted basis - current (248,649,283)		C\$0.56	31.9p
<b>Fully diluted basis as at y/e 31-03-19 (230,971,363)</b>		<b>C\$0.60</b>	<b>34.4p</b>

*Table: Sum-of-the-parts valuation and target price for Zenith Energy. Source: Align Research*

Our sum-of-the-parts valuation for Zenith Energy amounts to C\$139.678 million (£79.41 million based on current FX rates – CAD\$1.76: £1). **Based on the number of shares currently in issue this gives a price per share of 37.1p.** On a fully diluted basis (248,649,283) this works out at 31.9p. There are however a significant number of out of the money warrants that are due to expire before 31<sup>st</sup> March 2019 and thus we have assumed that they will expire unexercised at the year-end resulting in a total of 230,971,363 shares being outstanding and thus our derived price target of 34.4p per share. We have further assumed that a debt facility of \$US 7m is put in place with a coupon of 12%.

## Peer group analysis

Looking at a peer group of largely London-listed oil and gas stocks makes for very interesting reading. This analysis has been performed ahead of the potential Indonesian acquisition and funding and so focuses on the company as it exists today with its interests in Azerbaijan and Italy.

Company	Share price	EV £m	2P Reserves mmboe	EV/2p £/boe	Countries of operation
Amerisur Resources (AMER)	15.16p	159.3	18.95	8.40	Colombia, Paraguay
Aminex (AEX)	2.23p	78.2	169.2	0.46	Tanzania
Columbus Energy Resources (CERP)	4.40p	25.9	11.8	2.19	Trinidad
Coro Energy (CORO)	3.30p	23.6	19.0	1.24	Italy
President Energy (PPC)	9.65p	114.3	26.6	4.30	Argentina, US
SDX Energy (ASDX)	60.90p	102.7	13.5	7.61	Egypt, Morocco
Solo Oil (SOLO)	2.29p	11.1	26.0	0.43	Tanzania, UK
Tap Oil (ASX:TAP)	A\$0.085	14.4	2.83	5.09	Thailand
Trinity Exploration & Production (TRIN)	17.15	43.2	21.3	2.03	Trinidad & Tobago
Victoria Oil & Gas (VOG)	27.85p	51.2	40.2	1.27	Cameroon
<b>MEDIAN</b>				<b>2.11</b>	
<b>RANGE</b>				8.40 – 0.42	
Zenith Energy (LSE:ZEN)	4.10p	13.3 <sup>1</sup>	44.9 <sup>2</sup>	0.30	Azerbaijan, Italy, Indonesia

<sup>1</sup> Enterprise Value adjusted for Indonesian acquisition and placing

<sup>2</sup> 2P reserves figure includes 10mmbo for the Indonesian assets, a figure which has been determined internally by the vendor

*Table: Peer comparisons. Source: Align Research*

**Viewing Zenith against its peer group illustrates quite clearly the degree of additional value the company could attract moving ahead.**

The analysis in the above table shows some far higher valuations for fairly comparable companies, with the median Enterprise Value (EV) to 2P reserve ratio being 2.11. **This compares to Zenith, which is trading on a lowly 0.30 times.** Accepted that some of these are in differing geographic regions but, we would argue that the risk discount of Azerbaijan as a country is actually less than others such as Egypt and Colombia. **This peer group table illustrates very succinctly to us the sort of valuation that the company could begin to attract on evidence of the successful development in Azerbaijan, helped by a proactive IR campaign and good investor engagement to really get the message out.** Indeed, if management delivers on the program and the stock price does not adequately respond we would expect the company to be on the radar of potential acquirers given the extreme undervaluation of the assets and the now geographic and political risk diversification of these.

**We do accept that execution on the Azerbaijan assets over the last 18 months since dual listing in London has been frustrating and that concerns over management capability have begun to surface. Should Andrea Cattaneo & his crew actually now address these sceptics and deliver on his promise of 1000 bopd by the end of 2018 then we would expect the shares to finally re-rate and attract a valuation that begins to close the gap with ZEN's peers.**

## Conclusion

Given the combination of new production from Indonesia, along with the programme of workovers accelerating and the new wells being drilled this year in Azerbaijan, we expect that there will, finally, be good news flow developing over the next eighteen months. As production milestones are passed, the company should progress further towards its goal of becoming a mid-cap E&P company, with growing revenues and profitability.

We look forward to hopefully revising up our target price as the company climbs the growth curve. At the moment, we are content to base our target on the sum-of-the-parts valuation. **We therefore update our research coverage on Zenith Energy with a new medium term target price of 34.4p as management hopefully now moves ever closer towards the key production targets and accordingly retain our Conviction Buy stance.**

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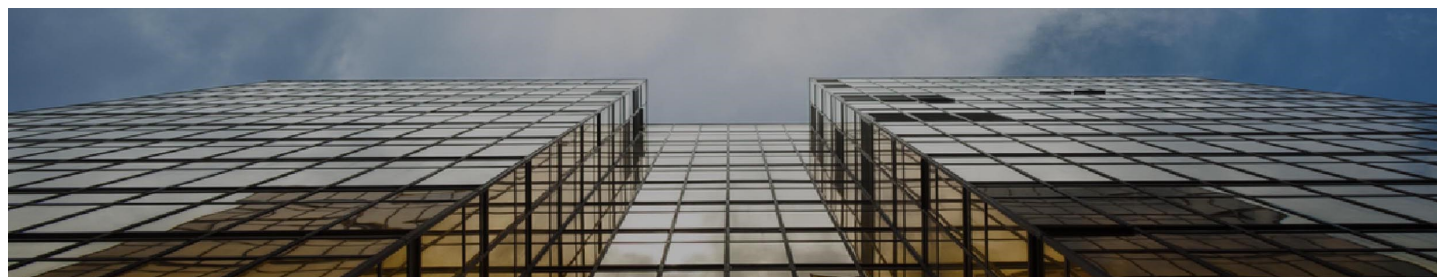
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