Tethys Petroleum

Initiation of coverage

Central Asia-focused player

Oil & gas

Tethys Petroleum (TPL) should interest investors who want exposure to significant exploration in Central Asia. Tethys holds interests with gross prospective resources of over 30bnboe in Tajikistan (where it counts Total and CNPC as partners) and Georgia, as well as material, lower-risk oil exploration in Kazakhstan. Fiscal terms are attractive in all its countries; both oil and gas are valuable due to ever-increasing export capacities to Europe and China. The company has existing producing assets in Kazakhstan, which provide useful cash flow and a valuation of 34p/share. The addition of 2014 exploration, including Klymene and a maiden well in Georgia, gives a RENAV of 85p/share. Optional inclusion of the longer-term exploration in Tajikistan would add a further 15p/share, based on our illustrative modelling. Success in drilling Klymene, Georgia or Tajikistan would transform the company.

Year end	Revenue ($m)	PBT ($m)	Cash flow ($m)	Net cash/(debt) ($m)	Capex ($m)
12/12	38.1	(19.9)	1.4	(15.6)	17.5
12/13	36.9	(7.5)	(0.8)	20.1	23.8
12/14e	36.6	(21.5)	(12.7)	54.5	40.6
12/15e	37.1	(20.8)	(9.5)	(5.2)	50.3

Source: Company accounts and Edison Investment Research

Upside from Kazakhstan, Georgia and Tajikistan

Tethys's existing core assets provide upside to the current share price should the company deliver the production growth and realisation rises it expects. However, investors in Tethys are more likely to be investing for the potential of transformational upside in large prospects in Kazakhstan, Tajikistan and Georgia. The Klymene (Kazakhstan) prospect could contain 422mmboe, while we model illustrative fields for earlier-stage exploration in Georgia (150mmboe) and Tajikistan (10tcf field). The potential for greater upside is real. Drilling may occur in H214 at Klymene and Georgia (subject to funding) and 2016 for Tajikistan.

Funded for 2014, helped by corporate deals

Tethys has been astute in corporate dealings. A farm-down of its Tajikistan asset has resulted in a partially carried work programme for 2014, while a recent Kazakhstan farm-down to a Chinese equity fund provides further funds, once closed – until then the recent fund-raising should provide necessary bridging funds. We believe the management is open to further shrewd monetisation.

Valuation: Large potential upside from exploration

The core producing and development assets provide a foundation to the shares at 34p/share. Drilling of the meaningful Klymene and Georgia prospects in 2014 serve as potential catalysts and contribute to our 12-month RENAV of 85p/share. In the longer term, the inclusion of illustrative discoveries in Tajikistan would add further (possibly to the tune of 15p/share), though exploration here is currently outside our valuation horizon.

7 July 2014

Price	**19.00p**
Market cap	**£64m**
	$1.60/£
Net cash ($m) 31 March 2014	7.0
Basic shares in issue	336m
Free float	100%
Code	TPL
Primary exchange	TSX
Secondary exchange	LSE

Share price performance

%	1m	3m	12m
Abs	(11.6)	(29.6)	(56.3)
Rel (local)	(12.2)	(30.8)	(59.5)
52-week high/low		46.5p	17.6p

Business description

Tethys Petroleum is an E&P with production and exploration assets in Kazakhstan. It also holds potentially significant interests in Tajikistan and Georgia. It is relinquishing its assets in Uzbekistan.

Next event

Klymene well	H214

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Tethys Petroleum is a research client of Edison Investment Research Limited

Investment summary

Company description: Asian independent

Tethys Petroleum is an independent E&P focused on the Central Asian republics. It currently has producing and exploration assets in Kazakhstan and holds exploration acreage in both Georgia and Tajikistan. It is in the process of relinquishing its Uzbekistan assets.

Kazakhstan currently provides the majority of revenues and all the company's reserves, but exploration activities in the next few years could radically change the company's asset base. Exploration in Kazakhstan in H214 at Klymene is material at 422mmboe (gross), but in Tajikistan a CPR puts gross mean unrisked prospective resources at 27.5bnboe and gross prospective resources in Georgia are estimated at 3bnboe. Success in any of these countries could be transformational. In Tajikistan, Total and CNPC give credibility to the elephant-hunting narrative and partly fund upcoming exploration.

Valuation: Core of 34p, RENAV of 85p

The existing production in Kazakhstan provides a valuation of 34p and could provide some meaningful exploration upside. However, the bulk of our RENAV is made up of early-stage exploration and is therefore speculative. In our 12-month RENAV of 85p/share, we include a 422mmboe field in Kazakhstan (as guided by consultants Gustavson). In the longer term (2015 and 2016), illustrative discoveries in Tajikistan and Georgia could take that towards 100p/share. The size of the prize (and good fiscal terms) in Kazakhstan, Tajikistan and Georgia means Tethys has a number of chances to find valuable resources.

Financials: Funded in 2014, but success will need capital

With the farm-out of Tajikistan to Total and CNPC, the pending farm-down of 50% of the Kazakhstan assets, and the May 2014 equity raising of $15m, Tethys is funded for exploration and development in 2014. The stature of Tethys in the joint operating company with Total and CNPC also means it has control over the capital spending in Tajikistan and will not be "spent out".

However, material success in exploration will bring significant capital requirements for development from 2015 onwards, which the company cannot fund from internal cash flows. Tethys will likely wisely reduce equity ownership over time to fund its work programme, we think. In the case of Tajikistan, exploration wells are expensive ($40-70m each) and multiple wells may be required over time to find resources, but the prize is very large.

Sensitivities: Kazakhstan prices near term, CoS longer term

We believe many investors see the countries in which Tethys operates as ex-Soviet and apply a high risk rating while ignoring the pros and cons evident for each country. Concerns have been raised over civil rights in Kazakhstan, cronyism and corruption in Tajikistan and Georgia's involvement in a war with Russia in 2008. However, Georgia also ranks eighth in the world for ease of business dealings (above Norway and the UK). Kazakhstan is a mature hydrocarbon producer, with supermajors in-country. Tajikistan is still new to oil exploration, but the Total/CNPC involvement should give investors comfort.

In the longer term, the key to share price appreciation will be exploration success in Kazakhstan, Georgia and/or Tajikistan. It is still very early days, and may not be immediate, but success would be transformational for the company.

Company description: Diversified Central Asian player

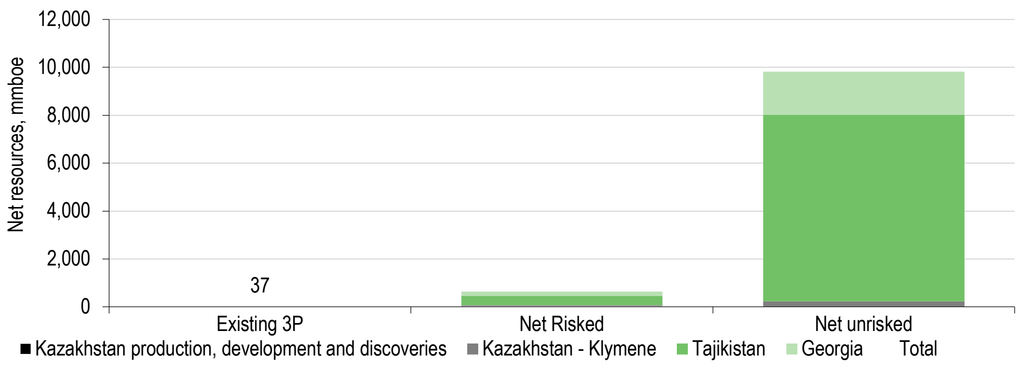
Tethys Petroleum is an independent E&P focused on the Central Asian republics. It currently has producing assets in Kazakhstan, which provide the company with the majority of its revenues (80% in H113) and all its reserves. It is in the process of relinquishing its Uzbekistan assets.

Tethys also holds exploration acreage in Kazakhstan, Tajikistan and Georgia. A June 2012 Gustavson CPR puts gross mean unrisked prospective resources in Tajikistan at 27.5bnboe and it counts Total and CNPC as joint venture partners in the country. In Georgia, the Gustavson evaluation suggests total resources of over 3bnboe (June 2013). The company also owns and operates five rigs, giving it operational and cost control over drilling. The recent announcement of the Klymene prospect also means that Kazakhstan exploration is a material event in 2014.

A lot to play for

Tethys has production assets in Kazakhstan, which provide some cash flow and a relative floor to the valuation. However, the investment proposition in the company may be best illustrated by the chart below, which shows the current resources vs those possibly in play over the coming years. Current net 3P resources (assuming the Kazakhstan farm-down completes) are 18mmboe. This is small compared to the 422mmboe sought at Klymene and dwarfed by the prospective resource in Tajikistan and Georgia, even risking them at 5% and 10% respectively, as seen below.

Exhibit 1: Tethys current resources vs prospective resources



Source: Tethys, Edison Investment Research. Note: Edison risks Tajikistan at 5% and Georgia at 10%. This analysis does not take account of the ability of the company to fund exploration/development of any resources (if found). A reduction in working interest in exploration assets in Georgia/Tajikistan is possible, although there are a number of avenues open to the company to fund development.

Understanding geopolitics in the Caspian

A major part of the investment process in Tethys requires a proper understanding of the geopolitics of the region. Many investors wrongly assign high risk to former Soviet bloc countries, and are not aware of the nature or stability of the political and fiscal regimes in the individual countries. While each of the countries has difficulties to overcome, we suspect investors are applying too broad a brush to the risk components. Encouragingly, each country has experienced GDP per capita CAGR of over 15% in 2002-12.

While Georgia had a short war with Russia in 2008, it has made strides towards economic progress and is now ranked as the eighth easiest country worldwide with which to do business – this is not an inconsiderable feat – above both Norway and the UK. If we look at the ‘protecting investors ranking’ index, all three appear high up. Georgia ranks 16th (the same as Japan and Belgium), while both Kazakhstan and Tajikistan are 22nd (the same as Norway). Politically, the countries are relatively stable, with presidents in both Kazakhstan and Tajikistan in place since the early 1990s. There are issues, but if we compare the overall situation with that of, say, Kurdistan (in which many investors have rightfully been interested in the recent past), we do not believe the risks are materially different.

Exhibit 2: Summary of countries in which Tethys operates

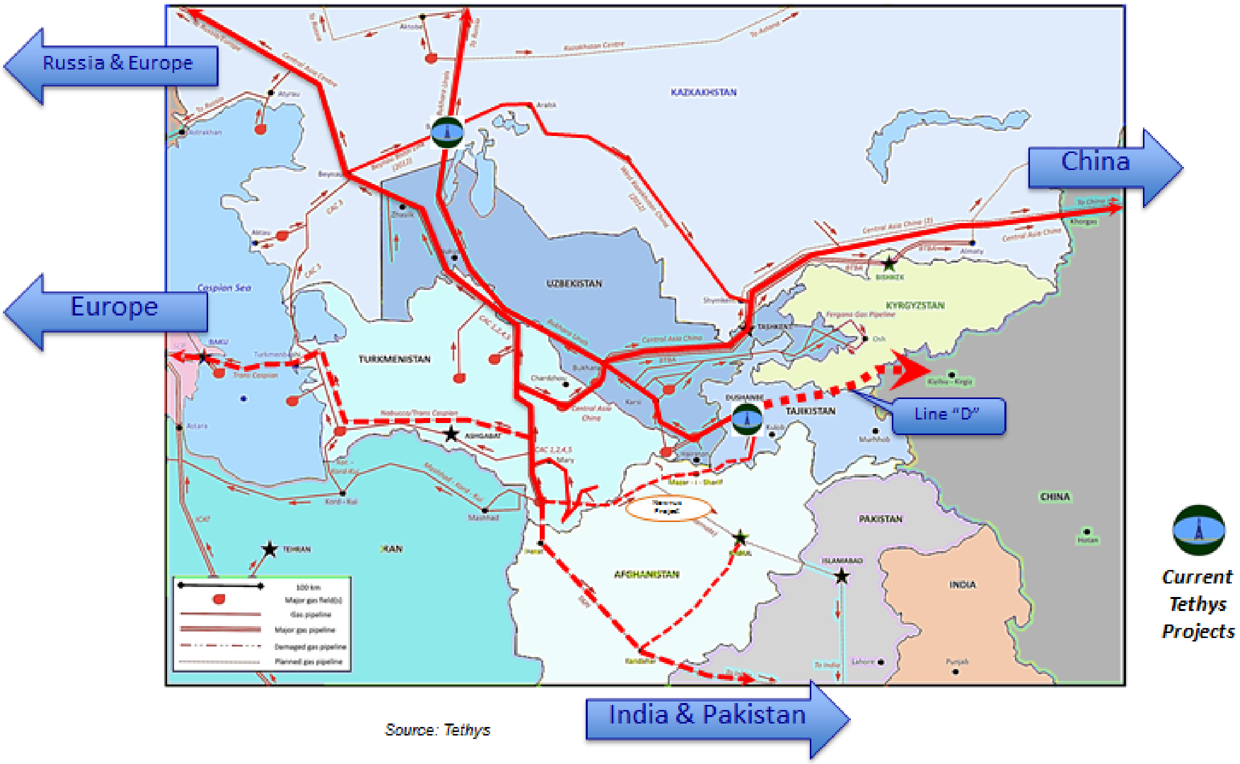
	Kazakhstan	Tajikistan	Georgia
Oil companies working in country and infrastructure	BG, ENI, Chevron, Lukoil, Total, KazmunaiGas, BP, Exxon. 15bcm/yr export pipeline under construction. New railway under construction 50km from Doris oil field.	Total, CNPC, Gazprom. CNPC to build a gas pipeline through Tajikistan to join existing network.	Sought to reduce dependence on imports by building Baku-Tbilisi-Ceyhan oil pipeline and Baku-Tbilisi-Erzurum gas pipeline, while railway also provides access to Batumi/Poti.
GDP per capita growth	The country has grown strongly since independence in 1991. 11% CAGR 1992-2012 and 22% CAGR 2002-12.	GDP growth 2002-12 averaged 16%. According to the CIA handbook, Tajikistan has the lowest GDP per capita of the former Soviet republics.	GDP growth 2002-12 averaged 16%.
WTO member?	No. Kazakhstan's Working Party was established on 6 February 1996. Bilateral market access negotiations are ongoing. The latest revision of the draft Report of the Working Party was circulated in July 2013. Kazakhstan joined the Russian/Belarus customs union.	Since 2 March 2013.	Since 14 June 2000.
Perception corruption rankings	140=	154=	55=
Ease of business rankings	50/189 (above Spain and Italy)	143/189	8/189 (above Norway and the UK). Has been praised by World Bank for anti-corruption efforts.
Protecting investors ranking	22= (same as Norway)	22= (same as Norway)	16= (same as Japan and Belgium)
Government and political situation	The government is stable, with President Nursultan Abishuly Nazarbayev in power since 1991. Presidential elections are held every five years. The current prime minister was elected in June 2013.	President Emomali Rahmon (since 6 November 1994) – there was a civil war from 1992-97 Prime Minister Qohir Rasulzoda (since 23 November 2013). Emomali Rahmon re-elected president with an 84% share of the vote.	Independent from Soviet Union from 1991. President Giorgi Margvelashvili (since 17 November 2013). Prime Minister Irakli Garibashvili (since 20 November 2013). Giorgi Margvelashvili elected president with 62.1% of vote.
Cons	Kazakhstan has been criticised for its human rights record by Human Rights Watch and David Cameron raised the issue when visiting Kazakhstan in July 2013. At the last election, President Nazarbayev received 96% of the popular vote.	The government is "characterized by cronyism and corruption" in a US cable while "[p]arliament acts as a rubber stamp". Strict media controls exist and restrictions on religious expression were introduced in 2009. There is some tension with neighbouring Russia.	In a 2010 cable (via Wikileaks): "Georgia is calmer and more stable than at any time since the war, but those improvements are far from durable. A palpable sense of insecurity still permeates society and politics."
Major industries	Coal (4% of global proved reserves), uranium (36% of 2012 world production), copper and zinc. It also has a large agricultural sector and produces 2-3% of world wheat supply.	Cotton is a major agricultural product. Commodities include aluminium, silver, gold, uranium and tungsten.	Agriculture including grapes, citrus fruits. Commodities include manganese, copper and gold. Currently imports nearly all hydrocarbon requirements.
Distance to major markets (from capital city)	Berlin 3,880km Beijing 3,650km	Berlin 4,460km Beijing 4,060km Shanghai 4,800km	Berlin 2,600km Beijing 5,800km
Control risks rating	Political – medium risk Security – low risk Kidnap – low risk	Political – high risk Security – high risk Kidnap – low risk	Political – medium risk (high in some areas) Security – medium risk (high in some areas) Kidnap – low risk
PWC country risk categorisation	Medium risk	Very high risk	High risk
Expropriation of assets?	Not recently	No	No

Source: CIA handbook, World Bank, IMF, IFC, Wikileaks, assorted

Central Asia critical in satiating Chinese demand

Central Asia stands roughly equidistant from major markets in Europe and China. Of the countries in which Tethys operates, Georgia is best situated to serve European cities (Georgia borders Turkey), while both Tajikistan and Kazakhstan are equidistant to Beijing and Berlin.

Exhibit 3: Central Asian gas export infrastructure

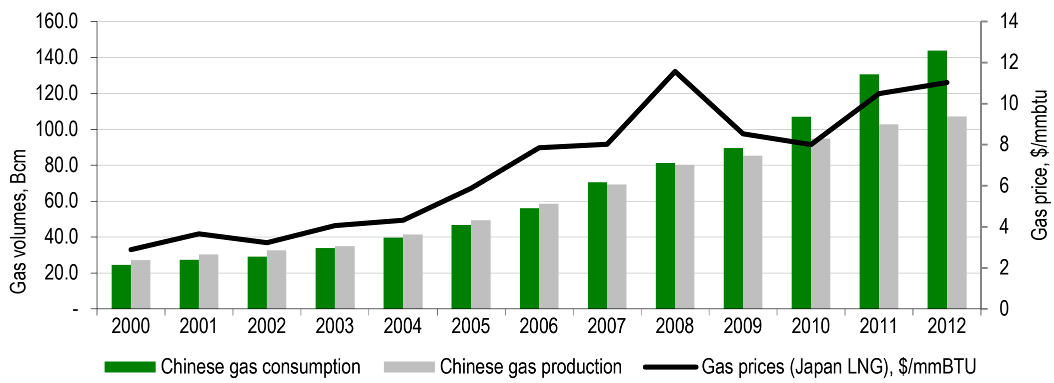


Source: Tethys

Given the growth of the Chinese economy and gas demand, we would expect the major market for Kazakhstan/Tajikistan hydrocarbons to be China. As the chart below illustrates, the Chinese gas deficit has grown substantially in the last decade. Since 2002, gas demand increased at a CAGR of over 17%, leaving China to source 37bcm from imports in 2012. With little material new indigenous gas production forthcoming in the short term at least, this gap will likely grow even larger. According to a recent Woodmac report, “[w]inter gas shortages will be exacerbated through to 2020 as seasonal demand growth in northern China increases at an annualised rate of approximately 16% per annum. Domestic supply cannot respond”.

The main sources for extra supplies are pipeline gas from Russia or Central Asia and LNG imports (there is also a 15bcmpa pipeline from Burma); the Chinese are seeking to expand supplies from each source. It is not surprising to see an increased Chinese presence in Central Asia including the construction of pipelines and Tethys’s recent farm-out to CNPC and Total.

Exhibit 4: Chinese gas production vs consumption over time vs prices for LNG import



Source: BP stat review

Kazakhstan: Significant near-term exploration potential adds to existing production

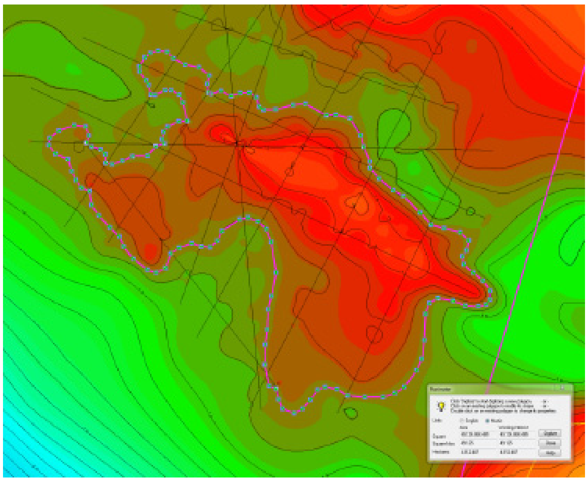
Tethys's Kazakhstan portfolio is made up of a number of small oil discoveries and numerous shallow gas fields that produce cash flow, which should grow over time. Notably, the success of the recent shallow gas drilling programme and the tie-in of the wells in 2014 means that a tripling of gas production is likely. This increase should more than offset the recent decrease in realised gas prices caused by the Tenge devaluation in February. In the longer term as gas prices are increased (helped we believe by its partnership with a farm-out partner) this will lead to a meaningful rise in the cash flow generation of these assets. While providing useful cash flow and a foundation of value, the recent announcement of the Klymene prospect could be transformational.

Klymene

Klymene is a newly announced prospect in the Kul-Bas exploration contract area, as defined on recent seismic. The prospect has been analysed as potentially holding 422mmbbl of unrisked prospective resource by Gustavson, which would dwarf Tethys's existing 3P reserve base (gross 40.4mmboe, net 36.7mmboe). If proven up, the field would present a step change in value for the Kazakhstan business and for Tethys. The prospect is described as a "four-way closure with bright spots at 2 of 3 prospective stratigraphic levels within the Cretaceous and Jurassic sequence, both of which are productive in the company's Doris oilfield".

We model Klymene as a 422mmbbl field. However, we note that the production licence only extends to 2032; without licence extensions, this quantity is unlikely to be extracted by 2032, but given the success the company has had with extensions, we assume extraction of the full field. We currently assume that the prospect is drilled in late 2014 or early 2015, with well costs of around $7m. A number of appraisal wells will be required to fully assess the prospect.

Exhibit 5: Klymene is described by Gustavson as having gross unrisked prospective oil resources of 422mmboe

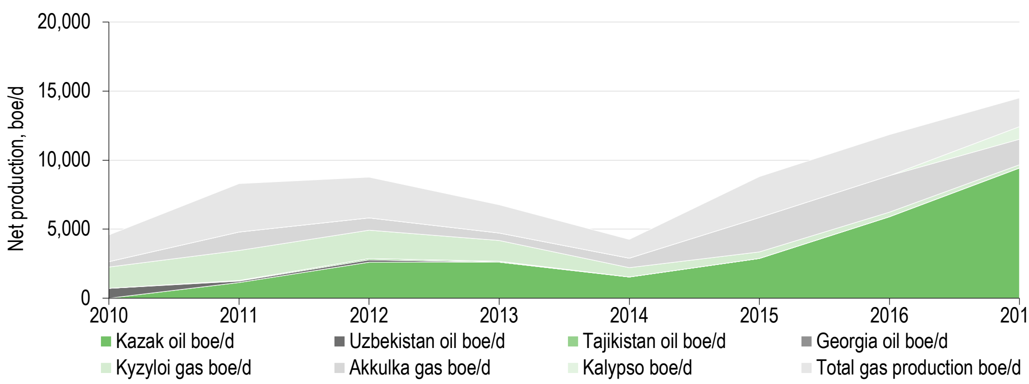


Source: Tethys

Existing production and development assets

Tethys's assets in Kazakhstan are located in the North Ustyurt basin to the west of the Aral Sea, adjacent to the prolific Pre-Caspian basin, which contains super giant oilfields such as Tengiz. The company holds 50% and operates all its assets in the country (assuming completion of the farm-out – see later in this note). It produces oil and gas from three fields (Kyzyloi, Akkulka and Doris), which are surrounded by a large exploration area (Akkulka Exploration Contract), which is in turn surrounded by a larger exploration and production contract (Kul-Bas). The production licences for a number of the fields are due to end in the next five years. However, the company has been able to extend the licences a number of times in the past and believes that its government relationships and track record in the country mean that it will continue to be able to do so. We assume the same.

Exhibit 6: Estimated net production, boe/d



Source: Edison Investment Research. Note: Assumes Kazakhstan farm-out is completed and exploration success.

Progress on exploitation of its Kazakhstan reserves has been slower than originally anticipated. However, a number of factors should enable the company to drill more aggressively in 2014, not least the recent sale of 50% of the assets to a Chinese private equity company.

Farm-out deal with SinoHan

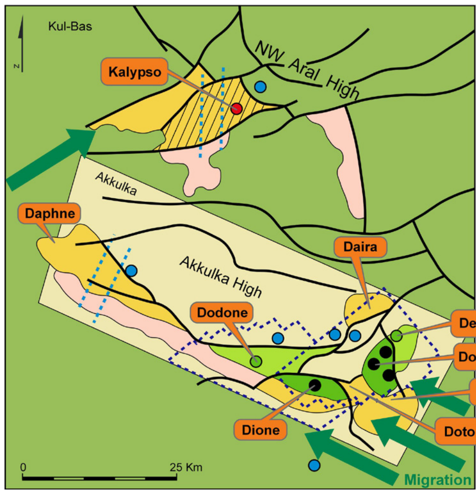
On 1 November 2013, Tethys announced that it had signed a farm-out deal with SinoHan, a Chinese private equity fund. Under the terms of the deal, SinoHan will hold 50% plus one share of the Kazakhstan assets in return for a $75m payment. The $75m is made up of a $55m cash payment and $20m of cost carry for the work programme in Kazakhstan (much already carried out in 2013) – we therefore expect that the $20m carry is made up of cash in our modelling. Further bonuses are available in future contingent on booking additional 2P reserves. The deal is contingent on government approvals, which we assume will be given in H214.

We believe this is a positive development for Tethys. It brings a third-party valuation to investors' attention, providing a benchmark by which the assets can be judged. More importantly, the inclusion of a large Chinese entity will enable the JV to push for better gas prices over time.

Exhibit 7: Kazakhstan assets

Source: Tethys Petroleum

Exhibit 8: Doris area discoveries and prospects



Source: Tethys Petroleum

Shallow gas – Kyzyloi and Akkulka fields

Tethys currently produces gas from two areas, the Kyzyloi gas field and the Akkulka group of fields, which hold a combined 45.1bcf of 1P and 68.1bcf of 2P reserves. The gas produced is sold on an annual contract with Intergas Central Asia, a subsidiary of the Kazakhstan state gas company. Production from the fields has been falling in recent years as the company de-prioritised investment due to low prices. However, a large increase in the realised prices in January 2013 (from $32/mcm to $65/mcm) has enabled the company to plan a more aggressive investment programme and 2014 should mark the multiple-well campaign in the Akkulka field. These could increase the gas production to 30mmscf/d and beyond, with six further wells due to be drilled in the 2014-15 programme.

The wells are likely to target individual accumulations in the Akkulka complex rather than one large field. As such, there is some risk of unsuccessful drilling, but Tethys has a strong understanding of the geology in the area and past experience has been positive (11 of the 13 wells previously drilled hit commercial gas). Wells are relatively cheap and quick; they cost around $1m and take three weeks to drill to reach the 600-800m target depth in the Eocene age Kyzyloi sands.

Much of the shallow prospectivity for the block has been identified, but deeper potential exists in the area. The Tasaran sands have been identified by a number of wells (AKK05/AKK14/AKK15/AKK16) and these will be worked over in 2014, with a view to adding significantly to existing production in the Akkulka fields. These will be joined by the first four wells drilled in 2014 (AKK17/AKK18/AKK19/AKK20), which have tested at encouraging aggregate rates of 23mmscfd.

At this stage, we assume these wells are added in Q115, and contribute to an average production from Akkulka of just under 30mmscfd in 2015, although this could move up once the wells are in production. We have assumed other wells come online between now and end 2016, and this is included in development in our core NAV.

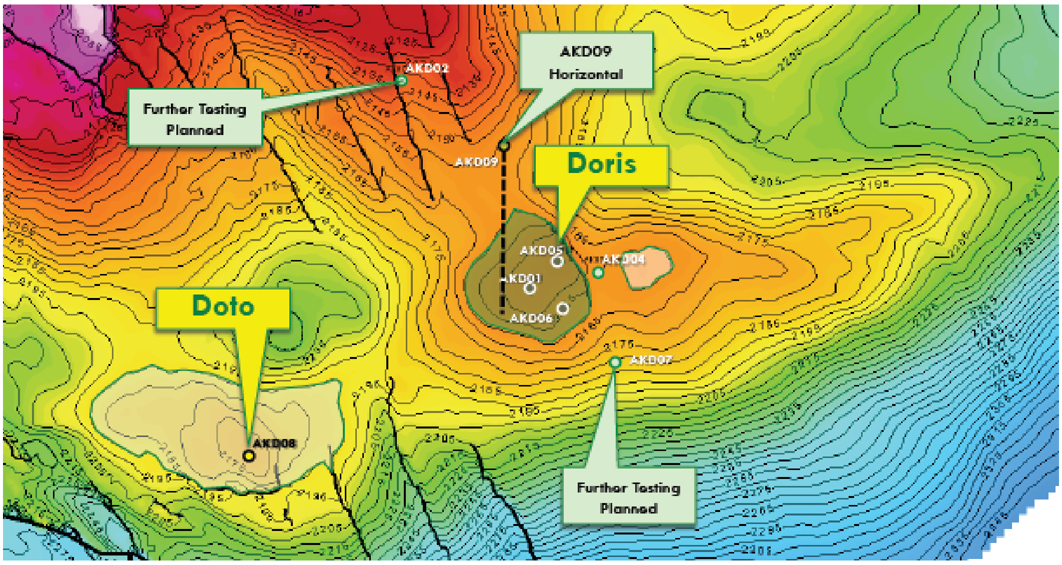
Gas exports

Gas is exported via the Bukhara-Urals gas line, although a gas pipeline exporting gas to China opened in September 2013, providing an additional commercialisation route with the potential to increase the gas sales price further in the near term. After the recent devaluation of the Kazakhstani tenge, gas prices have weakened. We assume a small recovery in 2014 and 2015 (2.5%), then large increases in 2016 as negotiations take hold before 2.5% increases continue.

Oil fields – Doris (producing) and other prospects

The Doris field was discovered in February 2010, just south-east of the Akkulka gas fields. The field is made up of a Cretaceous and smaller Jurassic interval, together capable of initially producing over 6mb/d per well of 45° API oil and 0% sulphur. So far, three wells have been drilled and 2P reserves in 2013 stood at 12.3mmbbl – production since then has reduced this. Before the discovery, the nearest oil field to Tethys's acreage was located 450km away. This made development of the oil, far from existing infrastructure, difficult. As a result, the company looked to develop oil facilities itself (called the Aral Oil Terminal, or AOT).

Exhibit 9: Doris – Doto base cretaceous map



Source: Tethys Petroleum

Numerous other oil prospects

We conservatively model that the Dione discovery (tested at 400b/d in 2011) starts development in 2015 and 2016 and produces around 4mmbbl, though this could be accelerated should the SinoHan farm-out deal be finalised in 2014 (company guidance is that development is in late 2014). This first discovery of oil in the area has opened up a number of potential oil prospects, mainly in the vicinity of Doris. The company spudded the first of these additional prospects with exploration well AKD08 on its **Doto** prospect in September 2013. The well targeted 22mmbbl of gross recoverable prospective oil resources across several zones, including the Lower Cretaceous sandstone and Upper Jurassic carbonate that had been proven in Doris. The well was to be drilled deeper to 3,300m to target the Triassic, which Doris encountered but could not properly evaluate/test due to technical issues. The well therefore remains an exploration prospect. In the longer term, the company has identified many other prospects to explore with Dero, Dodone, Daphne, Danae and Daira all possible future targets. There are no published timelines to drill these fields, nor disclosed prospect sizes.

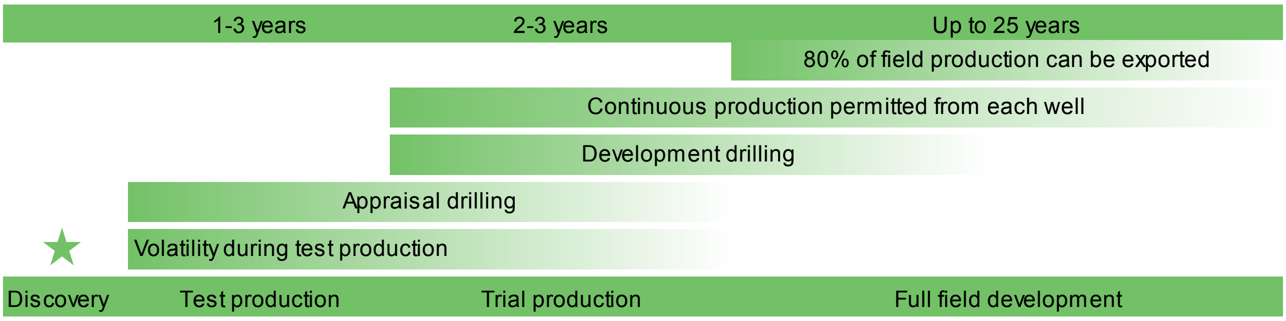
Kalypso

Tethys drilled the Kalypso prospect in 2011, reaching TD in September. Logs indicated 100m of gross hydrocarbon pay in permo-carboniferous limestone, but questions remain on the ability for the well to flow. Two and half years from discovery, the company has fracked the well and we await the acidisation to ascertain if the gas condensate will flow – this will be carried out subject to funding in 2014. A successful stimulation and test here would de-risk the c 120bcf of gas estimated – though we note that the prospect is not detailed in the latest presentation – suggesting that the company sees greater potential elsewhere. At this stage, we assign a 15% chance of success.

Kazakhstan – timings

Taking fields from discovery to production is not a quick process in Kazakhstan. As Exhibit 10 illustrates, once a field is discovered, each interval can be placed on test production for 30 days. Trial production (allowing continuous production) can only start around a year after discovery, with another two to three years of domestic sales before export of oil/gas is possible. This timeline is notably extended versus other regimes.

Exhibit 10: Kazakhstan discovery to production timelines

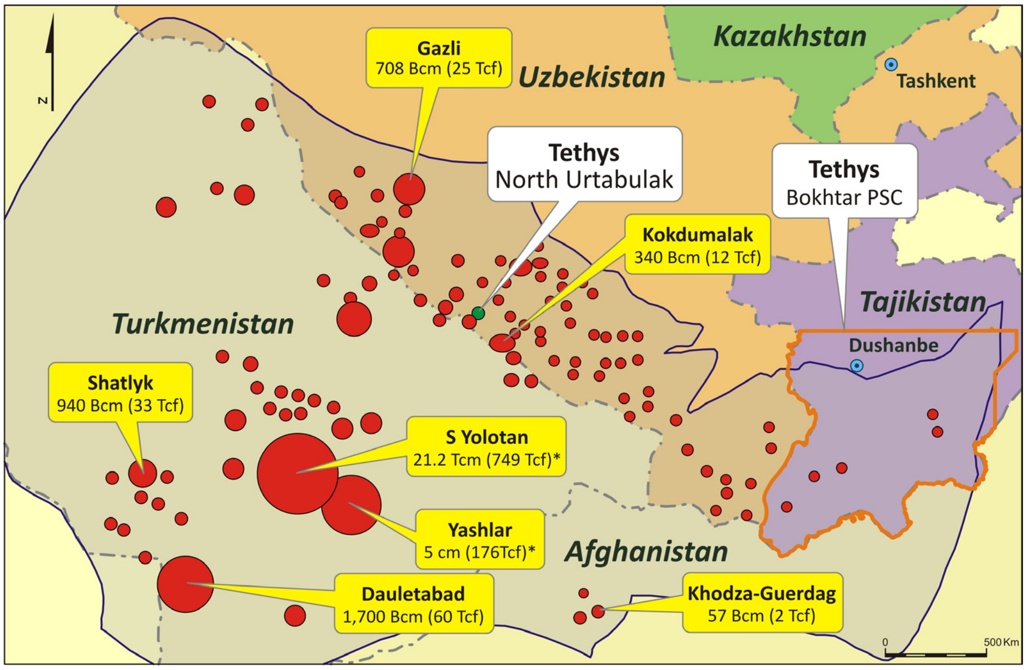


Source: Edison Investment Research, adapted from a Max Petroleum presentation

Tajikistan: The jewel in the crown

In June 2012, the Bokhtar PSC was independently assessed to contain 27.5bnboe recoverable prospective resources. While this is a very significant resource, such a vast area with potential resource would require a level of capital investment that Tethys could not fund alone, and this was perhaps a reason for the market's lacklustre response following the CPR announcement. Tethys's farm-out of the PSC to Total and CNPC (announced in December 2012, completed in June 2013) was therefore critical because it brought strong partners, the funding to progress exploration in the area and further endorsement of the potential in the block. Companies the size of Total and CNPC are not looking for accumulations of "only" a few trillion cubic feet. We can therefore be confident that they believe prospectivity in the block is very substantial.

Exhibit 11: Amu Darya basin



Source: Tethys Petroleum

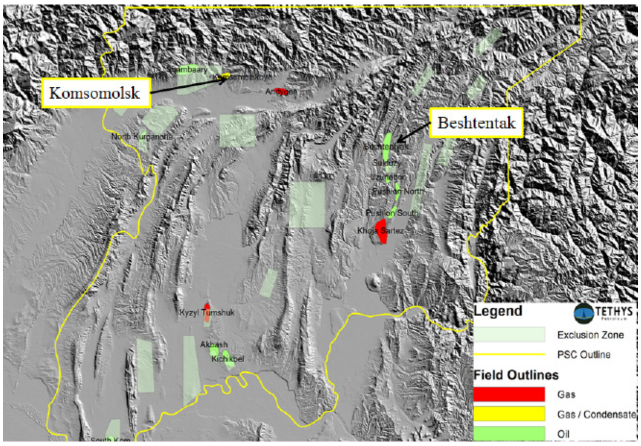
Block summary

In Tajikistan, Tethys's projects are located in the Bokhtar PSC, a large underexplored area of 36,186km^2 in the south-west of the country, covering over 20% of its land mass. Bokhtar sits in the easterly extension of the Amu Darya basin, which is productive in Uzbekistan, Turkmenistan and

Afghanistan. The basin is primarily gas prone and contains some super giant gas and condensate fields, including the 749tcf South Yolotan field in Turkmenistan.

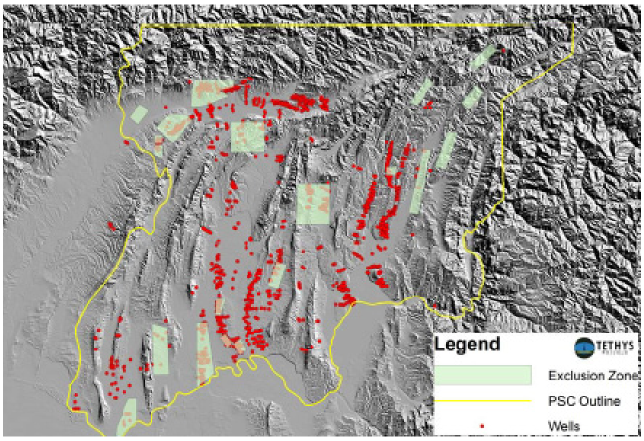
Since entering Tajikistan in 2007, Tethys collected geological and geophysical data, including over 1,000km of 2D seismic acquired in 2009 and 2011. The company is particularly interested in the deep exploration prospects below the regional salt layer, and the acquired data have reinforced Tethys's view that large deep Jurassic reefal structures could exist sub-salt. Reefs form some of the most prolific fields in Amu Darya, but to date no sub-salt wells have been drilled in Tajikistan. Existing 2D seismic has demonstrated it is possible to see below the salt, and a further 1,800km 2D survey is planned in 2013 to provide grid completion across the area.

Exhibit 12: Bokhtar area has proven fields



Source: Tethys Petroleum

Exhibit 13: Good well control in PSC area



Source: Tethys Petroleum

The company farmed out the acreage to Total and CNPC in 2012. Under the terms of the deal, SSEC (85% controlled by Tethys) retains a 33.3% interest, received $63m in back costs and will have a 67% carry on the costs of the initial $80m work programme (leaving it to fund $9m). This deal values Tethys's stake at around $56m (gross block at $200m). Importantly, given the size of the partners, Tethys has a blocking vote, reducing the risk of being spent out of the contract due to capex calls. The joint operating company, known as the Bokhtar Operating Company (BOC), has gone out to tender for a new seismic programme and we expect this to commence in 2014, followed by a possible well spudding in late 2015.

We expect the BOC to be exploring for giant gas fields of perhaps 10tcf or more. We have tentatively modelled a gas field of 10tcf (made up of 7tcf of gas and 500mmbbl of condensate) for illustrative purposes – we expect to update this as prospects are better defined after the seismic work and drill location(s) are chosen. At this stage, therefore, our DCF valuation for Tajikistan is illustrative only, but uses assumptions we believe are defendable.

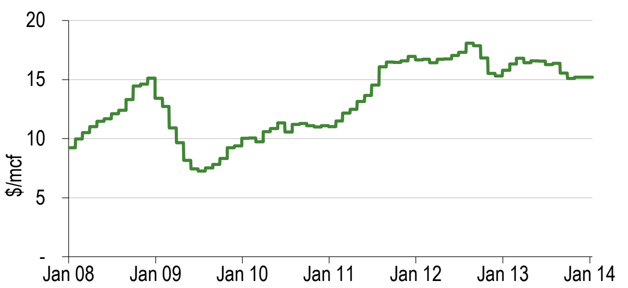
Modelling assumptions

We model on the basis of a 10tcf discovery given the size of neighbouring gas fields and the size of its partners, with a gas/condensate ratio based on typical ratios given in independent reports. Costs for development are based on phase one of the development of the South Yolotan field by Petrofac. Gas prices use a variety of factors. Gas pricing in the Central Asian network tends to derive from a mixture of oil price formula (based on LNG cargo pricing), with gas delivered at the end-user price minus transport fees. With pipeline gas from Central Asia to China, the marginal supply will come from LNG and so we look at this for guidance on pricing structure. LNG cargoes are currently achieving around $15/mcf in Japan, giving us comfort that our pricing assumptions (at a considerable discount to the LNG prices) are reasonable. Even taking into account an estimated gas transport cost of $1.7/km/m^3 (or approximately $2.3/mcf given the >4,800km distance from

Dushanbe to Shanghai), the gas would sell at a discount to current LNG prices. We inflate the prices at 2.5% pa.

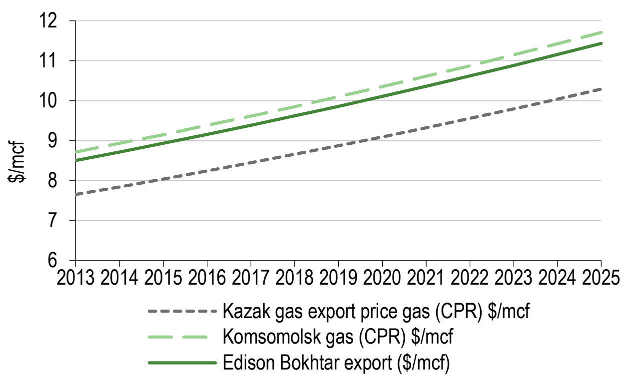
We also note that domestic Tajikistan gas is selling for $380/mcm ($10.8/mcf) according to Tethys, due to the need for Tajikistan to import much of its energy (currently from Uzbekistan). In this case, Tajikistan has to compete with Uzbekistan's other export markets and so is a fair indicator of current export prices that it may achieve should a discovery be made. We would expect a large discovery to compress this domestic price, as production would be far more than the internal needs of Tajikistan.

Exhibit 14: LNG cargo pricing over time, Japan



Source: Bloomberg

Exhibit 15: Pricing for Tajikistan gas, comps



Source: Tethys AIF, Edison Investment Research

Project would be very valuable to Tajikistan, Tethys, Total and the Chinese

The fully modelled development gives a value of this single 10tcf asset to be worth around $2bn (gross unrisked in 2014), or about $4/boe. As development progresses, this value should increase materially to over $10/boe in 2020. To this, we apply a significant risking to account for the chance of finding such a large accumulation, as well as commercial risks (discussed below). However, it should not be forgotten that a discovery of a large gas field would be transformational for the company. Tajikistan's PSC terms are very attractive: 70% cost oil is available with a 70% take of profit oil and no tax.

Irrespective of the outcome of any well, further wells (costing $40-70m) would require external financing, while development of a discovery would require very significant capital outflows long before any revenues are forthcoming. Given typical exploration success rates, Tethys could well have to fund multiple wells before any discovery is made, though we would expect success to drive strong share price revaluation. To better frame capital needs, we can reference our illustrative modelling. Total capex for the project would be around $2bn net to Tethys. Further reduction in equity share of its stake or equity issuance is therefore a real possibility in the exploration and development stages.

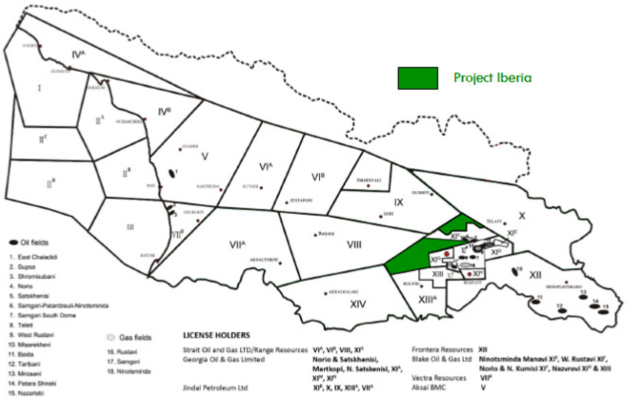
Georgia: Conventional and substantial shale potential

In July 2013, Tethys announced that it had conditionally acquired interests in a number of PSCs in Georgia (Project Iberia and Project Tamar) – completion of the Project Iberia deal was announced in January 2014. Under the terms of the deal, Tethys acquired 56% and became operator of Blocks XI^A, XI^M and XI^N (known collectively as Project Iberia) and is responsible for funding the first $10m work programme – it has already contributed $4m so far. It is no longer pursuing the Project Tamar blocks.

The Iberia blocks are located in the Kura Basin in Central Georgia near the capital Tbilisi and existing infrastructure. The assets offer both conventional and unconventional prospective resources independently assessed at 3.216bnboe, with over 85% of these being unconventional shale oil resources. The company plans to initially focus on developing the conventional target prospects in the Tertiary and Cretaceous zones.

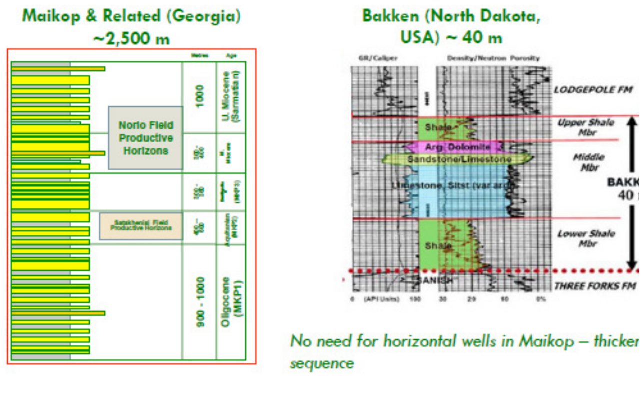
We understand that only two large discoveries have been made in the Kura Basin. The Samgori Field (discovered in 1974) has produced 210mmbbl and is still producing. Initial flow rates in the field were as high as 5,000b/d per well. The Ninotsminda Field has produced 12mmbbl of oil and 8.5bcf of gas to date and is still being developed. Well performance in this field is dependent on fractures and well flow rates of around 700-800b/d have been achieved.

Exhibit 16: Tethys's blocks in Georgia



Source: Tethys Petroleum. Note: Project Iberia is held at 56%.

Exhibit 17: Maikop Shale is much thicker than the Bakken



Source: Tethys Petroleum

In Project Iberia, Tethys has already begun acquiring 2D seismic and it expects to have a drill-ready prospect here by Q414, costing perhaps $3-4m. We understand that the drill prospect is expected to contain resources in the region of 150mmboe over a number of intervals (Chokrak, Eocene, Cretaceous and Maikop). The timing of seismic acquisition in Tamar is currently under negotiation as part of the transaction.

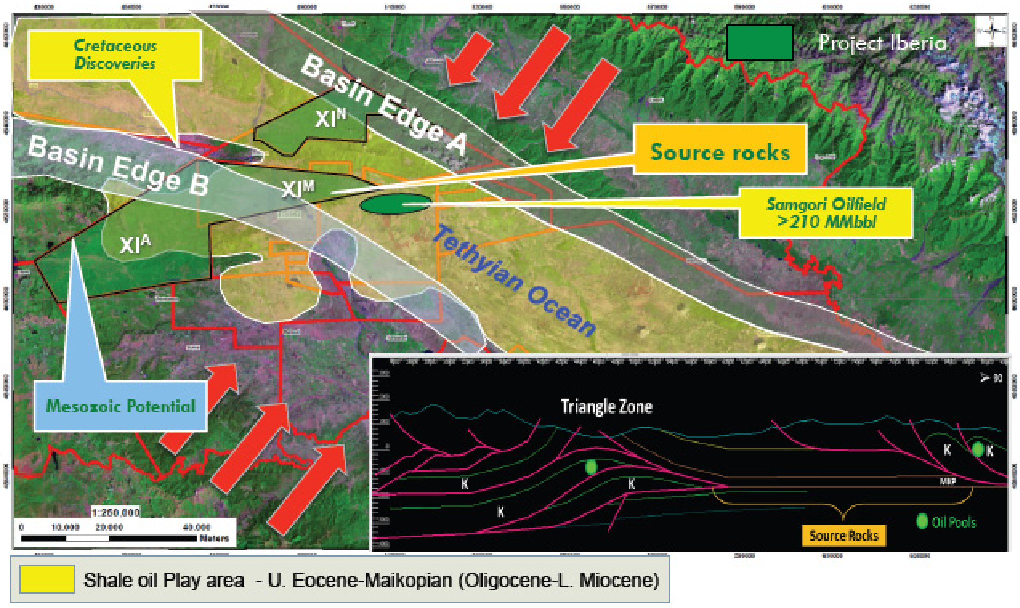
For valuation purposes, we arbitrarily assume an overall CoS of 10% for one 150mmboe conventional prospect. We assume this is made up of mostly oil and any gas is used for fuel or re-injection. However, we stress that the upside from conventional prospects alone could be material, as the fiscal regime is attractive. Any success beyond one prospect is not currently valued.

Unconventional shale – longer-term, material opportunity

Most of the shale oil potential is identified as being in Blocks XI^M and XI^N (within Project Iberia). The Maikop shale is potentially analogous to the Bakken and Eagle Ford plays in the US, but is estimated to have a substantially greater gross shale thickness of up to 2,500m (for comparison, the Bakken shale is around 40m deep).

Due to the thickness, the Maikop could be developed in a different way to the US shales, with vertical wells and fracks potentially the norm (as opposed to horizontal wells). Additionally, the structure could be naturally fractured in places, allowing natural flow.

Exhibit 18: The majority of Tethys's blocks lie within the shale basin and close to existing discoveries



Source: Tethys Petroleum

The company has stated that there is significant interest from majors. This is unsurprising, as given the resource prospectivity, fiscal terms in Georgia and oil price realisations (realisations of c $100/bbl are currently achieved elsewhere in Georgia) these assets could be valuable in time. Development of such a material resource will take significant investment and so involvement from a larger company makes sense in the mid-term. Given Tethys's record of bringing in majors in Tajikistan, we are optimistic that it could execute a beneficial deal over time.

We would expect Tethys to bring in skilled and expert help when approaching the Maikop. Early basin-opening exploration is difficult and much can be learned the US shale plays.

Given the early stage of the exploration and unproven nature of the unconventional resource, we do not include any value at this point. However, the potential of unlocking a resource of over 3bnboe is very real, if proven over time.

Management

Executive chairman and president Dr David Robson trained as a geologist and geochemist. He is founding chairman of Tethys (formerly a wholly owned subsidiary of CanArgo). Previous roles include founder of JKX Oil & Gas and roles at Britoil, Hamilton Oil and Mobil. Dr Robson has worked on projects in the former Soviet Union since 1990 in areas such as Siberia, Sakhalin, Murmansk and the Caspian region.

CEO Julian Hammond has worked for Tethys since 1998. In his current role Mr Hammond heads up day-to-day management of the business including operations, exploration, commercial, M&A, business development implementation. He is also responsible for the commercial activities and development of the business of the company, including financing the company's activities through instruments including equity, debt and trade finance and also negotiating any new contracts or licences associated with new business.

CFO Denise Lay is a fellow of the Association of Chartered Certified Accounts (FCCA) and has more than 15 years' experience. Ms Lay previously worked for KPMG for six years. She has held positions at Gallaher Group, NRG International and Chevron. Ms Lay is fluent in Russian and holds a BA (Hons) in Russian language and literature.

Chief Administrative Officer and Corporate Secretary Liz Landles is director of many of the company's subsidiaries and is responsible for human resources. Ms Landles has over 14 years' experience in the oil and gas sector. She holds an advanced diploma in business administration from the Institute of Business Administration and Management. Ms Landles is a member of The Association of International Petroleum Negotiators (AIPN) and a member of the Institute of Directors (IoD).

Vice President Exploration Rosemary Johnson Sabine OBE leads Tethys's exploration. Mrs Johnson Sabine has worked for many years in both major and independent oil and gas companies. This includes nearly 10 years with Chevron/Texaco, seven with Monument Oil & Gas and seven with Amerada Hess. Mrs Johnson Sabine is a member of SEG, a past president of EAPG and a past chairman of PESGB. She holds an OBE for services to the UK oil and gas industry.

Sensitivities

In line with other E&Ps, Tethys's earnings and valuation are sensitive to a number of macro factors, not least the current and future oil and gas prices. As an E&P, it is exposed to the normal geological/technical risks inherent in oil exploration. Apart from these, we highlight the following as major risks:

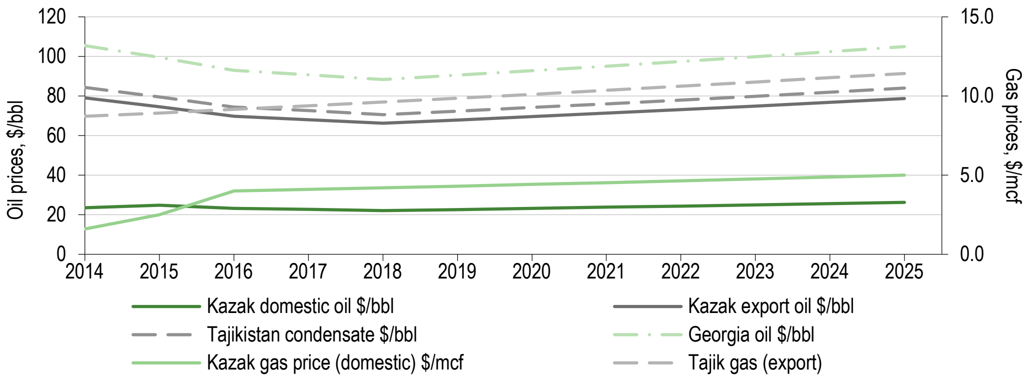
- **Bureaucracy/country risk:** Tethys operates in a number of former Soviet Union countries that rank very low on international corruption indices. For example, in the Corruption Perceptions Index 2012, Tajikistan is 157th of 174, Kazakhstan 133rd and Georgia 51st. However, we understand the company has good relationships with the governments of the countries and has worked successfully in the region for many years. In countries where fiscal terms are good, there is a risk that effective government take may be increased over time (as even seen in the UK over the last decade).
- **Operator risk:** Tethys is the operator of most of its assets and as such has a degree of control over the fields. However, its cash flow currently runs from three fields. Should any of the fields stop producing, it could have a material impact on company finances. To some degree this is mitigated through the number of wells it has on the fields and by its strong relationships.
- **Licence extensions:** Many of Tethys's assets in Kazakhstan are due to expire in the next five years. However, the company has been successful thus far in getting extensions to contracts and we assume it continues to do so. For example, the Kyzyloi area is on track to be extended by 15 years. The economics in our valuation are therefore explicitly based on the economic life of the fields, rather than the licence expiry dates.
- **Partner and funding risk:** In Tajikistan, Tethys has two very large partners. Although the Tajikistan asset is run by a joint operating company, as the smallest, most capital-constrained company, Tethys could be asked to contribute significant capex amounts in the future. This funding may have to come from equity markets, diluting shareholders. We note this is more likely in a success scenario and such a situation is a medium-term risk, given the capex carry that the company secured in the farm-out.

Valuation

Our core NAV is made up of Tethys's existing oil and gas production in Kazakhstan, development assets and existing cash resources. We model each asset individually using country specific fiscal regimes and employing a 12.5% discount rate given the nature of the countries of operation.

For commodity prices, we use a benchmark of Brent price of $80/bbl real (after a fade from current levels) or estimated domestic prices where appropriate (following a similar pricing trend).

Exhibit 19: Assumed prices of commodities



Source: Edison Investment Research

We only include assets that will have a potential impact on valuation in the next 12-18 months. As a result, we exclude the prospects in Tajikistan and a number of prospects elsewhere where drilling is outside this window. Our resulting core NAV is 34p, while a RENAV sits at 85p. For investors interested in the long-term potential of Tajikistan, our illustrative modelling suggests a further 15p/share could be attributed, although we explicitly do not include it in our RENAV at this point. This is shown in detail in Exhibit 20 below.

Exhibit 20: NAV summary

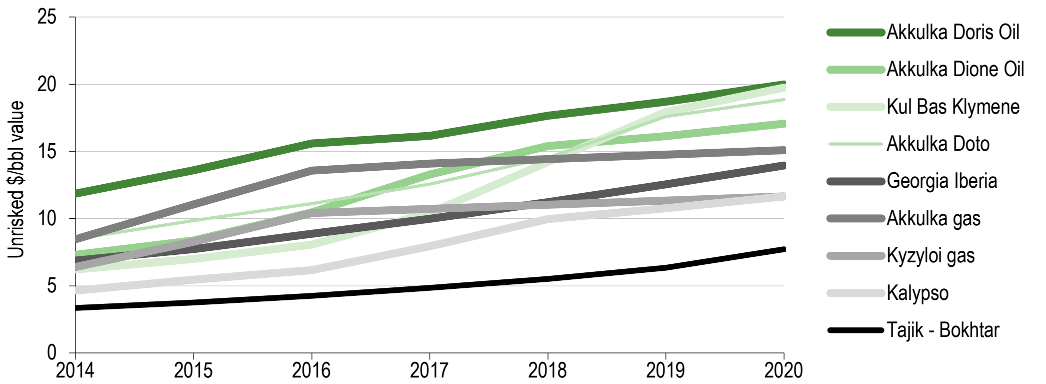
Asset				Recoverable reserves			Net risked	Value per share
	Country	Diluted WI	CoS	Gross	Net	NPV/boe	value	Risked
		%	%	mmboe	mmboe	$/boe	$m	p/share
Net (debt)/cash – March 2014			100%				7	1
SG&A			100%				(37)	(7)
Equity raise of $15m, June 2014			100%				15	3
Sale of Kazak assets for $75m ($55m cash + $20m of paying for 2013 work programme)			100%				75	14
Proposed farm-out of 50% of Kazak assets $30m bonuses (if earned)			35%				11	2
Exploration capex in 2014			100%				(20)	(4)
Production								
Kyzyloi	Kazakhstan	50%	100%	1.6	0.8	5.9	5	1
Akkulka (+ some new wells)	Kazakhstan	50%	100%	8.7	4.4	8.3	38	7
Doris	Kazakhstan	50%	100%	10.3	5.1	11.8	61	11
Ownership of five rigs (at book value)	All	100%	100%				18	3
Development								
Dione	Kazakhstan	50%	65%	4.3	2.1	7.2	10	2
Core NAV							**181**	**34**
Exploration								
Kalypso	Kazakhstan	50%	15%	20.4	10	4.4	7	1
Doto	Kazakhstan	50%	15%	21.6	11	8.4	14	3
Klymene	Kazakhstan	50%	15%	422	211	6.2	197	37
Block XIa, Block XIm, Block XIn	Georgia	56%	10%	150	84	6.9	58	11
Discovery and Exploration NAV							**275**	**51**
RENAV							**455**	**85**

Source: Edison Investment Research. Note: Tethys recently announced a farm-out deal to SinoHan in Kazakhstan. For the purposes of this report, we assume this goes through at year end 2014. This means we model Kazakhstan WI as 100% until end of 2014.

We note the Tajikistan farm-out valued Tethys's remaining stake at $56m, lower than our risked NAV. We are implicitly valuing a discovery of a significant size as an illustration of what may be expected and material uncertainty exists as to whether any accumulation will be found.

As time progresses and any exploration provides discoveries, this value should grow. We can show how this value could move over time with regards to $/bbl figures. This gives an idea of how the value will increase as capex is spent and production ramps up for the Kazakhstan fields, while the exploration assets will also naturally increase over time.

Exhibit 21: Progression of unrisked value of fields over time ($/bbl)



Source: Edison Investment Research

Sensitivities to valuations

The main sensitivities to our valuations lie in commodity pricing and discount rates. For the analysis below, we show the sensitivity of our core NAV and RENAV to changing assumptions on these factors.

Exhibit 22: Sensitivity of NAV to discount rate and oil price, p/share

		Discount rate				
		7.5%	10.0%	12.5%	15.0%	17.5%
Oil price, long term	$60/bbl	35	33	31	29	27
	$80/bbl	39	36	34	31	30
	$100/bbl	45	41	38	35	33
	$120/bbl	54	49	45	41	38

Source: Edison Investment Research

Exhibit 23: Sensitivity of RENAV to discount rate and oil price, p/share

		Discount rate				
		7.5%	10.0%	12.5%	15.0%	17.5%
Oil price, long term	$60/bbl	99	76	60	49	41
	$80/bbl	140	107	85	68	56
	$100/bbl	184	141	111	89	73
	$120/bbl	231	177	140	112	92

Source: Edison Investment Research

See-through from SinoHan farm-out

The November announcement that Tethys was halving its 100% stake in Kazakhstan assets for $75m had little effect on the share price. As previously stated, we believe this is a good deal – it gives a third-party benchmark for the assets and brings an influential private Chinese investor into play.

Given the bonus element of the deal, the prospective value of the assets will lie somewhere between $75m and $105m, or 15-21p/share. This valuation is very close to our DCF-derived valuation for the core assets (around 19p/share), giving us comfort that the deal is well priced, while giving both sides upside should exploration be successful.

Financials

Tethys posted cash of $13.7m (excluding $0.5m of restricted cash) and carried debt of $6.7m as of end-March 2014. Total net cash was $7.0m. The debt is due to loans on the rigs owned by Tethys and accrues interest at a rate of c 15% pa.

In November 2013, Tethys entered into a deal to sell half (plus one share) of its Kazakhstan assets to SinoHan, a Beijing-based private equity fund, for $75m plus contingent bonuses (of up to $30m in total). The company is confident that the approvals will come through before year end; at this stage we assume in both valuation and financials that this goes through in the final quarter and model cash flows on Kazakhstan on a 100% WI basis until then

In May 2014, Tethys announced an equity raise of $15m. We view this as essentially a bridge financing. Until the SinoHan deal completes and cash is received, the company needed to continue to fund the shallow drilling campaign to hit the targets. This is because the wells need to drilled and tested before year end to get state reserves certification and enable production in 2015.

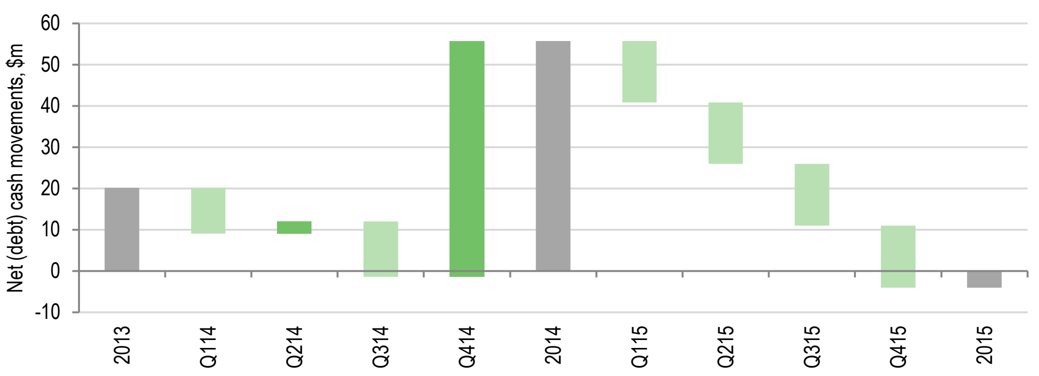
The company is still very much in investing mode. With exploration and appraisal of properties occurring simultaneously, the company is spending much more than it generates internally for the time being.

Capex and work programme

The company's capex spend will be dependent on when the Kazakhstan farm-down closes – for the moment we model that the farm-in closes at year end, though it is very possible that this may happen earlier. We currently expect gross Kazak spend to be around $25m (based on a 100% WI basis). We also model additional spend of $5.5m in Georgia and some spend as the carry in Tajikistan is exhausted. We expect the company to spend around $41m in 2014. With existing cash, equity raising, possible farm-in proceeds (we expect H214) and cash flow, this will leave Tethys with a positive cash balance at the end of 2014. A well in Tajikistan in 2016 is likely to cost $40-70m gross.

A cash flow waterfall illustrates the cash movements in 2014 and 2015.

Exhibit 24: Net cash/debt waterfall



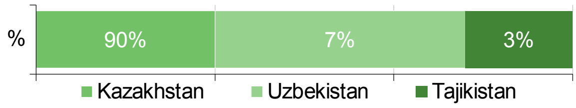
Source: Edison Investment Research. Note: Assumes the $75m of farm-in cash from SinoHan deal arrives in Q414. For simplicity, we assume $55m cash and $20m carry of work programme as $75m cash payment given the 2014 work programme.

However, it is critical to understand that material success in exploration will bring significant capital requirements for development from 2014 onwards. Success will lead to funding requirements, though given the materiality of the exploration to current market share, we would expect the company to be able to raise equity at more attractive valuations.

Exhibit 25: Financial summary

US$000s	2010	2011	2012	2013	2014e	2015e
Year end December	IFRS	IFRS	IFRS	IFRS	IFRS	IFRS
PROFIT & LOSS						
Revenue	14,767	30,297	38,107	36,945	36,637	37,147
Cost of Sales	(7,076)	(23,896)	(12,970)	(16,676)	(13,348)	(18,853)
Gross Profit	7,691	6,401	25,137	20,269	23,289	18,294
EBITDA	(20,103)	(30,036)	(363)	6,627	(5,814)	(6,743)
Operating Profit (before amort. and except.)	(25,988)	(30,036)	(18,787)	(5,992)	(20,194)	(20,093)
Intangible Amortisation	0	0	0	0	0	0
Exceptionals	0	0	0	0	0	0
Other	0	0	0	0	0	0
Operating Profit	(25,988)	(30,036)	(18,787)	(5,992)	(20,194)	(20,093)
Net Interest	(190)	1,100	(1,083)	(1,460)	(1,310)	(671)
Profit Before Tax (norm)	(26,178)	(28,936)	(19,870)	(7,452)	(21,504)	(20,765)
Profit Before Tax (FRS 3)	(26,178)	(28,936)	(19,870)	(7,452)	(21,504)	(20,765)
Tax	(3,471)	1,947	(1,034)	(3,083)	(319)	(3,066)
Profit After Tax (norm)	(29,649)	(26,989)	(20,904)	(10,535)	(21,823)	(23,831)
Profit After Tax (FRS 3)	(29,649)	(26,989)	(20,904)	(10,535)	(21,823)	(23,831)
Average Number of Shares Outstanding (m)	260.6	286.7	286.7	335.6	372.5	372.5
EPS - normalised (p)	(11.4)	(9.4)	(7.3)	(3.1)	(5.9)	(6.4)
EPS - normalised and fully diluted (p)	(11.4)	(9.4)	(7.3)	(3.1)	(5.9)	(6.4)
EPS - (IFRS) (p)	(11.4)	(9.4)	(7.3)	(3.1)	(5.9)	(6.4)
Dividend per share (p)	0.0	0.0	0.0	0.0	0.0	0.0
Gross Margin (%)	52.1	N/A	N/A	N/A	N/A	N/A
EBITDA Margin (%)	-136.1	N/A	N/A	N/A	N/A	N/A
Operating Margin (before GW and except.) (%)	-176.0	N/A	N/A	N/A	N/A	N/A
BALANCE SHEET						
Fixed Assets	181,340	241,614	237,574	47,351	77,676	114,575
Intangible Assets	16,892	99,959	107,374	31,074	47,351	47,850
Tangible Assets	115,653	128,918	121,097	15,291	29,338	65,738
Investments	48,795	12,737	9,103	986	987	987
Current Assets	86,408	21,777	14,379	187,267	146,869	87,138
Stocks	2,121	2,025	2,046	0	0	0
Debtors	3,680	5,478	7,703	1,358	1,369	1,369
Cash	79,135	10,746	1,750	25,109	61,218	1,487
Other	1,472	3,528	2,880	160,800	84,282	84,282
Current Liabilities	(16,690)	(20,835)	(24,325)	(32,025)	(23,624)	(23,624)
Creditors	(11,643)	(12,439)	(10,700)	(27,060)	(22,653)	(22,653)
Short term borrowings	(5,047)	(8,396)	(13,625)	(4,965)	(971)	(971)
Long Term Liabilities	(7,836)	(4,676)	(7,475)	0	(5,744)	(5,744)
Long term borrowings	(2,853)	(1,632)	(3,688)	0	(5,744)	(5,744)
Other long term liabilities	(4,983)	(3,044)	(3,787)	0	0	0
Net Assets	243,222	237,880	220,153	202,593	195,177	172,345
CASH FLOW						
Operating Cash Flow	(16,824)	(12,558)	1,358	(781)	(12,662)	(9,480)
Net Interest	0	0	0	0	0	0
Tax	0	0	0	0	0	0
Capex	(38,293)	(41,902)	(17,501)	(23,809)	(40,639)	(50,250)
Acquisitions/disposals	0	(6,785)	0	62,959	73,373	0
Equity financing and convertible debt	130,088	(8,895)	40	(10,713)	14,738	0
Dividends	0	0	0	0	0	0
Net Cash Flow	74,971	(70,140)	(16,103)	27,656	34,810	(59,730)
Opening net debt/(cash)	3,113	(71,235)	(718)	15,563	(20,144)	(54,503)
HP finance leases initiated	0	0	0	0	0	0
Other	(623)	(377)	(178)	8,051	(451)	0
Closing net debt/(cash)	(71,235)	(718)	15,563	(20,144)	(54,503)	5,228

Source: Edison Investment Research. Note: For the purposes of this report, we assume the farm-out to SinoHan goes through at year end 2014. This means we model Kazakhstan WI as 100% until end of 2014. We note the Kazak business up for sale has associated net debt of $8.325m, which is not accounted for in the net debt calculation in the tables above for 2014 onwards. Furthermore, once the sale is closed, the company will be accounting for the Kazak business as a joint venture. For simplicity, we have not yet switched over, instead assuming 50% of Kazak revenues/costs going forward on a proportionate consolidation basis.

Contact details	Revenue by geography (first nine months of 2013)
27th Floor, Millbank Tower, Millbank, London SW1P 4QP. www.tethyspetroleum.com	 Note: Uzbekistan is being relinquished; Tajikistan is no longer producing.

CAGR metrics		Profitability metrics		Balance sheet metrics		Sensitivities evaluation	
EPS 2010-14e	N/A	ROCE 2013e	-1.2%	Gearing 2013e	-17%	Litigation/regulatory	●
EPS 2012-14e	N/A	Avg ROCE 2010-14e	N/A	Interest 2013e	(0.6)	Pensions	●
EBITDA 2010-14e	N/A	ROE 2013e	N/A	CA/CL 2013e	3.5	Currency	◖
EBITDA 2012-14e	N/A	Gross margin 2013e	62%	Stock days 2013e	N/A	Stock overhang	◖
Sales 2010-14e	29%	Operating margin 2013e	-4%	Debtor days 2013e	N/A	Interest rates	○
Sales 2012-14e	4%	Gr mgn / Op mgn 2013e	N/A	Creditor days 2013e	N/A	Oil/commodity prices	●

Management team

Chairman: Dr David Robson

Dr David Robson trained as a geologist and geochemist and is founding chairman of Tethys. He has worked on projects in the former Soviet Union since 1990 in areas such as Siberia, Sakhalin, Murmansk and the Caspian region.

CEO: Julian Hammond

Julian Hammond has worked for Tethys (and its precursor) since 1998. He has been responsible for the commercial activities and development of the company.

CFO: Denise Lay

Denise Lay is a fellow of the Association of Chartered Certified Accounts (FCCA) and has more than 15 years' experience. Ms Lay previously worked for KPMG for six years. She has held positions at Gallaher Group, NRG International and Chevron. Ms Lay is fluent in Russian and holds a BA (Hons) in Russian language and literature.

Principal shareholders	(%)
Pope asset management	17.7
JP Morgan	7.8
Capital Group	7.2
David Robson	0.3

Companies named in this report

Total, CNPC

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