East Africa Crude Oil Pipeline (EACOP)

25 June 2018

Executive Summary:

- It is highly probable that the USD$3.5bn EACOP will not be completed on schedule at the end of 2020 and is more likely by 2023. Although some construction associated with the project has already begun, a final investment decision which should have been made at the beginning of 2018 is not expected before the end of 2018.
- There is a lack of necessary skills amongst the local workforce and infrastructure to enable the project, e.g. roads and electricity networks, which are highly likely to hinder construction. It is probable that foreign workers will be needed in the short-term which could anger local communities who have been promised employment linked to construction of the EACOP.
- The government budgets of Tanzania and Uganda were already stretched prior to the EACOP project. Both governments will have to raise additional debt and repurpose funds from other development initiatives to fund the project which is likely to result in domestic and international criticism.
- It is possible that the Turkana-Lamu pipeline will be a source of financing competition for the EACOP if Tullow Oil and Total SA move investments to Kenya due to uncertainty in Uganda and Tanzania.
- Of the scenarios analysed, none predict the EACOP project to be fully operational by the 2020 completion date given by the Ugandan and Tanzanian governments.

Introduction

1. This document provides information on the planned EACOP between the Hoima oil field in Uganda and Tanga port in Tanzania. The document also provides a scenario analysis exploring the most likely scenario and four alternatives. For any additional enquiries or to request further detail please contact Jamie Shaw, Analytical Operations Manager (jshaw@assayerisk.com).

Background on the EACOP

2. The EACOP will begin in the Hoima District in western Uganda before passing through Masaka and Mutukula and eventually finishing at Tanga port in Northern Tanzania. Once the crude oil arrives at the Tanga port, it will be transported to other countries for refining. The crude oil extracted at Hoima has a low sulphur content and as a result, solidifies at room temperature preventing the crude oil from being transported.[1] This requires crude oil in the pipeline to be heated above 50°C through a series of six heater stations along the route. At a length of 1,445 kilometres, the EACOP is set to be the longest electrically heated pipeline in the world.[2]

3. Currently, both the Ugandan and Tanzanian governments have signed an Inter-Governmental Agreement (IGA) which confirms financing and development of the EACOP. Construction has begun on the EACOP, which has the capacity to process 210,000 bpd of crude oil and this provides the option to take additional inputs from South Sudan or the Democratic Republic of the Congo (DRC) in the future. Statements from the Tanzanian President, John

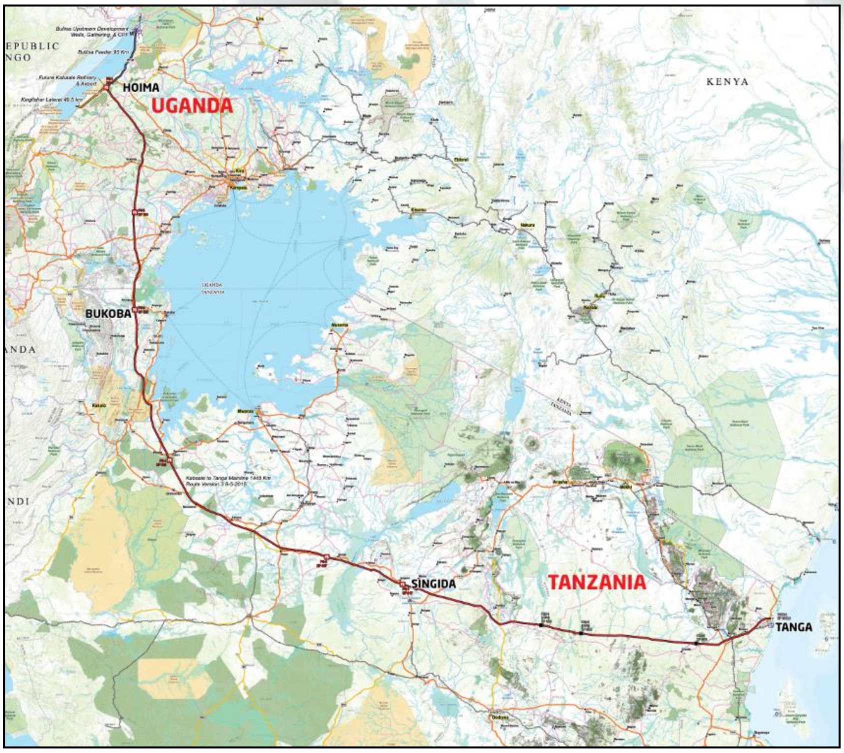
[1] World Pipelines- 'Gulf to deliver FEED services for the East African crude oil pipeline'- 20 April 2017
[2] Oil in Uganda- 'East African Crude Oil Pipeline: The Inside Story'- 11 December 2017

Magufuli, have suggested that the pipeline will be completed by the end of 2020.[3] At least 80 per cent of the pipeline will be on the Tanzanian side and the Tanzanian government will benefit from a $12.20 per barrel tariff.

4. The majority of the EACOP is being financed by private financial institutions who will cover 70% of the total costs. The remaining 30% of costs will be covered by the project stakeholders includings the Ugandan and Tanzanian governments and a joint venture partnership between Total SA, Tullow Oil and the China National Offshore Oil Corporation (CNOOC).[4] According to government officials from both countries, a Final Investment Decision (FID) will be made by the end of this year; the decision should have been made at beginning of 2018. It is predicted that the EACOP will bring in a 60% rise in foreign direct investment for both countries and 10,000 jobs during the construction phase.[5]

5. Predictions from the World Bank highlight that the oil industry in Uganda could generate USD$3.5bn annually between 2029 and 2045 as a result of the EACOP.[6] In addition, Uganda has announced plans to build a USD$3bn crude oil refinery at Hoima which will have a projected output of 60,000 bpd.[7] Despite the signing of an agreement with an oil consortium on 10 April 2018, the Ugandan government has not confirmed when the Hoima refinery will be completed. If the Ugandan government can successfully build a refinery for its crude oil capacity, it will be less reliant on foreign nations for petroleum.

Map 1: Location of the EACOP between Hoima in Uganda and Tanga in Tanzania



EACOP route map (source: EACOP)

[3] Daily News- 'Embrace Locals in Pipeline Project, JPM Tells Total'- 06 December 2017
[4] Daily Monitor- 'Uganda to raise Shs300bn for crude oil pipeline'- 13 December 2017
[5] Ibid
[6] Daily Monitor- 'How Ugandans can benefit from upcoming oil boom'- 15 May 2018
[7] Reuters- 'Uganda signs agreement with investors to build oil refinery'- 10 April 2018

Issues Surrounding the EACOP

6. **Funding concerns.** Ugandan President Yoweri Museveni has promised that the EACOP will achieve all the necessary financing to achieve completion by 2020. Thus far, only Tullow Oil has committed funding for 10% of the project. The majority of funding is set to come from government debt financing which could be problematic given the ongoing deficits which Tanzania (5.3%) and Uganda (4.9%) both have.[8] Additionally, large scale infrastructure development projects in each of the countries will complete for government finances. Consequently, some financial advisory companies involved with the EACOP, such as Standard Bank, have been sceptical of President Museveni's claims that the project will be completed by 2020.

7. As part of a strategy to entice foreign companies to invest in the EACOP, Uganda and Tanzania have agreed that companies involved with the construction of the project will not be subject to Value Added Tax (VAT) or corporate income tax.[9] Whilst it remains a possibility that rising government debts may force the Ugandan and Tanzanian governments to introduce a series of taxes against these companies, the reputational damage this would cause with investors makes this unlikely.

8. **Politics.** Both President Museveni and President Magufuli have faced criticism from opposition MP's over the cost of the EACOP and the decision to invest billions in crude oil. Opposition parties in both Uganda and Tanzania have insisted that their governments should instead be making investments in workforces to increase productivity.[10] It is likely that Tanzania and Uganda will not have a sufficiently skilled workforce to deliver on the construction of the project. This could lead to further criticism of the government if foreign workers have to be brought in to work on the EACOP.

9. **Infrastructure and electricity requirements.** The project is likely to face delays if insufficient infrastructure surrounding the project is not constructed alongside the building of the EACOP. Tanga port requires the construction of the Handeni-Singida highway to allow for the EACOP construction materials to be transported along the planned route.[11] Furthermore, six pumping stations and a marine storage terminal at Tanga are needed for the crude oil to be transported to international markets. The Ugandan government has announced a 21% budget increase in road infrastructure, however, significant challenges for transporting goods along the EACOP route are almost certain to persist in 2018/19.[12]

10. The EACOP requires a large input of electricity to be operationally effective. Uganda is spending USD$1.2bn on two hydropower plants which is expected to add 780 MW of power to the grid.[13] Similarly, Tanzania has outlined plans to invest USD$3.6bn (25% of the total Tanzanian budget) into the Stiegler's Gorge hydropower project. It is possible that funding for hydropower projects could compete with funding for the EACOP, leading to further delays.[14] Whilst competing funding and stable sources of power are areas of concern, the greatest obstacle is likely to be expansion of the electricity distribution network. On 21 June 2018, these fears were alleviated to some extent by the World Bank's approval of a USD$455mn loan to Tanzania for "infrastructure that will support the electrification of the southern and north-western regions of Tanzania"[15].

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[8] All Africa- 'Uganda: East African Crude Oil Pipeline - the Inside Story'- 11 December 2017
[9] Ibid
[10] Daily Monitor- 'Uganda to raise Shs300b for crude oil pipeline'- 13 December 2017
[11] The Citizen- 'Tanga Ports targets EACOP opportunities'- 15 April 2018
[12] Uganda Observer- 'Uganda, Tanzania set new fast track deadline for oil pipeline'- 06 May 2018
[13] The Africa Report- 'Uganda power distributor Umeme to spend $1.2 bln to expand grid'- 16 May 2018
[14] Hydrocarbons Technology- 'Crude Oil Pipeline Project, East Africa'- 2018
[15] CNBC Africa – 'What you need to know about the World Bank's $455mil loan to Tanzania for its power projects' – 22 June 2018

11. **Competition from the Turkana-Lamu pipeline.** It is a realistic possibility that the EACOP will face competition from the smaller crude oil pipeline project between Turkana and Lamu in neighbouring Kenya which is due for completion in 2021. The total amount of recoverable crude oil reserves at the Hoima district is 2.2 billion barrels which, by comparison, is significantly higher than the Turkana basin in Kenya that has 750 million exploitable barrels of crude oil.[16] On the other hand, the cost of the Turkana-Lamu project is only USD$1.1bn in comparison to the USD$3.5bn cost of the EACOP.[17] Tullow Oil and Total SA have split investments between the EACOP and the Turkana-Lamu pipeline. Consequently, it is possible that both oil companies could divert funds from the EACOP towards the Turkana-Lamu pipeline in the future if persistent delays prevent crude oil from being transported to Tanga port.

Scenario Generation

12. The scenario analysis in this section attempts to answer the question, *'What will be the status of the EACOP by the end of 2020?'* The analysis will present five potential scenarios determined by different assumptions made about the six key influencing forces: project finance, politics, electricity and infrastructure, competition, skills, employment and local community benefits and domestic factors. The five scenarios include a baseline scenario of what is most likely to happen and four plausible alternatives.

13. These scenarios are developed using the 'Cone of Plausibility' scenario generation technique to provide an understanding of the possible futures of this crude oil pipeline project.

14. The following are the key drivers (influencing forces in the environment) and assumptions on how they will develop in relation to the EACOP.

Drivers	Assumptions
Project finance	The Ugandan and Tanzanian governments will receive sufficient loans to cover the cost of the EACOP from financial institutions and a FID between all parties will be agreed upon by the end of 2018. Both governments will subsequently have to increase debt to pay for these loans. The Ugandan government prioritises investment in the EACOP over the planned oil refinery due to a lack of finance for both projects. Investors face increased costs as the project is not completed by the planned 2020 date.
Politics	Both President Museveni and President Magufuli will pursue investment in the EACOP over other development projects, despite opposition to the project. President Magufuli will use the construction of the EACOP as evidence of government investment in the economy during the 2020 general election and this will increase popularity for the Tanzanian government.
Electricity and infrastructure	The Tanzanian government prioritises the EACOP over building hydropower developments as immediate revenue will be higher from crude oil than electricity development. In both countries, a lack of progress in road infrastructure and electricity grids is highly likely. Problems with road networks and getting appropriate electricity mean that construction of the EACOP exceeds the 2020 completion deadline.
Competition	The Turkana-Lamu pipeline is not completed by the planned 2021 date due to construction delays in Kenya and the EACOP is completed before the Turkana-Lamu pipeline. Tullow Oil and Total SA maintain investments in both pipelines mitigating investment risk. The Turkana-Lamu pipeline will be a source of competition for the EACOP once it is fully operational.

[16] Assaye Risk- 'Prospects for Kenya's Turkana-Lamu oil pipeline'- 09 May 2018
[17] Business Daily- 'Cost of Turkana oil pipeline now drops by Sh100 billion'- 31 May 2018

Skills, employment and local community benefits	Uganda and Tanzania will face challenges in employing local workers with sufficient construction, engineering and electrical qualifications to work on the EACOP. This will result in workers from foreign countries being brought in to work on the project. Without adequate training institutions, local communities will not benefit from EACOP employment. However, some industries such as hotels, vehicle rentals and tourist workers will benefit from an influx of foreign workers employed for the EACOP.
Domestic factors	President Magufuli and President Museveni will continue to govern after their respective 2020 and 2021 presidential elections and consequently, domestic policies in both countries are expected to remain the same for the foreseeable future. Strict control over media outlets in both countries will assist in election victories for the ruling parties. Election success for both current governments will see the continuation of development on the EACOP and provide them with the mandate to continue allocating large amounts of funding to the project. However, recent taxes on other sectors such as mining, oil and gas will make the investment situation in Tanzania worse but is only likely to lead to a small dip in popularity for the Tanzanian government.

15. **Baseline Scenario.** This is the most likely scenario for the question '*What will be the status of the EACOP by the end of 2020?'* based on the assumptions provided above:

16. Early delays in securing funding, licenses and establishing supply chains means that oil exploration in Uganda has not yet progressed to the point of commercial extraction. Meanwhile, majority of the EACOP is completed but construction of some sections is being hindered by poor workmanship, lack of roads to facilitate logistics and connection of electricity networks to power the pipeline heating stations. Both governments have allocated substantial funding from their budgets and taken out large loans from banks to finance the project. As a result, investment in training and skills development remains low and workers from foreign countries have been brought in to work on construction of the EACOP. Local communities do not benefit as much from the EACOP as had originally been planned due to a lack of developing local employment skills and this leads to resentment from some communities towards the government. Despite the EACOP not being delivered by the originally planned date, President Magufuli and President Museveni insist that the project will increase the GDP of both countries in the long run and use the project as an example of their delivery on development.

Sufficient developments have been made in the EACOP which showcase infrastructure improvements and benefit President Magufuli in the 2020 general election. Consequently, President Magufuli is victorious and continues with EACOP development. Meanwhile, other infrastructure projects which competed with the EACOP for government financing, such as Stiegler's Gorge in Tanzania and the oil refinery in Uganda, have suffered significantly from delays as finances were prioritised for the EACOP. Overall, delays in infrastructure and electricity developments indicate that the EACOP is more likely to transport first oil by the end of 2022.

17. **Plausible Alternative Scenario #1.** Another potential scenario is generated when the assumptions for the 'project finance' driver are changed. For this scenario, the assumption becomes "Uganda and Tanzania do not receive the required investment in the project from banks and investors." The altered assumption generates a second alternative scenario:

18. As a result of a lack of finance to pay for loans, banks do not lend either government the full amount needed to pay for the pipeline and this creates delays in the project moving forward. Consequently, FID is not agreed upon by the end of 2018 which further hampers EACOP progress. As an alternative source of finance, both governments pursue loans from other state governments who are then provided with greater influence in the

region. The Tanzanian and Ugandan Government's credibility is impacted as neither can deliver on the promises of EACOP completion by 2020.

19. **Plausible Alternative Scenario #2.** Another potential scenario is generated when the assumption for the 'project finance' driver is changed again. For this scenario, the assumption becomes "Uganda and Tanzania secure loans for the project by raising debt but over the course of constructing the EACOP, some of this money is used to plug holes in the government budgets." The altered assumption generates a second alternative scenario:

20. The budgets of both governments were already stretched prior to accumulating debt to finance the EACOP. Despite the influx of foreign direct investment (FDI) associated with construction of the EACOP this has not offset the added cost to budgets of repaying loans. Money which had been borrowed to finance the EACOP has therefore been used to plug gaps in the respective government's budgets. This has led to delays in payments which have delayed the project. Consequently, both governments have had to cut costs within their budgets which has caused domestic political issues and public anger. It is also possible that both governments return to financial institutes asking for more loans which results in accusations of poor financial management and reputational damage.

21. **Plausible Alternative Scenario #3.** Another potential scenario is generated when the assumption for the 'competition' driver is changed. For this scenario, the assumption becomes "The Turkana-Lamu pipeline is viewed as a more stable investment by Total SA and Tullow Oil which results in it being completed before the EACOP." The altered assumption generates a third alternative scenario:

22. Investors become less confident in the EACOP due to limited progress which encourages Tullow Oil and Total SA to move investments to the Turkana-Lamu pipeline which is viewed as a more stable investment. Factors which influence this decision include the relative stability in Kenya, only having to deal with one state government who also offer generous investment terms, all of which encourages investor confidence in the Turkana-Lamu pipeline. Subsequently, the Turkana-Lamu pipeline receives sufficient loans to fulfil its completion by 2021 and this makes it more competitive than the EACOP. A shift of investment towards the Turkana-Lame pipeline results in the EACOP being delayed beyond 2023.

23. **Plausible Alternative Scenario #4.** Another potential scenario is generated when the assumption for the 'Skills, employment and local community benefits' driver is changed. For this scenario, the assumption becomes "EACOP land acquisitions prove unpopular with local populations and this results in the disruption of production along the pipeline." The altered assumption generates a fourth alternative scenario:

24. Local community benefits promised by both governments are not delivered across all communities. The governments are forced to acquire land from local communities to build the EACOP which leads to the loss of employment and livelihoods for those communities. A lack of retraining opportunities for the displaced workers creates issues for agricultural workers looking to benefit from EACOP employment. This results in civil unrest amongst communities and attempts to sabotage the development and operations of the EACOP as previously seen with other pipelines, such as the Trans Mountain Pipeline in Canada and the Trans-Adriatic Pipeline (TAP) between Greece and Italy. Consequently, the respective governments are forced to increase security to prevent incursions which disrupt production on the EACOP. International Non-Governmental Organisations (INGO's) increase negative publicity on the EACOP which gives reputational damage for the companies and governments involved.

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