Appendix H: Cumulative Impact Assessment

February 2020

CONTENTS

TABLES

FIGURES

H1 SOURCES OF CUMULATIVE IMPACT

Table H1.1 presents the associated facilities that have been screened in to the cumulative impact assessment, and Table H1.2 shows the third-party developments that have been screened in to the cumulative impact assessment based on the criteria defined in Section 5 of the ESIA.

Table H1.1 Screened-In Associated Facilities

ID[1]	Project	Proponent	Description	Reference[2]
AF01	Tilenga Project	Total E&P Uganda BV	Tilenga Project comprises a field development that will supply oil to the Tilenga feeder pipeline. **Field Development** • Six production fields within which 412 wells (190 producers, 190 water injectors and 32 observation wells) from 34 well pads • Production and injection network of buried pipelines to transport oil, gas and produced water extracted from the producing wells to the CPF and injection water to the well pads from the CPF and Lake Albert. The network will include a tunnelled (via horizontal directional drilling) section under the Victoria Nile • The Industrial Area, containing o 190,000 BOPD capacity CPF, including electrical power generation, oil heating facility and a pump station for the Tilenga feeder pipeline. From the CPF, the treated and stabilised oil will be sent to the oil export system via Tilenga feeder pipeline and gas will be used for power generation o auxiliary facilities including permanent operation and security camps, maintenance facilities and offices, and integrated waste management area • Water abstraction system from Lake Albert for reinjection at the well pads to maintain production pressure • Victoria Nile ferry crossing facility • New access roads In addition to the above, the project will upgrade and use existing Tangi Operation Support Base, Bugungu Airstrip and a number of roads. During construction, the project will require the following temporary facilities: • Buliisa and Bugungu construction camps (existing facilities originally constructed to support exploration activities) • Temporary camp and construction facilities at the Industrial Area • Temporary facilities at the Tangi construction support base	Information received from the Tilenga Project, including EA-1/EA-1A & EA-2 North Project – ESIA Scoping Report/Terms of Reference, 2015 Tilenga Feeder Pipeline ESIA, 2018

Table H1.1 Screened-In Associated Facilities

ID[1]	Project	Proponent	Description	Reference[2]
			• Masindi vehicle check point. **Feeder Pipeline** The feeder pipeline is a 95 km long, 24-in.-diameter, insulated, electrically trace heated, buried pipeline from the Tilenga central processing facility (CPF), Buliisa to pumping station-1 (PS1) at Kabaale Industrial Park. The pipeline will have several aboveground installations, namely four standalone main line block valve station and one main block valve station combined with an electric substation, all located in the pipeline operational right of way (RoW). In the construction phase, the project will have one main construction camp and pipe yard at KP44, and 3.7 km of new or upgraded construction facility access roads. At the time of writing, exact construction timeframes are not confirmed.	
AF02	Kingfisher Oil Project	CNOOC	The Kingfisher oil project is on the southeast shoreline of Lake Albert and will consist of the following components: • The Kingfisher Development Area (KFDA) mainly on the Buhuka Flats: • four onshore well pads with total of 31 wells (20 producer wells and 11 water injection wells) • produced well fluids will be conveyed to the CPF through the buried infield flowlines. • CPF which includes oil separators, water treatment facilities, a water injection unit, a gas processing unit, an LPG unit, oil storage tanks and power generation. • Feeder pipeline • 46 km,12 to 14-inch in diameter, insulated, trace heated, buried feeder oil pipeline from the CPF to a delivery point in the Kabaale Industrial Park • At the delivery point, there will be metering of the crude oil, which will be piped to the refinery or, as required, exported through the EACOP line • An MCPY is located at approximately KP27	Information received from the Kingfisher project, including Scoping Report for the ESIA for Kingfisher Discovery Area, 2014

Table H1.1 Screened-In Associated Facilities

ID[1]	Project	Proponent	Description	Reference[2]
			• supporting facilities including construction and permanent camps, material yards, a jetty, an airstrip and roads • Access roads will be used for the development area and the feeder pipeline. The permanent right of way will be 10 m wide. Grazing of stock over the right of way will be permitted, but cultivation and settlement will be prohibited. At the time of writing, exact construction timeframes are not confirmed.	

NOTES: [1] The ID number is used to identify developments in the cumulative impact assessments in Section 8.

[2] This column lists the sources of information received on the development. This information has been used to identify and assess the impacts of the development in the cumulative impact assessments in Section 8.

Table H1.2 Screened-in Third Party Developments

ID[1]	Project	Proponent	District	Nearest KP	Approximate Distance From Pipeline (km)	Description	Reference[2]
UG0A	Electricity transmission line from the Tilenga Project CPF to Kabaale	UETCL	Hoima	0	0	A 132-kV transmission line from the Tilenga project to the Kabaale Industrial Park. The line will evacuate excess power generated at the Tilenga Project CPF and import power to the Tilenga Project CPF when excess gas is reduced or depleted. The line will also be used to provide power to the Kabaale Industrial Park and surrounding areas. The transmission line is likely to be supported by steel towers. Installation of this type of transmission line typically involves: • clearance of the right of way • installation of the towers • installation of power stations • stringing of the overhead transmission line. A preliminary route is available at time of writing.	Tilenga Project shapefiles

Table H1.2 Screened-in Third Party Developments

ID[1]	Project	Proponent	District	Nearest KP	Approximate Distance From Pipeline (km)	Description	Reference[2]
UG04	Kabaale International Airport	Uganda Civil Aviation Authority (UCAA) and International Civil Aviation Organisation (ICAO)	Hoima	0	1.6	The primary objective of Kabaale International Airport is to provide air access to the Kabaale region and particularly to provide capacity for large cargo aircraft which will bring in equipment and tools for construction of the refinery and petrochemical plants. Subsequently, it is expected that the airport will offer passenger services domestically and internationally. The airport's runway will be 3500 m long and 75 m wide and be constructed within the 29-km^2 area of land already acquired for the Kabaale Industrial Park. Approximately 174 acres of the land will be required for the airport facilities including the runway, air traffic control tower, fuel farm and terminal buildings. Between 50 and 4000 workers will be hired over a 3 year construction period. A workers' camp site will be established within the site boundary for the construction phase.	ESIA for the Proposed Kabaale International Airport, 2016

Table H1.2 Screened-in Third Party Developments

ID[1]	Project	Proponent	District	Nearest KP	Approximate Distance From Pipeline (km)	Description	Reference[2]
UG05	Transmission lines to Kabaale Airport	Uganda Electricity Transmission Company Limited (UETCL)	Hoima	12	Crosses the pipeline	Two 33-kV transmission lines associated with the Kabaale Airport (see UG04). The power lines will be constructed within a 10m corridor (way leave) from the road reserve and require a 5 m RoW. Power transmission line 1 will start from Hydromax dam (Kabalega hydropower station) through Kaiso-Tonya road to the airport site. The total distance of this line along the existing road network is 24 km. Power transmission line 2 will start in Kiziranfumbi and follow the Kiziranfumbi-Kabaale road to the airport site for approximately 18 km. The two power transmission lines will be 33 kV bare conductor overhead lines connected on wooden poles. Construction involves clearance of the 10 m corridor, installation of the poles and conductor stringing. The project is expected to have a construction workforce of about 20 people, of which half will be casual labourers.	ESIA for two 33 kV Power Transmission Lines for the Proposed Kabaale International Airport, 2016

Table H1.2 Screened-in Third Party Developments

ID[1]	Project	Proponent	District	Nearest KP	Approximate Distance From Pipeline (km)	Description	Reference[2]
UG07	Refinery	Government of Uganda	Hoima	0	0	60,000 barrel per stream day hydrocracker and coker refinery at Kabaale within the 29-km^2 area of land already acquired for the Kabaale Industrial Park Key project components will include a tankage area, process units, utilities, buildings, flare area and expansion area.	Environmental Baseline Report for the Proposed Oil Refinery
UG08	Hoima–Buloba Pipeline	Government of Uganda	Hoima	4.5	127.2m	210-km pipeline for transporting refined petroleum products from the refinery in Hoima (see UG07) to the distribution terminal in Buloba, Kampala. Part of the Kampala–Mpigi pipeline corridor	Ramboll Group website

Table H1.2 Screened-in Third Party Developments

ID[1]	Project	Proponent	District	Nearest KP	Approximate Distance From Pipeline (km)	Description	Reference[2]
UG19	Lot 4 critical oil road upgrades:	Uganda National Roads Authority (UNRA)	Hoima	3, 12	Crosses the pipeline at KP12	The proposed upgrade of the following roads in: • R4 (Kabaale–Kiziranfumbi, 26 km) • R5 (Kaseeta Lwera via Bugoma Forest, 16 km) • R7 (Hohwa-Kyarushesha-Karokarungi, 25 km). The roads will be upgraded from gravel to paved standard covering a total distance of 67km. The carriageway will be increased from 4.5 m to a maximum of 12 m. The roads will have a maximum RoW of 50 m.	ESIA for the Proposed Upgrade of Lot 4 Critical Oil Roads, 2017
UG20	Lot 5 critical oil road upgrades: Buhimba–Nyalweyo–Kakindo–Kakumiro road upgrade	Uganda National Roads Authority (UNRA)	Hoima and Kakumiro	39.5	Crosses the pipeline	Upgrade of the 93-km Buhimba–Nyalweyo–Kakindo–Kakumiro road from gravel to bitumen with a 30–50m RoW. Approximately 75% of the proposed road follows the existing alignment with minor inclinations to the left or right hand side of the existing road and the increase in the RoW. This forms Lot 5 and 6 of the critical oil roads project.	ESIS for the for the Buhimba-Nalweyo-Kakindo-Kakumiro road, 2017

Table H1.2 Screened-in Third Party Developments

ID[1]	Project	Proponent	District	Nearest KP	Approximate Distance From Pipeline (km)	Description	Reference[2]
UG21	Construction camp for Bulima – Kabwoya road	China Railway Number Five Engineering Group Co., Ltd.	Hoima	19	3.3	Construction of 4.4-acre contractor's camp for 30 workers and equipment yard for the Bulima-Kabwoya road upgrade (see UG22). Camp will be fenced and will include housing units, bathroom facilities, kitchen, storage yard, workshop, parking yard and water tanks. Over 50 people are anticipated to be employed during the construction of the camp.	Project Brief for the Proposed Workers Camp and Equipment Yard, 2017
UG22	Bulima – Kabwoya road upgrade	Uganda National Roads Authority (UNRA)	Hoima	19 & 25	Crosses the export pipeline	Upgrade of 66-km Bulima-Kabwoya road from gravel to bitumen. The road is divided into two sections of 3.5-m carriageway and 1.5-m shoulder: 1. 22 km from Hoima town (Kinubi village) to Bulima village 2. 44 km from Hoima town to Kabwoya village. The government of Uganda, African Development Bank (AfDB) and Department of International Development (DFID) fund this project.	Project Brief for the Proposed Workers Camp and Equipment Yard, 2017
UG34	Transmission line extension	Rural Electrification Agency	Mubende	133	Crosses the pipeline	The proposed grid extension project covers a distance of 95 km of 33-kV overhead lines, 52.2 km of low-voltage network and 27 distribution transformers with a total installed capacity of 1,550 kVA serving at	Project Brief for the Proposed 33kV Electricity Distribution Grid Extension Lines and Associated

Table H1.2 Screened-in Third Party Developments

ID[1]	Project	Proponent	District	Nearest KP	Approximate Distance From Pipeline (km)	Description	Reference[2]
						least 23 load centres including towns, or rural growth centres or villages. The project covers the subcounties of Kiganda, Kitenga, Kigando, Kasambya, Nabingola and Kibalinga. The subcounty traversed by EACOP is Kitenga in Mubende district. The 33kv power lines will be constructed with 12 m high creosote treated wooden poles, with an average spacing of 110m. Approximately 850, 12 m wooden poles will be required for the 33kv line. The LV distribution network will require approximately 1300, 10m wooden poles. The distance between poles for the LV distribution is 50m maximum. Construction activities will include: • RoW clearance • Installation of poles • Conductor stringing. Maximum construction workforce requirement is 30 people. Although it is hoped that the power lines run along the road reserves i.e. the strip of land at the side of a road where it is prohibited to use the land, in some cases the lines may not strictly go along the road reserve	Low Voltage Networks, 2014

Table H1.2 Screened-in Third Party Developments

ID[1]	Project	Proponent	District	Nearest KP	Approximate Distance From Pipeline (km)	Description	Reference[2]
						Part of the World Bank funded Energy for Rural transformation Project Phase III project.	
UG38	Gold mine	Zhong Quan Ltd	Mubende	98.5	29.6	A 5-acre open cast gold mine in the hills of Kamusenene Village, Kitumba subcounty, Mubende District. There is an existing access road therefore the company will not make big changes to the existing infrastructure. Workers will be housed in rented accommodation or will commute from home.	EIS for a Proposed Gold Mine, 2017
UG39	Gold processing plant	Kisita Mining Company Limited (KMCL)	Mubende	104	7.9	A gold processing plant on 0.873-ha of land for the existing gold mine in the Namwasa forest reserve. Ore that contains gold will be extracted from the ground using open pit mining methods, and will be processed on-site to be sold. On-site facilities will include: ore crusher, ore processing plant, tailings storage facility, topsoil and overburden stockpiles, laboratory and administration buildings, fuel storage and internal roads.	ESIS for the Proposed New Gold Processing Plant, 2015
UG41	Kyotera–Rakai road upgrade	UNRA	Rakai	258	Crosses the pipeline	Upgrade of 20 km of the Kyotera–Rakai road to bitumen. The road will have a RoW of between 30-50 m inclusive of a 7 m-wide carriageway (two 3.5-m lanes) and 1.5 m-wide shoulders.	ESIS for the proposed upgrade of Kyotera–Rakai road, Critical Oil

Table H1.2 Screened-in Third Party Developments

ID[1]	Project	Proponent	District	Nearest KP	Approximate Distance From Pipeline (km)	Description	Reference[2]
						This forms Lot 2 of the critical oil roads project.	Roads Project Lot 2, 2017
UG44	ICT infrastructure	Government of Uganda (GoU)	National	223, 223.5 and 269.5	Crosses the pipeline	1536.39 km of buried optical fibre cable to be laid across the country to build the National Data Transmission Backbone.	Second National Development Plan (NDPII) 2015/16 – 2019/20

NOTES: [1] The ID number is used to identify developments in the cumulative impact assessments in Section 8.

[2] This column lists the sources of information received on the development. This information has been used to identify and assess the impacts of the development in the cumulative impact assessments in Section 8.

H2 LOCATION OF SCREENED-IN THIRD-PARTY DEVELOPMENTS

Figure H2.1 presents the location of the screened-in associated facilities and third-party developments in Uganda.

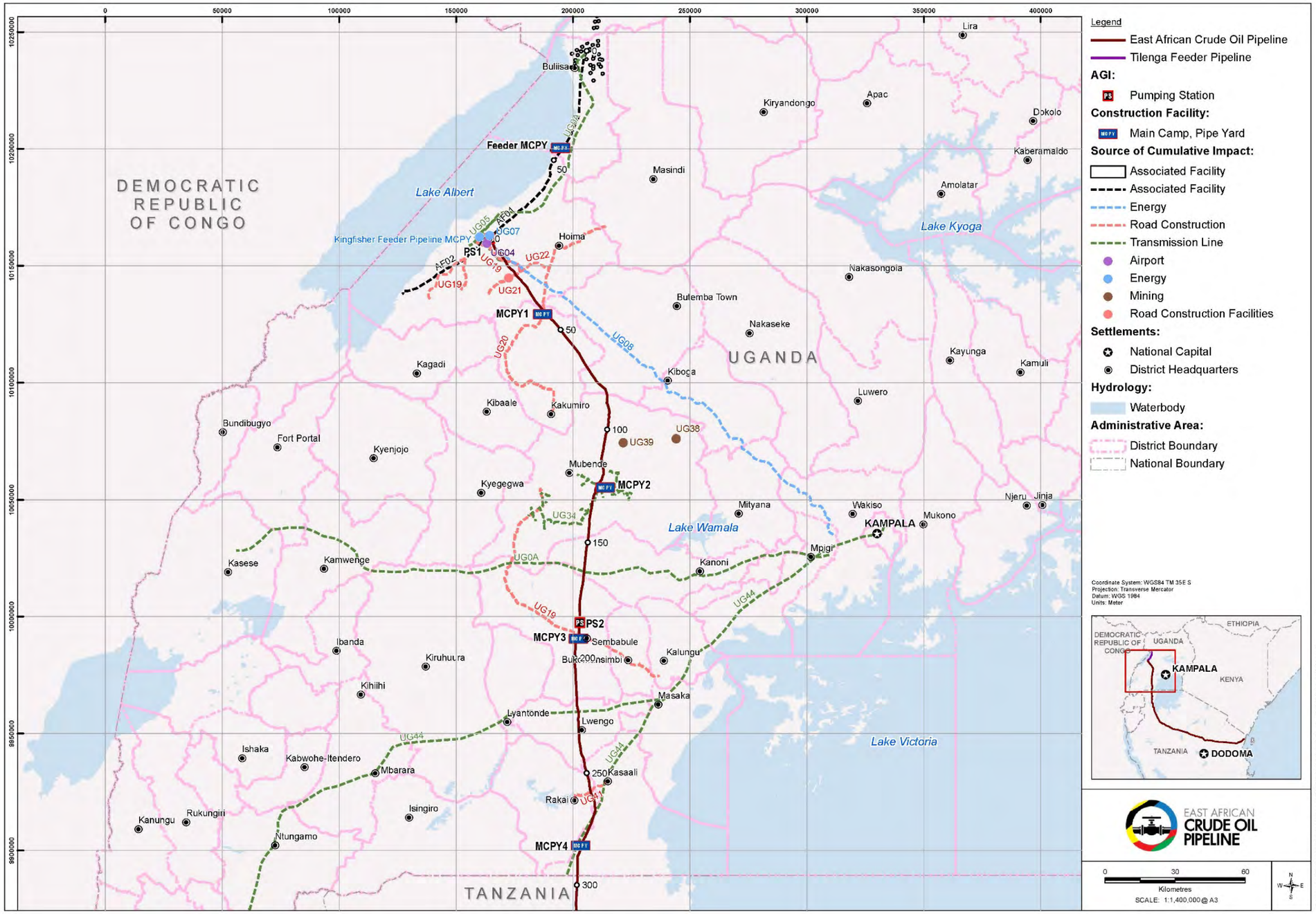

Figure H2.1 Screened-In Third-Party Developments in Uganda

H3 CUMULATIVE IMPACTS ASSESSMENT SCREENING MATRICES

Table H3.1 present the cumulative impacts and assessment screening matrix for associated facilities and the EACOP project, and Table H3.2 presents the matrix for third party developments and the EACOP project.

The assessment screening categories are described in Section 5.6.2.5 and 8.1.2 and presented below in Table H3.1 and Table H3.2.

Table H3.1 Cumulative Impacts Assessment Matrix: Associated Facilities

VEC	Source of Cumulative Impact		Rationale for Screening in to the CIA[1]
	AF01 Tilenga Project	**AF02 Kingfisher Oil Project**	
Biodiversity			
Habitats of conservation importance			No interactions identified, therefore no cumulative impact.
Flora and fauna species of conservation			
Chimpanzees in the broad landscape	Category 3	Category 3	Industrial activity in the Albertine Graben is leading to increased pressure on the land resulting in disturbance to the forests where the chimpanzees live. However, with the mitigation measures proposed by EACOP and the AFs, the contribution to cumulative impacts are negligible.
Legally protected, internationally or nationally recognised onshore areas			There are no cumulative impacts identified that are likely to affect the integrity or ecological function of a protected area.
Physical Environment			
Soil	Category 3	Category 3	Potential cumulative impact on soil around KP0, where the EACOP project and the Tilenga and Kingfisher feeder pipelines converge at the manifold at PS1. The overlapping AOI is limited in extent and therefore the EACOP contribution to residual cumulative impacts is negligible.
Surface water: Wambabya River crossing		Category 3	Potential cumulative impact on an ephemeral tributary of the Wambabya River from EACOP permanent access road to PS1 and the Tilenga feeder pipeline resulting in reduced water quality owing to increased suspended sediment concentrations and the accidental release of oil and chemicals. Both projects have committed to reinstatement and therefore the contribution to a residual cumulative impact is negligible.
Surface water: Abstraction			No interactions identified, therefore no cumulative impact.
Groundwater: Abstraction			No interactions identified, therefore no cumulative impact.
Groundwater: Discharge	Category 3	Category 3	Potential cumulative impact on groundwater around KP0, where the EACOP project and the Tilenga and Kingfisher feeder pipelines converge at the manifold at PS1. Potential cumulative impacts are from accidental releases of contaminants which may migrate to the groundwater during the construction and operation of the projects where activities are undertaken above the same aquifer. This will lead to localised short-term deterioration of groundwater quality. Any potential releases of contaminants are likely to be small in volume, localised to the working area or plant being used and readily visually observable, allowing immediate emergency spill response actions. The projects will implement pollution prevention measures and therefore the contribution to a residual cumulative impact is negligible.
Landscape	Category 1	Category 1	Potential cumulative impacts are predicted on landscape character and visual receptors where PS1 is close to the Tilenga and Kingfisher feeder pipelines around KP0. See Section 8.8.6.
Air quality	Category 1	Category 1	Potential cumulative impact on air quality around KP0, where the EACOP, and the Tilenga and Kingfisher feeder pipelines converge at the manifold at PS1. Construction of the EACOP project and the AFs will generate dust resulting in cumulative temporary deterioration of local air quality. See Section 8.9.6.
Acoustic environment	Category 1	Category 1	Construction activities may incrementally temporarily affect the local acoustic environment where the EACOP project and the AF AOIs overlap around PS1. See Section 8.10.6.
Climate			The climate VEC has a global AOI and in effect, every source of GHG emissions is a source of cumulative impact. See Section 8.23.5.

[1] Category definitions:

- Category 1: High risk of potential cumulative impacts and the EACOP project is an important contributor to the cumulative impacts on a VEC.
- Category 2: High risk of potential cumulative impacts but the EACOP project is a small contributor to the cumulative impacts on a VEC.
- Category 3: The residual EACOP project impacts have a limited contribution to cumulative impacts.

VEC	Source of Cumulative Impact		Rationale for Screening in to the CIA[1]
	AF01 Tilenga Project	AF02 Kingfisher Oil Project	
Socio-economic and Health			
Local economy	Category 1	Category 1	Cumulative impacts are predicted on employment and economic development. See Section 8.12.6.
Land-based livelihoods	Category 1	Category 1	Cumulative impacts are predicted from the loss of land. See Section 8.13.6.
River and lake-based livelihoods			No interactions identified, therefore no cumulative impact.
Land and property	Category 1	Category 1	Cumulative impacts are predicted from land speculation and conflicts. See Section 8.15.6.
Workers' health, safety and welfare			No interactions identified, therefore no cumulative impact.
Social infrastructure and services	Category 1	Category 1	Cumulative impacts are predicted from increased traffic congestion on common transport routes. See Section 8.17.6.
Community health	Category 1	Category 1	The combined use of transport routes by both EACOP and AFs increases the potential spread of communicable diseases as main transport route rest stops are known for being areas of potentially increased risk of sexually transmitted diseases (STDs). See Section 8.18.6.
Community safety, security and welfare	Category 1	Category 1	Cumulative impacts are predicted from PIIM from the EACOP project and the AFs and impacts on community dynamics from changes in social climate in the PACs. See Section 8.19.6.
Cultural heritage: Tangible			No interactions identified, therefore no cumulative impact.
Cultural heritage: Intangible			No interactions identified, therefore no cumulative impact.

NOTES: Blue shading = Interaction. White shading = No interaction. Yellow shading = Transboundary VEC.

Table H3.2 Cumulative Impacts Assessment Matrix: Third Party Development Interactions

VEC	Source of Potential Cumulative Impact														Interaction and Rationale for Screening in to the CIA[2]
	UG0A	UG04	UG05	UG07	UG08	UG19	UG20	UG21	UG22	UG34	UG38	UG39	UG41	UG44	
	Transmission Line Tilenga CPF–Kabaale	Kabaale International Airport	Transmission Lines to Kabaale Airport	Refinery	Hoima–Buloba Pipeline	Lot 4 Critical Oil Road Upgrades	Lot 5 Critical Oil Road Upgrades	Construction Camp for Bulima–Kabwoya Road	Bulima–Kabwoya Road Upgrade	Transmission Line Extension	Gold Mine	Gold Processing Plant	Kyotera–Rakai Road Upgrade	ICT Infrastructure	
Biodiversity															
Habitats of conservation importance															
- Kafu River							Cat 3								Potential cumulative impacts are predicted on aquatic habitats where the EACOP project and the proposed road upgrade between Buhimba and Kakumiro cross the Kafu River, its associated floodplain and wetlands. The project crosses the river at KP37 and the road crosses the river 1.5 km upstream from the pipeline crossing. Potential cumulative impacts on the Kafu River are disturbance and mobilisation of silt from the riverbed, marginal habitat or riparian land and riverbanks from the construction of both projects. This can adversely affect water quality, the physical habitat (e.g., by smothering spawning habitat) and can also cause sub-lethal or lethal affects to aquatic life (e.g., through smothering aquatic flora and fauna including prey items and plants which might form important physical habitat components). Both projects have committed to soil management practices and pollution control measures and therefore the contribution to a residual cumulative impact is negligible.
- Salongo and Kawenda Rivers													Cat 3	Cat 3	Potential cumulative impacts are predicted on aquatic habitats in the Salongo and Kawenda Rivers from the EACOP project, the proposed Kyotera–Rakai road upgrade and the installation of buried fibre optic ICT infrastructure. The pipeline and the road upgrade cross the Salongo River at KP258. The pipeline crosses the Kawenda River at KP268.2 and the buried ICT infrastructure crosses 0.89 km downstream. Potential cumulative impacts are from disturbance and mobilisation of silt from the riverbed, marginal habitat or riparian land and river banks from the construction of both projects. This can adversely affect water quality, the physical habitat (e.g., by smothering spawning habitat) and can also cause sub-lethal or lethal affects to aquatic life (e.g., through smothering aquatic flora and fauna including prey items and plants which might form important physical habitat components). UNRA and EACOP have committed to soil management practices and pollution control measures (an ESIA for the ICT infrastructure was not available at time of writing) and therefore the contribution to a residual cumulative impact is negligible.

[2] Category definitions:

- Category 1: High risk of potential cumulative impacts and the EACOP project is an important contributor to the cumulative impacts on a VEC.
- Category 2: High risk of potential cumulative impacts but the EACOP project is a small contributor to the cumulative impacts on a VEC.
- Category 3: The residual EACOP project impacts have a limited contribution to cumulative impacts.

Table H3.2 Cumulative Impacts Assessment Matrix: Third Party Development Interactions

VEC	Source of Potential Cumulative Impact														Interaction and Rationale for Screening in to the CIA[2]
	UG0A	UG04	UG05	UG07	UG08	UG19	UG20	UG21	UG22	UG34	UG38	UG39	UG41	UG44	
	Transmission Line Tilenga CPF–Kabaale	Kabaale International Airport	Transmission Lines to Kabaale Airport	Refinery	Hoima–Buloba Pipeline	Lot 4 Critical Oil Road Upgrades	Lot 5 Critical Oil Road Upgrades	Construction Camp for Bulima–Kabwoya Road	Bulima–Kabwoya Road Upgrade	Transmission Line Extension	Gold Mine	Gold Processing Plant	Kyotera–Rakai Road Upgrade	ICT Infrastructure	
Flora and fauna species of conservation importance															
- Wambabya–Bugoma Corridor		Cat 1	Cat 1	Cat 1	Cat 1	Cat 1									The land between the Wambabya and Bugoma Forest Reserves is an important wildlife corridor for chimpanzees. The linear projects will result in chimpanzee movement disruption between the reserves. Although the refinery and the airport will not directly affect this wildlife corridor, their presence will cause increased traffic movement along the roads which will exacerbate the existing habitat severance.. See Section 8.3.6.
Legally protected, internationally or nationally recognised onshore areas															Potential cumulative impacts on habitats and species of conservation importance within protected areas are described in Sections 8.2.6 and 8.3.6. There are no cumulative impacts identified that are likely to affect the integrity or ecological function of a protected area.
Physical Environment															
Soil							Cat 3						Cat 3		EACOP and the SCIs are dispersed over a large area, across a variety of soil types and have relatively small footprints, Overlapping AOIs are limited in extent and therefore contribution to cumulative impacts are negligible.
Surface Water															
Wambabya River crossing		Cat 3		Cat 3	Cat 3										Potential cumulative impacts are predicted on an ephemeral tributary of the Wambabya River which crosses the permanent access road to PS1 at KP4.8, and a second tributary (KP1) which drains the Tilenga feeder pipeline, the Kabaale international airport, the refinery and the Hoima-Buloba pipeline. Concurrent construction may result in reduced water quality owing to increased suspended sediment concentrations and the accidental release of oil and chemicals. With mitigation the contribution to cumulative impacts are negligible.
Kafu River crossing							Cat 3								The EACOP pipeline crosses the Kafu River at KP36.5 and approximately 1.5 km downstream, the Buhimba–Kakumiro road upgrade (UG20) crosses the river. The Kafu River could potentially experience a direct transient reduction in channel stability and in water quality as a result of the construction of both projects. The vegetation in the channel and floodplain of the Kafu River means that the cumulative impacts are negligible
Crossing of ephemeral watercourses at KP189.2, 258 and 268.2						Cat 3							Cat 3	Cat 3	The lot 4 road upgrade crosses EACOP on a hillslope above a watercourse at KP189.2; the Kyotera–Rakai road upgrade crosses both the EACOP pipeline and an ephemeral watercourse at KP258; the ICT infrastructure installation crosses the same watercourse 0.8 km downstream from EACOP KP268.2.

Table H3.2 Cumulative Impacts Assessment Matrix: Third Party Development Interactions

VEC	Source of Potential Cumulative Impact														Interaction and Rationale for Screening in to the CIA[2]
	UG0A	UG04	UG05	UG07	UG08	UG19	UG20	UG21	UG22	UG34	UG38	UG39	UG41	UG44	
	Transmission Line Tilenga CPF–Kabaale	Kabaale International Airport	Transmission Lines to Kabaale Airport	Refinery	Hoima–Buloba Pipeline	Lot 4 Critical Oil Road Upgrades	Lot 5 Critical Oil Road Upgrades	Construction Camp for Bulima–Kabwoya Road	Bulima–Kabwoya Road Upgrade	Transmission Line Extension	Gold Mine	Gold Processing Plant	Kyotera–Rakai Road Upgrade	ICT Infrastructure	
															The stripping of vegetation and soils at the crossing decreases channel stability and reduces water quality through sediment suspension and accidental spills of oil or fuel from equipment and machinery. UNRA and EACOP have committed to soil management practices and pollution control measures (an ESIA for the ICT infrastructure was not available at time of writing) and therefore the contribution to a residual cumulative impact is negligible.
Surface water: abstraction															No interactions identified, therefore no cumulative impact.
Groundwater: abstraction				Cat 3	Cat 3										Simultaneous abstraction of groundwater by EACOP, refinery and the Hoima–Buloba pipeline may directly affect the elevation of the water table and indirectly impact the local communities that rely on groundwater. EACOP and the SCIs will be required to apply for the necessary abstraction licences which will include conditions to manage the groundwater, and therefore the contribution to a residual cumulative impact is negligible.
Groundwater: discharge		Cat 3		Cat 3	Cat 3	Cat 3	Cat 3		Cat 3		Cat 3	Cat 3	Cat 3		Potential cumulative impacts are from accidental releases of contaminants which may migrate to the groundwater during the construction and operation of the developments where activities are undertaken above the same aquifer. This will lead to localised short-term deterioration of groundwater quality. Any potential releases of contaminants are likely to be small in volume, localised to the working area or plant being used and readily visually observable, allowing immediate emergency spill response actions therefore the contribution to a residual cumulative impact is negligible.
Landscape		Cat 2	Cat 2	Cat 2	Cat 2	Cat 2									Potential cumulative impacts are predicted on landscape character and visual receptors where the PS1 and third party development AOIs overlap. The overall industrialising of the area will be large in magnitude from the landscape and visual perspectives, but the contribution of EACOP and the associated facilities is small. See Section 8.8.6.
Air quality			Cat 1		Cat 1	Cat 1	Cat 1		Cat 1	Cat 1			Cat 1	Cat 1	Construction of the EACOP project and the SCIs will generate dust resulting in cumulative temporary deterioration of local air quality. See Section 8.9.6
Acoustic environment			Cat 1		Cat 1	Cat 1	Cat 1		Cat 1	Cat 1			Cat 1	Cat 1	Construction activities may incrementally temporarily affect the local acoustic environment where the EACOP project and the SCI AOIs overlap. See Section 8.10.6
Climate															The climate VEC has a global AOI and in effect, every source of GHG emissions is a source of cumulative impact. See Section 8.23.5

Table H3.2 Cumulative Impacts Assessment Matrix: Third Party Development Interactions

VEC	Source of Potential Cumulative Impact														Interaction and Rationale for Screening in to the CIA[2]
	UG0A	UG04	UG05	UG07	UG08	UG19	UG20	UG21	UG22	UG34	UG38	UG39	UG41	UG44	
	Transmission Line Tilenga CPF–Kabaale	Kabaale International Airport	Transmission Lines to Kabaale Airport	Refinery	Hoima–Buloba Pipeline	Lot 4 Critical Oil Road Upgrades	Lot 5 Critical Oil Road Upgrades	Construction Camp for Bulima–Kabwoya Road	Bulima–Kabwoya Road Upgrade	Transmission Line Extension	Gold Mine	Gold Processing Plant	Kyotera–Rakai Road Upgrade	ICT Infrastructure	
Socio-economic and Health															
Local economy	Cat 1	Cat 2	Cat 1	Cat 2	Cat 1	Cat 1	Cat 1	Cat 1		Cat 1				Cat 1	Cumulative impacts are predicted on employment and economic development. See Section 8.12.6.2
Land-based livelihoods	Cat 1	Cat 2	Cat 1	Cat 2	Cat 1	Cat 1	Cat 1	Cat 2		Cat 1				Cat 1	Cumulative impacts are predicted from the loss of land. See Section 8.13.6.2
River and lake-based livelihoods							Cat 3								**River-based Livelihoods** Potential cumulative impacts are predicted on individuals and households that rely on the Kafu River where the project and the proposed road upgrade between Buhimba and Kakumiro cross the river, its associated floodplain and wetlands around KP37. The concurrent construction of the project and the road upgrade may affect water quality, the physical habitat and aquatic life in the river, affecting fish catches. UNRA and EACOP have committed to soil management practices and pollution control measures and therefore the contribution to a residual cumulative impact is negligible.
Land and property	Cat 1	Cat 2	Cat 1	Cat 2	Cat 1	Cat 1	Cat 1	Cat 1	Cat 1	Cat 1			Cat 1	Cat 1	Cumulative impacts are predicted from land speculation and conflicts. See Section 8.15.6.2
Workers' health, safety and welfare															No interactions identified, therefore no cumulative impact
Social infrastructure and services		Cat 2		Cat 2	Cat 1		Cat 1	Cat 1	Cat 1					Cat 1	Cumulative impacts are predicted from increased traffic congestion on common transport routes. See Section 8.17.6.2
Community health	Cat 1	Cat 2	Cat 1	Cat 2	Cat 1	Cat 1	Cat 1	Cat 1	Cat 1	Cat 1				Cat 1	The combined use of transport routes by both EACOP and SCIs increases the potential spread of communicable diseases as main transport route rest stops are known for being areas of potentially increased risk of sexually transmitted diseases. See Section 8.18.6.2
Community safety, security and welfare	Cat 1	Cat 2	Cat 1	Cat 2	Cat 1	Cat 1	Cat 1	Cat 1	Cat 1	Cat 1				Cat 1	Cumulative impacts are predicted from PIIM from the EACOP project and the SCIs and impacts on community dynamics from changes in social climate in the PACs. See Section 8.19.6.2
Cultural heritage: tangible															No interactions identified, therefore no cumulative impact
Cultural heritage: intangible															No interactions identified, therefore no cumulative impact

NOTES: Blue shading = Interaction. White shading = No interaction. Yellow shading = Transboundary VEC.

H4 SCREENED-OUT SOURCES OF CUMULATIVE IMPACT

Table H4.1 presents the associated facilities that have been screened out of the cumulative impact assessment, and Table H4.2 shows the third-party developments that have been screened out of the cumulative impact assessment based on the criteria defined in Section 5 of the ESIA.

Table H4.1 Screened-Out Associated Facilities

ID	Project	Proponent (Where Available)	Description
AF04	Kaiso Tonya development	Tullow Oil Ltd	The Kaiso Tonya licence area on the central part of the east shoreline of Lake Albert. Kaiso Tonya is due to come online in approximately 10 years from first oil in Uganda. It will also be a tie-back to the Kingfisher Central Processing Facility. Screened out of the CIA because development is not due until 2030 and is therefore not considered reasonably foreseeable under the IFC guidelines.
AF05	Waste management facilities, concrete batching plants and borrow pits	Total East Africa Midstream BV	These facilities are considered associated facilities where they meet all the following criteria: • facility was not in existence before the project or expanded because of the project • facility is not viable as a business after the project. Locations are not currently defined and therefore screened out of CIA.

Table H4.2 Screened-Out Third-Party Developments

ID	Project	Proponent (Where Available)	Description	Reason for Screening Out[3]
UG01	Piped water systems	Not available	Construction of piped water systems described in the subcounty development plans	Subcounty chiefs and districts confirmed that, other than the administrative boundaries for the proposed projects presented in the development plans, specific locations are only determined at the implementation phase, i.e., when the budget has been approved and money allocated. Coordinates and detailed information therefore not available.
UG02	Latrine construction and borehole drilling	Not available	Latrine construction and borehole drilling	Subcounty chiefs and districts confirmed that, other than the administrative boundaries for the proposed projects presented in the development plans, specific locations are only determined at the implementation phase, i.e. when the budget has been approved and money allocated. Coordinates and detailed information therefore not available.
UG03	Large-scale farming developments	Oola Loilm Farm and Amatheon AGRI Uganda Limited	Large-scale farming developments Oola Lolim Farm and Amatheon AGRI Uganda Limited, which together cover over 4000 acres of land located in Wii Anaka	No further information available. It was therefore not reasonably defined and thus screened out.
UG06	Airstrip upgrade	Not available	Airstrip upgrade at Pakuba	There will be no development of the Pakuba airstrip, therefore not considered a source of cumulative impact.

[3] Screened-out developments did not meet the following criteria (as described in Section 5 Methodology):

1. Is the development reasonably defined, as described in IFC Performance Standard 1?
2. Is the development reasonably predictable or a foreseeable future development, as defined in the IFC CIA Handbook?
3. What is the nature of development?
4. Do the EACOP project VEC AOIs overlap with the third-party development AOIs?

Table H4.2 Screened-Out Third-Party Developments

ID	Project	Proponent (Where Available)	Description	Reason for Screening Out[3]
UG11	Ecotourism lodge	Uganda Jungle Lodge	Construction, installation and operation of Bugoma Jungle Lodge for the development of an ecotourism site in Kabwoya	EACOP project VEC AOIs unlikely to overlap with the SCI AOIs
UG13	Booma Ground upgrade	Ministry of Land, Housing and Urban Development, Government of Uganda	The beautification of Booma grounds, located within Hoima Municipality	EACOP project VEC AOIs unlikely to overlap with the SCI AOIs
UG14	Abattoir	Ministry of Land, Housing and Urban Development, Government of Uganda	Construction of a modern abattoir within Hoima municipality funded by World Bank	EACOP project VEC AOIs unlikely to overlap with the SCI AOIs
UG17	Mubende–Kakumiro–Kibaale–Kagadi road	Uganda National Roads Authority (UNRA)	Construction of the proposed 113-km-long Mubende–Kakumiro–Kibaale–Kagadi road and 2 km of secondary town link roads in each of the four towns. The road will be constructed to class II paving standard with an overall construction width of 20–30 m. Construction expected to take three years	EACOP project VEC AOIs unlikely to overlap with the SCI AOIs
UG25	Waste facilities	Total EP Uganda BV	Waste facilities required for the Tilenga upstream development	Adequate information to perform an assessment not available at the time of writing, therefore considered not reasonably defined

Table H4.2 Screened-Out Third-Party Developments

ID	Project	Proponent (Where Available)	Description	Reason for Screening Out[3]
UG26	Aggregate washing and storage facility	China Railway Number Five Engineering Group Co., Ltd.	Temporary aggregate washing and material stockpile area on Hoima–Bulima road in Buhimba East Village to support the upgrading of the Bulima–Kabwoya road (see UG22)	EACOP project VEC AOIs unlikely to overlap with the SCI AOIs
UG29	Solar photo-voltaic (PV) plant	Cambridge Clean Energy (CCC)	Construction of a 30-kW mini off-grid solar-PV power generation plant in Sebagoro Village, Kabwoya Subcounty. Footprint required is 30 m × 30 m. There will be no deforestation, relocation of facilities or resettlement required. Construction will involve: • vegetation clearance • installation of the PV panels on piled supports • trenching for buried AC/DC cables • installation of 40-ft modified shipping container on concrete foundations to house battery and inverter • pole intallation and cable stringing. Project design life is minimum 10 years.	EACOP project VEC AOIs unlikely to overlap with the SCI AOIs
UG31	Access road construction	PA Technical Services	A 4.4-km access road to the Nkusi Hydropower plant	EACOP project VEC AOIs unlikely to overlap with the SCI AOIs
UG32	Sewage waste disposal lagoon	Hoima Regional Referral Hospital	A proposed lagoon to treat and handle sewage generated from the hospital under aerobic conditions	EACOP project VEC AOIs unlikely to overlap with the SCI AOIs

Table H4.2 Screened-Out Third-Party Developments

ID	Project	Proponent (Where Available)	Description	Reason for Screening Out[3]
UG35	Construction camp for Mubende–Kakumiro–Kibaale–Kagadi road	China Communications Construction Company Ltd	Construction of 39.54-acre construction camp for the Mubende–Kakumiro–Kibaale–Kagadi road works (see UG17). The camp will comprise workers' accommodation, toilet facilities, bitumen stock area, bitumen heating facilities, offloading and parking area for trucks. The construction camp is expected to be in place for three years.	EACOP project VEC AOIs unlikely to overlap with the SCI AOIs
UG36	Standard Gauge Railway	Standard Gauge Railway Uganda	The development of a standard gauge railway network, with a total length of 1614 km. An indicative route is available.	It has been confirmed that the SGR will be built a long time after the construction of the EACOP project, therefore the AOIs will not overlap temporally.
UG37	Ayago power station	UEGCL	A proposed 840-MW power station along the Victoria Nile at Ayago, upstream of Murchison Falls National Park. UEGCL was appointed by the Ministry of Energy and Mineral Development as the implementing agency working on behalf of the Government of Uganda.	EACOP project VEC AOIs unlikely to overlap with the SCI AOIs
UG40	Solar-powered boreholes for water supply	Not available	Three solar-powered boreholes have been planned for Lwengo Town. 50,000-L storage facilities are to be set up for communal use, mainly on the grounds of clinics, churches and schools and 50 boreholes will be rehabilitated.	No further information available therefore considered not reasonably defined or predictable

Table H4.2 Screened-Out Third-Party Developments

ID	Project	Proponent (Where Available)	Description	Reason for Screening Out[3]
UG42	Piped water system	National Water and Sewerage Corporation	Infrastructure service delivery plans and performance improvement programmes	No further information available therefore considered not reasonably defined or predictable
UG43	Waste treatment plants	Water and Sanitation Development Facility- South West Branch	Construction of faecal sludge treatment plants (FSTP) around the large towns in Rakai district, with collection and transportation trucks stationed in the larger towns and serving a cluster of small towns as and when services are demanded. The proposed FSTP site is in Kalagala village, Kasaali subcounty, Rakai District. The project is estimated to employ around 50 workers during the construction phase, mostly local residents.	EACOP project VEC AOIs unlikely to overlap with the SCI AOIs
UG45	Kabaale–Kampala road capacity expansion	GoU	Upgrade and expansion of the existing road from Kabaale to Kampala	EACOP project VEC AOIs unlikely to overlap with the SCI AOIs