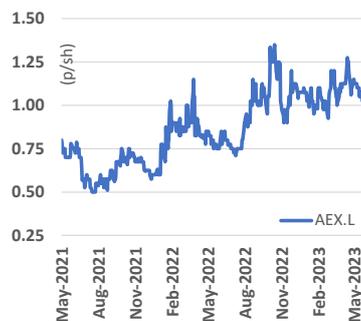


Sector: Oil & Gas

Upstream exploration and development company

Market data

Ticker	AEX
Price (p/sh)	1.03
12m High (p/sh)	1.35
12m Low (p/sh)	0.71
Target range (p/sh)	2.0-2.5
Shares (m)	4211
Shares FD (m)	4211
Mkt Cap (£m)	43
Market	LSE/standard



Source: Alpha

Description

LSE quoted Aminex PLC is an established energy company that holds interest in three blocks in Tanzania. The assets contain 191BCF of contingent gas resources (2C), net to Aminex. www.aminex-plc.com

Board & key management

Executive Chairman	Charles Santos
General Counsel	Brian Cassidy
CFO	Nigel Penney

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Aminex Plc

The time has come!

In the next six months, Aminex (AEX) will embark on a development programme that will see the company become a producer and free cash flow (FCF) generator. Between drilling the new Chikumbi-1 well (CH-1), re-entering the existing two wells, processing of the new 3D seismic, signing a GSA, and reaching first gas, there will be plenty of milestones in 2023 to, in our view, gradually “guide” the market towards recognising a full value for the targeted initial 60mmscf/d gross production in late 2023 and ultimately 140mmscf/d of plateau production. Each of these milestones will bring the company closer to our estimated FCF of \$20-40mm/year at plateau production. Most importantly, this transformation comes at no additional cost to the company. With no debt, a G&A of only ~\$1.5mm/year and \$35mm of net capex carry, Aminex is well positioned to benefit from its hard work and perseverance in the last 10 years.

- ▶ **From 0 to 60 in less than nine months... and with “other people’s money”!** Following negotiations with the Tanzanian authorities, AEX and its partner have decided to accelerate the development of the Ntorya gas field, with first gas expected in late 2023. Between drilling a new well (CH-1) and re-entry of the two existing wells, the partners expect to reach an initial gross production capacity of 60mmscf/d, by late 2023. The expected 2023 gross capital expenditures of ~\$30mm will all be financed by AEX’s partner and operator of the block, ARA Petroleum Tanzania (APT).
- ▶ **Next stage of growth: from 60 to 140mmscf/d.** With drilling of up to five additional wells in 2024, the partners expect to reach their targeted 140mmscf/d plateau production during 2025/26. We believe this staged development approach provides even further comfort that no additional funds should be required from AEX in this second stage of growth. If anything, with estimated c\$5m of FCF in 2024 and \$100mm of remaining capex carry, we see potential for AEX to build a cash position during this period.
- ▶ **Perfect timing: maxed-out supply.** As presented in Figure 3, we estimate that the current gas production in Tanzania has essentially reached its maximum capacity, with only limited ability to expand. In fact, one of the two producers in the country recently stated that in the last quarter it did not meet its demand nominated volumes and has no ability to grow current production levels. In that respect we see the above two-stage approach working well for AEX, as the first stage of growth will address the near-term demand, while the second stage of growth will provide assurance for potential new gas-powered investments.
- ▶ **Commitment and confidence all around.** While the drilling of CH-1 still carries some geological risks, we believe that Wentworth Resource’s recent bid for 25% of the Ruvuma asset implies a high confidence in the asset by an independent party. Furthermore, by exercising its right-of-first-refusal and effectively committing up to \$140mm of development capital, we believe the operator, APT, has also demonstrated its full confidence in the asset. And finally, the government’s commitment to build a 30km connection pipeline and expedite reaching first gas (regardless of the CH-1 well results), also, in our view, demonstrates the government’s commitment to this development.

Valuation – We value the asset using a DCF12% approach and assigning probabilities to four different potential development outcomes. This results in a fair value range for the shares of between 2.0-2.5p/share. In that respect, we believe there is a mismatch between the “risk factor” applied on the asset by the market vs the comparable industry players, thus, in our view, providing a good risk/reward opportunity in the shares.

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Investment summary

Our investment thesis on AEX is largely focused on what we believe to be perfect timing for the company and its investors to capitalise on all the hard work that has been done in the last 10 years, since AEX made the Ntorya gas discovery in Tanzania. With up to \$35mm of net capex carry in hand and the apparent need in Tanzania for more gas production capacity, the timing appears just right for development of the field, starting with imminent testing of Ntorya-2 well (NT-2), followed by drilling of CH-1 well and the workover on the Ntorya-1 well (NT-1), later in the year. Between reaching first gas and the results of the CH-1 we see two major **independent catalysts** towards full value recognition of the asset by the market. In that sense, our thesis revolves around four key points:

- 1) The latest operational update suggests that the government and the partners in the block have recognised the immediate need for gas in Tanzania and have effectively “decoupled”, or arguably even prioritised, reaching first gas over spudding the CH-1 well. We see this as a very positive development for AEX, as not only does it demonstrate confidence in the project, but it will also make the company a producer and a FCF generator late this year, regardless of the results and the timing of the CH-1 well.
- 2) Despite “first gas” being no longer dependent on CH-1, success at the CH-1 well would further refine the asset size and will open the way towards a development of 60mmscf/d gross production capacity (15mmscf/d net to AEX) in late 2023 and more importantly towards the 140mmscf/d gross plateau production (35mmscf/d net to AEX) a year or so thereafter (Figure 1). We estimate that at plateau production the company will be able to generate between \$20-40mm/year of FCF for many years to come (Figure 2). To put this in very simple terms, **an average \$20m/year of FCF generated for a long period of time at 12% discount represents ~£140mm of value (more than 3x the current market cap). And the best of all, in our view, this growth comes with no additional funds required!**
- 3) **We estimate that the gas production capacity in Tanzania is reaching its peak (Figure 3), and we are already seeing indications of unmet demand.** As we don’t see any other alternative in the country for the foreseeable future, in our view, it is clearly in the best interest of the government to see the development of this asset underway as soon as possible. A two-stage development would allow for the immediate need for gas to be addressed relatively quickly, while also allowing for the additional demand to catch up with the 140mmscf/d plateau in a few years.
- 4) While the CH-1 well still carries some geological risk, the recent interest by Wentworth Resources (WEN) and a subsequent exercised right of first refusal (ROFR) by AEX partner and operator of the block, ARA Petroleum Tanzania (APT), in our view, represents a significant “vote of confidence” by independent industry participants with good knowledge of the geology in the country. **Based on this observation, we believe that the current market implied 15-25% probability of success of this development is likely a conservative one, representing in our view a good risk/reward for investors at current share levels.**

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Based on these four key investment thesis points, we see several catalysts for the shares in the next twelve months:

- 1) **Testing and first gas from NT-1 and NT-2 wells.** Historically, the company has drilled and tested two Ntorya wells (NT-1 and NT-2) that has led to an independent resource estimate of 763Bcf of contingent resources (2C). A new two-week well test on NT-2 well is now imminent which will help refine the initial development plan. This will be followed by a workover on NT-1 later in the year. The partners and the government are targeting first production from these wells in October 2023. Between the two, we expect a production capacity of up to 40mmscf/d and a transfer of some of the 2C resources into a proved + probable (2P) reserve category.
- 2) **Results of the CH-1 well.** The drilling of CH-1 is expected later in the year, once further analysis of the latest 3D seismic data provides an optimised location for the well. In case of a successful drilling outcome, we believe the resource size and the development plan will be further refined. We believe that a test flow rate of 20mmscf/d or higher would constitute a success and it will provide further confirmation of the asset size and indeed confirm the ability to produce a total of 60mmscf/d from the initial three wells. We expect the drilling results from this well to be available in the second half of this year. In our view, a successful result will have a positive reaction in the market, potentially moving the market implied probability of success of a full development from the current 15-25% towards a more likely 60-80% range, potentially providing 100-150% upside from the current share levels.
- 3) **3D seismic results.** In 2022, the partners conducted a 3D seismic campaign with the data still being processed. Based on the operator's revised mapping, the partners expect gross recoverable gas resources of ~2Tcf, significantly higher than the currently recognised 763BCF of 2C in the competent person report (CPR). Therefore, provided positive results from the CH-1 well and the 3D seismic survey, we see potentially a further resource size increase in the CPR, and a subsequent market recognition for it. As a point of reference, increasing the plateau production to 250mmscf/d (to reflect a 2Tcf resource size) increases our valuation towards a 4.0-5.0p/share range, effectively doubling our current fair value range. We expect the initial results from the 3D seismic and the CH-1 well to be available in 2H23.
- 4) **Finalising the Gas Sales Agreement (GSA).** The partners have already announced that they have entered negotiations with the Tanzanian authorities for finalising the terms of a GSA. Finalising the gas price at which the partners will sell their gas would alleviate some of the uncertainties related to the asset valuation. On page 15 we provide our sensitivities to different pricing outcomes, but as a point of reference we note that the two gas producers in the country currently sell their gas to the government owned distribution company, TPDC, at ~\$3.5/mscf. Therefore, we would expect Ntorya gas to fetch at least the same realised price, and potentially slightly higher. We expect the GSA to be finalised in 1H23.
- 5) **Construction start-up of the 30km connection pipeline.** We believe that the government's acceptance to build a 30km connection pipeline from the Ntorya gas field to the government owned Madimba gas processing facility

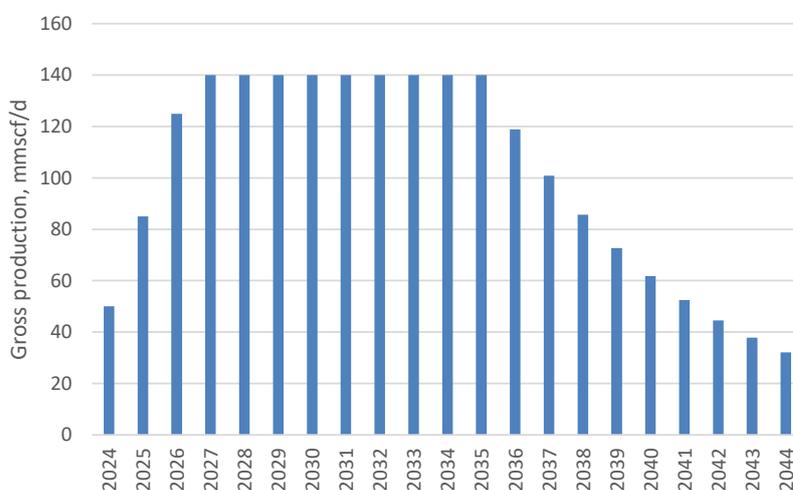
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represents a big vote of confidence in the project, as well as a recognition by the government for the need of this new capacity. While the partners have stated six to nine months as a timeline for completion of this pipeline, in our view, a construction start-up would likely have some market effect as it would further enhance the government’s position as it starts spending on the project.

Production and cash flow: Coming soon!

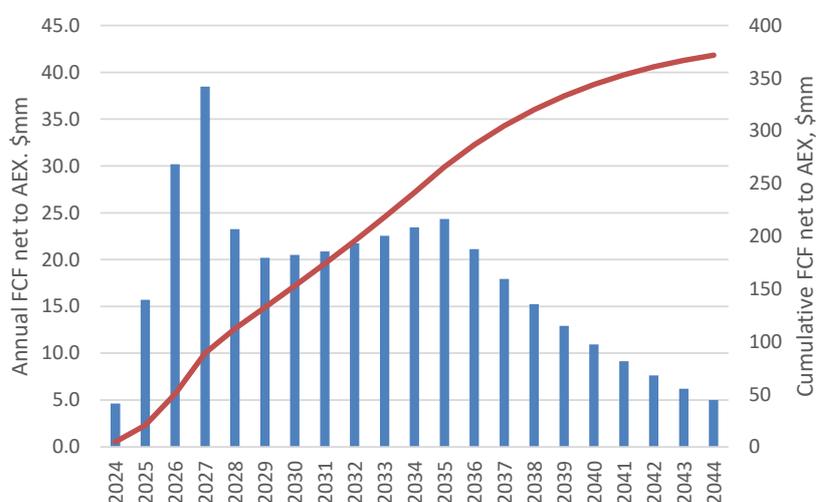
It has been ten years since the company made its gas discovery with the NT-1 well in the Ruvuma basin. Since then, the company drilled one more well (NT-2), secured a partner (APT) to fund the development and recently acquired additional 3D seismic on the block. The government built a 784mmscf/d pipeline from the south to the north of the country, including the 210 mmscf/d Madimba processing facility. The pipeline is currently used only by Mnazi Bay partners (one of the two producers in the country), delivering 90mmscf/d of gas. Therefore, we see the testing/workover on NT-1 and NT-2, drilling CH-1, signing a GSA and building a 30km connection pipeline (all to happen in next six to nine months) to be the final steps towards first gas production and subsequently towards a full field development. At present, the CPR has assigned 763Bcf of 2C resources with an expected gross plateau production of 140mmscf/d. Based on management’s latest operational update, in Figure 1 we provide our expected average gross annual production (AEX has a 25% interest).

Figure 1: Expected production from Ntorya gas field



Source: Shard estimates, Company

Figure 2: Expected Free Cash Flow net to AEX



Source: Shard estimates

As presented in Figure 2, we expect the company to start generating between \$20-40mm/year of FCF as soon as 2025/26, lasting for years to come. On average, we expect just shy of \$20mm/year of FCF, in the next 20 years, representing a ~40% FCF yield at the current market valuation, potentially leaving significant room for a decent dividend distribution to shareholders at peak production.

What if the resource size increases to 2Tcf? Management has stated that based on their early interpretation of the seismic results, the resource size may be close to 2Tcf of recoverable gas, or more than double from the current 763Bcf CPR estimate. Therefore, we believe the results from the CH-1 well and the new 3D seismic will be crucial for the independent evaluator to make a judgement on the management's current interpretation. We acknowledge that even if the 2Tcf resource size were to be confirmed, recognising full value will depend on many different factors, including pipeline capacity, processing capacity and most importantly demand in the country. Therefore, as a point of reference, we note two potential value points that we believe the market may consider when deciding how much value to recognise should the 2Tcf be confirmed:

- 1) Extending the plateau of 140mmscf/s for 20 years, would result in an increased average annual FCF of c\$25mm/year, and an approximated asset value of £175mm (~4x the current market cap), using a simplified 12% discount on FCF in perpetuity model. We note that in this case only 1Tcf of resources will be utilised in the 20-year period.
- 2) Theoretically, increasing the plateau to 250mmscf/s for 20 years would effectively exploit almost all of the 2Tcf of gas in this 20-year period. This hypothetical case, in our estimate, would generate an average annual FCF of about \$40mm, representing an approximated asset value of ~£275mm net to AEX (~6x the current market cap).

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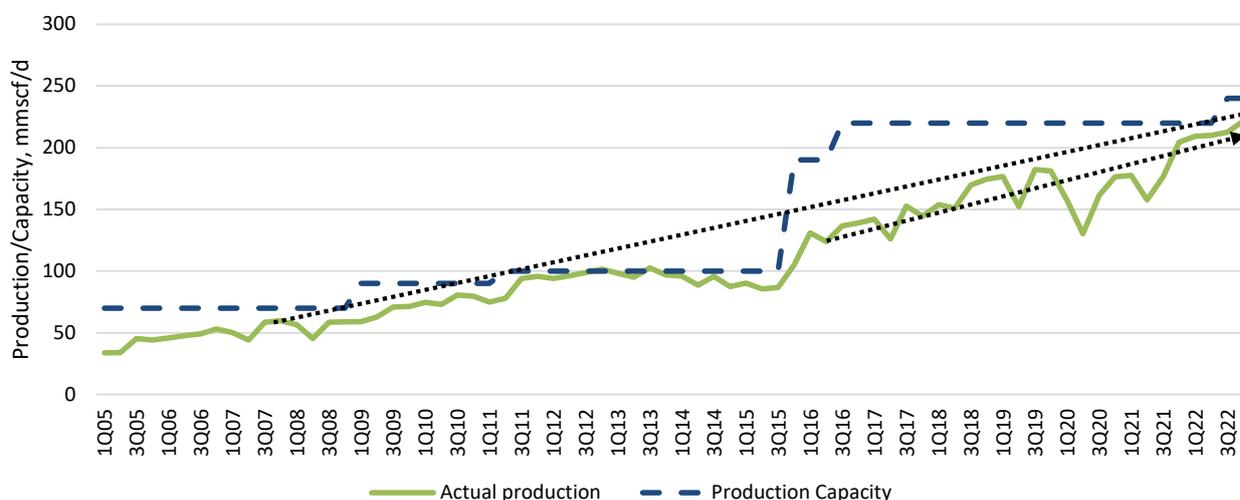
Perfect timing: Maxed-out supply!

At present, there are only two gas producing assets in Tanzania, the Songo-Songo field and Mnazi Bay. **On our estimates and based on the operators' most recent guidance, the combined production capacity of these two assets is ~240mmscf/d.** We note that based on recent announcements from both operators, the production in 4Q22 has at times already reached the maximum capacity. Furthermore, the ability to increase the capacity from these two assets is rather limited and would require further capex investments by both operators in the next couple of years.

We also estimate that **in 4Q22, these two producing assets averaged more than 220mmscf/d of gas production (Figure 3), and were effectively operating at ~95% of the available capacity, even on a quarterly average basis.**

Interestingly, in its last press release, WEN, one of the partners in the Mnazi Bay concession, stated that in the last quarter it was not able to meet its nominated demand volumes (i.e. produced 90mmscf/d vs the nominated 95mmscf/d) and has effectively no ability to grow its current production levels. Even maintaining the 90mmscf/d production capacity at Mnazi Bay would require further investments. As presented in Figure 3, it has been seven years since we have seen the gas supply reach its capacity. Therefore, we are not surprised by the government's apparent interest in bringing the Ntorya discovery into production as soon as possible, and certainly we see it as perfect timing for AEX and APT to develop the asset.

Figure 3: Actual gas production vs gas production capacity in Tanzania



Source: Shard estimates, Orca Exploration, Wentworth Resources

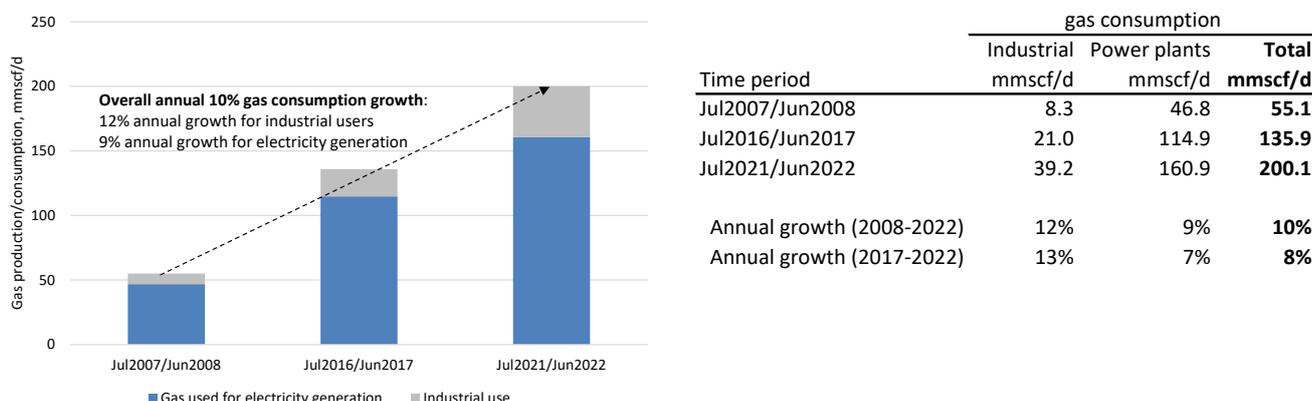
Steady demand growth

As presented in Figure 3 above, from 2016 until now there was significant unused production capacity in the country. Therefore, in that period we believe we can approximate the demand for gas in the country with the actual production. In Figure 4 below, we have analysed two periods (2008-2022 and 2017-2022) of demand growth, and **we estimate that the overall demand growth has been very steady in**

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the last 14 years, with an estimated overall growth of 8-10% per annum. We also estimate that the split between the gas used by Power Plants for electricity generation and gas used by industrial users is about 75/25, however with the industrial users growing at a slightly higher pace (Figure 4).

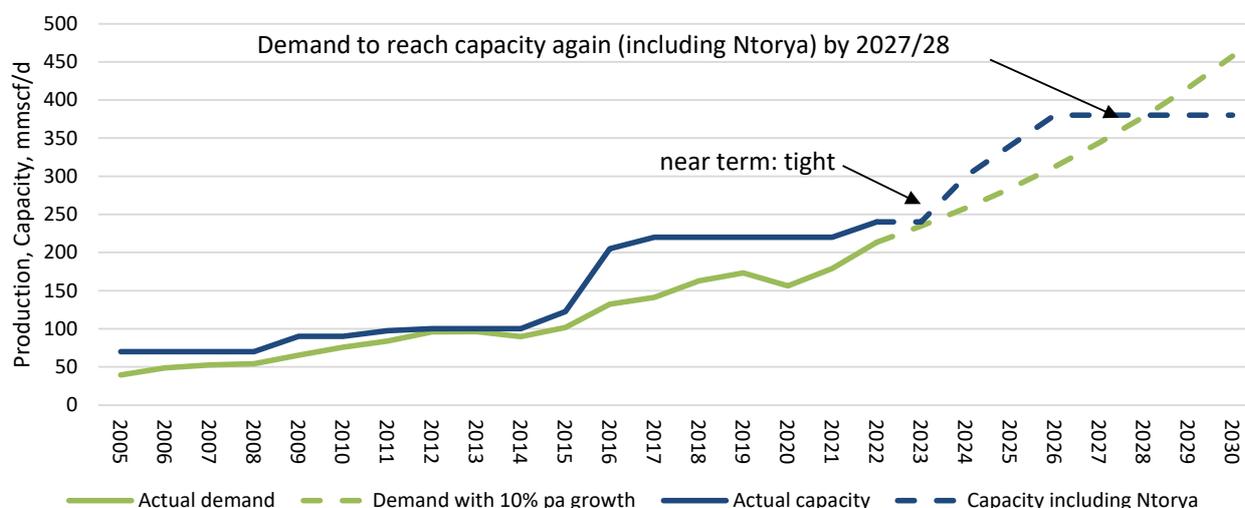
Figure 4: Tanzania gas consumption in last 14 years



Source: Shard estimates, EWURA, Orca Exploration, Wentworth Resources

Long and mid-term demand implications. Based on the analysis presented above, in Figure 5 we provide our estimated demand growth as well as capacity growth, including the Ntorya development. We have assumed 10% overall annual growth in demand, and 60mmscf/d production capacity coming online from Ntorya in 2024 and the full 140mmscf/d coming online in mid-2025. As presented in Figure 5 **we do believe that demand in the near-term will be tight**, therefore we understand why the Ruvuma partners and the government are interested in an accelerated development, even if it is at lower capacity. **Furthermore, assuming the historical growth of 10% pa, we estimate that the full Ntorya capacity will be utilised by 2028, even conservatively assuming no declines from the two current producing fields.**

Figure 5: Tanzania estimated gas consumption and capacity growth (including Ntorya development)



Source: Shard estimates, EWURA, Orca Exploration, Wentworth Resources

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Further to our “per annum” analysis above, in Figure 6 we also provide a simplified analysis based on potential gas-powered power plant projects between now and 2028, as outlined by the National Five-Year Development Plan III (FYDPIII) and the Ministry of Energy’s Power System Master Plan (PSMP). Based on these government plans, we believe that there are potentially two to three large power plants that may come online before 2028: Mtwara, Kinyerezi III and Kinyerezi IV. As presented in Figure 6, between 13% pa gas demand growth in the industry sector and these three power plant projects, we estimate an additional demand of ~200mmscf/d between now and 2028. This indeed already exceeds the 140mmscf/d capacity that will be brought online by the Ntorya development, implying a very similar outcome as in our “per annum” analysis in Figure 5.

Figure 6: Estimated demand growth based on potential Power plant projects

Mtwara, MW	300
Kinyerezi III - Phase 1, MW	300
Kinyerezi IV, MW	350
Potential new capacity (by 2028), MW	950
Plant Utilization (%)	70%
Effective power generation capacity, MW	665
Average gas usage by power plants, mmscfpd/MW	0.23
Gas demand growth from new power plants, mmscf/d	153
Gas demand growth (2022-2028) from industrial users (13% pa), mmscf/d	43
Total gas demand increase (2022-2028)	196

Source: Shard estimates, EWURA, FYDPIII, Ministry of Energy

Near-term demand implications. While the current demand is seemingly covered by the production capacity (or just about), we also note two reasons why even in the near-term the government is likely to need more production capacity brought online as soon as possible:

- 1) As presented in Figure 7, we estimate that the gas-powered power plants in Tanzania on average require 0.23mmscf/d of gas feed for every MW of generation capacity. Furthermore, we show that in the last two years the average power plant availability in Tanzania was between 83%-88%, while their utilization ranged between 62-74%. Based on these parameters, we estimate that the current gas production capacity in Tanzania (excluding gas for industrial demand) of about 180mmscf/d can only support about 785MW of effective power generation capacity, or just ~72% of the total plant generation capacity of 1086MW. While we acknowledge that plant utilisation can vary and can depend on the rain falls in the year; nevertheless, in some years (especially in the dry years), we have seen utilisation rates close to 75%. To put this in perspective, should the power plants be required to produce at 74.2% utilisation as in 2019, there will be a shortage of gas of about 5mmscf/d. In that sense, we are not surprised that in a recent operational update Wentworth Resources stated that the partners were not able to fulfil their nominated volumes for Mnazi Bay (95mmscf/d vs 90 mmscf/d). **Furthermore, if the electricity growth were to increase in the next couple of years and/or we see a few very dry years, such that the power plants are required to be utilised at all times during their availability (i.e ~85% utilisation), there will be an estimated gas**

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shortage of 33mmscf/d. Note that this analysis does not include any potential growth in the industrial gas demand, which is likely to take away, on average, about 5mmscf/d every year from the current production capacity.

Figure 7: Tanzania gas consumption for power plants

Power Plant	Capacity (MW)	2020/2021	2019/2020		2020/2021	2019/20
Songas	189	95.7%	95.8%	Tanzania electricity produced, GWh	8052	7678
Ubango 1	102	67.3%	64.0%	Electricity provided by gas power plants, %	60.6%	62.4%
Ubango 2	129	86.3%	92.1%	Electricity provided by gas power plants, GWh	4876	4792
Tageta	45	93.1%	65.8%	Effective Power generation capacity used, MW	557	545
Kinyerezi I	150	90.0%	89.1%	Gas used for power generation, mmscf/d	128	126
Kinyerezi II	248	92.4%	75.7%	Average gas usage by power plants, mmscfpd/MW	0.23	0.23
Mtwara	22	71.1%	99.2%	Current Power Plant capacity (gas powered), MW		1086
Somanga	7.5	52.1%	28.6%	Average utilisation		68.2%
Total/Average (weighted)	893	88.1%	82.9%	Effective Capacity, MW		741
				Average gas usage, mmscfpd/MW		0.23
				Gas required for average utilisation, mmscf/d		170
				Current gas production capacity (excluding industrial), mmscf/d		181
				Current estimated "spare" gas production capacity, mmscf/d		10
				Current Power Plant capacity (gas powered), MW		1086
				Full utilisation (when power plants are available)		85.5%
				Effective Capacity, MW		929
				Average gas usage, mmscfpd/MW		0.23
				Gas required for average utilisation, mmscf/d		214
				Current gas production capacity (excluding industrial), mmscf/d		181
				Potential gas shortage at full utilisation, mmscf/d		-33

Source: Shard estimates, EWURA, Orca Exploration, Wentworth Resources

- 2) We also note that for the government to be able to attract investments for the new planned power plants, we believe it would have to show a steady supply (and reserves) of gas for the next twenty years to potential investors ahead of these investments. At present, we believe the only option for the government to attract investments for the next set of power plants is if it can accelerate the development of the Ntorya discovery as soon as possible.

Given these observations, on near-, mid- and long-term implications from the current "capacity crunch", we are not surprised by the government's willingness to expedite the Ntorya development and even build and finance the 30km connection pipeline to the Madimba central processing facility (CPF).

Market more sceptical than the industry!

As we show later in our valuation section, we estimate that a base-case development scenario of 140mmscf/d production plateau (as per the latest operational update) could be worth in the range of 2.5-3.0p/share to Aminex. Therefore, the current 1.03p/share price, in our view, implies an element of market scepticism for management's base-case scenario. While it is always difficult to pinpoint the exact reasons and discount factors that the market applies when valuing the shares, we believe that the two key areas of uncertainty that are likely reflected in the share price are:

- 1) **The gas price that the partners will be able to realise.** The partners are currently negotiating a GSA with the Tanzanian government and in our valuation section we provide sensitivity to a range of outcomes for gas

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prices between \$3.50/mscf - \$4.30/mscf. Note that the low-end of this range represents approximately the 2022 gas realised priced by Mnazi Bay. While we believe that the Ntorya development should warrant a higher pricing, for this exercise we have assumed that the market values Aminex shares using Mnaza Bay gas realised price.

2) **Geological outcome of the CH-1 well (and re-entry of NT-1 and NT-2).**

While the partners have already drilled and tested two wells, the drilling of the CH-1 well and the re-entry of the other two wells still carry typical geological risks associated with oil and gas developments. In that sense, we expect the results of CH-1 to provide higher certainty around four possible outcomes that we believe are likely to be considered by investors at present:

- a. *No economic development.* Although unlikely, we could see investors considering that the results from CH-1 and the re-entry of NT-1 and NT-2 may lead to a scenario where the partners cannot proceed with an economic development.
- b. *Low-case development scenario (45mmscf/d, 173 Bcf).* This is a scenario where investors would assume a rather “limited” success at CH-1 but still enough to provide a commercial development with the three drilled wells, especially from the already tested NT-1&2.
- c. *Base-case development scenario (140mmscf/d, 763Bcf).* This is a scenario that the partners see as most likely at present, with the first phase reaching 60mmscf/d in late 2023.
- d. *High-case development scenario (250mmscf/d, 1.7Tcf).* As the partners have already hinted at a potential 2Tcf of discovered resource size in the block, the results of CH-1 combined with the final results from the 3D seismic could potentially confirm to investors the possibility of higher production.

Based on these assumptions and our valuation of the asset, we try to analyse what kind of discount the market is currently applying to the shares. In that sense, we have assumed that the market incorporates the Mnazi Bay gas pricing for the Ntorya gas price and does not consider the high case development at all (giving us a prudent approach to our exercise in our view). In Figure 8 we show two probability scenarios that result in the current share price. Therefore, based on this exercise and our interpretation of these two scenarios, **we believe the market applies only 15-25% probability that the management base-case** (ie full development) will materialise. We also note in our scenarios we have assumed that the market does not assign more than 20% probability to the “no economic development” scenario, which we believe is a reasonable assumption following the recent operational update from AEX.

Figure 8: Market implied probability of CH-1 success

Development scenarios	Probability %	Value (p/share)	"risky val." (p/share)	Development scenarios	Probability %	Value (p/share)	"risky val." (p/share)
No development	0.0%	0.00	0.00	No development	20.0%	0.00	0.00
Low case: 45mmscf/d, 173Bcf	84.0%	0.77	0.65	Low case: 45mmscf/d, 173Bcf	54.5%	0.77	0.42
Base case: 140mmscf/d, 763Bcf	16.0%	2.39	0.38	Base case: 140mmscf/d, 763Bcf	25.5%	2.39	0.61
High case: 250mmscf/d, 1.7Tcf	0%	3.93	0.00	High case: 250mmscf/d, 1.7Tcf	0%	3.93	0.00
Total "risky" value:			1.03	Total "risky" value:			1.03
Current share price:			1.03	Current share price:			1.03

Source: Shard estimates

However, in our view, recent events suggest that several industry players have a significantly different view than the market. We do not believe any of the following events would have happened, unless these industry participants were fairly convinced in the success of the project with a much higher conviction than a 25% probability:

- 1) WEN recently made a bid to acquire 25% of the Ruvuma licence. A successful completion of this transaction would have resulted in WEN spending more than \$10mm in 2023 alone on this asset.
- 2) APT (the operator of the Ntorya development) exercised its ROFR, thus acquiring the 25% that WEN bid for. With this acquisition (and subject to completion), APT will further increase its stake in the project (to 75%) and in our view this shows the operator's strong belief in the project's success. As a point of reference, with this acquisition, APT is set to spend \$35mm in 2023 on this project.
- 3) As stated before, the Tanzanian government has already agreed to build a 30km connection pipeline to the Madimba Gas Processing facility in the next six to nine months. Assuming ~\$30mm of government expenditure on this alone, to us this indicates that the government of Tanzania also strongly believes in the success of the project.
- 4) Finally, the discovery already has: 1) two tested wells with a combined test rate of 37mmscf/d; 2) A CPR indicating a 50% probability of 763Bcf of gas resources; and 3) 3D seismic survey with initial encouraging results of c2Tcf potential discovered resources according to the operator.

Overall, we do not believe any of these participants would have entered into these transactions unless they believed that the full development of this asset is fairly certain and are likely assuming probabilities much, much higher than 25%; probably more in the 80-100% range.

While we acknowledge that the market always has its valid reasons for scepticism; nevertheless, this mismatch in our view represents a good risk/reward opportunity for investors. Namely, in our view, the market has already priced in some (albeit not all) "potential failure" of CH-1, leaving significant room for upside in case of a success and likely a limited downside, as long as at least the low-case development is confirmed by the NT-1, NT-2 and the CH-1 results.

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Valuation

We initiate coverage on the company with a fair value range of 2.0-2.5p/share, implying potential upside of 100-150% to the current share price.

Derivation of fair-value range

Given that the asset is still in development stage and there is still some uncertainty associated with the outcome, we are deriving our fair value range based on calculating a DCF12% value for each outcome and associating certain probabilities to each one. The four potential outcomes, described in the previous section, include: 1) No economic development; 2) Low-case development scenario (45mmscf/d, 173 Bcf); 3) Base-case development scenario (140mmscf/d, 763Bcf) and 4) High-case development scenario (250mmscf/d, 1.7Tcf).

In terms of gas pricing for our fair value range estimates, we use a \$3.90/mscf gas price (2022 base) with a 3.5% inflation factor. Our justifications for using a slightly higher gas price than the current Mnazi Bay realised price (\$3.90/mscf vs 3.44/mscf) are:

- 1) the government is dependent on this new project (given the stretched capacity), as presented earlier in the report.
- 2) Ntorya development still requires significant capital to be deployed in order to exploit its full resource potential.
- 3) The new “world gas price order” following the Ukraine/Russia conflict.

We will adjust our gas pricing in our valuation as soon as the partners are able to secure a GSA. Nevertheless, on page 15 of this report we provide valuation sensitivity to different gas pricing scenarios.

For the **low-end of the fair value range**, we assign fairly “even” probability outcomes across the spectrum, with the two extremes (high-case and no development) given very low probability, while the two “middle-ground” cases (low and base case) given an equal probability (Figure 9). For the **high-end of the fair value range**, we assign probabilities that we feel are more in line with the industry players (Figure 9), as discussed in the previous section on Page 12.

Figure 9: Fair value range derivation (high and low end)

Development scenarios	Probability %	Value (p/share)	"risky val." (p/share)	Development scenarios	Probability %	Value (p/share)	"risky val." (p/share)
No development	5.0%	0.0	0.0	No development	0.0%	0.0	0.0
Low case: 45mmscf/d, 173Bcf	45.0%	0.9	0.4	Low case: 45mmscf/d, 173Bcf	15.0%	0.9	0.1
Base case: 140mmscf/d, 763Bcf	45.0%	2.7	1.2	Base case: 140mmscf/d, 763Bcf	80.0%	2.7	2.2
High case: 250mmscf/d, 1.7Tcf	5.0%	4.5	0.2	High case: 250mmscf/d, 1.7Tcf	5.0%	4.5	0.2
Total			1.9	Total			2.5
Low-end of "fair value range":				High-end of "fair value range":			
2.0				2.5			

Source: Shard estimates

Cash-flow multiple “sense check”

Given that the project does not generate any cash flows at present, it would be difficult to value on a cash flow multiple basis at present. Nevertheless, as a “sense check” exercise, in Figure 10 we provide a potential valuation of the asset based on cash flow multiples at some point in the future, assuming the management’s base-case development materialises.

As presented, two cash flow multiple methods, FCF in perpetuity and EV/EBITDA methods (used on cash flows post 2025), result in very comparable valuation to our DCF12% valuation method, giving us further comfort in our valuation approach.

Figure 10: Valuation derived on cash flow multiple basis

"FCF in Perpetuity" valuation:	Base case	EV/DACF valuation	Base case
Average FCF/annum (2025-2044 period) net to AEX	18	Average EBITDA in 2026/27 net to AEX, \$mm	34
discount rate	0.12	EV/EBITDA multiple, x	4.0
Value of the asset net to AEX, \$mm	153	Implied value of the asset in 2025 net to AEX, \$mm	137
Fx rate, USD/GBP	1.2	Estimated cash balance by the end of 2025, \$mm	19
Value of the asset net to AEX, £mm	128	Total value of the asset in 2025 net to AEX, \$mm	156
Shares outstanding, mm	4211	Fx rate, USD/GBP	1.2
Value per share, p/share	3.0	Value of the asset net to AEX, £mm	130
		Shares outstanding, mm	4211
		Value per share, p/share	3.1

Source: Shard estimates

In our EV/DACF multiple method presented above, we use a 4.0x multiple on average EBITDA generated in 2026/27. The justification for this multiple is presented in Figure 11, showing that the UK E&P companies on average traded largely in a relatively tight interval of between 2.5x and 4.0x forward P/CF and EV/EBTDA multiples. For this “sense check” valuation exercise, we have opted to use the high-end of this range, given AEX’s longevity of the FCF.

Figure 11: Historical P/CF and EV/EBITDA multiple of UK peers



Source: Bloomberg, Shard estimates

Sensitivity to realised gas price

Given that the partners have not yet signed a GSA with the government, there is some uncertainty around the price used in our valuation. In general, given the precedents in the country, we would expect the Ntorya partners to be able to realise a gas price between \$3.50/mscf and \$4.30/mscf. This range mostly relates to the gas that will be delivered to the government owned distribution company, TPDC. Should the Ntorya partners be able to negotiate direct sales with an industry player(s), we see potentially even higher average realised prices. However, for the time being we are only considering sales to TPDC and in Figure 12 we provide a range of gas price scenarios and the impact to our valuation on all three development cases.

Figure 12: AEX NAV (p/sh) - sensitivity to gas price

		Gas sales price (2022 base), \$/mscf				
		3.50	3.70	3.90	4.10	4.30
development scenarios	45mmscf/d, 173BCF	0.79	0.86	0.92	0.98	1.03
	140mmscf/d, 763Bcf	2.44	2.57	2.71	2.85	2.98
	250mmscf/d, 1.7Tcf	4.00	4.23	4.47	4.70	4.93

Source: Shard estimates

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Risks

Commodity price risk and FX risk

As presented in the previous section, AEX's main exposure to the commodity price risk will be mainly until it signs the GSA with the Tanzanian government. Following that agreement, the price will be fairly stable, with the only uncertainty likely being the US inflation index that is typically used in the Tanzanian gas pricing formula.

While typically the Tanzanian government has been paying foreign companies in USD, more recently some of the gas producers in the country have announced the possibility of being paid in Tanzanian Shillings, thus increasing the FX risk when converting the gas proceeds into a foreign currency.

Geological risks

The performance of any oil and gas field inherently carries a geological risk. Typically, the risks decrease over time as more data is available from the field's production.

The drilling and testing of the first two wells have lowered the initial exploration risks associated with the asset. Nevertheless, as a non-developed and yet to produce asset, geological risks associated with the production of the reservoir remain still relatively high (as typical for any new discovery). The next well, CH-1, also carries some geological risk. As the partners continue to drill and develop the asset these risks will be decreasing over time. To address these risks, we have assigned different probabilities to some of the potential geological outcomes, including a scenario of "no further development" of the asset.

Environmental/Regulatory risk

The oil and gas sector is experiencing a significant impact from various legislative initiatives related to the environment and energy sustainability. There is also a notable impact on the investors' sentiment towards the sector. Therefore, as a participant in the oil industry, AEX may be exposed to various government initiatives that may have an impact on the industry.

General Political risk

While Tanzania has been a relatively stable jurisdiction for foreign companies to operate in; nevertheless, it is considered an emerging market country. As such, we see above average political risks compared to developed countries.

While we encourage investors to make their own political judgement on investing in Tanzania, we believe we have addressed this elevated political risk in our valuation by assigning a 12% discount rate for the assets, compared to a 10% discount rate that we typically use for developed countries.

Forecasts

Figures 13-18 below summarise our key operational and financial estimates.

Figure 13: Assumptions summary

Key assumptions	2021A	2022A	2023E	2024E	2025E	2026E
Brent Oil Price (\$/bbl)	70.9	100.0	90.0	80.0	75.0	72.5
Realised Gas Price (\$/mscf)	4.0	3.9	4.1	4.3	4.4	4.6
Production - WI (kboe/d)	0.0	0.0	0.0	2.1	3.5	5.2
Production liquids (%)	NA	NA	NA	0%	0%	0%
FX rate (\$/£)	1.38	1.20	1.20	1.20	1.20	1.20

Source: Shard estimates

Figure 14: Summary Income Statement

Income statement (in \$mm)	2021A	2022A	2023E	2024E	2025E	2026E
Revenue	0	0	0	16	28	43
COGS (including injection costs)	0	0	0	-13	-14	-16
Gross profit	0	0	0	4	14	27
Total G&A	-3	-3	-2	-1	-1	-1
Other expenses	-6	-1	0	0	0	0
Net finance costs	0	0	0	0	0	0
Profit before tax	-9	-4	-2	2	13	26
Total tax expense	0	0	0	0	0	0
Net income	-9	-4	-2	2	13	26
Weighted average # of shares diluted (mm)	3771	4081	4211	4211	4211	4211
EPS diluted (\$/sh)	0.00	0.00	0.00	0.00	0.00	0.01
DPS (\$/sh)	0.00	0.00	0.00	0.00	0.00	0.00

Source: Shard estimates

Figure 15: Summary balance sheet

Balance sheet (in \$mm)	2021A	2022A	2023E	2024E	2025E	2026E
Cash and equivalents	5	6	4	9	25	55
Net non-cash working capital	-8	-9	-9	-9	-9	-9
Net non-current assets	37	36	36	43	50	58
Total debt	0	0	0	0	0	0
Shareholders funds	33	33	32	43	66	104

Source: Shard estimates

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Figure 16: Summary Cash Flow Statement

Cashflow statement (in \$mm)	2021A	2022A	2023E	2024E	2025E	2026E
Profit before tax	-9	-4	-2	2	13	26
DD&A	0	0	0	9	10	12
Other adjustments	6	1	0	0	0	0
Op. CF before working capital changes	-3	-3	-2	11	23	38
Working capital changes	8	1	0	0	0	0
Op. CF after working capital changes	5	-2	-2	11	23	38
Cash taxes paid	0	0	0	0	0	0
Capital expenditures and acquisitions	-1	0	0	-6	-8	-8
Proceeds from debt	0	0	0	0	0	0
Proceeds from equity	0	4	0	0	0	0
Interest paid	0	0	0	0	0	0
Dividends	0	0	0	0	0	0
Other	0	0	0	0	0	0
Change in cash	4	1	-2	5	16	30

Source: Shard estimates

Figure 17: Summary Operational Performance Metrics

Key performance metrics	2021A	2022A	2023E	2024E	2025E	2026E
Netback (\$/boe)	NA	NA	NA	14.56	17.94	19.82
Opex (\$/boe)	NA	NA	NA	4.93	2.90	1.97
Adjusted Op. CF (\$mm)	-3	-3	-2	11	23	38
DACF (\$mm)	-3	-3	-2	11	23	38
FCF (\$mm)	-4	-3	-2	5	16	30
EBITDAX (\$mm)	-2	-3	-2	11	23	38
Adjusted net debt/(cash) (\$mm)	4	3	4	0	-16	-46
Adjusted net debt to EBITDAX ratio (x)	NA	NA	NA	NA	NA	NA

Source: Shard estimates

Figure 18: Trading metrics summary

Trading metrics	2023E	2024E	2025E	2026E
Cashflow and production				
P/CF (x)	NA	4.9	2.4	1.4
EV/DACF (x)	NA	5.3	2.3	1.0
EV/boe of production (\$/boepd)	NA	28,256	15,312	7,399
Reserves as reported				
2P as reported (mmboe)	0			
EV/2P (\$/boe)	NA			
2P+2C (mmboe)	32			
EV/(2P+2C) (\$/boe)	1.80			
Reserves				
2P (mmboe)	0			
EV/ 2P (\$/boe)	NA			
2P+2C (mmboe)	32			
EV/ (2P+2C) (\$/boe)	1.80			
NAV				
Core NAV% (p/sh)	2.7			
P/Core NAV (%)	40%			
(Core + Contingent) NAV (p/sh)	2.7			
P/(Core + Contingent) NAV (%)	40%			

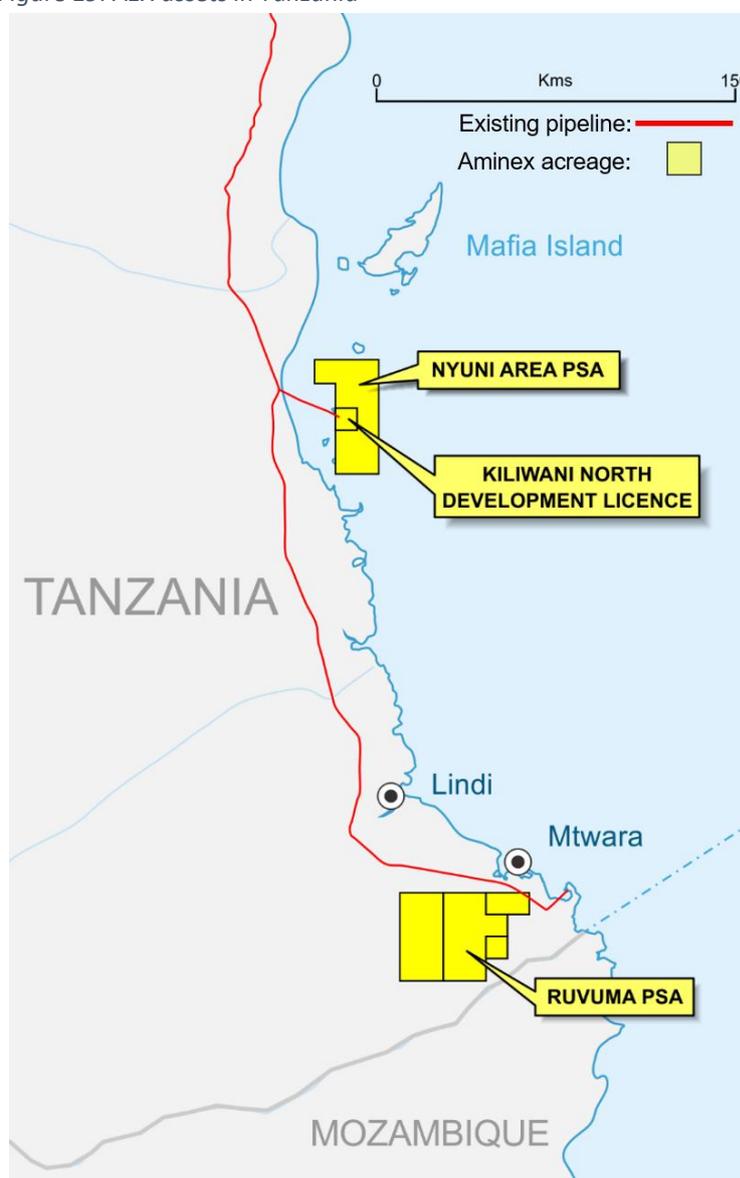
Source: Shard estimates

Company assets overview

Aminex PLC is a publicly listed company incorporated in Ireland and trades on the London Stock Exchange (Main market, standard listing segment). It has an interest in three different assets, all located in Tanzania (Figure 19):

- 1) 25% interest in Ruvuma PSA, that contains the Ntorya gas discovery.
- 2) 63.8304% in Kiliwani North Development Licence.
- 3) 100% in Nyuni Area exploration PSA.

Figure 19: AEX assets in Tanzania



Source: AEX presentation

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Ruvuma PSA

The Ruvuma PSA is located in the south of the country, near the Mozambique border (Figure 20).

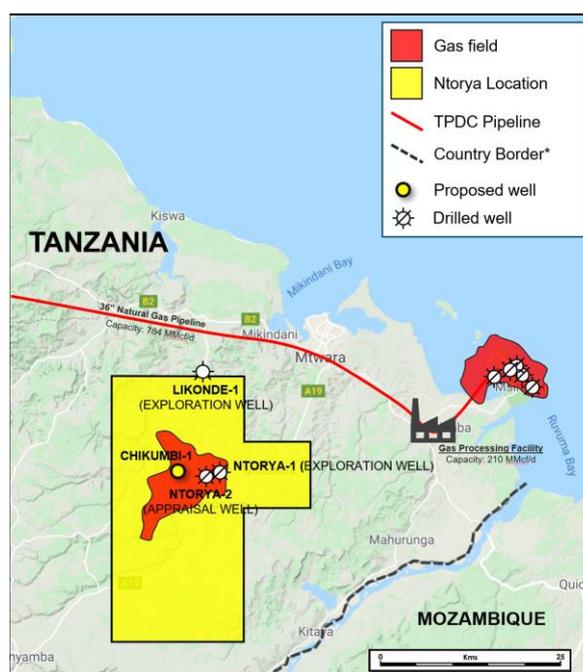
The company made a discovery with its Ntorya-1 (NT-1) well in 2012 and subsequently drilled an appraisal well, Ntorya-2 (NT-2). Both wells were flow tested, delivering flow tests of 17-20mmscf/d. Based on these wells and 2D seismic, AEX has commissioned a CPR which has assigned 763Bcf of 2C resources.

In October 2020, AEX completed a farm-out to ARA Petroleum, lowering its interest in the PSA from 75% to 25%, in exchange for some upfront cash payment and up to \$35mm of development carry (net to AEX). At current estimates, the free carry should be sufficient to take AEX to a full development of the asset, reaching 140mmscf/d.

In 2022, the partners completed 338km² of 3D seismic survey and are currently awaiting the results to confirm management’s expectation of up to 2Tcf of recoverable gas resources.

The Ruvuma PSA is located close to Mnazi Bay, one of the two producing gas assets in the country. This conveniently provides the Ntorya gas field development with two key pieces of infrastructure: 784mmscf/d pipeline capacity (taking the gas to Dar es Salaam) and a 210mmscf/d Gas Processing Facility (GPF) at Madimba, about 30km away from the Ruvuma PSA. Mnazi Bay produces only 90mmscf/d of gas, thus providing significant spare capacity (both in the pipeline and the Madimba GPF) for the Ntorya development. Based on the current plans, a full development would include five more wells in addition to CH-1 scheduled for drilling later in the year (eight in total) to supply the full plateau production.

Figure 20: Ruvuma PSA



Source: AEX presentation

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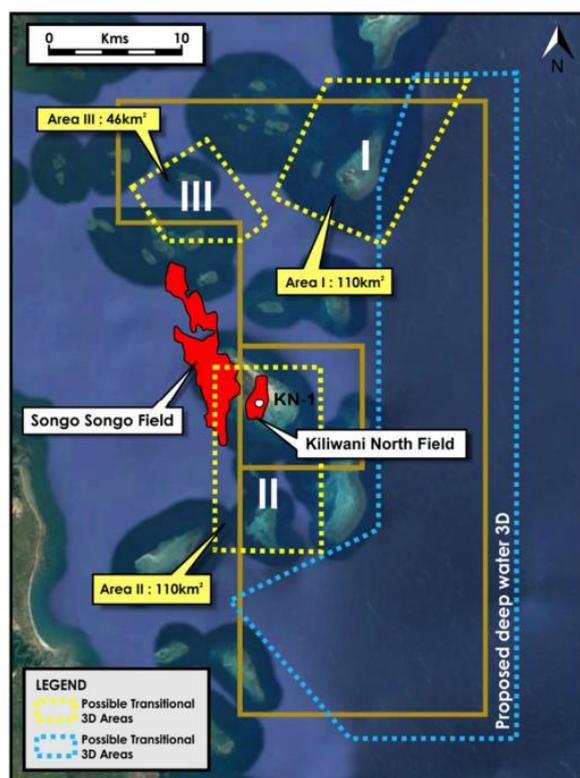
Kiliwani North and Nyuni Area Assets

The Kiliwani North Development Licence (KNDL) is AEX's first producing asset and the company has a ~64% interest in the licence. In 2016/17, the Kiliwani North field was producing about 15mmscf/d and produced in total 6.5Bcf of gas over two years. However, production stopped a couple of years post first production, and PanAfrican Energy Tanzania Limited, a subsidiary of Orca Energy, is undertaking a 3D seismic programme over its adjacent Songo-Songo field that will cover approx. 12.5 km² of the KNDL area, and which is planned to complete by mid-year. The new seismic data should provide AEX with valuable data to improve structural mapping and refine the prospectivity of the Kiliwani North and South structures, allowing the Company to determine more effectively potential new drill and infill drill opportunities.

The Nyuni Area PSA is an exploration licence 100% owned by AEX. Whilst AEX continues to believe that the Nyuni Area acreage offers upside exploration potential to complement its other assets, the significant exploration risk, the high costs associated with offshore operations and the lack of a farm-in partner combined to lead the Company to enter discussions last year with the Tanzanian authorities to return the licence to the Ministry of Energy.

At present, we do not assign any value for these assets in our valuation, awaiting the results of the 3D survey and any potential farm-out transaction.

Figure 21: Kiliwani North and Nyuni assets



Source: RPS Energy CPR

Board/Management bios

Charles Santos (Executive Chairman)

Charles Santos is currently the CEO and Chairman of UIG Energy Inc, which develops energy projects in Central and Southeast Asia. He has more than 33 years of experience in political and commercial negotiations in West Africa, the Middle East, and Central, South, and East Asia. Charles served on the board of and led commercial negotiations on the Afghan portion of the Turkmen-Afghan-Pakistan-India gas pipeline for a consortium of international energy companies. He developed energy projects in Central Asia, including the farm-in of critical gas assets in Uzbekistan, where he served as the Chairman of the Steering Committee and the Operations Committee. Working for the United Nations in the late 1980s and early to mid-1990s, Charles served as Special Advisor to four Under-Secretary-Generals. He was the Deputy Head and Political Advisor to UN Peace missions in Afghanistan and Tajikistan. Charles was appointed Chairman in August 2020 and Executive Chairman in January 2021.

Tom Mackay (Non-executive Director)

Tom Mackay was originally appointed as a Non-Executive Director of Aminex in September 2014 serving on the Audit and Nominations Committees and as Chair of the Remuneration Committee before he was appointed Interim CEO in April 2019 until April 2020. Originally graduating with a degree in Geology from Durham University, he retrained as a Petroleum Engineer with Shell and later served in senior management positions with Clyde Petroleum and Gulf Canada. He was General Manager and later Senior Vice President of Stratic Energy Corporation and more recently, a Partner in Gemini Oil & Gas Advisors LLP; acting in technical, commercial and financial advisory capacities to the Gemini Oil & Gas Funds, investing in global appraisal and development projects.

James Lansdell (Non-executive Director)

James Lansdell is Senior Legal Counsel at The Zubair Corporation. Prior to joining The Zubair Corporation, he was a Senior Associate at Dentons, Muscat. James is an experienced oil and gas and construction lawyer with over 10 years' experience working as a member of Dentons' Tier 1 oil and gas team in London and the Middle East. He is a member of the Association of International Petroleum Negotiators and the Society of Construction Law. He holds an BSc in Psychology and an LLB in Law.

Sultan Al-Ghaithi (Non-executive Director)

Sultan Al-Ghaithi has over 20 years of industry experience and is currently Chief Executive Officer of ARA Petroleum LLC. He is a wellsite engineer by background and has previously worked with Petroleum Development Oman and Weatherford International where he was Country and Area Manager in Oman. Sultan previously served on the Board of Aminex between October 2017 and September 2019 before being reappointed to the Board in August 2021.

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Brian Cassidy (General Counsel and Company Secretary)

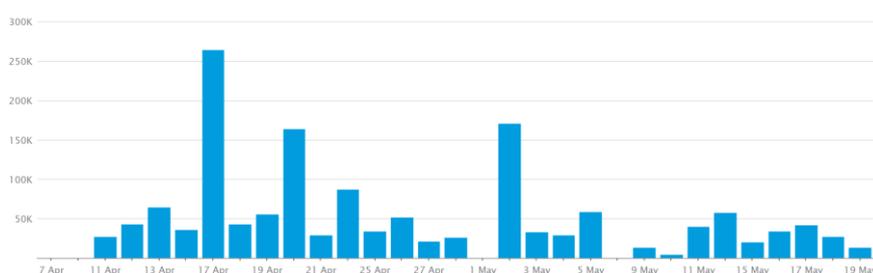
Brian Cassidy is a Solicitor qualified in England and Scotland. He has over 25 years' experience in the oil and gas industry, during which time he was based in the UK, Azerbaijan, Singapore, Hong Kong, China and South Korea. Before moving in-house, he held senior roles with Ledingham Chalmers LLP, McGrigors LLP and Clifford Chance LLP. Prior to joining Aminex PLC, he was Head of Legal and Company Secretary at Bowleven plc.

Shareholding and trading

The company has 4.2bn shares in issue with 72% considered as free float. While the company has one significant shareholder, Eclipse Investments LLC, the rest of the shares are largely in retail hands. Interestingly, Eclipse Investments LLC (27.39%) is a vehicle owned by the Zubair family, a family office that also owns ARA Petroleum Tanzania, the operator of the Ntorya gas field development.

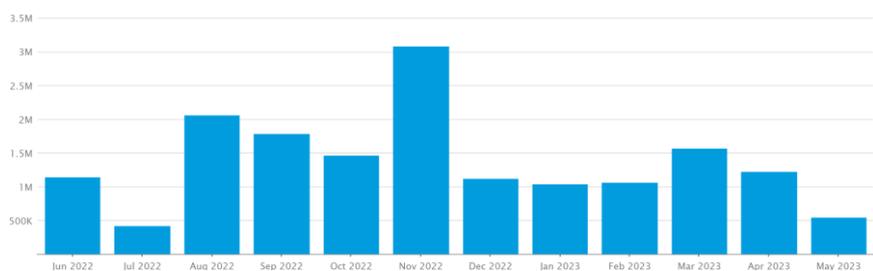
As presented in Figure 22 and Figure 23, on average, there is between £50-100k of value traded in the shares on daily basis on the LSE, or between £1-2mm of value traded on a monthly basis.

Figure 22: Daily value traded on LSE



Source: LSE

Figure 23: Monthly value traded on LSE



Source: LSE

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