



## REPORT

# East African Crude Oil Pipeline (EACOP) Project

*Lenders Environmental and Social Consultant - Final Environmental and Social Due Diligence Report*

Submitted to:

**Potential Lenders and Pathfinders**

**Cc: EACOP Ltd, TotalEnergies, CNOOC, UNOC, TPDC, ICBC, Standard Bank and KPMG**

Submitted by:

**WSP Italia S.r.l.**

10155 Torino,  
Italy

20399033-012-RLO-Rev.3

February 2025



## Disclaimer

This report is finalized in February 2025 by WSP (formerly Golder Associates) for the benefit of the Client in its role of Lenders Environmental and Social Consultant (LESC) as defined in the loan agreements/ term sheet documentation, and in accordance with the professional services agreement in place between the parties and set out in the Independent Consultant Engagement Letter dated 1<sup>st</sup> December 2020. The disclosure of any information contained in this report is the sole responsibility of the Client. This report is confidential and contains proprietary intellectual property and we accept no duty of care, responsibility, or liability to any other recipient other than the Client as to the accuracy or completeness of the information contained in this report. Any use which a third party makes of this report, or any reliance on or decisions made based on it, are the sole responsibility of such third parties. WSP accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report. To the extent practicable, WSP relied on information made available by the Client and have independently carried out its assessment. Some of the information included in the report are commercially sensitive and protected by confidentiality agreements between the parties to the contracts and their accuracy could not be independently verified. Information and opinions are current only as of the date of the report and we accept no responsibility for updating such information or opinion after the date of the report. This limitation statement is considered part of this report.

# Table of Contents

<b>1.0 INTRODUCTION .....</b>	<b>1</b>
<b>2.0 LESC SCOPE AND PROCESS.....</b>	<b>2</b>
<b>3.0 LEGAL FRAMEWORK AND POLICIES .....</b>	<b>4</b>
<b>4.0 THE EACOP PROJECT.....</b>	<b>4</b>
4.1 EACOP Pipeline .....	4
4.2 Project phases.....	7
4.2.1 Construction .....	7
4.2.2 Operations.....	9
4.2.3 Project Schedule and Progress to Date.....	10
4.2.4 Associated Facilities .....	15
4.2.5 Tilenga Project .....	15
4.2.5.1 Construction .....	17
4.2.5.2 Operation .....	18
4.2.5.3 Project Schedule and Progress to Date.....	18
4.2.6 Kingfisher Oil Field .....	22
4.2.6.1 Facilities .....	22
4.2.6.2 Construction .....	23
4.2.6.3 Operations .....	24
4.2.6.4 Project Schedule and Progress to Date.....	25
4.2.7 Other Associated Facilities .....	28
4.3 Project Setting.....	29
4.3.1 EACOP.....	29
4.3.2 Associated Facilities .....	29
4.4 Third Parties Developments in the Project Area of Influence .....	30

## TABLES

No table of figures entries found.

## FIGURES

Figure 1: Overview of the EACOP System.....	1
Figure 2: Project Map .....	5
Figure 3: Key components of the EACOP Electrical System and Associated Facilities (Source: EACOP Project, 2022). .....	6
Figure 4: Kagera River slightly downstream of RoW, Uganda. The RoW crosses the fields on rear left of the image (Source: LESC Site Visit, November 2023). .....	8
Figure 5: Areal View of Marine Terminal (Source: EACOP Monthly report. October 2024). .....	12
Figure 6: Lot 1 – pipeline welding (Source: EACOP Monthly report. October 2024). .....	12
Figure 7: Lot 3 – field joint coating pre-production test (Source: EACOP Monthly report. October 2024). .....	12
Figure 8: Marine Terminal Exhaust Stack (Source: EACOP Monthly report. October 2024). .....	13
Figure 9: Marine Tank B – 7 <sup>th</sup> shell plate erection (Source: EACOP Monthly report. October 2024). ....	13
Figure 10: Jetty construction in shallow water (Source: EACOP Monthly report. October 2024). .....	13
Figure 11: EACOP Integrated Project Schedule (Source: EACOP Ltd March 2024). .....	14
Figure 12: Tilenga Development (Source: TEPU Uganda 2022). .....	16
Figure 13: Visualisation of a well pad JBR05 in the MFNP with screening bund wall (Source TEPU). ...	17
Figure 14: KAS01 Well pad - Technical Culvert Installation at Tubular Handling Area .....	19
Figure 15: JBR03 - Installation of Roofing Sheets on Emergency Pit .....	19
Figure 16: JBR05: Rig-down of mast.....	20
Figure 17: CPF: Oil Treatment 1 foundation back-filling .....	21
Figure 18: CPF: Water Injection Tank and Pipe Rack Foundations .....	21
Figure 19: NGR05 - CPF Oil Flowline welding and stringing .....	21
Figure 20: South CSB- SINOPEC: Fabrication/ Paint Shop set-up .....	22
Figure 21: CPF: Pre-heaters lifted and positioned on foundations .....	22
Figure 22: Overview of the main project infrastructure (Source: Kingfisher ESIA Sept 2018). .....	24
Figure 23: Pipeline construction (Source: EACOP, September 2024). .....	26
Figure 24: Well Pad 1 aerial view with drilling operations ongoing (Source: EACOP, September 2024). .....	26
Figure 25: CPF aerial view with civil works and installation works ongoing (Source: EACOP, September 2024). .....	27
Figure 26: Aerial view of the drilling camp, permanent camp and supply base (Source: EACOP, September 2024). .....	27
Figure 27: Rig operating at Well Pad 2 (Source: LESC Field Visit, November 2023). .....	28
Figure 28: Well Pad 1 ready to receive the Rig (Source: LESC Field Visit, November 2023). .....	28

---

Figure 29: Area of Taala Forest Reserve in Uganda showing eucalyptus and banana plantations and clearance of forest (Source: LESC Site Visit, March 2021). .....	29
Figure 30: View a portion of the Murchison Falls National Park and of Lake Albert to the North of the Albert Delta (Source: LESC Site Visit, March 2021). .....	30
Figure 31: View from the escarpment road of Kingfisher main camp (white structures) on shore of Lake Albert (Source: LESC Site Visit, March 2021). .....	30

## LIST OF FREQUENTLY USED ABBREVIATIONS

ACA	Additional Conservation Actions
AFs	Associated Facilities
AGIs	Above Ground Installations
AIS	A Invasive Species
AoI	Area of Influence
ARRC	Avoid Reduce Restore Conservation (IUCN SSC PSG SGA taskforce on primates)
BAP	Biodiversity Action Plan
BAT	Best Available Technique
BES	Biodiversity and Ecosystem Services
BESAP	Biodiversity and Ecosystem Services Action Plan (Tilenga)
BESS	Battery Energy Storage System
BMEP	Biodiversity Monitoring and Evaluation Plan
BMP	Biodiversity Management Plan
BOMP	Biodiversity Offset Management Plan
CAPEX	Capital Expenditure
CBM	Conventional Buoy Moorings
CCP	Contractor Control Plan
CCRA	Climate Change Risk Assessment
CCTRA	Climate Change Transition Risk Assessment
CH	Critical Habitat
CHA	Critical Habitat Assessment
CHAIR	Critical Habitat Assessment Interpretations and Recommendations (Tilenga)
CHMP	Cultural Heritage Management Plan
CHSS	Community Health, Safety and Security
CIPP	Contractor Implementation Plans and Procedures
CNOOC	China National Offshore Oil Corporation
CPF	Central Processing Facility
CPN	Change Proposal Notice
CPP	China Petroleum Pipeline Engineering Company Limited
DMP	Detailed Management Plan
EACOP	East African Crude Oil Pipeline
EHS	Environmental Health and Safety
EIMS	EACOP Integrated Management System
EPs/EP4	Equator Principles IV
EPCM	Engineering, Procurement, and Construction Management
EPcmC	Engineering, Procurement, and Construction Management Contractor
E&S/ES	Environmental and Social
EPS	Engineering and Procurement Services
ESAP	Environmental and Social Action Plan
ESDD	Environmental and Social Due Diligence
ESHS	Environmental, Social, Health and Safety
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
ESMS	Environmental and Social Management System
FC	Financial Close
FPIC	Free, Prior and Informed Consent
GHG	Green House Gases
GIIP	Good International Industry Practice
GN	Guidance Note (IFC PS)
HDD	Horizontal Directional Drilling
HGA	Host Government Agreement
HRIA	Human Rights Impact Assessment
HSE	Health, Safety, and Environment
H2SE	Health, Safety, Social and Environment or Health, Safety, Security and Environment
H3SE	Health, Safety, Social, Security and Environment

HVC	High-Voltage Cable
IAS	Invasive Alien Species
IBLAC	Independent Biodiversity & Livelihoods Advisory Committee
ICP	Informed Consultation and Participation
IUCN SSC PSG SGA	International Union for Conservation of Nature – Species Survival Commission – Primate Specialist Group – Section on Great Apes (see also ARRC taskforce)
JHA	Job Hazard Assessment
KBAs	Key Biodiversity Areas
KP	Kilometre Point
KPI	Key Performance Indicator
LESC	Lenders' Environmental and Social Consultant
LLHT	Long line heat tracing
LOF	Load-out Facility
LR	Local Requirement
LSOC	Land and Social
MCHIMA	Marine Critical Habitat Impact and Mitigation Assessment
MCPY	Main Camp and Pipe Yyard
MFNP	Murchison Falls National Park
MLBV	Mainline Block Valve
MoU	Memorandum of Understanding
MTT	Marine Terminal and Tanks
MWE	Ministry of Water and Environment (Uganda)
NEMA	National Environment Management Authority (Uganda)
NDT	Non-Destructive Testing
NFA	National Forestry Authority (Uganda)
NG	Net Gain
NGO	Non-Government Organisation
NNL	No Net Loss
NORM	Naturally Occurring Radioactive Materials
OECD CA	Common Approaches Recommendation of The Council on Common Approaches for Officially Supported Export Credits and Environmental and Social Due Diligence
OHSS	Occupational Health and Safety, Security
PAP	Project Affected Person
PAU	Petroleum Authority of Uganda
PIIM	Project Induced In-Migration
PRS	Pressure Reduction Station
PSs	Performance Standards
PS <sup>1</sup>	Pumping Station <sup>1</sup>
PV	Photovoltaic
RIA	Residual Impact Assessment
RAP	Resettlement Action Plan
RoW	Right of Way
SEP	Stakeholder Engagement Plan
TEPU	TotalEnergies Exploration & Production Uganda
TIS	Thermal Insulation System
TPA	Tanzania Ports Authority
UNOC	Uganda National Oil Company
UNRA	Uganda National Road Authority
UWA	Uganda Wildlife Authority
WMA	Waste Management Area
WMP	Waste Management Plan
VEGSIAIPs	Vulnerable Ethnic Groups Self-identifying as Indigenous Peoples

<sup>1</sup> Note that PSt is used in this LESC ESDD report rather than the EACOP's acronym PS, so as to differentiate the Pumping Station (PSt) from the Performance Standards (PS) acronyms. Figures taken from EACOP documents however still contain the use of the acronym PS and the use of PS in the figures should be read as Pumping Station.

VPSHR Voluntary Principles on Security and Human Rights



## EXECUTIVE SUMMARY

*The East Africa Crude Oil Pipeline (EACOP) Project is a 1,443 km buried insulated 24-inch diameter pipeline to transport crude oil from the Tilenga and Kingfisher oil fields in the Lake Albert area of Uganda to a marine terminal on the coast of Tanzania for loading onto Suezmax type tankers and export to international markets.*

*As the Lenders Environmental and Social Consultant (LESC), WSP (formerly Golder Associates) has undertaken the Environmental and Social Due Diligence (ESDD) to provide an independent review of the compliance of the EACOP Project with applicable environmental and social standards as demonstrated in the EACOP Environmental and Social Management System (ESMS) and other EACOP Environmental and Social (E&S) related documents. Compliance of the Tilenga and Kingfisher upstream Associated Facilities (AFs) has also been evaluated.*

*This document is the final ESDD report and is based on the latest information/documents provided by the Project up to end of January 2025. It provides an update of the Project status with respect to alignment with Lenders' requirements since the ESDD process commenced in quarter two (Q2) 2021. An Environmental and Social Action Plan (ESAP) that captures the status of the actions to achieve compliance with Lenders' requirements that were identified during the ESDD process and captured in the previous ESDD versions is included in Section 5. For the benefit of the reader, Appendix A includes the previous ESDD report dated March 2024 with the status of the Project with respect to International Finance Corporation (IFC) Performance Standards (PS) 1 – 8 based on the documentation provided by that date. More details on progress since the early stages of the ESDD can be found in the previous reports developed by the LESC during the due diligence (see Section 2).*

*Overall, the Project has completed the majority (96%) of the ESAP items identified during the ESDD process and towards meeting Lenders' requirements. The ESDD review process has not identified "red flags" against the IFC PSs 1-8 or other Lenders' standards (e.g., representing E&S aspects and risks that the Project has not addressed, dismissed or intentionally ignored), which may result in significant impacts and/or reputational risk. The LESC notes that over the 3+ years ESDD process (commenced in Q2 2021) EACOP Ltd has steadily worked to complete various Environmental, Social, Health and Safety (ESHS) actions.*

*The LESC confirms that EACOP Ltd is generally aligned to Lenders' requirements and has addressed almost all items required to be closed before Financial Close (FC), with the exception of one action still outstanding. Outstanding action PS6.26 relates to Associated Facility CNOOC's Kingfisher/feeder biodiversity work program. CNOOC has accepted further technical support from EACOP's external consultants to develop and deliver the required actions detailed in the ESAP table item. A letter committing to compliance to PS6 was sent by CNOOC Uganda Limited's President to EACOP and shared with the LESC. Three other actions identified in the ESAP (Section 5) cannot be closed at this stage as they are not due until nearer to the operation phase of the Project.*

*The key outcomes of the LESC review with respect to compliance with the IFC PSs and the pre-FC ESAP (Section 5) are summarised in the table below.*

*A final post-FC ESAP that only captures the remaining items that have not been closed by FC is included in Section 6.*

IFC PS	Summary Comment on Status	ESAP items closed	ESAP items open
<b>1</b> Assessment & Management of Environmental & Social Risks and Impacts	<p>The EACOP Integrated Management System (EIMS) structure is considered in line with the requirements and the key documents have been completed including various policy documents, the EIMS manual, a Project ESMP document, numerous management plans and others. EACOP Ltd is required to use its influence to ensure that the AF Environmental and Social Management Systems (ESMSs) meet lenders' requirements and implement procedures to ensure the consistency of the ESMSs and performance monitoring between the companies. A Tri-partite Agreement (Memorandum of Understanding for cooperation) has been agreed between EACOP Ltd, Tilenga and Kingfisher and signed. At the time for the March ESDD report an action regarding staffing was still open as the full HSE teams were not fully on board. Since then, the recruitment has progressed and the latest H3SE organization provided is considered appropriate and confirms the Project commitment to have the full team in place before the main construction (pipeline laying and MCPYs Camp Construction etc.) commences. This item has therefore been closed.</p> <p>The effectiveness of this organization structure will be assessed on the ground going forward during the early stages of the construction monitoring.</p>	9	-
<b>2</b> Labour & Working Conditions	It is considered that EACOP is compliant with Lenders' requirements.	4	-
<b>3</b> Resource Efficiency & Pollution Prevention	<p>EACOP Ltd is on track to meet Lenders' requirements and has made further progress in implementing ESAP actions related to PS3 requirements.</p> <p>Remaining actions due before operations deal with naturally occurring radioactive material (NORM) management procedures for EACOP and the AFs, management of air and noise emissions around some permanent facilities to ensure that the Project adopted air and noise standards can be met through the application of a suite of mitigation and management measures.</p>	22	3 (due before operations)
<b>4</b> Community Health, Safety & Security	<p>EACOP Ltd has plans, procedures and resources in place that meet Lenders' requirements in the areas of community health, safety, security and Project Induced In-Migration (PIIM) management.</p> <p>A Memorandum of Understanding (MoU) with the Government security forces of Uganda was signed on 28<sup>th</sup> of October 2024.</p> <p>A MoU with the Government security forces of Tanzania was signed on 19<sup>th</sup> of February 2025.</p>	16	-
<b>5</b> Land Acquisition & Involuntary Resettlement	EACOP Ltd land acquisition and resettlement documentation is compliant. Tilenga has now signed and commenced a contract for the independent review of resettlement and livelihood restoration programmes which allows close out the remaining action open at the time of the March 2024 ESDD.	17	-
<b>6</b> Biodiversity Conservation & Sustainable Management of Living Natural Resources	<p>EACOP has addressed all internal compliance-gaps raised through the Due Diligence process, however action P6.26 related to the CNOOC Associated Facility (Kingfisher oilfield and feeder pipeline) remains open.</p> <p>CNOOC have now committed to making their biodiversity work program PS6-compliant however delivery of the ESAP required actions has not yet occurred. A new schedule of key document deliverables has been agreed, although this timeframe will go beyond the Financial Close deadline.</p>	26	1

IFC PS	Summary Comment on Status	ESAP items closed	ESAP items open
<b>7</b> Indigenous People	Substantive conditions have been achieved for land access to commence on ancestral land, or historical land, territories and resources of four indigenous groups in Tanzania (Akie, Taturu, Barabaig and Maasai).	1	-
<b>8</b> Cultural Heritage	EACOP is compliant with requirements. A revised Cultural Heritage Management Plan for the Kingfisher AF, outstanding at the March ESDD, has been completed.	3	-
<b>Totals</b>		<b>98</b>	<b>4</b>

## 1.0 INTRODUCTION

TotalEnergies Exploration and Production Uganda (TEPU), China National Offshore Oil Corporation Uganda Limited (CNOOC) and Uganda National Oil Company (UNOC) (the “Upstream Partners”) hold interests in petroleum resource licences near Lake Albert. These Upstream Partners will produce crude oil from their oil fields, stabilise it at the Tilenga and Kingfisher central production facilities and then send it for transportation through the new East African Crude Oil Pipeline (EACOP) Project to a Marine Terminal and Tanks (MTT) (formerly known as the Marine Storage Terminal (MST)) and load-out facility (LOF) at Tanga on Tanzania’s coast for storage and export in Suezmax type tankers. The Upstream Partners, along with the Tanzania Petroleum Development Corporation (TPDC) are shareholders in the EACOP and related infrastructure (the “Project”). EACOP Ltd is the project company that has been established by the shareholders as a specific company to build and operate the Project.



Figure 1: Overview of the EACOP System.

The shareholders of EACOP intend to raise project finance debt from credit providers (the “Lender Group” or “the lenders”). Because the Project is categorized as A as defined by Equator Principles IV (EP IV) and Organization for Economic Co-operation and Development (OECD) Common Approaches, the Lender Group requires that a full Environmental and Social Due diligence (ESDD) review of the Project is carried out including benchmarking against the International Finance Corporate (IFC) Performance Standards (PSs) and the Environmental, Health and Safety (EHS) Guidelines, and lender specific policies.

The Lender Group has retained WSP (formerly Golder Associates), a leading global engineering and consulting company, to act as the Lenders’ Environmental and Social Consultant (LESC) as defined in the loan agreements/ term sheet documentation to carry out the ESDD. The role of the LESC is to assess and report to the lenders’ group on EACOP compliance with applicable environmental and social standards demonstrated in the Environmental and Social Management System and other Environmental and Social (E&S) related documents developed to date by EACOP.

This document is the final ESDD report and provides an update of the Project status with respect to alignment with Lenders’ requirements since the ESDD process commenced in quarter two (Q2) 2021. The report accounts

for the latest documents provided by EACOP and for the outcomes of topic-specific meetings/calls between the LESC and EACOP specialists and represents the final LESC deliverable in the ESDD process. The report includes: a simplified description of the Project as more detailed information have been provided in previous ESDD reports, an update of the ESDD assessment carried out; and the updated Environmental and Social Action Plan (ESAP) from the previous LESC reports that tracks the actions that have been addressed and closed, and identifies those that remain open/ongoing that will be monitored during the Project construction phase.

Overall, the Project has made significant progress implementing the ESAP items identified during the ESDD process and towards meeting Lenders' requirements. There are four ESAP actions (see Section 6) that are still in progress as they are not fully aligned with the relevant lenders' requirements and that should be closed at the onset of the main construction or approaching operation. Progress and status will be verified by the LESC during the first construction monitoring site visit currently foreseen for Q1-Q2 2025.

## 2.0 LESC SCOPE AND PROCESS

Within the ESDD, the overall objectives of the LESC are:

- provide specialized advice to the Lender Group throughout the ESDD to assess compliance with their standards until financial close;
- support, as required, the Lender Group during the negotiation of the environmental and/or social covenants to be included in the finance documents, if any;
- prepare reports that may be used by the lenders in their credit approval and syndication activities throughout the lifetime of the Project financing up to financial close;
- be available up to financial close to support the Lender Group and provide them with information pertaining to its scope of work; and
- cooperate and be ready to provide information to other lenders' consultants such as the Technical Consultant in relation to the Project.

Based on information provided by the Lender Group, the lenders consider facilities upstream of the Kabalega Delivery Point as Associated Facilities (AF) according to the definition provided in the applicable standards. As such, the ESDD has also included a review of potential environmental and social risks relevant to these AFs against lenders' standards. The LESC's ESDD services are required up to financial close. Post financial close ES review services will continue with construction monitoring, which is not within the scope of the current assignment.

To date, the ESDD process has included the following activities:

- a "Preliminary Findings Report"<sup>2</sup> finalised in March 2021 with a summary of key findings from the initial desktop review of the E&S documentation package provided by EACOP (including ESIA reports and several management documents for the Project, the AFs, and other E&S documentation);
- a site visit to the Project Area of Influence (Aol) in Uganda and Tanzania in March and April 2021, respectively, and an "Initial ESDD report"<sup>3</sup> and associated initial Environmental and Social Action Plan (ESAP) where key gaps with Lenders' requirements have been captured and relevant actions to achieve compliance identified;

---

<sup>2</sup> Golder Document No.20399033-001-RLO-Rev.3 dated March 2021.

<sup>3</sup> Golder Document No.20399033-002-RLO-Rev.2 dated June 2021.



- a site visit to Uganda and Tanzania focused on aspects of biodiversity (Uganda only as Tanzania was already visited in the previous visit), land acquisition and social compliance, in October 2021 and relevant site visit memo<sup>4</sup> submitted in December 2021;
- a “First Progress ESDD<sup>5</sup> report” submitted in March 2022 with an update of EACOP’s progresses in addressing and resolving issues identified in the Initial ESDD report action plan items based on the review of additional E&S documentation provided by EACOP in response to the ESAP actions;
- an additional site visit by the LESC marine specialist in August 2022 to the LOF and MTT. The LESC marine specialist visited the site of the MTT, which was in the very early stages of construction, and the proposed site of the LOF. He also met with local stakeholders in and around Tanga;
- a “Second Progress ESDD report”<sup>6</sup> submitted in January 2023 with an updated ESAP that reflects the Project status with respect to alignment with Lenders’ requirements based on the review of further E&S documentation provided by EACOP;
- a “Non-Technical Summary” (NTS)<sup>7</sup> of the ESDD process carried out up to January 2023 for the benefit of the lenders and external stakeholders with an easily understandable summary of the information included in the ESDD reports developed since the ESDD process commenced in quarter two (Q2) 2021;
- a “Third Progress ESDD Report”<sup>8</sup> issued in June 2023 to document EACOP progress in the ESAP implementation up to May 2023. The report was based on the review of new or revised documentation provided by EACOP with no site visits;
- an additional site visit held from November 20<sup>th</sup> to 26<sup>th</sup> 2023, to selected project locations in Uganda (including Tilenga, Kingfisher and EACOP PS1) and Tanzania (including Coating Yard, Main Camp and Pipe Yard 09, Marine Storage Terminal and Jetty) to support the preparation of the final ESDD report;
- a site visit to a number of Project locations in Uganda (February 27<sup>th</sup> – March 1<sup>st</sup>, 2024) carried out by the LESC biodiversity specialist and in Tanzania (March 3<sup>rd</sup> – 8<sup>th</sup> 2024) carried out by the LESC social specialist to accompany a Lender in their pre-financial close site visit (therefore not a full DD visit);
- an updated ESDD Report<sup>9</sup> issued in March 2024 to document EACOP progress in the ESAP implementation up to May 2023. The report was based on the review of new or revised documentation provided by EACOP and the above February and March 2024 site visits; and
- participation of the LESC marine specialist to a marine biodiversity workshop in Dar es Salaam, Tanzania to learn about research programs going on and a site visit to the Tanga area to look at jetty construction and meet the marine contractor and other stakeholders to be updated on offsetting projects, livelihoods, marine access, etc (October 6<sup>th</sup> - 15<sup>th</sup> 2024).

Since the last ESDD report submitted in March 2024, EACOP Ltd has progressed further with the development of several additional documents to address the gaps identified during the ESDD process. This report is the Final ESDD report, which includes a final ESAP (Section 5) with a summary of the Project status with respect to compliance with Lenders’ requirements and highlights some remaining aspects where additional actions are still

<sup>4</sup> Golder Document No.20399033-004-RLO-Rev.0 dated December 2021.

<sup>5</sup> Golder Document No.20399033-005-RLO-Rev.2 dated March 2022.

<sup>6</sup> WSP Document No. 20399033-006-RL0-REV.2 dated January 2023.

<sup>7</sup> WSP Document No.20399033-007-RLO-Rev.3 dated January 2023.

<sup>8</sup> WSP Document No. 20399033-008-RL0-Rev.3 dated June 2023.

<sup>9</sup> WSP Document No. 20399033-011-RL0-Rev.0\_dated March 2024.

required to achieve full compliance. The pre-FC ESAP included in this report is an updated version of the ESAP from the previous LESC reports and tracks the actions that have been addressed and closed and identifies those that remain open/ongoing and that will have to be progressively completed before FC or during the early stages of the Project construction phase. The report also includes a post-FC ESAP (Section 6) with the remaining items that have not been closed before FC and the relevant timeframe of their closure committed by EACOP. The progresses of these remaining items will be reviewed by the LESC during the incoming construction monitoring phase.

### 3.0 LEGAL FRAMEWORK AND POLICIES

The ESDD has assessed Project compliance against the following<sup>10</sup>:

- IFC Performance Standards (PSs):
  - PS1: Assessment and Management of Environmental and Social Risks and Impacts;
  - PS2: Labour and Working Conditions;
  - PS3: Resource Efficiency and Pollution Prevention;
  - PS4: Community Health, Safety and Security;
  - PS5: Land Acquisition and Involuntary Resettlement;
  - PS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources;
  - PS7: Indigenous Peoples; and
  - PS8: Cultural Heritage.
- World Bank Group (WBG) General Environmental, Health and Safety (EHS) and EHS Guidelines for Onshore Oil and Gas Development.
- Equator Principles 4 (EP4) - a risk management framework for determining, assessing, and managing ES risks in projects and are primarily intended to provide a minimum standard for due diligence to support responsible risk decision-making.
- OECD Common Approaches within which projects are expected to be benchmarked against international standards as part of the environment and social due diligence process (IFC PSs, WBG EHS Guidelines).
- Host countries (Uganda and Tanzania) laws and permits.

## 4.0 THE EACOP PROJECT

### 4.1 EACOP Pipeline

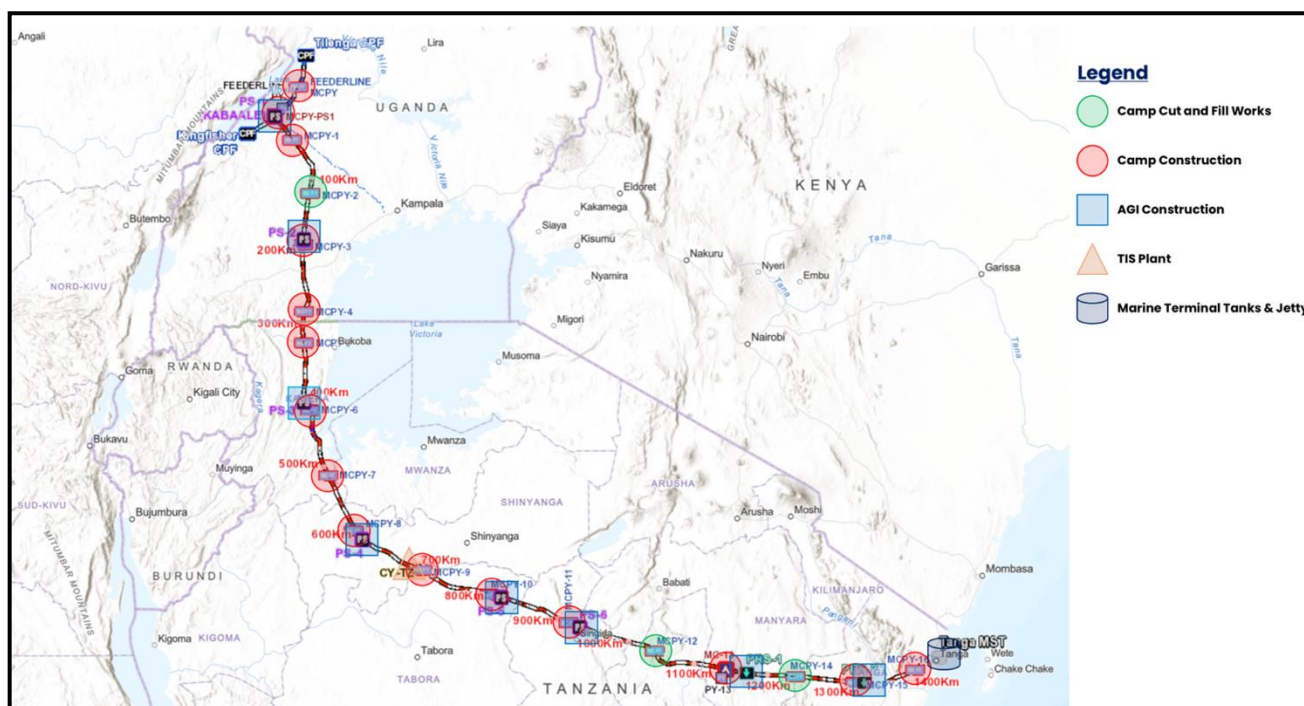
The EACOP Project<sup>11</sup> is a 1,443 km buried insulated 24-inch diameter pipeline to transport crude oil from the Tilenga and Kingfisher oil fields in the Lake Albert area of Uganda to a terminal comprising a storage facility and LOF on the coast of Tanzania for export to international markets in Suezmax type tankers.

This pipeline will begin at a pump station (PS1) within the planned Kabalega Industrial Park and run South from PS1 to the border with Tanzania, and then continue South, to the west of Lake Victoria, before turning Eastwards

<sup>10</sup> A more comprehensive list of the standards used throughout the ESDD is included in the LESC Second Progress Report (Document No. 20399033-006-RLO-REV.2 dated January 2023).

<sup>11</sup> More information on system description, construction sequence, pipeline integrity can be found at the EACOP website pages <https://eacop.com/overview/>

through Tanzania terminating at the MTT adjacent to the LOF consisting of a 2 km long offshore trestle and export loading platform North of Tanga City on the Indian Ocean.



**Figure 2: Project Map**

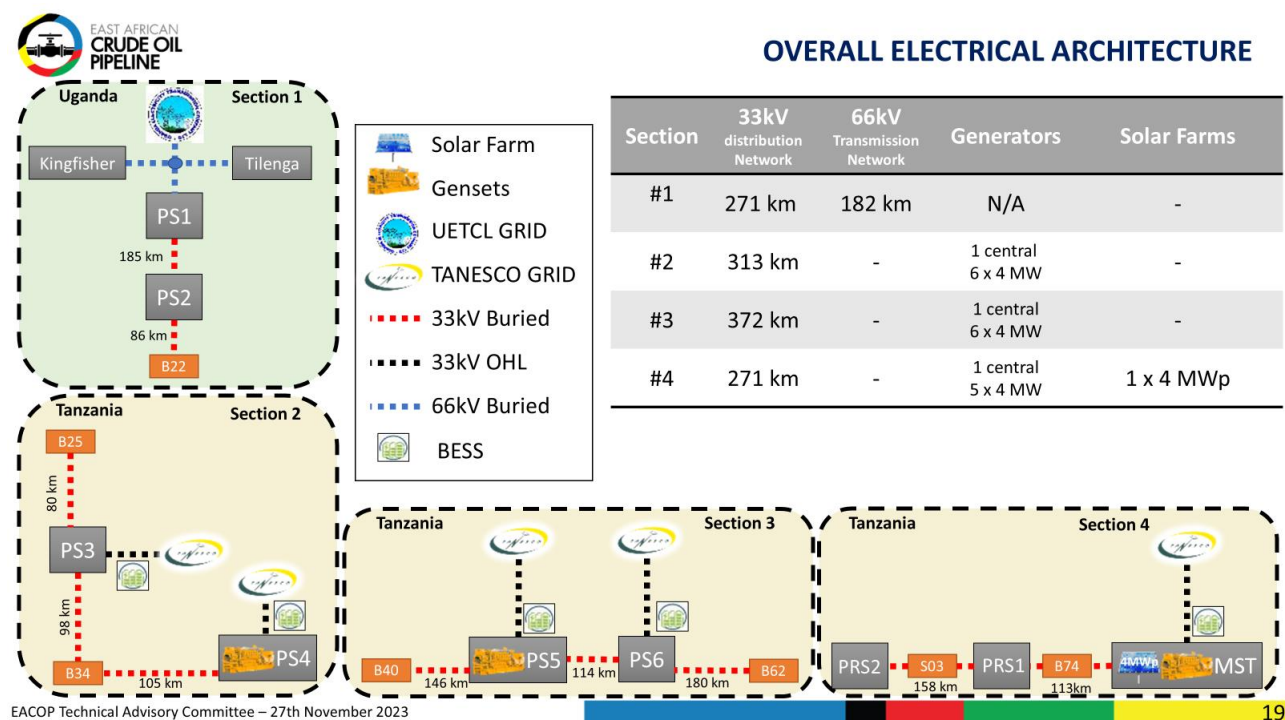
The oil in the EACOP pipeline will have its pressure boosted at each of six pump stations to maintain flowing pressure over the rolling terrain of the East African plateau, and two Pressure Reduction Stations (PRS) to manage pressure as the pipeline descends to the MTT.

The pipeline will be buried and fitted with long line heat tracing (LLHT) which will maintain the temperature of the crude when flow rates decrease later in the pipeline's life. Heating is not required during the period of maximum flow rate as the insulation alone will suffice. A fibre optic (FO) cable on the top of the pipe enables the Project to detect disturbances along the pipeline (e.g., leak, noise and vibration), complemented in places by a second FO cable running adjacent to the pipeline to measure potential strain from seismic activity. A high-voltage three phase electrical cable (HVC) will distribute power along the route to, or from the aboveground installations (AGIs), such as PSs PRSs and MTT. Grid connections and EACOP's own power generation will be generated at selected locations and distributed via the HVC to where it is needed. With respect to power generation, since the early stage of the ESDD process EACOP has moved away from the original base case to generate electricity through burning crude through identifying opportunities to reduce the overall carbon footprint. A number of alternative power generation options have been assessed since 2020 and the Best Available Techniques (BAT) evaluation of the alternatives for energy production identified connections to the national electrical grids as the best option combined with battery energy storage system (BESS), with a solar PV farm installed at the MTT. In this case the crude burning generator sets at selected PSs would only be used as a back-up power requirement when the alternative electricity supply is not stable or not available.

The LESC considers that this BAT approach will achieve EACOP's reported 30% reduction in CO<sub>2</sub> emissions in Tanzania when compared to the base case; furthermore, based information available to WSP from ongoing EACOP studies, on the implementation of the full range of proposed carbon reduction proposals, the Project's CO<sub>2</sub> emissions could be reduced by in the order of 40 – 50% in Tanzania when compared to the base case.



AGIs also include 76 mainline block valves (MLBV) which will be distributed along the pipeline route at key points, such as either side of watercourses which are more than 30 m wide (or less if located upstream of a sensitive receptor). These MLBVs provide the Project with the ability to stop and isolate the flow of oil into a damaged section of pipeline and so minimise releases to the environment in the scenario of a pipeline rupture. The key components of the Project are illustrated in the next figure along with the main AFs.



**Figure 3: Key components of the EACOP Electrical System and Associated Facilities (Source: EACOP Project, 2023).**

For the construction phase of the Project, temporary construction facilities will be built. These include the pipeline Thermal Insulation System (TIS) coating facility (or ‘Coating Yard’) at KP701, adjacent to MCPY-09 in Nzega District, Tabora Region, Tanzania, where pipeline insulation will be applied to the pipe sections that will be imported through Dar es Salaam port, as well as 16 Main Camp and Pipe Yards (MCPYs – roughly every 100 km with four in Uganda and 12 in Tanzania). The pipeline coating facility will also coat the pipe sections which will be used on the Tilenga feeder pipeline. The insulated pipes will be distributed by road to the MCPYs and then along the pipeline right of way (RoW).

There are two layers of oversight within the EACOP organisation to manage the health, safety, social, security, and environment (H3SE) components during project construction. The EACOP “Corporate entity”, who has overall responsibility for verifying the safe and efficient delivery of the Project’s health, safety, security, social and environment components, including liaison with regulators, and ensuring international standards are upheld, referred to as health, safety, and environment (HSE) and Land and Social (“LSOC”). The second layer is the EACOP Project H3SE team within the EACOP ‘Project’ Team. The Project organisation is the Contract Owner for construction contractors. EACOP Project manages and assures construction Contractor performance and maintains oversight of Contractor. Project H3SE is responsible for the routine assurance technical H3SE guidance to Contractors to deliver the Project’s health, safety, security, social and environmental performance requirements. Project H3SE includes Industrial Relations management. During the early project phase, EACOP engaged an Engineering, Procurement, and Construction Management and Contractor (EPcmC) with resources embedded into the Project organisation to form an integrated construction management team. In 2024, EACOP Ltd decided to take over all construction management roles and responsibilities from this EPcmC contractor and

then, change the contract type with the EPcmC to an EPS contract (Engineering and Procurement Services contract).

## 4.2 Project phases

### 4.2.1 Construction

All land required is acquired by the Ugandan and Tanzanian Governments and then leased by EACOP Ltd from the Uganda Land Commission and Tanzania Petroleum Development Corporation. This lease will include land for permanent facilities and temporary construction facilities, once construction is complete, all land no longer required by the Project will be handed back to these government entities. Most of the construction facilities, including the pipe coating facility, will require the leasing of the acquired land for three years. During construction, the footprint of the Project is estimated to be 1,109 ha in Uganda and 4,080 ha in Tanzania, of this land the majority (889 ha in Uganda and 3,441 ha in Tanzania) is required for the 30 m wide pipeline construction corridor (i.e., the Right of Way (RoW)).

To enable the installation of the pipeline and construction of the AGI there will be the requirement for:

- new and upgraded construction facility access roads, which will remain in place post construction;
- 17 MCPY for the construction phase (12 in Tanzania and 5 in Uganda), these are all single facilities except for MCPY-13 which is separated into MC13 and PY13; and
- a pipeline coating facility in Tanzania where the imported pipeline sections will be prepared and then insulated. This facility is located adjacent to MCPY-09 and a section of the railway whose utilization to transport some equipment was investigated at the early stage of the design; however, based on the current status of the railway and upgrades which would be required, EACOP Ltd has not selected the railway as an option due to the Project schedule risks as well as the current speed and volume constraints on the railway.

The installation of the pipeline will comprise the clearance of the RoW which will remove all vegetation, topsoil and some of the subsoil, and include topsoil stockpiling in preparation for reinstatement. The insulated pipes will be delivered to their predetermined locations by truck and positioned in a way which avoids damage to pipe or its coating; this “stringing” of the pipe will ensure that pre-bent sections are then in the correct position on the RoW. The pipes will then be welded together with the pipeline string laid alongside the planned trench. Welded joints will be tested for integrity and then field joint coated to prevent corrosion and insulation added. The trench will be excavated using a trenching machine (with shallow blasting where required to enable the trenching in rocky areas). In wetland areas, tracked excavators on mats will be used. The trench will then be ‘padded’ with a layer of soft material (clays etc.) without sharp materials, and the pipe lowered into the trench, and backfilled. A high visibility polyethylene pipeline warning net, with a width equal to the pipeline diameter, will be placed 0.3 m above the pipeline over the entire route for notification of disruption to the pipeline. The armoured high-voltage cable will be installed in a circa 1.25 m deep trench approximately 4.5 m from the pipeline in the same RoW.

There are numerous crossings on the pipeline route; for most crossings, the pipeline will be installed using an open-cut method, where a trench is excavated to a minimum depth of 1.8 m. This may require the crossing to be temporarily blocked or diverted during construction. The Project base case is that the crossing of these rivers will take place in the dry season when water levels are low (or for ephemeral rivers, absent). The potential environmental and social impact of each crossing, such as on other water users, will be assessed prior to implementing the works. For two rivers in Tanzania, the Kagera and Sigi Rivers, the pipeline will be installed under the riverbed, using horizontal directional drilling (HDD) due to the river flow rate, size and/or topography. Larger land infrastructure crossings (e.g., road and rail crossings) will be achieved using auger boring.



**Figure 4: Kagera River slightly downstream of RoW, Uganda. The RoW crosses the fields on rear left of the image (Source: LESC Site Visit, November 2023).**

The Project will utilise diesel generators during construction. A number of the MCPYs have already been connected to the electricity supply grid and connections are in progress for others. Water will be predominantly supplied by groundwater wells located on the operational sites. Waste generated by the Project during construction will be managed by the construction contractors in accordance with the Project's waste management requirements. This will require contractors to minimise waste generation and implement the reuse and recycle principals. It is recognised that the waste disposal options along much of the route are limited and therefore wastes will need to be transported back to approved waste management facilities such as in Dar es Salaam (Tanzania) or in Hoima (Uganda) near Kilometre Point (KP) 0 (see also Section 4.3.3).

Imported construction materials will enter via the Tanzanian ports of Dar es Salaam and Tanga. Once in the port the pipes (which only enters via Dar es Salaam) will be transported to the coating plant and from there to the pipe yards along the RoW. AGI components and construction materials will be transported to the various storage facilities and construction sites. Following a detailed review of rail transport options, the assumption is that transport will be by road due to limitation on the rail infrastructure and rolling stock.

During construction, the expatriate and non-local Tanzanian workforce will be housed at the MCPYs which will operate as controlled camps to minimise the potential impacts on the local communities and potential additional impacts on ecosystem services and biodiversity. Unskilled and semi-skilled workers from local communities will be day workers and return to their villages each night.

The marine trestle and load-out facility, through which crude oil will be exported on Tanzania's Indian Ocean coast, is situated in sufficiently deep waters that, based on the ESIA design, does not require dredging during construction, with the trestle and LOF installed on a pile-driven structure.

Once the MCPYs are decommissioned, they will be, along with other temporary construction areas, either handed back to the respective Governments, or retained.

The ESIA cost-benefit analysis indicates that the EACOP project is likely to generate about 25 million local manhours employment in Tanzania (about 73% of level contractor manhours) and 7 million manhours in Uganda (about 77% of level contractor manhours). This translates to:

- About 6,000 Tanzanian workers employed during peak construction; and

- About 1,500 Ugandan workers during peak construction.

The Project is expected to deliver over 1.2 million manhours in training – 0.2 million manhours for Uganda and 1.0 million manhours for Tanzania.

The Goods and Services spend will exceed USD 432 million in Tanzania and USD 87 million in Uganda mainly on cement, steel, aggregate, logistics, catering hospitality, construction and facilities setup. Other benefits will include capacity building such as:

- Partnership between international companies and Local Companies;
- Industry Enhancement Centre, quarterly forums;
- “Train The Trainer” (training done by contractors to teachers at universities);
- Training for local communities;
- Scholarship, Support to local institutions;
- Donations to local communities;
- Business development initiatives; and
- Internships (students sent abroad at contractor's head office and university to receive training).

#### 4.2.2 Operations

Before commissioning and operations can begin, the following core pre-commissioning activities will be undertaken:

- controls and instrumentation system check and verification;
- flushing with water and initial cleaning of the pipeline with gauging of pipeline wall thickness;
- hydrostatic testing consisting of a strength and leak test;
- final cleaning and dewatering or nitrogen fill after completion of hydrostatic testing; and
- communications systems check and verification.

A similar testing regime will be implemented at the PSts and MTT.

The primary source of water for the hydrostatic testing is expected to be surface water, not groundwater. If surface water is not available to make up losses incurred during testing, groundwater, if available, may be used, if this is permitted and within ground water abstraction limits set by government for each borehole, and can be abstracted without local groundwater resources impacts. All permits for groundwater abstraction will be acquired and permit conditions adhered to by the EACOP project. A Hydrotest Management Plan will be developed to guide this activity.

The surface water abstraction points will be fitted with filters to reduce the entrapment of fish, sediment, and residues in the hydrostatic test water. EACOP Ltd will assess opportunities for the hydrostatic test water to be reused between test sections with the aim of reducing the overall volume of water required.

The crude oil from the Lake Albert basin fields is waxy with a relatively high pour point temperature, and therefore, to enable the crude to flow, and avoid waxes separating out in transit, the crude must be maintained at a temperature above 50°C. When production volumes drop, the crude will be heated by the LLHT system along the pipeline, and heating in the external floating roof crude oil tanks and the export lines at the MTT. The amount of heating required will increase later in the Project life when flow rates are declining, with this further

heating provided by the pumping station bulk heaters. The power for this heating is anticipated to be from a combination of the Ugandan and Tanzanian national grid with BESS in Tanzania, and backup oil burning generators at selected PSTs (the original ESIA base case). Because of the relatively high pour point temperature (above ambient temperatures), any accidental release of crude to the environment would be expected to solidify close to the source of the release once the temperature had dropped below the pour point temperature. All facilities will have a security contingent associated with them, but only some facilities will have a full-time staff presence. During operations there will be approximately 316 personnel distributed over:

- PST1 (who will also as needed cover PST2);
- PST3 (who will also as needed cover PST4);
- PST5 (who will also as needed cover PST6); and
- The MTT to also cover PRS1 and 2, and the LOF.

During normal operations at the MTT and LOF, the Project anticipates loading a Suezmax type tanker (0.9–1.0 million barrels) every 4-5 days, with each tanker being filled within 36 hours.

### 4.2.3 Project Schedule and Progress to Date

At the time of this report, the overall construction packages progress based on information taken from the November 2024 Monthly Report was as follows:

EACOP - November 2024	Weight	Planned	Eam
Engineering	3.9%	93.4%	90.1%
Procurement	55.2%	76.0%	68.7%
Construction & Pre-Commissioning	38.4%	22.9%	22.9%
Commissioning & Assistance to START-UP	2.5%	-	-
Overall Progress		54.6%	50.2%

In terms of progress for the different project components, the latest update provided indicates:

- Line Pipe Supply: 8<sup>th</sup> shipment of Line Pipe from the pipe mill delivery to TIS plant completed. 2<sup>nd</sup> shipment of heavy thickness Line Pipe from the pipe mill to Dar Port planned in December;
- Thermal Insulation System: trials commenced on Line 1 of the TIS Plant. Line 2 of the TIS plant is in production with three 8-hour shifts. 92 km of Polyurethane Foam (PUF)-coated pipes were produced by the end of October. 89 km were dispatched to MCPYs for pipeline installation activities;
- Pipeline Construction – CPP: welding of the pipeline is ongoing across all 3 Lots, 42 kilometres welded by the end of October. Non-destructive testing (NDT) of the welds is ongoing in parallel. Go-no-go for Horizontal Directional Drilling in progress. Geotechnical and topographical survey for MLBVs completed in Uganda and Tanzania;
- Above Ground Installations (AGI) construction (PSs 1 – 6, PRSs 1 – 2): civil works and foundation works ongoing with a target to complete the foundations in Q1 2025;
- Main Camps and Pipe Yards Construction:
- Tilenga Main Camp: commenced embedded water supply and sewage pipes & Electrical & IT Cable installations;
- MCPY-PS1: completed waste collection and disposal facilities installation;

- MCPY-1: commenced prefabricated house, water supply & drainage system and power & electrical distribution system installations.
- MCPY-2: commenced foundation trench excavation and installations;
- MCPY-4: commenced prefabricated house installations;
- MCPY-7: completed waste collection and disposal facilities installation;
- MCPY-8: completed it and communication system installation;
- MCPY-9: commenced waste collection and disposal facilities installation;
- MCPY-12: early civil works commenced on site;
- MC-13: trench excavation and installations for foundation completed;
- PY-13: commenced foundation trench excavation, foundation installations, prefabricated house and power & electrical distribution system installations;
- MCPY-14: commenced foundation trench excavation;
- MCPY-15: completed foundation installations and IT & communication system installation.
- Water Sourcing (WS):
  - Uganda – Main contractor feeder, MCPY-1 – overall progress 93.25%;
  - Tanzania: ECP-21-C-016 (ENG): (MCPY6, MCPY7, MCPY8, MCPY9, MCPY10, MCPY11, MCPY12, MC13, MCPY14, PS3, PS4, PS5, PS6) - Overall Progress 94.74%.
- Marine Terminal construction: power generators delivered to site. Completed installation of Exhaust Stacks (for 2 units). First onsite large bore piping cutting achieved. Completed welding works for Batch 2 of Prefabricated Steel Structures in China. Batches 1 and 2 of Piping prefabrication ongoing at Himile, China. Technical Area Fabrication workshop equipment installation and inspection completed.
- EPC Tanks:
  - Tank A: 7<sup>th</sup> Shell Plate erection completed. Pontoon assembly erection completed, truss welding ongoing;
  - Tank B: completed 7<sup>th</sup> Shell Plate erection; and
  - Tanks C and D: completed 2<sup>nd</sup> Shell Plate welding.
- Jetty: completed first onsite piping weld. Pile driving and crosshead installations ongoing at both shallow and deep-water parts of the Jetty.





Figure 5: Areal View of Marine Terminal (Source: EACOP Monthly report. October 2024).



Figure 6: Lot 1 – pipeline welding (Source: EACOP Monthly report. October 2024).



Figure 7: Lot 3 – field joint coating pre-production test (Source: EACOP Monthly report. October 2024).



Figure 8: Marine Terminal Exhaust Stack (Source: EACOP Monthly report. October 2024).



Figure 9: Marine Tank B – 7<sup>th</sup> shell plate erection (Source: EACOP Monthly report. October 2024).



Figure 10: Jetty construction in shallow water (Source: EACOP Monthly report. October 2024).



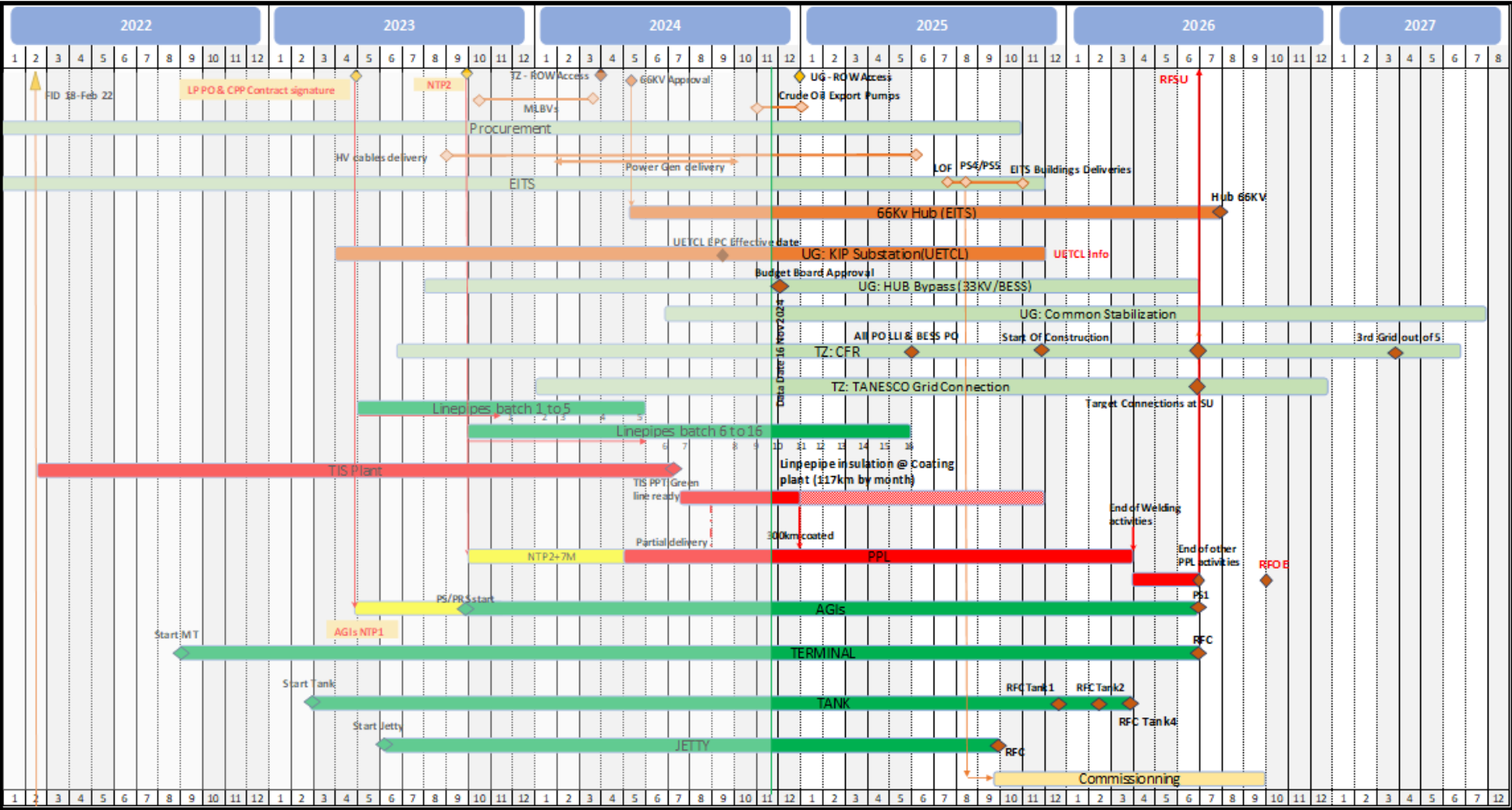


Figure 11: EACOP Integrated Project Schedule (Source: EACOP Ltd October 2024).<sup>12</sup>

<sup>12</sup> More detailed Project schedules have been provided by EACOP.

#### **4.2.4 Associated Facilities**

The Upstream Partners will supply oil from their production fields either side of the Victoria Nile (Tilenga) or beneath Lake Albert (Kingfisher), via two feeder pipelines. The Kingfisher and Tilenga projects, each comprising oil field infrastructure, a Central Processing Facility (CPF), and a feeder pipeline to PSt1, are considered associated facilities (AFs) to the EACOP Project as defined under IFC PS1 and, as such, have been included in the ESDD assessment. The CPFs will process the crude, including recovered gas, before heating the oil and pumping it to PSt1 where it will enter the EACOP pipeline or be utilised in the planned refinery in Kabalega Industrial Park. The recovered gas will be used to power the Kingfisher and Tilenga developments. Recovered gas from Tilenga and Kingfisher not required for power generation is planned to be bottled as LPG for retail sales in Uganda.

#### **4.2.5 Tilenga Project**

The Tilenga project comprises the development of six oil fields in the Albertine Graben with wells extracting the oil to the Northeast of Lake Albert and downstream of Murchison Falls. It is operated by TEPU on behalf of the Upstream Joint Venture (TEPU, CNOOC and UNOC).

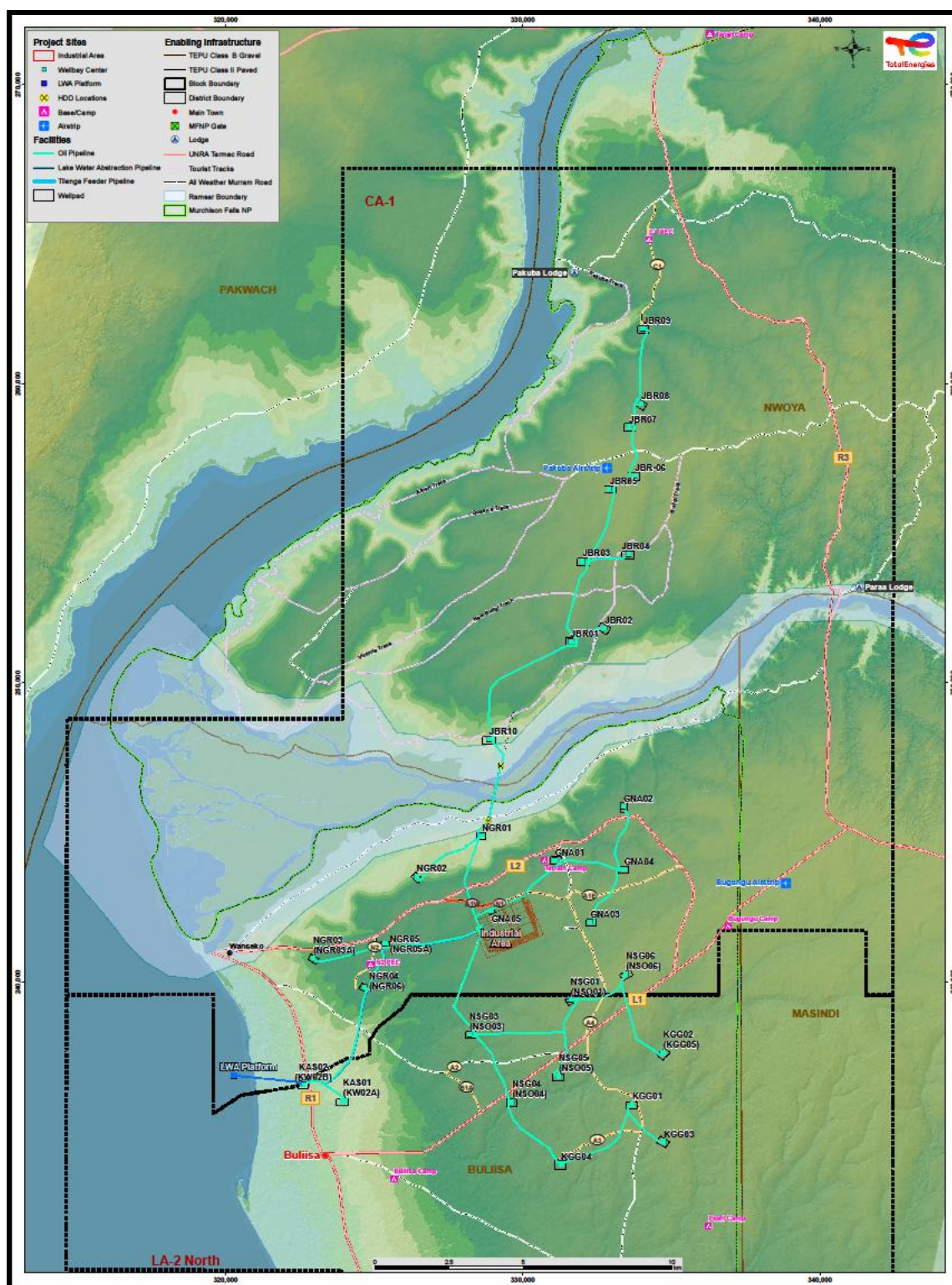


Figure 12: Tilenga Development (Source: TEPU Uganda 2022).

Well fluids, comprising a mixture of oil, water, and gas will be produced from 420 wells located on 29 well pads, 10 of which will be within the Murchison Falls National Park (MFNP). These 10 wells within the MFNP have been designed to minimise the visual impact through the reduction in the height of infrastructure and construction of an earth bund around the well pads, outside of the MFNP a mixture of bund walls and fencing has been used.



**Figure 13: Visualisation of a well pad JBR05 in the MFNP with screening bund wall (Source TEPU).**

A buried infield production network will transport produced fluids from the well pads to the CPF in the Industrial Area of Ngwedo sub-county in Buliisa district. This connection of the fields to the CPF will require a section of the network to be installed by HDD beneath the Victoria Nile River (part of the Murchison Falls/Lake Albert Delta Wetland).

The CPF and the industrial area will include the operational support structures and resources, as well as administration requirements. The CPF will include a treatment facility, power generation facility (utilising the produced gas and solar PV system), and export facilities, and will house other systems such as a water treatment plant. The solar PV is designed to supplement the electricity needs of the Project, with up to 50 MWp installed in two phases, A Phase 1 of 15 MWp and Phase 2 of 35 MWp, which will be installed on about 15 Ha of land identified by TEPU on the eastern side of the Industrial Area, which is outside the main construction area but inside the acquisition zone within the Industrial Area in Buliisa district. The well fluids will be processed at the CPF into crude oil, produced water and recovered gas. Crude oil, which is already heated as part of the water separation process, will be pumped via the 98 km insulated Tilenga Feeder Pipeline to PSt1 where it will enter the EACOP pipeline or be utilised in the planned refinery in Kabalega Industrial Park (not part of the Tilenga, Kingfisher or the EACOP Projects). All produced water will be transported to the CPF via a buried infield pipeline network for treatment and reinjection back into the oil reservoirs. The recovered gas will be utilised for power and heat generation and producing LPG. Propane and Butane will be extracted from the gas and will be bottled as liquified petroleum gas (LPG) for retail sales in Uganda and regional market. When gas volumes decrease, electricity will be imported from the national grid. The CPF is designed to produce 190 thousand barrels of oil per day (kbopd). Infrastructure will also include a water abstraction system on the shores of Lake Albert.

Early civil works started in 2021 at the CPF with the establishment of the construction camp and construction support base. Start-up and operation of the facilities are expected to commence in the second half of 2026. Operations are expected to last for approximately 25 years. Decommissioning is planned at the end of operations.

#### **4.2.5.1 Construction**

The construction phase for the Tilenga development, will include:

- site preparation and enabling infrastructure works (clearance, earthworks, civil works, access roads) for Industrial Area, 31 well pads, access roads;
- construction of Temporary Construction Camp at the Industrial Area, (existing camps including Tangi, Bugungu, and Buliisa will be utilized by project teams and contractors);
- temporary facilities in the Industrial Area including Construction Support Bases and Drilling Support Base;



- use of existing and new borrow pits and quarries; Tilenga has stated that where feasible the planning of these will take account of the potential to utilise the large borrow pits created for the recent new road construction;
- construction, installation and commissioning of main facilities (CPF and well pads);
- construction, installation and commissioning of the production and injection network including the Victoria Nile Crossing;
- construction, installation and commissioning of the lake water abstraction infrastructure and pipeline;
- well development drilling using water (upper hole) and oil-based mud systems (lower sections);
- the drilling returns (slurry & cuttings) will be recycled as far as possible. All waste slurry and cuttings will be transported to an appropriately licensed facility for treatment to recover the water and synthetic oils for reuse. The oil recovery process will yield an oil content in the process solids of less than 5% to enable disposal to landfill; and
- installation of a 98 km insulated underground pipeline from Tilenga CPF to EACOP PSt1 at the Kabalega Industrial Park.

The workforce during construction is estimated to be up to 4,400 personnel at the Tilenga development, the majority housed in temporary camps. The construction of the Tilenga feeder pipeline will be executed by the same contractor and be essentially identical to EACOP's pipeline construction.

At the time of this report site preparation and access roads construction were at different level of advancement, the Drilling Support Base completed and ready to support operations in the Industrial Area, well pads under preparation with some wells either drilled, under drilling or under rig move.

#### **4.2.5.2 Operation**

During operations, the Tilenga oil field gas will be used to power gas turbine-driven generators to heat the water re-injected and to produce LPG. In the later years when gas volumes fall, electricity will be brought in from the grid. The power will be used to maintain the injection of liquids to the field and enhance oil production, power the CPF, and pump the oil to a delivery point near Kabalega, via the underground pipeline. Peak oil production is expected to generate about 190,000 barrels of oil per day. The volume of produced oil and gas will remain constant for several years before gradually declining. During operations there are estimated to be a permanent staff contingent of over 120.

#### **4.2.5.3 Project Schedule and Progress to Date**

The Project construction phase is being implemented under three major components, including: Enabling Infrastructure (EI), Drilling and Wells (D&W) and Engineering, Procurement, Supply, Construction and Commissioning (EPSCC) of Surface Facilities. The following is a summary of project progress under the various components.

- Enabling Infrastructure. This component is being implemented under three major sub-components: CFT1, CFT2 and CFT4. CFT3 which was Bugungu Airstrip upgrade was descope from the project after value engineering. CFT1 consists of Industrial Area Site Preparation civil works; CFT2 is road construction or upgrade works; and CFT4 is Well Pad Site Preparation civil works. By end of July 2024:
  - CFT1- Overall progress at 99.9% with works on all CPF platforms, OSB/OC platforms, GNA05 well pad and all internal roads and associated drainages completed and handed over to EPSCC CTR. Works on the two Retention Basins are almost complete to ameliorate flooding downstream of the Industrial Area.

- CFT2 – C1, N2 and A1 West roads complete; progress at A1 East (98%), A4 (82%) and A3 (16%).
- CFT4 – Overall progress at 40.7%. JBR05 and NGR03 well pads were handed over to EPSCC CTR for surface facilities works after Drilling operations were concluded and remedial works and remaining civil works done by EI. By end of July 2024, GNA01 drilling operations were done and the well pad handed back to EI for remedial works; JBR04, NGR01 and GNA04 had been handed over to Drilling; EI works had commenced and were progressing at JBR02, JBR03, JBR06, JBR08, KAS01 and NGR05.



Figure 14: KAS01 Well pad - Technical Culvert Installation at Tubular Handling Area



Figure 15: JBR03 - Installation of Roofing Sheets on Emergency Pit

- Drilling and Wells. This project component is closely supported by the Geoscience and Reservoir team. Three rigs are in operation and progress registered by end of July include:
  - Successful conclusion of drilling operations at JBR05 (12 wells), NGR03 (9 wells), GNA01 (14 wells), NGR01 (13 wells). Following successful rig-moves, drilling ops underway at JBR04 and GNA04 well pads.
  - Total number of wells drilled by end of July 2024 from start of drilling operations: 62 wells and projection to drill a total of 98 wells by end of year.

- Return on Experience (REX) has seen Non-Productive Time (NPT) and drilling duration reduce on successive wells as learnings from each well are incorporated in the subsequent ones, from 14% NPT initially to less than 5% NPT in some of the recent wells and from about 22 days per well initially to less than 10 days/ well in some of the recent wells.



Figure 16: JBR05: Rig-down of mast

- EPSCC Surface Facilities: project component consists of two major subcomponents, namely: (i) the facilities at the Industrial Area, and (ii) all surface facilities outside the Industrial Area, also known as Offsites. Progress by end of July 2024, overall EPSCC progress stood at 47.7%. Progress of the sub-components are broken down below:
  - Industrial Area. Overall progress of EPSCC scope at Industrial Area was 51.0%. Detailed Engineering progress - 90%; Procurement – 71%; 3172 beds Construction Camp capacity achieved (82%); foundation concrete works (22,248 m3 ~ 28%) and pipe-rack erection (2,665 tons ~ 21%). Clarification with LPG EPC contract bidders underway.
  - Offsites (LWA, Flowlines & pipelines, HDD, Well pads). Overall progress of Offsites EPSCC scope at 40.9%: Detailed Engineering progress - 88%; Procurement – 53%; CSB North completed; Pipeline construction works ~ 46km of pipeline welded in the North and South; HDD - pilot hole drilling of 16" HV cable casing completed; NGR03 well pad handover to SINOPEC completed.



Figure 17: CPF: Oil Treatment 1 foundation back-filling



Figure 18: CPF: Water Injection Tank and Pipe Rack Foundations



Figure 19: NGR05 - CPF Oil Flowline welding and stringing





Figure 20: South CSB- SINOPEC: Fabrication/ Paint Shop set-up



Figure 21: CPF: Pre-heaters lifted and positioned on foundations

- Field Operations. In preparation for the Operations phase, the Field Operations team is also conducting a number of activities including:
  - training of future operations and maintenance technicians through the Tilenga Academy; first batch of 100 students started their training at UPIK in April this year; and
  - several contracts for operations, maintenance and inspection have been awarded.

## 4.2.6 Kingfisher Oil Field

### 4.2.6.1 Facilities

The Kingfisher Project is situated on the Buhuka Flats in the Kingfisher Field Development Area (KFDA), along the south-eastern side of Lake Albert. The project is owned by CNOOC Uganda Limited (CNOOC) and TotalEnergies E&P Uganda Ltd and operated by CNOOC. Other than the feeder pipeline and high voltage transmission line, the infrastructure for the development will be on the Buhuka Flats and will exploit the oil fields

in the sediments approximately 1,500 m beneath Lake Albert through a series of deviated wells. Gas separated in the CPF will be used to drive gas turbines to produce electricity to power the development. The excess electricity generated will be exported to Uganda's national grid. The Project will be constructed over a period of four years. Drilling of additional wells and supporting infrastructure will continue for five years during the operational phase.

#### **4.2.6.2 Construction**

The planned construction phase for Kingfisher, will include:

- development of four well pads along with flow lines to the CPFs, water injection lines, electrical controls, etc.;
- progressive directional well drilling and development using water (upper hole) and oil-based mud systems;
- the drilling returns (slurry) will be treated to recover the water and synthetic oils for reuse. The oil recovery process will yield an oil content in the process solids of less than 5% to enable disposal to landfill;
- construction of a temporary camp, permanent camp, supply base, infield access roads, water intake and treatment station;
- construction of the CPF and associated facilities including a 10,000 m<sup>3</sup> floating roof tank which will provide 30 hours of storage. Off-spec oil will be stored in a 3,000 m<sup>3</sup> tank and gas in two 135 m<sup>3</sup> LPG bullets; and
- installation of a 47.6 km insulated underground feeder pipeline from Kingfisher CPF to EACOP Pump Station (PT) t1 at the Kabalega Industrial Park. The Transmission Line is proposed to be buried along its entire length within the Feeder Line corridor.



Figure 22: Overview of the main project infrastructure (Source: Kingfisher ESIA Sept 2018).

The workforce during construction is estimated to be between 1,000 and 2,000 personnel, the majority housed in temporary camps.

Due to the high-water levels in Lake Albert (625.15 masl on the 18<sup>th</sup> of December 2020, which exceed the last historic peak in 1963), studies undertaken by Kingfisher have identified the requirement to implement shoreline protection measures. The length of the proposed shoreline protection is as follows: Pad 1 263 meters, Pad 2 304 meters, Pad 3 265 meters and Pad 4A 272 meters which would also protect the jetty, drilling camp and materials yard. Recommended protection measures include a combination of rip-rap, stone gabions and sheet piles, as well as raising the level of some areas such as Well Pad 1. It is understood that there is no requirement to revise the layout of the Kingfisher infrastructure as part of these reinforcement works, and they will need to take account of access to the lake for fishers and any biodiversity sensitivities.

#### 4.2.6.3 Operations

The CPF will process the fluids by separation / removal of the produced water, sand, salts, and associated gas (together with small quantities of other material) to produce crude oil that meets the crude oil export standard. The main components of the CPF will include oil separation flash gas facilities, gas treatment & compression facilities, produced water treatment & Injection facilities, oil storage & export facilities, enclosed ground flare,

power generation plant, LPG production and loadout, electrical substation, water treatment plant, heat exchange unit for recovery of waste heat, fire water and pumps, plant Utilities area. Produced water will be returned to the well pads for reinjection via separate flowlines.

The Kingfisher CPF will use four 16 MW gas turbine-driven generators (three operational and one on standby) to generate power and heat. Any excess electrical power will be exported to the Ugandan grid (assuming the proposed connecting electricity line has been completed), and after year 11 an anticipated deficit of gas and therefore power, may be addressed through import of electricity from the grid and/or generated by the project's gensets. The CPF will convert part of the associated gas into LPG that will be sold into the local market. No gas flaring is contemplated except in cases of emergency.

Oil from Kingfisher will be exported through project's 47.6 km insulated Kingfisher feeder pipeline to the delivery point in the Kabalega Industrial Park in Hoima District, to supply the EACOP pipeline through PSt1, and some will also be delivered by the Upstream Partners for refining. A ground flare will be installed but the intention is that there will be no flaring, with flaring only occurring during emergencies, mal-operation, start-up, shut-down, or maintenance.

The Kingfisher feeder pipeline runs from the east side of the CPF, turning northward to the base of the escarpment at around KP1.5, where it turns directly east up the escarpment. The average gradient in this section of the route is 1:3 (Vertical: Horizontal), rising from roughly 650 amsl. to 1,040 amsl. From this point, the pipeline is routed north eastward in gently undulating terrain, extensively cultivated and interspersed with rural settlement. The route passes south-east of Hohwa and Kaseeta villages at KP 29 and KP 32 respectively. At KP 44, the route passes immediately north of the planned Kabalega Airport and then turns eastward to the terminal point at the proposed Kabalega Refinery and PSt1.

#### **4.2.6.4 Project Schedule and Progress to Date**

The early works are already complete at Kingfisher and drilling has started. Drilling has been carried out at pads 2, 3 and 1. The rig is still mobilized at Pad 1 to drill production and injection wells.

Construction works are complete at the other pads. The LESC visited well pad 1 in November 2023 and observed it is ready to receive the rig, has a concrete impermeable surface and large oil water separators in place to receive potentially contaminated water from the well pad; a drainage channel collecting uncontaminated stormwater along the pad fence flows into sedimentation ponds and then to Lake Albert.

The safety check station work was completed, and the facility is already in operation. The supply base works have also achieved substantial completion and rectification of the remaining work on the punch list is ongoing. The work at the permanent camp is also progressing and is currently at finishing stage. At the CPF, major earthworks and civil works for tank foundations and pipe racks has been completed.

The civil works for other equipment foundations and buildings within the CPF and at the well pads is also ongoing. On the installation side, tank plate welding, pipe rack installation and equipment installation is ongoing. Construction of the feeder pipeline and HV cable is ongoing. Laying of the pipes and HV cable in the trench is ongoing and the associated backfilling work is also in process. Construction for the cable wells is also ongoing.

The temporary camps (TCP East, TCP West and Hohwa) have been occupied by the contractors' teams.

CNOOC temporary camp continues to be used and the permanent camp for operations is under construction beside the camp, as the LESC could observe while onsite.

There is a waste treatment and disposal facility at the entrance gate at the top of the escarpment, owned by consortium of Luwero Industries Limited and China Oil HBP Science & Technology Corporation Limited. The consortium is a contractor for the Kingfisher drilling waste treatment and disposal. The LESC had no time to



visit the facility, however CNOOC staff reported that, in line with the Environmental and Social Impact Assessment Approval of the facility, the facility has the capability to treat both liquid and solid drilling waste and no drilling waste is transferred to other facilities for further treatment and disposal.



Figure 23: Pipeline construction (Source: EACOP, September 2024).



Figure 24: Well Pad 1 aerial view with drilling operations ongoing (Source: EACOP, September 2024).



Figure 25: CPF aerial view with civil works and installation works ongoing (Source: EACOP, September 2024).



Figure 26: Aerial view of the drilling camp, permanent camp and supply base (Source: EACOP, September 2024).





Figure 27: Rig operating at Well Pad 2 (Source: LESC Field Visit, November 2023).



Figure 28: Well Pad 1 ready to receive the Rig (Source: LESC Field Visit, November 2023).

#### 4.2.7 Other Associated Facilities

Apart from the Kingfisher and the Tilenga projects, other AFs include new or project-generated extension of existing borrow pits and quarries, concrete batch plants and waste management facilities, all of which require environmental and social evaluations, the development of mitigation and reinstatement measures, and the acquisition of regulatory approvals. These details are set out in EACOP Ltd.'s Borrow Pit Regulatory Guidance Note for Tanzania dated 7<sup>th</sup> September 2023 and one for Uganda dated 13<sup>th</sup> September 2023.

The planned hydrocracker and coker refinery in the Kabalega Industrial Park and connected facilities (such as the airport) are not considered AFs as these could be developed independently of the EACOP Project. Additionally, the proposed electrical grid connections at the AGIs in Tanzania are not considered to be AFs as EACOP is not reliant on them to operate (generators can provide all the power needed).

## 4.3 Project Setting

### 4.3.1 EACOP

Given its extension and complexity, the Project traverses a wide range of environmental and social settings and sensitivities. Since the design phase, route selection has been refined through a series of increasingly detailed reviews aimed at optimising the route from an engineering perspective and minimising environmental and social impacts. Assessment of the risks, potential impacts, and physical aspects, particularly topography, has determined the location of the AGIs. Based on this assessment, variations in pipe wall thickness to account for varying pressures along the pipeline was also determined. Much of the route of the pipeline is through modified habitat, such as grazing, small, and medium scale agricultural lands and plantations, with several sections traversing PS6-relevant Natural and Critical Habitat (forests, rivers, and wetlands) and protected areas. There are also a few areas on the route with ongoing and dynamic changes in land use (such as the Kahama artisanal mining area in Tanzania) which will require detailed reviews pre-construction, and these have been reviewed through the ESDD process from the perspective of pollution prevention (IFC PS3) and social (IFC PS4).



Figure 29: Area of Taala Forest Reserve in Uganda showing eucalyptus and banana plantations and clearance of forest (Source: LESC Site Visit, March 2021).

### 4.3.2 Associated Facilities

The Kingfisher and Tilenga AFs are located adjacent to and at a similar elevation to Lake Albert. The Tilenga fields extend from South of the Victoria Nile where the land is modified habitat used by pastoralists and some small agricultural plots, through to the MFNP to the North. The MFNP, which contains several species of large charismatic animals, is a major tourist destination along with the Murchison Falls. The pipeline network from the wells to the CPF will pass underneath the Victoria Nile, and the Murchison Falls-Albert Delta Wetland System, an internationally recognised Ramsar site.





**Figure 30: View a portion of the Murchison Falls National Park and of Lake Albert to the North of the Albert Delta (Source: LESC Site Visit, March 2021).**

Kingfisher is located on a low-lying area on the shore of Lake Albert. The surrounding land, below an escarpment to the East, contains several villages, most of which are focused on fishing and cattle rearing.



**Figure 31: View from the escarpment road of Kingfisher main camp (white structures) on shore of Lake Albert (Source: LESC Site Visit, March 2021).**

## **4.4 Third Parties Developments in the Project Area of Influence**

The ESIA and the consolidated EACOP ESIA identify the developments defined at the time the ESIA reports were prepared. These do not qualify as AFs to the Project and have been identified to assess cumulative impacts within the spatial and temporal boundaries of the EACOP project. These are captured by countries:

*Uganda:*

- Kabalega International Airport;
- a 132-kV electricity transmission line from the Tilenga Project CPF to Kabalega Industrial Park;

- two 33-kV transmission lines to Kabalega Airport will be installed, associated with the Kabalega Airport development;
- a 60,000-barrel-per-stream-day hydrocracker and coker refinery;
- a 210-km long Hoima–Buloba Pipeline for transporting refined petroleum products;
- various road improvements being developed under the jurisdiction of UNRA to support the oil industry;
- transmission line upgrade – construction of 33 kV overhead lines in Hoima district;
- a 2-ha opencast gold mine in the hills of Kamusenene village, Kitumba subcounty, Mubende district;
- a gold processing plant on 0.873 ha of land for the existing gold mine in the Namwasa Forest Reserve; and
- a 1536.39-km long buried optical fibre cable to be laid across the country to build the National Data Transmission Backbone.

*Tanzania:*

- the rural electrification of Tanzania;
- the Ngono Valley Multipurpose Water Resources Development Project;
- construction of Geita Airport in the Nyabilezi–Bukombe and Katende wards, Chato district, Geita;
- construction of 50 new houses at Zongomera ward in Kahama district, Shinyanga;
- construction of a 667-km, 400-kV alternating current transmission line split into three construction lots;
- Lake Victoria Shinyanga–Kahama water supply scheme extension to Tabora, Igunga and Nzega towns;
- upgrade of the Handeni–Singida road (461 km) to bitumen standard;
- waste facility at Mpirani Street approximately 17 km away from Tanga city centre, financed by the World Bank;
- TPA Industrial Park on 200 ha of land on the Chongoleani peninsula (including 85 ha of land to be leased by EACOP for the MTT and LOF);
- TPDC proposed refinery on 121 ha of land on the Chongoleani peninsula;
- Tipper proposed petroleum storage depot on 41 ha of land on the Chongoleani peninsula;
- Black Gold proposed oil storage depot on 81 ha of land on the Chongoleani peninsula;
- Simba Oil gas storage depot;
- Taifa Gas proposed conventional buoy moorings (CBM) and associated infrastructure for liquid petroleum gas (LPG) discharge from large ships to land storage facilities in Tanga located 1.6 km from the EACOP LOF and surrounded by a 300m MEZ – offshore from the Chongoleani peninsula;
- Tanga International Energy Ltd (TIEL) proposed LPG terminal on 20 ha of land including access adjacent to the MTT with a 300mm subsea pipeline to the shared CBM;
- Mount Meru storage depot (20.2 ha) on the Chongoleani peninsula; and,

- Tanga Port expansion works to expand and deepen two existing berths, Tanga Port, Central Ward, Tanga.

As reflected in this list, there are several anticipated improvements needed for infrastructure like road developments in both countries and these may overlap with Project activities. While there have been some concerns, for example by the Independent Biodiversity and Livelihoods Advisory Committee (IBLAC) about cumulative impacts from multiple oil developments, roads built by the Government (especially through MFNP), the airport, etc., EACOP Ltd considers that the effects of the Project on these will be manageable. Based on the LESC's site visits it is noted that several of the proposed roads in Uganda have been constructed and that these will benefit the Project and Upstream Partners and should reduce transportation risks. The assessment of further projects will be one of the tasks during the initial construction monitoring.

## Signature Page

**WSP Italia S.r.l.**



Federico Breda  
*Project Manager*



Giovanni De Franchi  
*Project Director*

FB/GDF/SUB

C.F. e P.IVA 03674811009

Registro Imprese Torino

R.E.A. Torino N. TO-938498

Capitale sociale Euro 105.200,00 i.v.

Società soggetta a direzione e coordinamento di WSP Global Inc. ex art. 2497 c.c.

**APPENDIX A**

**Lenders Environmental and  
Social Consultant - Environmental  
and Social Due Diligence Report  
March 2024**





## REPORT

# East African Crude Oil Pipeline (EACOP) Project

*Lenders Environmental and Social Consultant - Final Environmental and Social Due Diligence Report*

Submitted to:

**Potential Lenders and Pathfinders**

**Cc: EACOP Ltd, TotalEnergies, CNOOC, UNOC, TPDC, ICBC, Standard Bank and KPMG**

Submitted by:

**WSP Italia S.r.l.**

10155 Torino,  
Italy

20399033-011-RLO-Rev.0

March 2024



## Disclaimer

This report is finalized in March 2024 by WSP (formerly Golder Associates) for the benefit of the Client in its role of Lenders Environmental and Social Consultant (LESC) as defined in the loan agreements/ term sheet documentation, and in accordance with the professional services agreement in place between the parties and set out in the Independent Consultant Engagement Letter dated 1<sup>st</sup> December 2020. The disclosure of any information contained in this report is the sole responsibility of the Client. This report is confidential and contains proprietary intellectual property and we accept no duty of care, responsibility, or liability to any other recipient other than the Client as to the accuracy or completeness of the information contained in this report. Any use which a third party makes of this report, or any reliance on or decisions made based on it, are the sole responsibility of such third parties. WSP accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report. To the extent practicable, WSP relied on information made available by the Client and have independently carried out its assessment. Some of the information included in the report are commercially sensitive and protected by confidentiality agreements between the parties to the contracts and their accuracy could not be independently verified. Information and opinions are current only as of the date of the report and we accept no responsibility for updating such information or opinion after the date of the report. This limitation statement is considered part of this report.

# Table of Contents

<b>1.0 INTRODUCTION .....</b>	<b>11</b>
<b>2.0 LESC SCOPE AND PROCESS.....</b>	<b>12</b>
<b>3.0 LEGAL FRAMEWORK AND POLICIES .....</b>	<b>14</b>
<b>4.0 THE EACOP PROJECT.....</b>	<b>14</b>
4.1 EACOP Pipeline .....	14
4.2 Project phases.....	16
4.2.1 Construction .....	16
4.2.2 Operations.....	18
Project Schedule and Progress to Date .....	19
4.2.3 Associated Facilities .....	25
4.2.4 Tilenga Project .....	25
4.2.4.1 Construction .....	27
4.2.4.2 Operation .....	28
4.2.4.3 Project Schedule and Progress to Date.....	28
4.2.5 Kingfisher Oil Field .....	30
4.2.5.1 Facilities .....	30
4.2.5.2 Construction .....	30
4.2.5.3 Operations .....	31
4.2.5.4 Project Schedule and Progress to Date.....	32
4.2.6 Other Associated Facilities .....	35
4.3 Project Setting.....	36
4.3.1 EACOP.....	36
4.3.2 Associated Facilities .....	36
4.4 Third Parties Developments in the Project Area of Influence .....	37
<b>5.0 SUMMARY OF FINDINGS.....</b>	<b>40</b>
5.1 PS1 – Assessment and Management of Environmental and Social Risks and Impacts ....	40
5.2 PS2 – Labor and Working Conditions .....	43
5.3 PS3 – Resource Efficiency and Pollution Prevention .....	45
5.4 PS4 – Community Health, Safety and Security .....	52
5.5 PS5 – Land Acquisition and Involuntary Resettlement .....	56

5.6	PS6 – Biodiversity Conservation and Sustainable Management of Living Natural Resources .....	59
5.7	PS7 – Indigenous Peoples.....	69
5.8	PS8 – Cultural Heritage .....	70

## TABLES

Table 1: EACOP Affected Land and Households (Pipeline, Priority Areas and AGIs) - March 2024 .....	56
--	----

## FIGURES

Figure 1: Overview of the EACOP System.....	11
Figure 2: Key components of the EACOP Electrical System and Associated Facilities (Source: EACOP Project, 2022). .....	15
Figure 3: Kagera River slightly downstream of RoW, Uganda. The RoW crosses the fields on rear left of the image (Source: LESC Site Visit, November 2023). .....	17
Figure 4: View of MC-PS1 in Kabalega, Uganda (Source: LESC Field Visit, November 2023). .....	20
Figure 5: View of the coating area within the Coating Yard near Sojo, Tanzania (Source: LESC Field Visit, November 2023).....	21
Figure 6: View of MCPY-09, Tanzania (Source: LESC Field Visit, November 2023). .....	21
Figure 7: View of sedimentation pond at MCPY-09, Tanzania (Source: LESC Field Visit, November 2023). .....	22
Figure 8: MST camp in Tanga and jetty construction on-going in the back, Tanzania (Source: LESC Field Visit November 2023).....	22
Figure 9: View of the MST, Tanzania (Source: LESC Field Visit, November 2023). .....	23
Figure 10: Jetty construction platform, Tanzania (Source: LESC Field Visit, November 2023).....	23
Figure 11: EACOP Integrated Project Schedule (Source: EACOP Ltd March 2024). .....	24
Figure 12: Tilenga Development (Source: TEPU Uganda 2022). .....	26
Figure 13: Visualisation of a well pad JBR05 in the MFNP with screening bund wall (Source TEPU). ..	27
Figure 14: Rig operating in Tilenga (Source: LESC Field Visit, November 2023).....	29
Figure 15: Flow Lines for Tilenga under construction (Source: LESC Field Visit, November 2023).....	29
Figure 16: CPF construction area for Tilenga (Source: LESC Field Visit, November 2023).....	30
Figure 17: Overview of the main project infrastructure (Source: Kingfisher ESIA Sept 2018).....	31
Figure 18: View North across Buhuka Flats to Lake Albert, the escarpment road is visible as is Kingfisher's Central Processing Facility footprint and the temporary camp (Source: LESC Field Visit, November 2023).....	33
Figure 19: View North-west across Buhuka Flats to Lake Albert. well pad 1 (left) and CNOOC permanent camp (Source: LESC Field Visit, November 2023). .....	33

Figure 20: View South-west across Buhuka Flats to Lake Albert. Rig visible on well pad 2 (Source: LESC Field Visit, November 2023). .....	34
Figure 21: View South across Buhuka Flats to Lake Albert (Source: LESC Field Visit, November 2023). .....	34
Figure 22: Rig operating at Well Pad 2 (Source: LESC Field Visit, November 2023). .....	35
Figure 23: Well Pad 1 ready to receive the Rig (Source: LESC Field Visit, November 2023). .....	35
Figure 24: Area of Taala Forest Reserve in Uganda showing eucalyptus and banana plantations and clearance of forest (Source: LESC Site Visit, March 2021). .....	36
Figure 25: View a portion of the Murchison Falls National Park and of Lake Albert to the North of the Albert Delta (Source: LESC Site Visit, March 2021). .....	37
Figure 26: View from the escarpment road of Kingfisher main camp (white structures) on shore of Lake Albert (Source: LESC Site Visit, March 2021). .....	37
Figure 27: EACOP Waste Management Hierarchy. ....	47
Figure 29: Examples of replacement housing nearing completion in Uganda (Source: EACOP, 2022) .....	57



## LIST OF FREQUENTLY USED ABBREVIATIONS

ACA	Additional Conservation Actions
AFs	Associated Facilities
AGIs	Aboveground Installations
AIS	Aquatic Invasive Species
AoI	Area of Influence
ARRC	Avoid Reduce Restore Conservation (IUCN SSC PSG SGA taskforce on primates)
BAP	Biodiversity Action Plan
BAT	Best Available Technique
BBOP	Business and Biodiversity Offsets Programme
BES	Biodiversity and Ecosystem Services
BESAP	Biodiversity and Ecosystem Services Action Plan (Tilenga)
BESMP	Biodiversity and Ecosystem Services Management Plan (Tilenga)
BESS	Battery Energy Storage System
BMEP	Biodiversity Monitoring and Evaluation Plan
BMP	Biodiversity Management Plan
BOMP	Biodiversity Offset Management Plan
BOS	Biodiversity Offsetting Strategy
CAPEX	Capital Expenditure
CBM	Conventional Buoy Moorings
CCP	Contractor Control Plan
CCRA	Climate Change Risk Assessment
CCTRA	Climate Change Transition Risk Assessment
CFR	Carbon Footprint Reduction
CH	Critical Habitat
CHA	Critical Habitat Assessment
CHAIR	Critical Habitat Assessment Interpretations and Recommendations (Tilenga)
ChAP	Chimpanzee Action Plan
CHMF	Cultural Heritage Management Framework
CHMP	Cultural Heritage Management Plan
CHSS	Community Health, Safety and Security
CIA	Cumulative Impact Assessment
CIPP	Contractor Implementation Plans and Procedures
CNOOC	China National Offshore Oil Corporation
CPF	Central Processing Facility
CPN	Change Proposal Notice
CPP	China Petroleum Pipeline Engineering Company Limited
DMP	Detailed Management Plan
EACOP	East African Crude Oil Pipeline
ECW	Early Construction Works
EHS	Environmental Health and Safety
EIMS	EACOP Integrated Management System
EPs/EP4	Equator Principles IV
EPCM	Engineering, Procurement, and Construction Management
EPcmC	Engineering, Procurement, Construction Management and Commissioning
EPRP	Emergency Preparedness and Response Plan
E&S/ES	Environmental and Social
ESAP	Environmental and Social Action Plan
ESDD	Environmental and Social Due Diligence
ESHS	Environmental, Social, Health and Safety
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
ESMS	ES Management System
FPIC	Free, Prior and Informed Consent
GHG	Green House Gases
GIIP	Good International Industry Practice

GN	Guidance Note (IFC PS)
HDD	Horizontal Directional Drilling
HGA	Host Government Agreement
HRIA	Human Rights Impact Assessment
HSE	Health, Safety, and Environment
H2SE	Health, Safety, Social and Environment or Health, Safety, Security and Environment
H3SE	Health, Safety, Social, Security and Environment
HVC	High-Voltage Cable
IAS	Invasive Alien Species
IBLAC	Independent Biodiversity & Livelihoods Advisory Committee
ICP	Informed Consultation and Participation
ISPS	International Shipping Port Facility Security
IUCN SSC PSG SGA	International Union for Conservation of Nature – Species Survival Commission – Primate Specialist Group – Section on Great Apes (see also ARRC taskforce)
JHA	Job Hazard Assessment
KBAs	Key Biodiversity Areas
KP	Kilometre Point
KPI	Key Performance Indicator
LESC	Lenders' Environmental and Social Consultant
LLHT	Long line heat tracing
LOF	Load-out Facility
LPA	Legally Protected Area
LR	Local requirement
LSOC	Land and Social
MCHIMA	Marine Critical Habitat Impact and Mitigation Assessment
MCPY	Main camp and pipe yard
MFNP	Murchison Falls National Park
MLBV	Mainline Block Valve
MoU	Memorandum of Understanding
MST	Marine Storage Terminal
MWE	Ministry of Water and Environment (Uganda)
NEMA	National Environment Management Authority (Uganda)
NEMC	National Environmental Management Council (Tanzania)
NFA	National Forestry Authority (Uganda)
NG	Net Gain
NGO	Non-Government Organisation
NNL	No Net Loss
NORM	Naturally Occurring Radioactive Materials
OECD CA	Common Approaches Recommendation of The Council on Common Approaches for Officially Supported Export Credits and Environmental and Social Due Diligence
OHSS	Occupational Health and Safety, Security
PAP	Project Affected Person
PAU	Petroleum Authority of Uganda
PIIM	Project Induced In-Migration
PRS	Pressure Reduction Station
PSs	Performance Standards
PS <sup>1</sup>	Pumping Station <sup>1</sup>
PV	Photovoltaic
RAP	Resettlement Action Plan
RoW	Right of Way
RPF	Resettlement Policy Framework
SEP	Stakeholder Engagement Plan

<sup>1</sup> Note that PS<sup>1</sup> is used in this LESC ESDD report rather than the EACOP's acronym PS, so as to differentiate the Pumping Station (PS<sup>1</sup>) from the Performance Standards (PS) acronyms. Figures taken from EACOP documents however still contain the use of the acronym PS and the use of PS in the figures should be read as Pumping Station.

---

SSA	Sliding Scale Approach
TANAPA	Tanzania National Parks Authority
TEPU	TotalEnergies Exploration & Production Uganda
TIS	Thermal Insulation System
TPA	Tanzania Ports Authority
UNOC	Uganda National Oil Company
UNRA	Uganda National Road Authority
UWA	Uganda Wildlife Authority
WMA	Waste Management Area
WMP	Waste Management Plan
VEGSIAIPs	Vulnerable Ethnic Groups Self-identifying as Indigenous Peoples
VPSHR	Voluntary Principles on Security and Human Rights

## EXECUTIVE SUMMARY

*The East Africa Crude Oil Pipeline (EACOP) Project is a 1,443 km buried insulated 24-inch diameter pipeline to transport crude oil from the Tilenga and Kingfisher oil fields in the Lake Albert area of Uganda to a terminal comprising a storage facility and LOF on the coast of Tanzania for export to international markets in Suezmax type tankers.*

*As the Lenders Environmental and Social Consultant (LESC), WSP is undertaking the Environmental and Social Due Diligence (ESDD) to provide an independent review of the compliance of the EACOP Project with applicable environmental and social standards as demonstrated in the EACOP Environmental and Social Management System and other EACOP Environmental and Social (E&S) related documents. Compliance of the Tilenga and Kingfisher upstream Associated Facilities (AFs) has also been evaluated.*

*This document is the fourth and final ESDD report and is based on the latest information/documents provided by the Project up to March 2024. It provides an update of the Project status with respect to alignment with Lenders' requirements since the ESDD process commenced in quarter two (Q2) 2021. An updated Environmental and Social Action Plan (ESAP) that captures actions to achieve compliance with Lender requirements and shows closed actions and open/ongoing actions that will be monitored during the Project construction phase is included in Section 8.*

*Overall, the Project has made significant progress implementing the ESAP items identified during the ESDD process and towards meeting Lenders' requirements. The ESDD review process has not identified "red flags" against the International Finance Corporation (IFC) Performance Standards (PSs) 1-8 or other Lenders' standards (e.g., representing E&S aspects and risks that the Project has not addressed, dismissed or intentionally ignored), which may result in significant impacts and/or reputational risk. The LESC notes that over the ESDD process (commenced in Q2 2021) EACOP Ltd has, as would be expected for a project at this stage of design, been steadily working on various Environmental, Social, Health and Safety (ESHS) aspects.*

*Although some additional studies have yet to be completed and a small number of plans yet to be finalised, the LESC notes that EACOP Ltd is generally aligned to Lenders' requirements and has addressed almost all items required to be closed before Financial Close. There are still some areas where actions are needed: these are mainly related to the implementation of the provisions included in the management plans whose implementation milestone will be the onset of the construction, and also the alignment of the Kingfisher Associated Facility with lender requirements. However, the majority of those actions identified since the early stages of the ESDD process and due before construction have been completed or are on track with the target for them to be completed by the implementation deadline agreed on the ESAP. Other actions identified in the ESAP cannot be closed at this stage as they are not due until nearer to the operation phase of the Project, and operational planning is ongoing.*

*The key outcomes of the LESC review with respect to compliance with the IFC PSs and the ESAP are summarised below:*

IFC PS	Summary Comment on Status	ESAP items closed	ESAP items open
1 Assessment & Management of Environmental & Social Risks and Impacts	<p>The EIMS structure is considered in line with the requirements and the majority of key documents have been completed including various policy documents, the EIMS manual, a Project ESMP document, numerous management plans and others. A very limited number of documents are still to be prepared and some risk areas to be reviewed to achieve alignment with Lenders' requirements before Financial Close and main pipeline construction starts.</p> <p>The action regarding staffing will be closed when the full HSE teams are in place before the main construction commences.</p> <p>EACOP Ltd is required to use its influence to ensure that the AF ESMS's meet lenders' requirements and implement procedures to ensure the consistency of the ESMSs and performance monitoring between the companies. A Tri-partite Agreement (Memorandum of</p>	8	1



IFC PS	Summary Comment on Status	ESAP items closed	ESAP items open
	Understanding for cooperation) has been agreed between EACOP Ltd, Tilenga and Kingfisher and signed.		
<b>2</b> Labour & Working Conditions	It is considered that EACOP is compliant with Lenders' requirements.	4	0
<b>3</b> Resource Efficiency & Pollution Prevention	EACOP Ltd is on track to meet Lenders' requirements and has made further progress in implementing ESAP actions.  Remaining actions involve the development of aligned key performance indicators for EACOP and the Tilenga and Kingfisher AFs; demonstration of incorporation of best available technology (BAT) / Good International Industry Practice (GIIP) in project design to minimise greenhouse gas (GHG) emissions for the Kingfisher AF.  Actions due before operations deal with NORM management procedures for EACOP and the Afs, management of air and noise emissions around some permanent facilities.	20	5 (3 due before operations)
<b>4</b> Community Health, Safety & Security	EACOP Ltd has plans, procedures and resources in place that meet Lenders' requirements in the areas of community health, safety, security and Project Induced In-Migration (PIIM) management.  The remaining action concerns finalization of Memorandums of Understanding (MOUs) with the government security forces in Uganda and Tanzania to further elaborate the Heads of Government Agreement (HGA) Article 18 on Security already agreed between EACOP and the Governments of Uganda and Tanzania.	15	1
<b>5</b> Land Acquisition & Involuntary Resettlement	EACOP Ltd land acquisition and resettlement documentation is compliant. Tilenga is in the final stages of contract award for independent review of resettlement and livelihood restoration programmes to close out the remaining action.	16	1
<b>6</b> Biodiversity Conservation & Sustainable Management of Living Natural Resources	EACOP Ltd has made good progress towards meeting requirements. Remaining compliance gaps include: a technical systematic review of ecosystem services is to be finalized and reviewed against requirements; as an AF, there are gaps in Kingfisher's biodiversity management program to demonstrate compliance; formal opinion awaited from the IUCN Avoid Reduce Restore Conservation (ARRC) Taskforce regarding EACOP's approach to mitigating impacts on chimpanzees. Operational planning, including cumulative impact management, is ongoing.	24	3
<b>7</b> Indigenous People	Substantive conditions have been achieved for land access to commence on ancestral land, or historical land, territories and resources of four indigenous groups in Tanzania (Akie, Taturu, Barabaig and Maasai).	1	0
<b>8</b> Cultural Heritage	EACOP Ltd is generally compliant with requirements. A revised Cultural Heritage Management Plan for the Kingfisher AF is required.	2	1
<b>Totals</b>		<b>90</b>	<b>12</b>

## 1.0 INTRODUCTION

TotalEnergies Exploration and Production Uganda (TEPU), China National Offshore Oil Corporation Uganda Limited (CNOOC) and Uganda National Oil Company (UNOC) (the “Upstream Partners”) hold interests in petroleum resource licences near Lake Albert. These Upstream Partners will produce crude oil from their oil fields, stabilise it at the Tilenga and Kingfisher central production facilities and then send it for transportation through the new East African Crude Oil Pipeline (EACOP) Project to a Marine Storage Terminal (MST) and load-out facility (LOF) at Tanga on Tanzania’s coast for storage and export in Suezmax type tankers. The Upstream Partners, along with the Tanzania Petroleum Development Corporation (TPDC) are shareholders in the EACOP and related infrastructure (the “Project”). EACOP Ltd is the project company that has been established by the shareholders as a specific company to build and operate the Project.



Figure 1: Overview of the EACOP System.

The shareholders of EACOP intend to raise project finance debt from credit providers (the “Lender Group” or “the lenders”). Because the Project is categorized as A as defined by Equator Principles IV (EP IV) and Organization for Economic Co-operation and Development (OECD) Common Approaches, the Lender Group requires that a full Environmental and Social Due diligence (ESDD) review of the Project is carried out including benchmarking against the International Finance Corporate (IFC) Performance Standards (PSs) and the Environmental, Health and Safety (EHS) Guidelines, and lender specific policies.

The Lender Group has retained WSP (formerly Golder Associates), a leading global engineering and consulting company, to act as the Lenders’ Environmental and Social Consultant (LESC) as defined in the loan agreements/ term sheet documentation to carry out the ESDD. The role of the LESC is to assess and report to the lenders’ group on EACOP compliance with applicable environmental and social standards demonstrated in the Environmental and Social Management System and other Environmental and Social (E&S) related documents developed to date by EACOP.

This document is the fourth and the final ESDD report and provides an update of the Project status with respect to alignment with Lenders’ requirements since the ESDD process commenced in quarter two (Q2) 2021. The report accounts for the latest documents provided by EACOP, for the outcomes of topic-specific meetings/calls between the LESC and EACOP specialists, for a site visit held 20-26<sup>th</sup> of November 2023, and for a short site

visit in late February – early March to support Lender's visit to some of the key project areas and represents the final LESC deliverable in the ESDD process. The report includes a simplified description of the Project as more detailed information have been provided in previous ESDD reports, an update of the ESDD assessment carried out, and the updated Environmental and Social Action Plan (ESAP) from the previous LESC reports that tracks the actions that have been addressed and closed and identify those that remain open/ongoing that will be monitored during the Project construction phase.

Overall, the Project has made significant progress implementing the ESAP items identified during the ESDD process and towards meeting Lenders' requirements. There are a few ESAP actions (see Section 7) mainly relate to IFC PS1, 3, and 6 that are in progress with target to be closed before financial close or at the onset of the main construction.

## 2.0 LESC SCOPE AND PROCESS

Within the ESDD, the overall objectives of the LESC are:

- provide specialized advice to the Lender Group throughout the ESDD to assess compliance with their standards until financial close;
- support, as required, the Lender Group during the negotiation of the environmental and/or social covenants to be included in the finance documents, if any;
- prepare reports that may be used by the lenders in their credit approval and syndication activities throughout the lifetime of the Project financing up to financial close;
- be available up to financial close to support the Lender Group and provide them with information pertaining to its scope of work; and
- cooperate and be ready to provide information to other lenders' consultants such as the Technical Consultant in relation to the Project.

Based on information provided by the Lender Group, the lenders consider facilities upstream of the Kabalega Delivery Point as Associated Facilities (AF) according to the definition provided in the applicable standards. As such, the ESDD has also included a review of potential environmental and social risks relevant to these AFs against lenders' standards. The LESC's ESDD services are required up to financial close. Post financial close ES review services will continue with construction monitoring, which is not within the scope of the current assignment.

To date, the ESDD process has included the following activities:

- a "Preliminary Findings Report"<sup>2</sup> finalised in March 2021 with a summary of key findings from the initial desktop review of the E&S documentation package provided by EACOP (including ESIA reports and several management documents for the Project, the AFs, and other E&S documentation);
- a site visit to the Project Area of Influence (Aol) in Uganda and Tanzania in March and April 2021, respectively, and an "Initial ESDD report"<sup>3</sup> and associated initial Environmental and Social Action Plan (ESAP) where key gaps with Lenders' requirements have been captured and relevant actions to achieve compliance identified;

---

<sup>2</sup> Golder Document No.20399033-001-RLO-Rev.3 dated March 2021.

<sup>3</sup> Golder Document No.20399033-002-RLO-Rev.2 dated June 2021.

- a site visit to Uganda and Tanzania focused on aspects of biodiversity (Uganda only as Tanzania was already visited in the previous visit), land acquisition and social compliance, in October 2021 and relevant site visit memo<sup>4</sup> submitted in December 2021;
- a “First Progress ESDD<sup>5</sup> report” submitted in March 2022 with an update of EACOP’s progresses in addressing and resolving issues identified in the Initial ESDD report action plan items based on the review of additional E&S documentation provided by EACOP in response to the ESAP actions;
- an additional site visit by the LESC marine specialist in August 2022 to the LOF and MST. The LESC marine specialist visited the site of the MST, which was in the very early stages of construction, and the proposed site of the LOF. He also met with local stakeholders in and around Tanga;
- a “Second Progress ESDD report”<sup>6</sup> submitted in January 2023 with an updated ESAP that reflects the Project status with respect to alignment with Lenders’ requirements based on the review of further E&S documentation provided by EACOP;
- a “Non-Technical Summary” (NTS)<sup>7</sup> of the ESDD process carried out up to January 2023 for the benefit of the lenders and external stakeholders with an easily understandable summary of the information included in the ESDD reports developed since the ESDD process commenced in quarter two (Q2) 2021;
- a “Third Progress ESDD Report”<sup>8</sup> issued in June 2023 to document EACOP progress in the ESAP implementation up to May 2023. The report was based on the review of new or revised documentation provided by EACOP with no site visits;
- An additional site visit held from November 20<sup>th</sup> to 26<sup>th</sup> 2023, to selected project locations in Uganda (including Tilenga, Kingfisher and EACOP PS1) and Tanzania (including Coating Yard, Main Camp and Pipeyard (MCPY-09, Marine Storage Terminal and Jetty) to support the preparation of the final ESDD report; and
- a site visit to a number of Project locations in Uganda (February 27<sup>th</sup> – March 1<sup>st</sup>) carried out by the LESC biodiversity specialist and in Tanzania (March 3<sup>rd</sup> – 8<sup>th</sup>) carried out by the LESC social specialist to accompany a Lender in their pre-financial close site visit (therefore not a full DD visit).

Since the third Progress ESDD Report submitted in June 2023, EACOP Ltd has progressed further with the development of several additional documents to address the gaps identified during the ESDD process. This report is the Final ESDD report, which includes a final ESAP, and provides a summary of the Project status with respect to compliance with Lenders’ requirements and highlights some remaining aspects where additional actions are still required to achieve full compliance. The ESAP included in this report is an updated version of the ESAP from the previous LESC reports and tracks the actions that have been addressed and closed and identifies those that remain open/ongoing and that will have to be progressively completed before Financial Close or during the early stages of the Project construction phase.

<sup>4</sup> Golder Document No.20399033-004-RLO-Rev.0 dated December 2021.

<sup>5</sup> Golder Document No.20399033-005-RLO-Rev.2 dated March 2022.

<sup>6</sup> Golder Document No. 20399033-006-RL0-REV.2 dated January 2023.

<sup>7</sup> Golder Document No.20399033-007-RLO-Rev.3 dated January 2023.

<sup>8</sup> Golder Document No. 20399033-008-RL0-Rev.3\_dated June 2023.

### 3.0 LEGAL FRAMEWORK AND POLICIES

The ESDD has assessed Project compliance against the following<sup>9</sup>:

IFC Performance Standards (PSs):

- PS1: Assessment and Management of Environmental and Social Risks and Impacts;
- PS2: Labour and Working Conditions;
- PS3: Resource Efficiency and Pollution Prevention;
- PS4: Community Health, Safety and Security;
- PS5: Land Acquisition and Involuntary Resettlement;
- PS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources;
- PS7: Indigenous Peoples; and
- PS8: Cultural Heritage.

World Bank Group (WBG) General Environmental, Health and Safety (EHS) and EHS Guidelines for Onshore Oil and Gas Development.

Equator Principles 4 (EP4) - a risk management framework for determining, assessing, and managing ES risks in projects and are primarily intended to provide a minimum standard for due diligence to support responsible risk decision-making.

OECD Common Approaches within which projects are expected to be benchmarked against international standards as part of the environment and social due diligence process (IFC PSs, WBG EHS Guidelines).

Host countries (Uganda and Tanzania) laws and permits.

### 4.0 THE EACOP PROJECT

#### 4.1 EACOP Pipeline

The EACOP Project<sup>10</sup> is a 1,443 km buried insulated 24-inch diameter pipeline to transport crude oil from the Tilenga and Kingfisher oil fields in the Lake Albert area of Uganda to a terminal comprising a storage facility and LOF on the coast of Tanzania for export to international markets in Suezmax type tankers.

This pipeline will begin at a pump station (PS1) within the planned Kabalega Industrial Park and run South from PS1 to the border with Tanzania, and then continue South, to the west of Lake Victoria, before turning Eastwards through Tanzania terminating at the MST adjacent to the LOF consisting of a 2 km long trestle and export loading platform North of Tanga City on the Indian Ocean.

The oil in the EACOP pipeline will have its pressure boosted at each of six pump stations to maintain flow rate over the rolling terrain of the East African plateau, and two Pressure Reduction Stations (PRS) to manage pressure as the pipeline descends to the MST.

The pipeline will be buried and fitted with long line heat tracing (LLHT) which will maintain the temperature of the crude when flow rates decrease later in the pipeline's life. Heating is not required during the period of

<sup>9</sup> A more comprehensive list of the standards used throughout the ESDD is included in the LESC Second Progress Report (Document No. 20399033-006-RLO-REV.2 dated January 2023).

<sup>10</sup> More information on system description, construction sequence, pipeline integrity can be found at the EACOP website pages <https://eacop.com/overview/>



maximum flow rate as the insulation alone will suffice. A fibre optic (FO) cable on the top of the pipe enables the Project to detect disturbances along the pipeline (e.g., leak, noise and vibration), complemented in places by a second FO cable running adjacent to the pipeline to measure potential strain from seismic activity. A high-voltage three phase electrical cable (HVC) will distribute power along the route to, or from the aboveground installations (AGIs), such as PSs PRSs and MST. Grid connections and EACOP's own power generation will be generated at selected locations and distributed via the HVC to where it is needed. With respect to power generation, since the early stage of the ESDD process EACOP has moved away from the original base case to generate electricity through burning crude through identifying opportunities to reduce the overall carbon footprint. A number of alternative power generation options have been assessed since 2020 and the Best Available Techniques (BAT) evaluation of the alternatives for energy production identified connections to the national electrical grids as the best option combined with battery energy storage system (BESS), with a solar PV system installed at the MST. In this case the crude burning generator sets at selected PSs would only be used as a back-up power requirement when the alternative electricity supply is not stable or not available.

The LESC considers that this BAT approach will achieve EACOP's reported 30% reduction in CO<sub>2</sub> emissions in Tanzania when compared to the base case; furthermore, based information available to WSP from ongoing EACOP studies, on the implementation of the full range of proposed carbon reduction proposals, the Project's CO<sub>2</sub> emissions could be reduced by in the order of 40 – 50% in Tanzania when compared to the base case.

AGIs also include 76 mainline block valves (MLBV) which will be distributed along the pipeline route at key points, such as either side of watercourses which are more than 30 m wide (or less if located upstream of a sensitive receptor). These MLBVs provide the Project with the ability to stop and isolate the flow of oil into a damaged section of pipeline, and so minimise releases to the environment in the scenario of a pipeline rupture. The key components of the Project are illustrated in the next figure along with the main associated facilities (AFs).

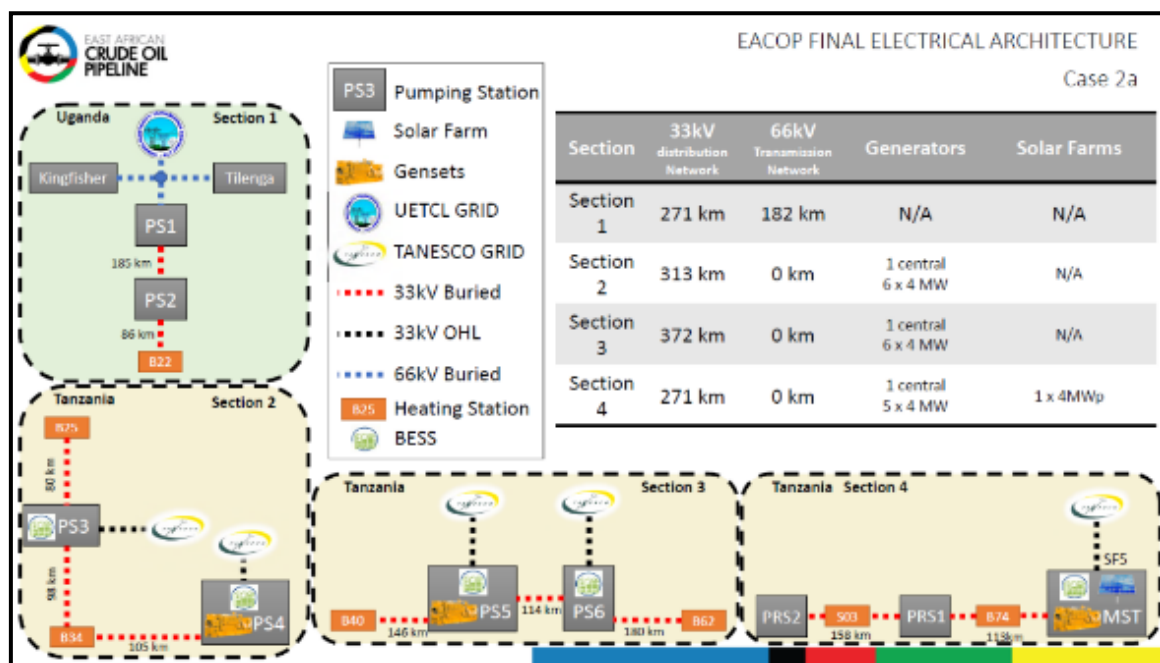


Figure 2: Key components of the EACOP Electrical System and Associated Facilities (Source: EACOP Project, 2022).

For the construction phase of the Project, temporary construction facilities will be built. These include the pipeline Thermal Insulation System (TIS) coating facility (or 'Coating Yard') at KP701, adjacent to MCPY-09 in Nzega District, Tabora Region, Tanzania, where pipeline insulation will be applied to the pipe sections that will

be imported through Dar Es Salaam port, as well as 16 Main Camp and Pipe Yards (MCPYs – roughly every 100 km with four in Uganda and 12 in Tanzania). The pipeline coating facility will also coat the pipe sections which will be used on the Tilenga feeder pipeline. The insulated pipes will be distributed by road to the MCPYs and then along the pipeline right of way (RoW).

There are two layers of oversight within the EACOP organisation to manage the health, safety, social, security, and environment (H3SE) components during project construction. The EACOP “Corporate entity”, who has overall responsibility for verifying the safe and efficient delivery of the Project’s health, safety, security, social and environment components, including liaison with regulators, and ensuring international standards are upheld, referred to as health, safety, and environment (HSE) and Land and Social (“LSOC”). The second layer is the EACOP Project H3SE team within the EACOP ‘Project’ Team. The Project organisation is the Contract Owner for construction contractors. EACOP Project manages and assures construction Contractor performance and maintains oversight of Contractor. Project H3SE is responsible for the routine assurance technical H3SE guidance to Contractors to deliver the Project’s health, safety, security, social and environmental performance requirements. Project H3SE includes Industrial Relations management. During the detailed design and construction phase EACOP engaged an engineering, procurement, and construction management and commissioning (EPcmC) with resources embedded into the Project organisation to form an integrated construction management team.

## 4.2 Project phases

### 4.2.1 Construction

All land required is acquired by the Ugandan and Tanzanian Governments and then leased by EACOP Ltd from the Uganda Land Commission and Tanzania Petroleum Development Corporation. This lease will include land for permanent facilities and temporary construction facilities, once construction is complete, all land no longer required by the Project will be handed back to these government entities. Most of the construction facilities, including the pipe coating facility, will require the leasing of the acquired land for three years. During construction, the footprint of the Project is estimated to be 1,109 ha in Uganda and 4,080 ha in Tanzania, of this land the majority (889 ha in Uganda and 3,441 ha in Tanzania) is required for the 30 m wide pipeline construction corridor (i.e., the Right of Way (RoW)).

To enable the installation of the pipeline and construction of the AGI there will be the requirement for:

- new and upgraded construction facility access roads, which will remain in place post construction;
- 16 MCPY for the construction phase (12 in Tanzania and 4 in Uganda), these are all single facilities except for MCPY-13 which is separated into MC13 and PY13; and
- a pipeline coating facility in Tanzania where the imported pipeline sections will be prepared and then insulated. This facility is located adjacent to MCPY-09 and a section of the railway whose utilization to transport some equipment was investigated at the early stage of the design; however, based on the current status of the railway and upgrades which would be required, EACOP Ltd has not selected the railway as an option due to the Project schedule risks as well as the current speed and volume constraints on the railway.

The installation of the pipeline will comprise the clearance of the RoW which will remove all vegetation, topsoil and some of the subsoil, and include topsoil stockpiling in preparation for reinstatement. The insulated pipes will be delivered to their predetermined locations by truck and positioned in a way which avoids damage to pipe or its coating; this “stringing” of the pipe will ensure that pre-bent sections are then in the correct position on the RoW. The pipes will then be welded together with the pipeline string laid alongside the planned trench. Welded joints will be tested for integrity and then coated to prevent corrosion and insulation added. The trench will be excavated using a trenching machine (with shallow blasting where required to enable the trenching in rocky

areas). In wetland areas, tracked excavators on mats will be used. The trench will then be 'padded' with a layer of soft material (clays etc.) without sharp materials, and the pipe lowered into the trench, and backfilled. A high visibility polyethylene pipeline warning net, with a width equal to the pipeline diameter, will be placed 0.3 m above the pipeline over the entire route. The armoured high-voltage cable will be installed in a circa 1.25 m deep trench approximately 4.5 m from the pipeline in the same RoW.

There are numerous crossings on the pipeline route; for most crossings, the pipeline will be installed using an open-cut method, where a trench is excavated to a minimum depth of 1.8 m. This may require the crossing to be temporarily blocked or diverted during construction. The Project base case is that the crossing of these rivers will take place in the dry season when water levels are low (or for ephemeral rivers, absent). The potential environmental and social impact of each crossing, such as on other water users, will be assessed prior to implementing the works. For two rivers in Tanzania, the Kagera and Sigi Rivers, the pipeline will be installed under the riverbed, using horizontal directional drilling (HDD) due to the river flow rate, size and/or topography. Larger land infrastructure crossings (e.g., road and rail crossings) will be achieved using auger boring.



**Figure 3: Kagera River slightly downstream of RoW, Uganda. The RoW crosses the fields on rear left of the image (Source: LESC Site Visit, November 2023).**

The Project will utilise diesel generators during construction. Water will be predominantly supplied by groundwater wells located on the operational sites. Waste generated by the Project during construction will be managed by the construction contractors in accordance with the Project's waste management requirement. This will require contractors to minimise waste generation and implement the reuse and recycle principals. It is recognised that the waste disposal options along much of the route are limited and therefore wastes will need to be transported back to approved waste management facilities such as in Dar es Salaam (Tanzania) or in Hoima (Uganda) near Kilometre Point (KP) 0 (see also Section 4.3.3).

Imported construction materials will enter via the Tanzanian ports of Dar es Salaam and Tanga. Once in the port the pipes (which only enters via Dar es Salaam) will be transported to the coating plant and from there to the pipe yards along the RoW. AGI components and construction materials will be transported to the various storage facilities and construction sites. Following a detailed review of rail transport options, the assumption is that transport will be by road due to limitation on the rail infrastructure and rolling stock.

During construction the expatriate and non-local Tanzanian workforce will be housed at the MCPYs which will operate as closed camps to minimise the potential impacts on the local communities and potential additional

impacts on ecosystem services and biodiversity. Unskilled and semi-skilled workers from local communities will be day workers and return to their villages each night.

The marine trestle and load-out facility, through which crude oil will be exported on Tanzania's Indian Ocean coast, is situated in sufficiently deep waters that, based on the ESIA design, does not require dredging during construction, with the trestle and LOF installed on a pile-driven structure.

Once the MCPYs are decommissioned, they will be, along with other temporary construction areas, either handed back to the respective Governments, or retained.

The ESIA cost-benefit analysis indicates that the EACOP project is likely to generate about 25 million local manhours employment in Tanzania (about 73% of level contractor manhours) and 7 million manhours in Uganda (about 77% of level contractor manhours). This translates to:

- About 6,000 Tanzanian workers employed during peak construction; and
- About 1,500 Ugandan workers during peak construction.

The Project is expected to deliver over 1.2 million manhours in training – 0.2 million manhours for Uganda and 1.0 million manhours for Tanzania.

The Goods and Services spend will exceed USD 432 million in Tanzania and USD 87 million in Uganda mainly on cement, steel, aggregate, logistics, catering hospitality, construction and facilities setup. Other benefits will include capacity building such as:

- Partnership between international companies and Local Companies;
- Industry Enhancement Centre, quarterly forums;
- Train "The Trainer" (training done by contractors to teachers at universities);
- Training for local communities;
- Scholarship, Support to local institutions;
- Donations to local communities;
- Business development initiatives; and
- Internships (students sent abroad at contractor's head office and university to receive training).

#### **4.2.2 Operations**

Before commissioning and operations can begin, the following core pre-commissioning activities will be undertaken:

- controls and instrumentation system check and verification;
- flushing with water and initial cleaning of the pipeline with gauging of pipeline wall thickness;
- hydrostatic testing consisting of a strength and leak test;
- final cleaning and dewatering or nitrogen fill after completion of hydrostatic testing; and
- communications systems check and verification.

A similar testing regime will be implemented at the PSTs and MST.

The primary source of water for the hydrostatic testing is expected to be surface water, not groundwater. If surface water is not available to make up losses incurred during testing, groundwater, if available, may be used, if this is permitted and within ground water abstraction limits set by government for each borehole, and can be abstracted without local groundwater resources impacts. All permits for groundwater abstraction will be acquired and permit conditions adhered to by the EACOP project. A Hydrotest Management Plan will be developed to guide this activity.

The surface water abstraction points will be fitted with filters to reduce the entrapment of fish, sediment, and residues in the hydrostatic test water. EACOP Ltd will assess opportunities for the hydrostatic test water to be reused between test sections with the aim of reducing the overall volume of water required.

The crude oil from the Lake Albert basin fields is waxy with a relatively high pour point temperature, and therefore, to enable the crude to flow, and avoid waxes separating out in transit, the crude must be maintained at a temperature above 50°C. When production volumes drop, the crude will be heated by the LLHT system along the pipeline, and heating in the external floating roof crude oil tanks and the export lines at the MST. The amount of heating required will increase later in the Project life when flow rates are declining, with this further heating provided by the pumping station bulk heaters. The power for this heating is anticipated to be from a combination of the Ugandan and Tanzanian national grid with BESS in Tanzania, and backup oil burning generators at selected PSTs (the original ESIA base case). Because of the relatively high pour point temperature (above ambient temperatures), any accidental release of crude to the environment would be expected to solidify close to the source of the release once the temperature had dropped below the pour point temperature. All facilities will have a security contingent associated with them, but only some facilities will have a full-time staff presence. During operations there will be approximately 316 personnel distributed over:

- PSt1 (who will also as needed cover PSt2);
- PSt3 (who will also as needed cover PSt4);
- PSt5 (who will also as needed cover PSt6); and
- The MST to also cover PRS1 and 2, and the LOF.

During normal operations at the MST and LOF, the Project anticipates loading a Suezmax type tanker (0.9–1.0 million barrels) every 4-5 days, with each tanker being filled within 36 hours.

## **Project Schedule and Progress to Date**

In Tanzania to date, early civil works have been undertaken at the MCPY and Coating Yard as summarised below. By Q1, 2024 all MCPY early civil works will be completed and handed over to the pipeline contractor.

From March 2022, the construction contractor mobilised to begin vegetation clearance of the MST and has completed early works and the upgrade of the 7km road connecting the MST with the main road. Since mid-2022, TIS Contractor has progressed construction of the coating facility and continues preparation for receipt of pipe sections in late 2023 and operations of the coating facility in early 2024. AGI early construction works (ECW) activities commenced in late Q3, 2023.

At MCPY-09 where pre-construction biodiversity surveys commissioned by EACOP Ltd indicated that Natural or Critical Habitat would not be impacted, construction was able to proceed before the finalisation of the Biodiversity Action Plan and other related documents.

At the time of this report, pipeline RoW pre-construction surveys have been completed in both Uganda and Tanzania. The majority of the activities ongoing are the early civil works along the length of the Project. A summary of the status of this as of the end of February 2024 was as follows:



- early civil works/site preparation at MCPY-06, MCPY-07, MCPY-08, MCPY-09, MCPY-10, MCPY-11 and MCPY-15 are complete as is the Coating Yard; early civil works /site preparation have not yet started on MCPY-02, and MCPYs 12-14, notices to proceed have been issued to the main construction contractor, China Petroleum Pipeline Engineering Company Limited (CPP) for these;
- early civil works /site preparation at all other MCPY sites is at various stages of completion; Coating Yard main building is completed, with progress on equipment installation and civil works, and a workforce of 340 on site. The plan is for the Coating Yard to be operational in Q2 2024;
- site preparation activities at the Tanga Marine Storage Terminal / Tank area are progressing with warehouse construction erection ongoing, upgrade of access road, topsoil removal and cut / fill work completed, piling on the jetty are ongoing;
- at the Jetty & Load out Facilities, structural design completed and piping, E&I detail design ongoing, marine mobilization completed, 1<sup>st</sup> and 2<sup>nd</sup> batch of piles arrived onsite and 1st batch of modules fabrication completed and delivered to Tanga, test pile driving completed with some piles already driven and precast installations ongoing;
- water sourcing early activities (engineering and procurement) in Tanzania and Uganda are now either completed or significantly complete;
- work on the AGIs by CPP is ongoing, with engineering works, procurement of materials, and civil construction works progressing;
- pipeline RoW pre-construction surveys have been completed in both Uganda and Tanzania including walkover seismic survey, individual crossings surveys, Sigi and Kagera River HDD geotechnical surveys and water sourcing surveys;
- from the start of MCPY early civil works (late 2021) and MST / Tank area site clearance (early 2022), EACOP Community Liaison Officers (CLOs) have been onsite to guide Contractor social management, assure Contractor social performance and observe Contractor stakeholder engagement;
- Project Environmental Advisors have been in place to support contractors to ensure all related mitigation measures are implemented at all work locations, and
- Marine Mammal Observers (MMO) are active for early jetty activities, including test piling.



Figure 4: View of MC-PS1 in Kabalega, Uganda (Source: LESC Field Visit, November 2023).



Figure 5: View of the coating area within the Coating Yard near Sojo, Tanzania (Source: LESC Field Visit, November 2023).



Figure 6: View of MCPY-09, Tanzania (Source: LESC Field Visit, November 2023).



Figure 7: View of sedimentation pond at MCPY-09, Tanzania (Source: LESC Field Visit, November 2023).



Figure 8: MST camp in Tanga and jetty construction on-going in the back, Tanzania (Source: LESC Field Visit November 2023).





Figure 9: View of the MST, Tanzania (Source: LESC Field Visit, November 2023).



Figure 10: Jetty construction platform, Tanzania (Source: LESC Field Visit, November 2023).

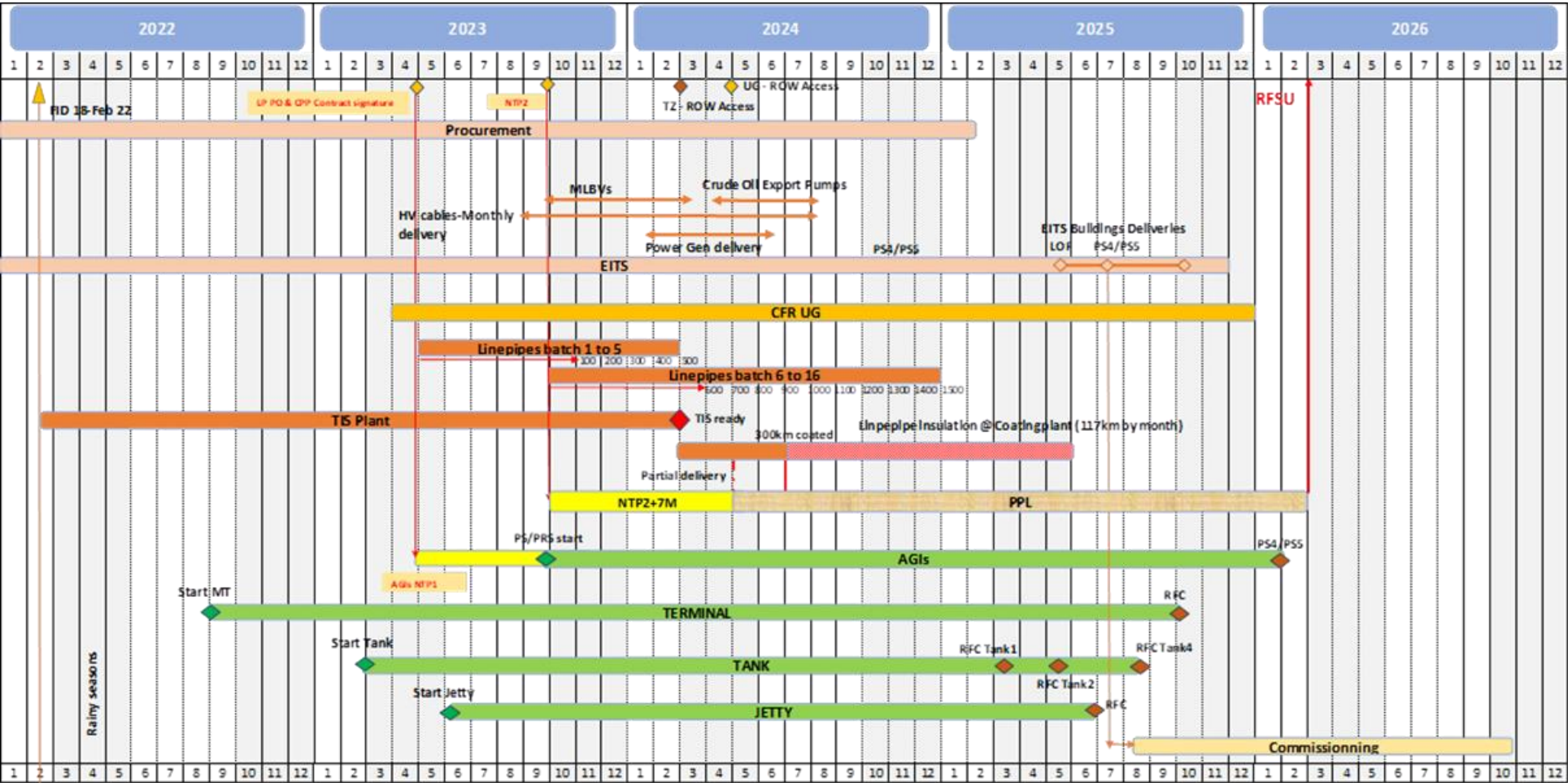


Figure 11: EACOP Integrated Project Schedule (Source: EACOP Ltd March 2024).<sup>11</sup>

<sup>11</sup> More detailed Project schedules have been provided by EACOP.



### **4.2.3 Associated Facilities**

The Upstream Partners will supply oil from their production fields either side of the Victoria Nile (Tilenga) or beneath Lake Albert (Kingfisher), via two feeder pipelines. The Kingfisher and Tilenga projects, each comprising oil field infrastructure, a Central Processing Facility (CPF), and a feeder pipeline to PSt1, are considered associated facilities (AFs) to the EACOP Project as defined under IFC PS1 and, as such, have been included in the ESDD assessment. The CPFs will process the crude, including recovered gas, before heating the oil and pumping it to PSt1 where it will enter the EACOP pipeline or be utilised in the planned refinery in Kabalega Industrial Park. The recovered gas will be used to power the Kingfisher and Tilenga developments. Recovered gas from Tilenga and Kingfisher not required for power generation is planned to be bottled as LPG for retail sales in Uganda.

### **4.2.4 Tilenga Project**

The Tilenga project comprises the development of six oil fields in the Albertine Graben with wells extracting the oil to the Northeast of Lake Albert and downstream of Murchison Falls. It is operated by TEPU on behalf of the Upstream Joint Venture (TEPU, CNOOC and UNOC).

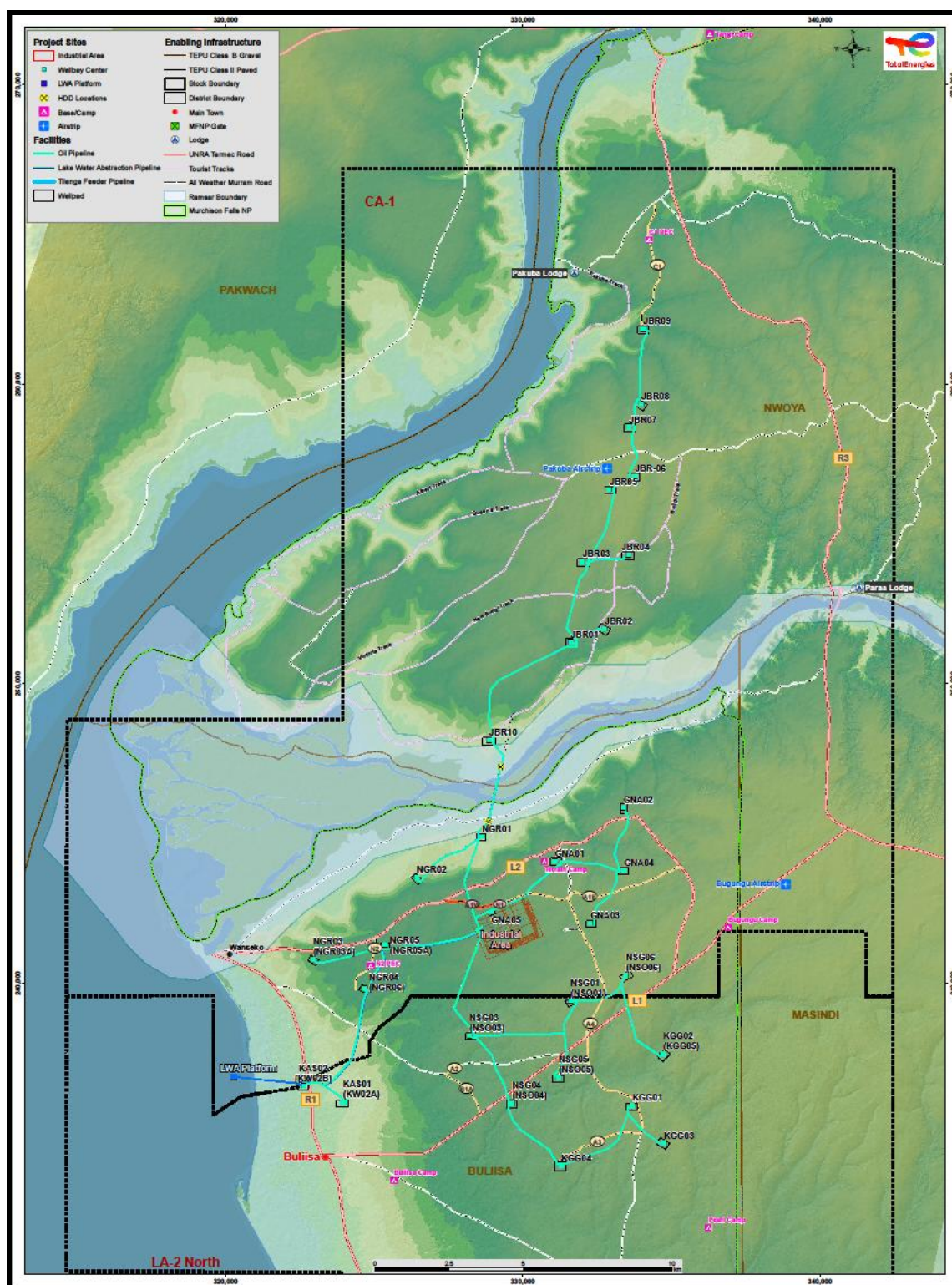


Figure 12: Tilenga Development (Source: TEPU Uganda 2022).

Well fluids, comprising a mixture of oil, water, and gas will be produced from 426 wells located on 31 well pads, ten of which will be within the Murchison Falls National Park (MFNP). These ten within the MFNP have been designed to minimise the visual impact through the reduction in the height of infrastructure and construction of an earth bund around the well pads, outside of the MFNP a mixture of bund walls and fencing has been used.



**Figure 13: Visualisation of a well pad JBR05 in the MFNP with screening bund wall (Source TEPU).**

A buried infield production network will transport produced fluids from the well pads to the CPF in the Industrial Area of Ngwedo sub-county in Buliisa district. This connection of the fields to the CPF will require a section of the network to be installed by HDD beneath the Victoria Nile River (part of the Murchison Falls/Lake Albert Delta Wetland).

The CPF and the industrial area will include the operational support structures and resources, as well as administration requirements. The CPF will include a treatment facility, power generation facility (utilising the produced gas and solar PV system), and export facilities, and will house other systems such as a water treatment plant. The solar PV is designed to supplement the electricity needs of the Project, with up to 50 MWp installed in two phases, A Phase 1 of 15 MWp and Phase 2 of 35 MWp, which will be installed on about 15 Ha of land identified by TEPU on the eastern side of the Industrial Area, which is outside the main construction area but inside the acquisition zone within the Industrial Area in Buliisa district. The well fluids will be processed at the CPF into crude oil, produced water and recovered gas. Crude oil, which is already heated as part of the water separation process, will be pumped via the 95 km insulated Tilenga Feeder Pipeline to PSt1 where it will enter the EACOP pipeline or be utilised in the planned refinery in Kabalega Industrial Park (not part of the Tilenga, Kingfisher or the EACOP Projects). All produced water will be transported via a buried infield pipeline network for reinjection back into the oil reservoirs. The recovered gas will be utilised for power and heat generation and producing LPG. Propane and Butane will be extracted from the gas and will be bottled as liquified petroleum gas (LPG) for retail sales in Uganda and regional market. When gas volumes decrease, electricity will be imported from the national grid. The CPF is designed to produce 190 thousand barrels of oil per day (kbopd). Infrastructure will also include a water abstraction system on the shores of Lake Albert.

Early civil works started in 2021 at the CPF with the establishment of the construction camp and construction support base. Start-up and operation of the facilities are expected to commence in the second half of 2025. Operations are expected to last for approximately 25 years. Decommissioning is planned at the end of operations.

#### **4.2.4.1 Construction**

The construction phase for the Tilenga development, will include:

- site preparation and enabling infrastructure works (clearance, earthworks, civil works, access roads) for Industrial Area, 31 well pads, access roads;
- construction of Temporary Construction Camp at the Industrial Area, (existing camps including Tangi, Bugungu, and Buliisa will be utilized by project teams and contractors);
- temporary facilities in the Industrial Area including Construction Support Bases and Drilling Support Base;

- use of existing and new borrow pits and quarries; Tilenga has stated that where feasible the planning of these will take account of the potential to utilise the large borrow pits created for the recent new road construction;
- construction, installation and commissioning of main facilities (CPF and well pads);
- construction, installation and commissioning of the production and injection network including the Victoria Nile Crossing;
- construction, installation and commissioning of the lake water abstraction infrastructure and pipeline;
- well development drilling using water (upper hole) and oil-based mud systems (lower sections);
- the drilling returns (slurry & cuttings) will be recycled as far as possible. All waste slurry and cuttings will be transported to an appropriately licensed facility for treatment to recover the water and synthetic oils for reuse. The oil recovery process will yield an oil content in the process solids of less than 5% to enable disposal to landfill; and
- installation of a 95 km insulated underground pipeline from Tilenga CPF to EACOP PSt1 at the Kabalega Industrial Park.

The workforce during construction is estimated to be up to 4,400 personnel at the Tilenga development, the majority housed in temporary camps. The construction of the Tilenga feeder pipeline will be executed by the same contractor and be essentially identical to EACOP's pipeline construction.

At the time of this report site preparation and access roads construction were at different level of advancement, the Drilling Support Base completed and ready to support operations in the Industrial Area, well pads under preparation with some wells either drilled, under drilling or under rig move.

#### **4.2.4.2 Operation**

During operations, the Tilenga oil field gas will be used to power gas turbine-driven generators to heat the water re-injected and to produce LPG. In the later years when gas volumes fall, electricity will be brought in from the grid. The power will be used to maintain the injection of liquids to the field and enhance oil production, power the CPF, and pump the oil to a delivery point near Kabalega, via the underground pipeline. Peak oil production is expected to generate about 190,000 barrels of oil per day. The volume of produced oil and gas will remain constant for several years before gradually declining. During operations there are estimated to be a permanent staff contingent of over 120.

#### **4.2.4.3 Project Schedule and Progress to Date**

At the end of February 2024 two rigs were drilled (JBR 05, NGR 03), one under drilling (GNA 01), and two under rig move. Flow lines were under construction to connect the well pads to the CPF.

The Tilenga construction base footprint has been established and numerous structures have already been erected, including offices of several contractors, laydown areas, parking areas, workshops, consolidated waste storage areas and the like. The CPF footprint has been established and civil works are ongoing. Large topsoil and subsoil piles are present along the boundary of the construction base where soil stripped from the construction base footprint has been stored.

The HDD site at the Nile crossing could not be visited in November 2023 and in February 2024 due to high water levels along the Nile. It was however reported that construction activities have not started.



The water abstraction point along Lake Albert shore to the west of the CPF could not be visited in November 2023 as the area was flooded and was not accessible by vehicle or on foot. There are no on-site activities ongoing in November 2023.



Figure 14: Rig operating in Tilenga (Source: LESC Field Visit, November 2023).



Figure 15: Flow Lines for Tilenga under construction (Source: LESC Field Visit, November 2023).





Figure 16: CPF construction area for Tilenga (Source: LESC Field Visit, November 2023).

## 4.2.5 Kingfisher Oil Field

### 4.2.5.1 Facilities

The Kingfisher Project is situated on the Buhuka Flats in the Kingfisher Field Development Area (KFDA), along the south-eastern side of Lake Albert. The project is owned by CNOOC Uganda Limited (CNOOC) and TotalEnergies E&P Uganda Ltd and operated by CNOOC. Other than the feeder pipeline and high voltage transmission line, the infrastructure for the development will be on the Buhuka Flats and will exploit the oil fields in the sediments approximately 1,500 m beneath Lake Albert through a series of deviated wells. Gas separated in the CPF will be used to drive gas turbines to produce electricity to power the development. The excess electricity generated will be exported to Uganda's national grid. The Project will be constructed over a period of three years. Drilling of additional wells and supporting infrastructure will continue for five years during the operational phase.

### 4.2.5.2 Construction

The planned construction phase for Kingfisher, will include:

- development of four drill pads along with flowlines to the CPFs and water injection lines and electrical controls etc.;
- progressive directional well drilling and development using water (upper hole) and oil-based mud systems;
- the drilling returns (slurry) will be treated to recover the water and synthetic oils for reuse. The oil recovery process will yield an oil content in the process solids of less than 5% to enable disposal to landfill;
- construction of temporary camps, infield access roads, water intake and treatment;
- construction of the CPF and associated facilities including a 10,000 m<sup>3</sup> floating roof tank which will provide 30 hours of storage. Off-spec oil will be stored in a 3,000 m<sup>3</sup> tank and gas in two 135 m<sup>3</sup> LPG bullets; and
- installation of a 47.6 km insulated underground feeder pipeline from Kingfisher CPF to EACOP PS11 at the Kabalega Industrial Park. The Transmission Line is proposed to be buried along its entire length within the Feeder Line corridor.



Figure 17: Overview of the main project infrastructure (Source: Kingfisher ESIA Sept 2018).

The workforce during construction is estimated to be between 1,000 and 2,000 personnel, the majority housed in temporary camps.

Due to the high-water levels in Lake Albert (625.15 masl on the 18<sup>th</sup> of December 2020, which exceed the last historic peak in 1963), studies undertaken by Kingfisher have identified the requirement to implement shoreline protection measures. The length of the proposed shoreline protection is as follows: Pad 1 263 meters, Pad 2 304 meters, Pad 3 265 meters and Pad 4A 272 meters which would also protect the jetty, drilling camp and materials yard. Recommended protection measures include a combination of rip-rap, stone gabions and sheet piles, as well as raising the level of some areas such as Well Pad 1. It is understood that there is no requirement to revise the layout of the Kingfisher infrastructure as part of these reinforcement works, and they will need to take account of access to the lake for fishers and any biodiversity sensitivities.

#### 4.2.5.3 Operations

The CPF will process the fluids by separation / removal of the produced water, sand, salts, and associated gas (together with small quantities of other material) to produce crude oil that meets the crude oil export standard. The main components of the CPF will include oil separation flash gas facilities, gas treatment & compression facilities, produced water treatment & Injection facilities, oil storage & export facilities, enclosed ground flare,

power generation plant, LPG production and loadout, electrical substation, water treatment plant, heat exchange unit for recovery of waste heat, fire water and pumps, plant Utilities area. Produced water will be returned to the well pads for reinjection via separate flowlines.

The Kingfisher CPF will use four 16 MW gas turbine-driven generators (three operational and one on standby) to generate power and heat. Any excess electrical power will be exported to the Ugandan grid (assuming the proposed connecting electricity line has been completed), and after year 11 an anticipated deficit of gas and therefore power, may be addressed through import of electricity from the grid and/or generated by the project's gensets. The CPF will convert part of the associated gas into LPG that will be sold into the local market. No gas flaring is contemplated except in cases of emergency.

Oil from Kingfisher will be exported through project's 47.6 km insulated Kingfisher feeder pipeline to the delivery point in the Kabalega Industrial Park in Hoima District, to supply the EACOP pipeline through PSt1, and some will also be delivered by the Upstream Partners for refining. A ground flare will be installed but the intention is that there will be no flaring, with flaring only occurring during emergencies, mal-operation, start-up, shut-down, or maintenance.

The Kingfisher feeder pipeline runs from the east side of the CPF, turning northward to the base of the escarpment at around KP1.5, where it turns directly east up the escarpment. The average gradient in this section of the route is 1:3 (Vertical: Horizontal), rising from roughly 650 amsl. to 1,040 amsl. From this point, the pipeline is routed north eastward in gently undulating terrain, extensively cultivated and interspersed with rural settlement. The route passes south-east of Hohwa and Kaseeta villages at KP 29 and KP 32 respectively. At KP 44, the route passes immediately north of the planned Kabalega Airport, and then turns eastward to the terminal point at the proposed Kabalega Refinery and PSt1.

#### **4.2.5.4 Project Schedule and Progress to Date**

The early works are already complete at Kingfisher and drilling has started. A rig is already operating on Well Pad 2 to drill production and injection wells.

Construction works are complete at the other pads. The LESC visited well pad 1 in November 2023 and observed it is ready to receive the rig, has a concrete impermeable surface and large oil water separators in place to receive potentially contaminated water from the well pad; a drainage channel collecting uncontaminated stormwater along the pad fence flows into sedimentation ponds and then to Lake Albert. Works at the Supply Base, Permanent Camp & safety check station are progressing with construction ongoing at the time of the visit. The footprint of the CPF has been established, the stormwater drainage trench has been constructed and the CPF construction camp is in place.

The CNOOC temporary camp continues to be used and the permanent camp for operations is under construction beside the camp, as the LESC could observe while onsite.

There is a waste treatment and disposal facility at the entrance gate at the top of the escarpment, owned by consortium of Luwero Industries Limited and China Oil HBP Science & Technology Corporation Limited. The consortium is a contractor for the Kingfisher drilling waste treatment and disposal. The LESC had no time to visit the facility, however CNOOC staff reported that, in line with the Environmental and Social Impact Assessment Approval of the facility, the facility has the capability to treat both liquid and solid drilling waste and no drilling waste is transferred to other facilities for further treatment and disposal.





Figure 18: View North across Buhuka Flats to Lake Albert, the escarpment road is visible as is Kingfisher's Central Processing Facility footprint and the temporary camp (Source: LESC Field Visit, November 2023).



Figure 19: View North-west across Buhuka Flats to Lake Albert. well pad 1 (left) and CNOOC permanent camp (Source: LESC Field Visit, November 2023).



Figure 20: View South-west across Buhuka Flats to Lake Albert. Rig visible on well pad 2 (Source: LESC Field Visit, November 2023).



Figure 21: View South across Buhuka Flats to Lake Albert (Source: LESC Field Visit, November 2023).





Figure 22: Rig operating at Well Pad 2 (Source: LESC Field Visit, November 2023).



Figure 23: Well Pad 1 ready to receive the Rig (Source: LESC Field Visit, November 2023).

#### 4.2.6 Other Associated Facilities

Apart from the Kingfisher and the Tilenga projects, other AFs include new or project-generated extension of existing borrow pits and quarries, concrete batch plants and waste management facilities, all of which require environmental and social evaluations, the development of mitigation and reinstatement measures, and the acquisition of regulatory approvals. These details are set out in EACOP Ltd.'s Borrow Pit Regulatory Guidance Note for Tanzania dated 7<sup>th</sup> September 2023 and one for Uganda dated 13<sup>th</sup> September 2023.

The planned hydrocracker and coker refinery in the Kabalega Industrial Park and connected facilities (such as the airport) are not considered AFs as these could be developed independently of the EACOP Project. Additionally, the proposed electrical grid connections at the AGIs in Tanzania are not considered to be AFs as EACOP is not reliant on them to operate (generators can provide all the power needed).

## 4.3 Project Setting

### 4.3.1 EACOP

Given its extension and complexity, the Project traverses a wide range of environmental and social settings and sensitivities. Since the design phase, route selection has been refined through a series of increasingly detailed reviews aimed at optimising the route from an engineering perspective and minimising environmental and social impacts. Assessment of the risks, potential impacts, and physical aspects, particularly topography, has determined the location of the AGIs. Based on this assessment, variations in pipe wall thickness to account for varying pressures along the pipeline was also determined. Much of the route of the pipeline is through modified habitat, such as grazing, small, and medium scale agricultural lands and plantations, with several sections traversing PS6-relevant Natural and Critical Habitat (forests, rivers, and wetlands) and protected areas. There are also a few areas on the route with ongoing and dynamic changes in land use (such as the Kahama artisanal mining area in Tanzania) which will require detailed reviews pre-construction, and these have been reviewed through the ESDD process from the perspective of pollution prevention (IFC PS3) and social (IFC PS4).



Figure 24: Area of Taala Forest Reserve in Uganda showing eucalyptus and banana plantations and clearance of forest (Source: LESC Site Visit, March 2021).

### 4.3.2 Associated Facilities

The Kingfisher and Tilenga AFs are located adjacent to and at a similar elevation to Lake Albert. The Tilenga fields extend from South of the Victoria Nile where the land is modified habitat used by pastoralists and some small agricultural plots, through to the MFNP to the North. The MFNP, which contains several species of large charismatic animals, is a major tourist destination along with the Murchison Falls. The pipeline network from the wells to the CPF will pass underneath the Victoria Nile, and the Murchison Falls-Albert Delta Wetland System, an internationally recognised Ramsar site.



**Figure 25: View a portion of the Murchison Falls National Park and of Lake Albert to the North of the Albert Delta (Source: LESC Site Visit, March 2021).**

Kingfisher is located on a low-lying area on the shore of Lake Albert. The surrounding land, below an escarpment to the East, contains a number of villages, most of which are focused on fishing and cattle rearing.



**Figure 26: View from the escarpment road of Kingfisher main camp (white structures) on shore of Lake Albert (Source: LESC Site Visit, March 2021).**

#### **4.4 Third Parties Developments in the Project Area of Influence**

The ESIA's and the consolidated EACOP ESIA identify the developments defined at the time the ESIA reports were prepared. These do not qualify as AFs to the Project and have been identified to assess cumulative impacts within the spatial and temporal boundaries of the EACOP project. These are captured by countries:

*Uganda:*

- Kabalega International Airport;
- a 132-kV electricity transmission line from the Tilenga Project CPF to Kabalega Industrial Park;

- two 33-kV transmission lines to Kabalega Airport will be installed, associated with the Kabalega Airport development;
- a 60,000-barrel-per-stream-day hydrocracker and coker refinery;
- a 210-km long Hoima–Buloba Pipeline for transporting refined petroleum products;
- various road improvements being developed under the jurisdiction of UNRA to support the oil industry;
- transmission line upgrade – construction of 33 kV overhead lines in Hoima district;
- a 2-ha opencast gold mine in the hills of Kamusenene village, Kitumba subcounty, Mubende district;
- a gold processing plant on 0.873 ha of land for the existing gold mine in the Namwasa Forest Reserve; and
- a 1536.39-km long buried optical fibre cable to be laid across the country to build the National Data Transmission Backbone.

*Tanzania:*

- the rural electrification of Tanzania;
- the Ngono Valley Multipurpose Water Resources Development Project;
- construction of Geita Airport in the Nyabilezi–Bukombe and Katende wards, Chato district, Geita;
- construction of 50 new houses at Zongomera ward in Kahama district, Shinyanga;
- construction of a 667-km, 400-kV alternating current transmission line split into three construction lots;
- Lake Victoria Shinyanga–Kahama water supply scheme extension to Tabora, Igunga and Nzega towns;
- upgrade of the Handeni–Singida road (461 km) to bitumen standard;
- waste facility at Mpirani Street approximately 17 km away from Tanga city centre, financed by the World Bank;
- TPA Industrial Park on 200 ha of land on the Chongoleani peninsula (including 85 ha of land to be leased by EACOP for the MST and LOF);
- TPDC proposed refinery on 121 ha of land on the Chongoleani peninsula;
- Tipper proposed petroleum storage depot on 41 ha of land on the Chongoleani peninsula;
- Black Gold proposed oil storage depot on 81 ha of land on the Chongoleani peninsula;
- Simba Oil gas storage depot;
- Taifa Gas proposed conventional buoy moorings (CBM) and associated infrastructure for liquid petroleum gas (LPG) discharge from large ships to land storage facilities in Tanga located 1.6 km from the EACOP LOF and surrounded by a 300m MEZ – offshore from the Chongoleani peninsula;
- Tanga International Energy Ltd (TIEL) proposed LPG terminal on 20 ha of land including access adjacent to the MST with a 300mm subsea pipeline to the shared CBM;
- Mount Meru storage depot (20.2 ha) on the Chongoleani peninsula; and,

- Tanga Port expansion works to expand and deepen two existing berths, Tanga Port, Central Ward, Tanga.

As reflected in this list, there are several anticipated improvements needed for infrastructure like road developments in both countries and these may overlap with Project activities. While there have been some concerns, for example by the Independent Biodiversity and Livelihoods Advisory Committee (IBLAC) about cumulative impacts from multiple oil developments, roads built by the Government (especially through MFNP), the airport, etc., EACOP Ltd considers that the effects of the Project on these will be manageable. Based on the LESC's site visits it is noted that several of the proposed roads in Uganda have been constructed and that these will benefit the Project and Upstream Partners and should reduce transportation risks. The assessment of further projects will be one of the tasks during the initial construction monitoring.



## 5.0 SUMMARY OF FINDINGS

This section presents the outcomes of the ESDD based on the latest information/documents provided by the Project up to March 2023. More details on progress since the early stages of the ESDD can be found in the previous reports developed by the LESC during the course of the due diligence (see Section 2). The ESDD review process has not identified “red flags” against the IFC PSs 1-8 or other Lenders’ standards (e.g., representing E&S aspects and risks that the Project has not addressed, dismissed or intentionally ignored), which may result in significant impacts and/or reputational risk. ESAP actions have been identified to achieve full compliance with Lenders’ requirements. The LESC notes that over the ESDD process (commenced in Q2 2021) EACOP Ltd has, as would be expected for a project at this stage of design, been steadily working on various Environmental, Social, Health and Safety (ESHS) aspects.

Although some additional studies have yet to be completed, the LESC notes that EACOP Ltd is generally aligned to Lenders’ requirements and has addressed almost all items required to be closed before financial close. There are still some areas where actions are needed, mainly related to the implementation of the provisions included in the management plans whose implementation milestone will be the onset of the construction. However, most of those actions identified since the early stages of the ESDD process and due before construction have been completed or are on track with the target for them to be completed by the implementation deadline agreed on the ESAP. Other actions identified in the ESAP cannot be closed at this stage as they are not due until nearer to the operation phase of the Project.

The key outcomes of the LESC review with respect to compliance with the IFC PSs are summarised below and in the actions’ status in the subsequent ESAP table (Section 6).

### 5.1 PS1 – Assessment and Management of Environmental and Social Risks and Impacts

LESC’s review of the assessment and management of environmental and social risks and impacts is based on the detailed ESIAs for the Project and the key associated facilities (AFs) and on the Environmental and Social Management System (ESMS) documentation provided, which for the Project is termed the EACOP Integrated Management System (EIMS).

EACOP has done significant progress implementing the ESAP, with only two ESAP actions to be completed that are in progress and should be closed before the main construction (pipeline laying) commences.

The EIMS structure is considered in line with the requirements and the majority of key documents have been already completed including various policy documents, the EIMS manual, a Project ESMP document, numerous management plans and others. There remain a very limited number of documents to be prepared and some risk areas to be reviewed to achieve alignment with Lenders’ requirements on PS1 before Financial Close and the main pipeline construction starts.

As observed in previous ESDD reports, significant effort has been spent in assessing risks and impacts for both the Project (i.e., pipeline and Above Ground Installations) and its AFs. LESC’s review has not found major gaps in the ESIAs reports or components of the Project that have not been scoped into the assessment or neglected. The methodology adopted for the ESIAs is considered adequate, and the review has not identified structural gaps in the ESIA process. This conclusion also applies to the AFs, with the ESIAs for the Tilenga project and its feeder pipeline and the Kingfisher ESIA following essentially the same format and structure as the EACOP ESIAs.

With reference to the management of the potential cumulative impacts resulting from multiple projects, a negotiation process with Tilenga and Kingfisher has been ongoing since January 2022 and the Tripartite Agreement (Memorandum of Understanding for cooperation) has been signed by EACOP Ltd, Tilenga and Kingfisher on January 26<sup>th</sup>, 2024. A copy of the signed document has been shared with the LESC. Each party agrees for the benefit of the other parties, to comply with Environmental and Social Law and best petroleum

industry practices relating to Environmental and Social Matters when designing, constructing, installing, testing, commissioning, operating, maintaining, and repairing their facilities. Best petroleum industry practices are defined as IFC PSs, WB EHS guidelines, and Equator Principles IV and OECD Common Approaches.

The Tripartite Agreement requires the setting up of a joint working group, the purpose of which is to serve as the body in which representatives of the Parties discuss environmental and social issues relating to the Projects, including the compliance of each Project with Environmental and Social Law and best petroleum industry practices relating to Environmental and Social Matters. The joint working group is a consultation and coordinating body and does not have any power to make decisions binding on the Parties. It should ensure consistency between the ESMSs and performance monitoring through mutual cooperation and if agreed auditing of each other's projects. The initial technical areas are expected to cover land and social, environment and climate, environmental and social stakeholder engagement, emergency preparedness and response, and ES performance monitoring including around land acquisition and biodiversity. There is understood to be a clear tiered level of committees from the executive to specialist technical sub-committee, to deliver the work, and a clear dispute resolution process.

In the course of 2022, the ESIAs have been supplemented by Climate Change Risk Assessments (CCRA) for physical and transition risks; the former has identified some potential risks to the Project due to climatic hazards, these included increased risks from intense rainfall events, hot weather, droughts, wildfires, and sea level rise (and associated stormwater surge risks). The physical risks assessment concludes that the Project was highly to moderately exposed to these risks. Based on discussions with EACOP Ltd it is LESC's understanding that the outcomes of this assessment have been reviewed against the design criteria and mitigations to address these physical risks have been embedded in the Project design with no need to consider additional material changes in the design which could have further E&S impacts. The transition risks assessment assessed policy and legal risks, technology and market risks, and reputational risk while these risks cannot be quantified and there is uncertainty the highest immediate risks would be risk of climate related litigation, and reputational risks for EACOP Ltd and investors, with others less likely to have a significant impact on the Project at this stage but could impact it later in the Project's life.

The Project ESMP document prepared by EACOP Ltd stipulates that E&S requirements to be implemented by EACOP Ltd will be identified in the Detailed Management Plans (DMP). The minimum E&S requirements for contractors are communicated through Contractor Control Plans (CCP).

EACOP Ltd and its Contractors collaborate to ensure that CCP requirements are effectively integrated into the contractors' management system and processes. EACOP Ltd has prepared DMPs and CCPs that the LESC has progressively reviewed during the ESDD process. These CCPs, refined to include clear mitigation measures from the ESIA, were included in construction tender packages and construction contracts.

Post contract kick-off meetings ensure that contractors understand the CCP requirements before preparing Contractor Implementation Plans and Procedures (CIPPs). This process began in early 2022 for the contractors undertaking the Lots 2 and 3 earthworks (i.e., at the Coating Yard, MCPY-09, MCPY-08, and MCPY-10) and has continued as new contractors have been engaged or when new work sites have been opened.

CIPPs developed by the contractors are reviewed by the Project H3SE team and approved only when they demonstrate adequate E&S management systems and procedures. Early construction stages involve a 'Go/No Go' process to ensure contractor readiness for mobilization. These focus on the site, activity, and phase specific CIPPs. The 'Go/No Go' process also involves detailed tracking and verification across all Project disciplines, including inductions, training, resourcing (recruitment, training, and mobilisation), sub-contractor engagement.

The LESC reviewed a small number of CIPPs to assess the effectiveness of the transfer of mitigation and management measures to the contractors and found these to be adequate. Ultimate responsibility for implementing the CIPPs resides with EACOP Ltd as part of its responsibility for ensuring that commitments contained in the E&S management plans (MPs) and Contractor MPs are delivered. A full assessment of the

CIPPs effectiveness and implementation on the ground will be within the scope of the LESC construction monitoring visits.

The H3SE Organisation Chart outlines the mission and key objectives of the various teams and their responsibilities for HSE-related aspects. The EACOP organisation has two layers of oversight to manage the health, safety, security, social and environment components during project construction: the Project H3SE team and the Corporate entity. The former manages and assures Contractor performance in the delivery of the health, safety, security, social, industrial relations and environment components, while the Corporate entity will bear the overall responsibility for verifying their safe and efficient delivery and will also liaise externally, such as with regulators and lenders, ensuring international standards are met. EACOP Ltd commissioned Worley as the Engineering, Procurement and Construction Management Contractor (EPcmC). The Project H3SE team, comprising resources from the EPcmC, works to oversee and assure Project health, safety, security, social, industrial relations, and environment aspects of the Project construction activities. Contractors have their own site supervision and discipline responsible persons to ensure CIPPs are properly implemented on site, with the necessary offsite management and supporting resources according to Project approved organisation charts.

EACOP Ltd has established a robust organization equipped to oversee the construction phase of the Project. This organization will remain in place through the transition to operations. EACOP Ltd is aware of the challenges of simultaneously managing 14 pipeline construction spreads and will monitor contractor E&S performance to ensure adequate management oversight.

Both EACOP Uganda and EACOP Tanzania have well-developed Stakeholder Engagement Plans (SEPs) that meet or exceed the requirements of PS1. These have been updated based on project progress and lessons learnt. Records of all consultations undertaken during the preparation of ESIA, the Human Rights Impact Assessment (HRIA) and Resettlement Action Plans (RAPs), and during everyday project operations are maintained. Stakeholder engagement records indicate that the Project has paid particular attention to engaging with women and vulnerable ethnic groups (Indigenous People) and this was also confirmed in the interviews carried out by the LESC during the site visits.

Records also show that EACOP Ltd has engaged a wide range of other interest groups including (but not limited to) farmers, fisherfolk, pastoralists, shopkeepers and traders, elderly, youths, artisanal miners, businesspeople, tourism operators, emergency service providers, community health practitioners and so on. EACOP Ltd has assembled statistics (disaggregated by gender) on the engagement meetings conducted and number of participants reached in Uganda and Tanzania during the different Project planning and early implementation phases. EACOP Ltd produces monthly and annual reports summarizing its stakeholder engagement activities, including stakeholder engagement data gathered by construction Contractors. Positions in stakeholder engagement team in Tanzania are being filled as shown in the organization charts to meet the increased engagement demands arising from construction.

EACOP Ltd has established grievance management and tracking systems in Uganda and Tanzania consistent with the requirements of IFC PS1. The grievance mechanism has now been operating for several years. Satisfactory records of complaints received, corrective actions, and outcomes are being recorded and presented in a monthly report. During its November 2023 site visit, the LESC noted some inconsistencies between Uganda and Tanzania in CLO use of the terms ‘issue’, ‘concern’ and ‘grievance’ and the way in which these were processed which should be addressed by EACOP going forward. Community awareness of the grievance mechanism was tested during LESC field trips to Uganda and Tanzania<sup>12</sup> in 2021 and found to be high. Interviewed people were aware of the mechanism and the avenues for lodging a complaint in both Uganda and Tanzania. It was noted that respondents had a preference for reporting grievances to their community leaders,

---

<sup>12</sup> Golder Document No.20399033-004-RLO-Rev.0 dated December 2021.

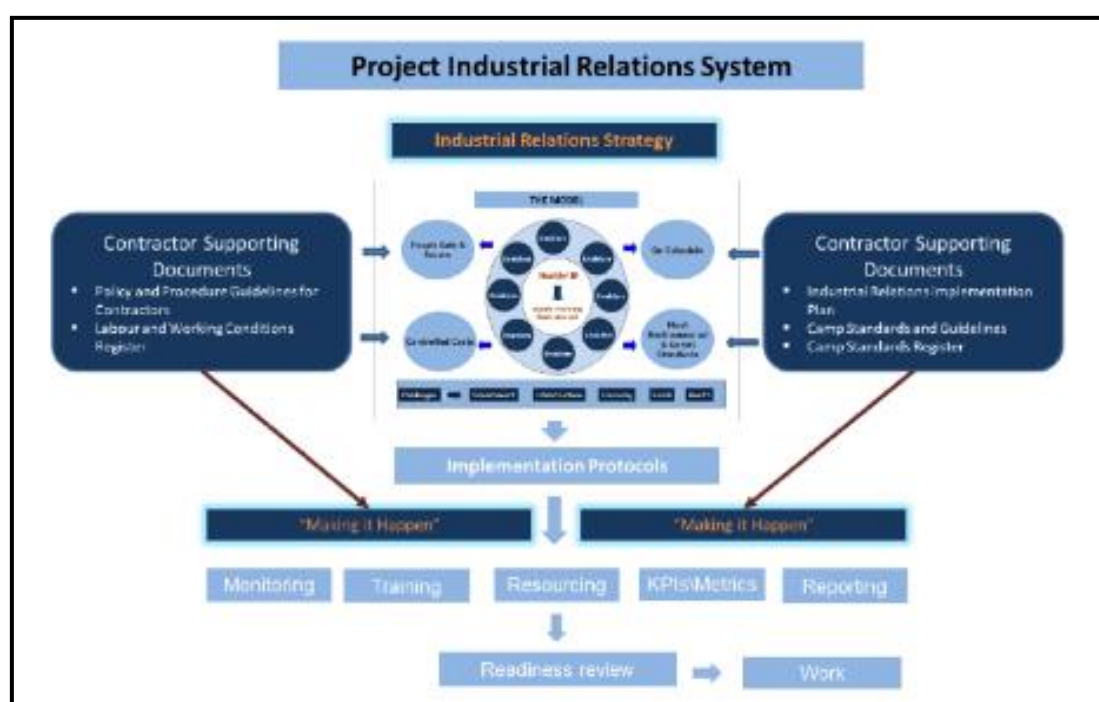
reflecting the traditional mechanism. Efforts to publicize avenues for lodging a grievance within project affected communities, particularly ahead of construction activities, are ongoing in both Uganda and Tanzania.

## 5.2 PS2 – Labor and Working Conditions

Overall, the LESC considers that for IFC PS2, EACOP is compliant with Lenders' requirements with all ESAP items identified closed at this stage. Over the two-year LESC due diligence period, EACOP Ltd has developed a Project Industrial Relations Management System (IRMS) that meets the requirements of IFC PS2. The IRMS describes the policies, standards, organization, roles and responsibilities, training, monitoring, and reporting requirements to consistently manage industrial relations across the countries, lots, spreads, and camps needed for Project construction. Establishing and maintaining a consistent industrial relations framework across a pipeline construction operation that involves 14 spreads with related camps and supporting logistics will be fundamental to the smooth execution of the Project.

EACOP Ltd's Project IR Strategy<sup>13</sup> is designed to support contractors and ensure they effectively manage their workforce and comply with national labour laws and other relevant regulations and standards (e.g., IFC PS2 requirements). The Project IR Strategy describes industrial relations requirements that are applicable to all contracts associated with the Project during construction and combines industrial relations requirements, implementation protocols and several detailed plans and procedures.

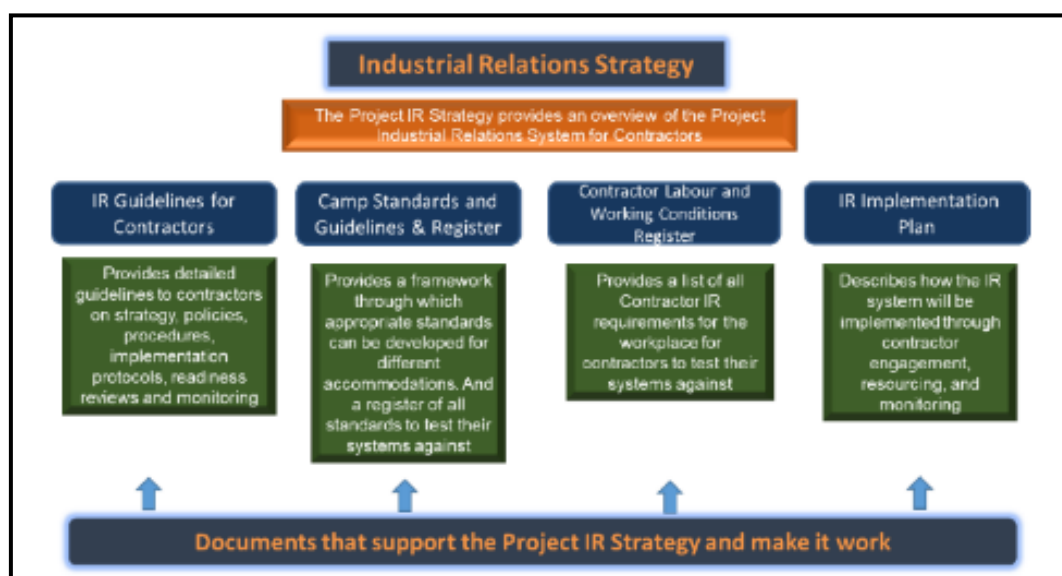
In Tanzania, the Project IR organization has had the opportunity to test and refine its Industrial Relations (IR) Management System (organization, roles, responsibilities, lines of communication and training) during early works construction. The IR system has now been scaled up for mobilization of the pipeline EPC contractor to cover the 14 pipeline spreads and camps.



There are several documents supporting the IR System that contractors have received to support development of their own plans and ensure a consistent industrial relations approach aligned with the objectives of the EACOP IRMS across all areas of the Project. These include:

<sup>13</sup> Doc. No. UT-MID-60\_IDP1\_110001 EACOP\_Project Industrial Relations Strategy, dated March 2023

- IR Guidelines for Contractors: policies, procedures, and implementation protocols<sup>14</sup> to assist contractors in the development of their IR systems (policies, procedures, reporting, resourcing, etc.);
- Project Camp Standards and Guidelines<sup>15</sup> to provide contractors with uniform standards for the design and management of different types of camps;
- Camp Standards Register;
- Contractor Labour and Working Conditions Requirements Register<sup>16</sup> with a consolidated register of labour and working conditions requirements to ensure contractors are aligned to the EACOP IR strategy and Labor Management CCP; and,
- Project IR Implementation Plan<sup>17</sup> with details on how EACOP will implement the IR Strategy (e.g., contractors' engagement process, EACOP and contractors IR resourcing, KPIs and monitoring).



The IRMS organization in Tanzania has been fully resources since August 2023. Uganda IRMS recruitment will be completed by the end of January 2024. The sufficiency of EACOP IR resources will need to be closely monitored taking into account the proficiency of contractors in developing, resourcing and monitoring the implementation of their own IR systems and the overall project industrial relations climate.

In relation to Occupational Health, Safety and Security (OHSS), EACOP has developed an OHSS CCP and an OHSS DMP which is part of the EACOP EIMS and supplements the previous plans developed for Tanzania and Uganda. As management control documents, the plans did not provide site-specific details and the latest DMP plan defines the minimum requirements necessary to achieve the OHSS commitments made by EACOP, including contractors' oversight activities conducted by EACOP. The document identifies different levels of HSE responsibilities between Corporate, Project, and Contractors and includes key performance indicators against which to measure contractors' performances as well as the implementation of ESIA commitments and ESIA conditions. The plans also address Voluntary Principles on Security and Human Rights (VPSHR) aspects and how these will be implemented across the EACOP Project.

<sup>14</sup> Doc. No. UT-MID-60\_IDP1\_110002 EACOP\_Industrial Relations Guidelines for Contractor, dated March 2023.

<sup>15</sup> Doc. No. UT-MID-60\_IDP1\_110003 EACOP\_Project Camp Standards and Guidelines, dated March 2023.

<sup>16</sup> Doc. No. UT-MID-60\_IDP1\_110004 EACOP\_Labour and Working Conditions Standards Register, dated March 2023.

<sup>17</sup> Doc. No. UT-MID-60\_IDP1\_110005 EACOP\_Project Industrial Relations Implementation Plan, dated March 2023.



### 5.3 PS3 – Resource Efficiency and Pollution Prevention

The LESC considers that for PS3, EACOP Ltd is on track to meet Lenders' requirements and has made further progress in implementing ESAP actions with respect to the situation previously observed and reported in the previous ESDD reports.

With the progress of the early construction works and the main construction continuing to ramp, achieving full compliance with PS3 will require additional detailed monitoring and ensuring the effectiveness of the mitigations identified in the different management plans developed by EACOP (DMPs) and by the contractors (CIPPs). This should be verified on the ground through the established environmental monitoring system. EACOP Ltd, Kingfisher and Tilenga have developed separate resource related KPIs, which, while largely qualitative and limited in scope in the case of Kingfisher, should serve to demonstrate some compliance with the main resource conservation objectives. Under the Tripartite Agreement it is recommended that the KPIs for Kingfisher and Tilenga are aligned to enable their relative performances to be compared and evaluated. GHG emissions are tracked on EACOP Ltd's HSE performance dashboard. Given the stage of the Project (early works only), the GHG emissions which were reported in September 2023 were well below the monthly target.

The key resources the Project will be reliant on during operations are energy and water, with aggregates being a further key resource during the construction phase. During early construction works and pipeline construction, the energy demand for the Project is being and will be provided by diesel power generation and mobile plants. Given the large number of vehicles which are, and will be, used during pipe delivery and pipeline construction, there is a requirement to properly maintain and operate these to ensure efficiency of fuel use along with planning and logistics to minimise diesel consumption. Diesel use per month is being tracked for the early construction works and will be throughout the entire Project construction period. The contractor installing the pipeline (CPP) has calculated the likely fuel use from its operations and EACOP Ltd has used this to determine the GHG emissions for the construction period. The calculated GHG emissions for Scope 1 over the three-year construction for Tanzania are 364 ktCO<sub>2e</sub>, and for Uganda 87 ktCO<sub>2e</sub>, which exclude GHG emissions generated by the Project due to land use changes, the calculation of these is being developed. Construction Scope 1 & 2 emissions for Tilenga are modelled at 19 ktCO<sub>2e</sub> in 2023, and 46 ktCO<sub>2e</sub> in 2024. Kingfisher emitted 5 ktCO<sub>2e</sub> in 2022 (largely contractor fuel use) and is understood to be reporting its GHG emissions annually. EACOP Ltd has developed a draft GHG reporting procedure for construction which includes definition of the KPIs which will be used to monitor GHG emissions during construction. The monitoring of actual fuel use and GHG emissions will enable EACOP Ltd to assess if the CPP estimates are accurate.

For operations, the initial ESIA base case for supplying the Project's energy demand was through the burning of crude at the power generation facilities to be installed at selected PSs and the MST. The PSs in Uganda were to be supplied with power in the initial stages of the Project from the electrical energy generated by the Tilenga project gas turbines, and then in the latter stages through power supplied from the Ugandan grid. The initial data provided in the ESIAs inferred that the GHG emissions during construction for the Project (Uganda and Tanzania) would be over 1 MtCO<sub>2e</sub>, averaging 0.3 MtCO<sub>2e</sub>/annum, and significantly above the Equator Principles trigger of 100,000 tCO<sub>2e</sub>/annum. Following this, EACOP Ltd developed more detailed estimates of the construction GHG emissions, with peak annual emissions for Tanzania being 217,000 tCO<sub>2e</sub> (in 2024 with total for the construction of 367,000 tCO<sub>2e</sub> including the emissions related to feeder line line-pipe transportation), and 56,000 tCO<sub>2e</sub> (70,000 tCO<sub>2e</sub> if feeder pipelines are included) in Uganda (in 2024 with the total for construction being 87,000 tCO<sub>2e</sub> or 109,000 tCO<sub>2e</sub> if the feeder pipelines are included). For the operational phase, EACOP Ltd has undertaken a significant amount of work to refine and optimise the operational equipment and energy make up, thereby reducing operational GHG emissions. The largest source of direct GHG emissions during the original operational base case would have been the crude oil-fired generators at PSt4 (originally located at PSt3 in the ESIA), PSt5 and at the MST, and the direct-fired heater at the MST.

EACOP Ltd has calculated the total operational GHG emission over the projected 25-year life of Project to be 5.05 MtCO<sub>2</sub>e (compared to 8.88 MtCO<sub>2</sub>e in the original base case). Of these emissions the most significant element is 3.20 MtCO<sub>2</sub>e of Scope 2 emissions from the Tanzanian grid, and the Scope 1 emissions from the onsite burning of crude oil in the gensets when they are required as backup power supply, the heaters and the diesel, which are calculated to emit 1.47MtCO<sub>2</sub>e over the life of Project. These emissions are equivalent to an average carbon intensity of 5 gCO<sub>2</sub>e/BOE/km over the life of the Project. The carbon intensity from year 2 to year 7 is 1.6-1.7 gCO<sub>2</sub>e/BOE/km (year 1 carbon intensity is 3.5 gCO<sub>2</sub>e/BOE/km due to a lower throughput). After year 8, there will be a steady decrease in throughput and although annual GHG emissions are not modelled to increase significantly, there is a steady rise in the carbon intensity reaching 11.2 gCO<sub>2</sub>e/BOE/km over the last five years (the carbon intensity in the original base case for the last 5 years of the Project was 20.4 gCO<sub>2</sub>e/BOE/km).

Recent detailed analysis by Tilenga has demonstrated that the peak emissions will occur in year 11 of the production, and the latest estimates of Scope 1 and 2 GHG emissions for the life of field are 12.85 MtCO<sub>2</sub>e (compared to an original base case which was reported to be 17.655 MtCO<sub>2</sub>e). The Kingfisher GHGs peak at 0.2 MtCO<sub>2</sub>e/annum (circa 30% of the volume produced by Tilenga due to its lower production rate). The calculated total emissions for the Kingfisher life of field are 3.2 MtCO<sub>2</sub>e and the main contributions to this come from fuel gas for heating & power generation (93%), flare (5%), and diesel oil for logistics and construction (2%).

Since the initial ESIA, EACOP Ltd has undertaken a significant amount of work to refine and optimise the operational equipment and energy make up (such as the BAT<sup>18</sup> evaluation of the alternatives for energy production) including assessing potential generation from wind, geothermal, solar, grid, and a combination of solar/genset/grid. This study has led to the development of a combined power supply which originally comprised a combination of solar generation and battery electrical storage, while a recent change in the strategy has opted for a combination of national grid connections (with associated additional distribution lines) and battery electrical storage system (BESS) to support and mitigate grid instabilities, with crude oil gensets as back-up. Existing design features of the Project to reduce energy input include a high thermal efficiency in the pipelines insulation which will minimise the Project's energy demand for in pipe heating, as heating takes up a significant proportion of the energy demand in the later stages of the project. This change from the original crude oil gensets to grid (low carbon) and BESS (zero carbon) and with crude oil genset backup is calculated to reduce the carbon footprint of operations by at least 30% in Tanzania compared to the original base case; furthermore based on information available to WSP from ongoing EACOP studies, the implementation of the full range of proposed carbon reduction proposals, the Project's CO<sub>2</sub> emissions could be reduced by in the order of 40 – 50% in Tanzania when compared to the base case. Energy for the PSTs in Uganda will be supplied from the national grid which is largely supplied by hydroelectric power.

Further Scope 2 emission reductions may be realised in Tanzania when a new hydropower plant (Julius Nyerere Hydraulic Power Dam) is due to progressively come online in 2024 (effective date to be confirmed), which will reduce GHG emissions related to electricity production and the associated grid emission factor. It is noted that 63% of the Project carbon emissions are Scope 2 emissions associated with the grid in Tanzania. The Project related GHG emissions continue to be refined by EACOP Ltd.

EACOP Ltd has also undertaken climate change physical and transitional risk assessments for the Project. These are considered to be in alignment with the requirements under EP4. With respect to the climate change transition risk assessments, it is considered that the assessment is a realistic appraisal of the likely risks, and that while there is uncertainty, there are no risks identified which have an immediate impact on the Project particularly as the design of the Project has accounted for the key risk areas.

---

<sup>18</sup> Best Practices: Power Generation: Tanzania, RSK, October 2022.

The Project strategy for the management and disposal of waste and hazardous material generated throughout the different phases of the Project is defined in the relevant sections of the ESIA's, Construction Waste Management Plan, and in the related CCPs i.e., Waste Management Plan and in the Pollution Prevention Management (PPM) plan. Overall, EACOP Ltd will follow good international industry practice (GIIP) for waste and hazardous materials management and a typical waste management hierarchy approach of avoid, reduce, reuse/recycle, treat, and dispose to project-approved waste disposal facilities only those materials that cannot be treated on site.

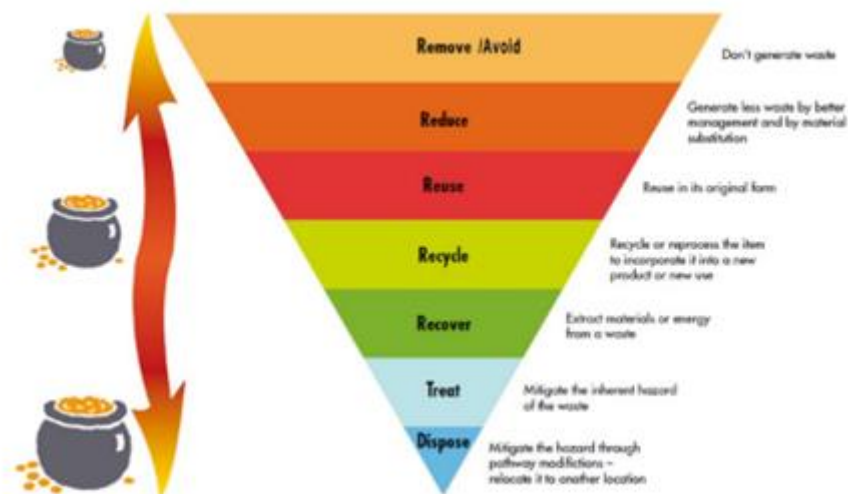


Figure 27: EACOP Waste Management Hierarchy.<sup>19</sup>

Considering the remoteness of some of the areas crossed by the Project, a key element of the waste management strategy is to reduce as much as feasible the volume of waste and establish an effective purchasing strategy to identify and acquire environmentally “favourable” products and to identify waste generation avoidance or minimization opportunities. The ESIA's distinguish between construction and operation phases and provide several methods that will be used for the storage and disposal of the different wastes generated, and an estimation of waste forecasts as well as treatment and disposal options considered. The ESIA's are supplemented by a Construction Waste Management Plan and Waste Management CCP that identify the general requirements for the management of waste and wastewater generated during the construction phase, including waste classification (e.g., non-hazardous waste, hazardous waste, inert and construction waste, wastewater, etc.), risks/ impacts, proposed mitigation and management options, monitoring requirements, training and awareness needs, roles and responsibilities for implementation. EACOP Ltd has also developed a Waste Management Plan (DMP<sup>20</sup> dated 7<sup>th</sup> October 2022) and a Pollution Prevention Management Plan (DMP<sup>21</sup> also dated 7<sup>th</sup> October 2022). These are Company documents forming part of the EACOP EIMS and define the minimum requirements to achieve the commitments made by EACOP Ltd to manage waste and pollution prevention throughout the Project. The Project has also provided an overarching Construction Waste Management Plan<sup>22</sup> for the EACOP System<sup>23</sup> and the Feederline<sup>24</sup> in Uganda and Tanzania to inform the development of the Waste Management CIPPs by all contractors engaged in the early construction works that

<sup>19</sup> EACOP Waste Management (Detailed Management Plan), Doc. No. L2-DMP-HSE-UT-0450 dated October 7<sup>th</sup>, 2022.

<sup>20</sup> EACOP Waste Management (Detailed Management Plan), Doc. No. L2-DMP-HSE-UT-0450 dated October 7<sup>th</sup>, 2022.

<sup>21</sup> EACOP Pollution Prevention (Detailed Management Plan), Doc. No. L2-DMP-HSE-UT-0429 dated October 7<sup>th</sup>, 2022.

<sup>22</sup> Doc. No. UT-MID-60-WPR2 -110018 dated July 2022.

<sup>23</sup> Meaning the petroleum export pipeline system intended from Kabalega Pumping Station, in the Hoima District (Uganda) to the MST that covers the AGIs, the pipeline and the MST.

<sup>24</sup> Meaning the pipeline from Tilenga (Uganda) to Kabalega (Uganda) Pumping Station.

are ongoing and in the pipeline construction phase. Evidence from interviews to EACOP and contractor personnel during the November 2023 site visit, from the presentation given by EACOP to the LESC and from the review of documentation made available by EACOP shortly before visiting Uganda and Tanzania, confirm that the early works currently ongoing are being delivered by contractors that manage waste, hazardous materials, soil and prevent pollution on the basis of CIPPs that have been approved by EACOP. In this respect, an update provided by EACOP during the March 2024 visit shows that for, for example, at the coating yard waste amounts produced are being recorded for the different categories. The CIPPs include the measures that are needed to manage risks and impacts of works delivered by each contractor according to their scope of work. Similar sets of CIPPs have been found to be present at the facilities visited to cover similar scopes of work, namely MC-PS1 in Kabalega in Uganda, MST and Coating Yard in Tanzania, with additionally spill prevention and control measures available from the jetty construction contractor (BBN) in Tanga to cover marine operations.

In the early stages of the ESDD process there was a question on the feasibility of some of the third-party treatment and waste disposal options identified in the plans, including the availability of reliable recycling contractors since the early stages of construction (e.g., for waste categories such as waste oil, tires, scrap metal and batteries, etc.) to avoid accumulation of significant volumes of hazardous and non-hazardous materials. Since the early stages of the ESDD process, EACOP Ltd has launched a Waste Management Capability Review to assess the availability and capability of recycling contractors and third-party waste management and disposal facilities in Uganda and Tanzania. Information from the site visits indicates that HSE audits are being carried out to the facilities identified to ensure they are available, capable and aligned with Project's standards /good international practice requirements. These are the facilities that are currently being used by contractors to manage site preparation and early construction waste according to the CIPPs approved by EACOP. The CIPPs foresee the construction of temporary waste storage areas in Tanzania, and waste consolidation areas in Uganda at the construction sites before the waste is delivered for recycling or final disposal to authorized treatment facilities. Such waste storage/consolidation facilities have been observed being in place at all facilities visited in November 2023.

The development of the different CPPs and CIPPs is complete to cover the ongoing site preparation and early construction activities, and CPPs for more advanced construction activities appear to be all available, as an example at MST where the relevant waste and pollution prevention CPPs for the terminal construction have been finalized by EACOP Ltd. As by definition contractors will remain on-site only for the construction period, they might have difficulties managing issues related to waste and other pollution prevention management that could have medium to long-term considerations beyond their on-site presence. As the ultimate responsibility for implementing the CCPs provisions sits under the Company, a strong supervision by EACOP Ltd is required to ensure that the actions included in the contractors' CIPPs will be effectively implemented across the Project since the very early stages of the construction.

Wastewater generated during early works and construction activities will be predominantly generated at the main construction yards and at the construction camps. As observed at the facilities visited in November 2023, sanitary waste (sewage and grey water) is treated to the Project's discharge quality standards, through dedicated bio-oxidation treatment facilities installed at all the MCPYs where activities are ongoing while sites where there is no treatment will transfer their effluent back to the nearest MCPY or to other Project's facilities. Hydrostatic test water will be recycled, reused, or treated and released to the environment in accordance with the EACOP Ltd specification for hydrostatic testing and the contractor's Hydrotest Management Plan. During operations, the volume of wastewater generated is expected to be limited to sanitary wastes and treated on the respective AGIs or transferred from the smaller AGIs to the main sites (PSt or MST). The Waste Management CCP places a commitment on the contractors to record water used, discharged, and reused and the purposes the water is reused for. It also specifies the requirements for environmental and social risk evaluation and implementation of appropriate measures to mitigate impacts from discharges on surface water ecology,

downstream water users or terrestrial ecology. As for storm water management, the three facilities visited in Uganda and Tanzania were all equipped with drainage channels and sedimentation ponds. Personnel onsite reported that the system has proven effective during the recent heavy rains which have occurred, especially in Tanzania. A similarly designed drainage system is reportedly available at the other MCPYs that could not be visited.

At the AFs the approach to wastewater and stormwater will be the same as for the Project, with the operational phase generating produced water which will be treated and reinjected, as well as process water at the CPFs which will also be treated and reused as feasible. Hydrotest water will be treated and either reused or discharged to the environment in accordance with the overall Project discharge standards.

The key sources of air emissions during early works and construction comprise particulates and gaseous emissions from fixed and mobile sources, and dust emissions from non-tarmac roads. Away from the MCPYs and other construction bases, impacts from these will be transient and relatively short-term in nature and mitigated through standard management tools including watering of roads to reduce dust at sensitive locations (as required in EACOP Ltd's Pollution Prevention CCP and reflected in respective Contractors CIPPs). During operations, in the original base case the largest sources of emissions were from the power generation units located at PSt3, PSt5 and the MST which would have burned crude continually, but with the new carbon reduction designs they will only be used as backup. The initial AERMOD models developed identified significant short term local off-site ground level concentrations of NO<sub>2</sub> at PSt3, PSt5 and the MST based on conservative assessments (i.e., worst case scenarios) with continuous combustion of crude. In 2021 EACOP Ltd commissioned CALPUFF air modelling on PSt3, PSt4, PSt5 and MST, the outcomes of this confirmed the issue of air quality at PSt3 and the power generation was moved to PSt4. Following a vendor selection process, there will be changes to the equipment type. The bid evaluation for the supply of the gensets ensured the design meets the national regulations and Project emission standards. The changes to equipment type and numbers, along with the changes in the power supply philosophy (use of grid), will require the air models to be re-run. This tender process is complete at the time of reporting. The revised air modelling will be completed six months prior to operations.

The Project is being constructed in a predominantly rural soundscape where ambient noise levels are low or punctuated by humans (voices, music, vehicles, etc.) or animals (e.g., dogs). During construction there will be transient noise along the pipeline right of way as construction continues, and these operations are understood to be predominantly only in daylight hours (a notable exception is commissioning, hydrostatic-testing, pigging and pipeline-drying facilities). Furthermore, there are noise sources at the construction infrastructures and noise from pile driving for the jetty and loading platform as observed during the recent site visit.

The transient noise sources will require management through focused localised noise mitigation measures to protect any sensitive receptors. Hard-rock blasting (known to be required between KP1082 and KP1106), will result in impacts of noise and vibration on potentially 10 receptors and a detailed Blast Management Plan will be developed. EACOP Ltd's Pollution Prevention CCP includes a requirement for contractors to undertake preconstruction surveys where there is potential for vibration effects on dwellings and buildings. The original noise modelling demonstrated that there are receptors around construction operations such as the 24-hour operating Coating Yard which required detailed mitigation and potential compensation plans to be developed. To address these impacts EACOP Ltd has designed in embankments around generators etc., which are modelled to prevent night-time exceedance of noise measures. Monitoring is being undertaken to confirm the modelling results. For the associated facilities, the 24-hour drilling operations are a potentially significant noise emission source (as well as light pollution) and will require mitigation measures such as acoustic barriers. Noise monitoring was observed at the Tilenga drilling operations during the November 2023 site visit with no exceedances of national noise standards being reported. At the Tilenga drill sites on the recent site visit, it was noted that the generator was insulated for noise to reduce the impact close to the Nile.



EACOP Ltd has conducted noise modelling at all AGIs and at the Coating Yard and identified several mitigation measures. Noise Modelling Verification for PSt1, PSt2, PSt3, PS6, PRS1 and PRS-2 is completed. The construction feasibility of identified mitigation measures has been verified. The report shows that no noise mitigation is required at PSt-1, PRS-1 and PRS-2, and acoustic screens have been selected for PSt2 and PSt3. At PSt4, PSt5 and the MST, noise modelling verification and verification of mitigation measures constructability for PSt4, PSt5 and MST is under revision while EACOP Ltd is progressing with the detailed engineering. Once all these models are available EACOP Ltd will need to consider whether there are locations where day-time and night-time noise levels are exceeded and if further site-specific mitigation are needed or if residents' relocation will be required as a last resort.

At the Kingfisher and Tilenga projects, baseline noise surveys and noise modelling were carried out at the time of the ESIA's and identified some residential properties which are likely to be affected by noise. For Tilenga, EACOP Ltd has carried out further noise modelling at the proposed Ngiri-3 well site located in the Buliisa District which from the modelling of drilling activities resulted in exceedances on the surrounding environment and community. Based on the results, a combination of mitigating noise at source and erection of berms will result in the lowest noise levels from the planned drilling activities.

Similar to Tilenga, the Kingfisher Project has identified the households most at risk, and recommended the acquisition of buffer areas between the projects' facilities such as the well pads and the neighbouring residents in the community. Kingfisher has implemented resettlement action plan phase 3 (which was based on the recommendations from the ESIA study) and acquired an additional 83 acres of land at the Kingfisher Oil field. A total of 16 PAPs were identified in 2018/19 and, at the time of writing, full compensation has been delivered to the economically displaced persons while 7 physically displaced PAPs were resettled to new sites upon completion and handover of replacement houses in July 2022. Rigs came on-site in Q4 2022, and on-site noise monitoring was undertaken during rigs test running to confirm that the noise mitigation actions implemented allow meeting of lenders' standards, including at those relocated residents.

The potential visual and aesthetic impacts of the Project and its two main AFs were considered in the ESIA's, and in the case of Tilenga there has been work on visualisation of the well pads to be constructed in the MFNP. There will be visual and lighting impacts from numerous bases and locations during the construction. The Project found that stakeholders did not perceive proposed project infrastructure as negative visual intrusions in the landscape but recognised the sensitivities of the MST and LOF in the tourist areas of Tanga and for Tilenga the visual impacts in the MFNP from the construction and operation of well pads. The visual impacts of the operational well pads in the MFNP will be mitigated with the construction of bund walls around the well pads to screen the majority of the infrastructure. At the time of writing, the final design of the bund wall and internal structures had been completed and designed based on site-specific conditions, construction of some bunds had commenced, and some were being vegetated (actively, and naturally in the case of JBR05).

Light impacts will be focused on the main construction bases and AGIs, and for the AFs the drilling rigs and in operations the CPFs. The latest visualisation for the operational Tilenga well pads in the MFNP shows lighting posts above the bund a. EACOP TEPU has developed a lighting strategy to select directional LED lights of a wavelength which it considers are less likely to disrupt birds. Infrastructure above 12 m in height in the project area (conductor pipe rotary piling rig, drilling mast, lampposts, communication towers, structural steel) will be coloured Papyrus White: RAL 9018. Hydrocarbon tanks will be coloured Ochre Yellow: RAL 1024. These works have been developed in liaison with the Uganda Wildlife Authority (UWA). TEPU has confirmed that under normal operations the well pads in the MFNP will not be illuminated and only be activated either locally or from the Buliisa main control room or security room. This approach is considered appropriate and to reflect the sensitivity of the MFNP and the dark skies in the MFNP. South of the Nile outside of the MFNP lighting will be controlled automatically to respond to local ambient light levels.

In the case of the AFs, it is considered that the drilling rigs will be visible at night for a significant distance, with relatively limited mitigation available. During the recent site visit, the LESC did not have a chance to see the rig over night to confirm their visibility and were supplied with photographs of the JNR05 rig at night. The subject has been discussed with Tilenga staff on site and rig operators that indicated that lights are all (except in a few noted cases) directed to the ground of the well pad to minimise light impacts. Within the MFNP well pads, JBR1 and JBR7 will be opened at a later date which will reduce overall the visual impact at any one time, due to a smaller number of well pads being developed at the same time / in close sequence.

For operations EACOP Ltd is developing its approach to minimising light pollution from the AGIs. To meet its requirements for safety, security and operability at the normally unmanned AGIs (including the PRS), substations and facilities, EACOP Ltd requires a minimum level of illumination, so they are reasonably visible at night. This allows them to be remotely surveyed 24/7 by the Project's operations and security personnel. The security cameras on the MLBVs will use infra-red illuminators, however there are spotlights on motion sensors that will light up when movement is detected. This is considered appropriate for the MLBVs and to be an appropriate balance for the security of these facilities.

To achieve the above aims EACOP Ltd has developed a Lighting Design Philosophy for its operations phase which is incorporated into the Electrical Design Criteria for the Project.

The Project traverses the East Africa Rift System which has intrinsic earthquake risks, as well as other risks such as landslips and flooding/erosion. The selection of the route considered these risks, and the design of the pipeline has taken account of these. As a consequence, the risks from natural disasters are considered minimal. In the unlikely event that a natural hazard occurred and resulted in the rupture of the pipeline, the MLBVs would isolate the section of pipe and trigger emergency response plans. Overall, the LESC considers that the risks from natural hazards are adequately addressed by the Project design as well as relevant scenario planning and response. Natural hazard risks are also considered for the AFs, with risks such as liquefaction of sediment, and in the case of the Kingfisher project this potential hazard resulted in the movement of a drill pad. The Kingfisher project also considered the risks of flooding, and the assumptions regarding these need to be reviewed in the light of the current high-water levels on Lake Albert. The Climate Change Risk Assessment undertaken for the Project does not appear to identify any further risks to the Project over and above those already accounted for in the risk assessments with issues such as flooding for Tilenga well pads and high Lake Albert water levels having been accommodated in the Project and AF design features.

Soils along the route have been characterised in the ESIA and within the majority of the Aol are typically soils with a high sand content which are 20–30 cm deep. The soil productivity varies and, in the wetland crossed by the project where papyrus is dominant, the soils are understood to be anoxic and will require EACOP Ltd to develop specific soil management plans linked to the restoration of these areas. The impacts on soils are almost exclusively associated with the construction phase. EACOP Ltd has developed a Soil Management CCP to be implemented by the contractors through their Soil Management CIPPs, which has been complemented by Wetland Soil Management and Reinstatement Guidance Notes for Uganda and Tanzania. Soil Management CIPPs are available and in use at the construction facilities visited in November. A tangible result of their implementation is the presence of areas with large piles of top and subsoil stored to be used for later site reinstatement. In operations there will be a requirement to monitor the restoration and address any areas of soil erosion. Food waste from the AGIs with a permanent workforce will be shredded, dewatered, and composted for soil enrichment. Within the AFs, the same approach will be taken. In the case of Kingfisher, the Project is already managing some soil stockpiled from the construction of the maintenance yard/supply base constructed in 2013 with topsoil and overburden stockpiled until the area is rehabilitated. During the site visit, some topsoil erosion was noted at Tilenga's CPF construction site that had filled drainage channels – use of siltation fences would minimise this and help preserve topsoil stocks.

Water resource is provided from a mixture of surface and groundwater sources in construction, and groundwater during operations, with the potential in both phases for the purchase of water from water districts and water boards. The ESIA's detail several proposed resource efficiency measures which are in line with GIIP with minimisation, reuse, and recycling. The sources of water for the Project will be identified and abstractions licenced in line with regulatory requirements for use by the contractors, and the EACOP Ltd requirements are stated in the Natural Resources CPP. The management of water will require good oversight by EACOP's H3SE teams to ensure that this resource is not impacted, particularly in the dry season when surface and ground water resources will be minimal in many areas.

The single largest water demand is for hydrostatic testing of 16,000 m<sup>3</sup> per test section during commissioning. The Project requires the hydrotest contractor to reuse the same water for different test sections as much as practical, although the feasibility and exact logistics of this option will vary from section to section, and this will be captured in a Hydrotest Management Plan. During construction, the typical water demand will be up to 200 m<sup>3</sup>/day for the construction camps. As these construction camps are distinct and separate, there will be no cumulative impact from their separate water demands which would be expected to be from groundwater. This ESIA data is supported by a study on potential water sources (RSK's 2017 Water Source Survey Final Report) which identified potential existing and new water sources and the relevant governing permitting authority along with the relevant water and wastewater standards.

The majority of water required by the Project is expected to be supplied from on-site groundwater wells and the identification, evaluation, installation and tie-in of the first batch of these, such as the MCPY-14 wells has been completed. EACOP's evaluation of water sourcing requires the contractor to undertake a desktop study, site investigation including geophysical surveys, and then detailed engineering design. The underlying premise is that contractors will avoid water abstraction sites that can affect water needs of resource users such as the local community and the ecosystem.

During operations the MST will require 200 m<sup>3</sup>/d in 2023 increasing to 400 m<sup>3</sup>/d in 2047 which will be sourced through a new pipeline connecting into existing pipelines supplied by the Mabayani dam<sup>25</sup> on the Sigi River. The new 23 km pipeline to the MST will also supply a number of communities along its route. As there is a lack of modelling of the dam and supplies and therefore impact of the relatively small MST abstraction, EACOP Ltd has commissioned RSK to assess the impacts of the present dam operations on downstream receptors, future impacts from increased abstraction (taking account of potential climatic changes), and the trade-off between reliable supply and meeting the needs of downstream aquatic environment and users. This study is due to report in February 2024.

For both AFs, the majority of the water demand for the two projects will be met through abstraction of water from Lake Albert through all phases of the project. This will be supplemented as needed by groundwater supplies. During production, the Tilenga Project will require approximately 12,000,000 m<sup>3</sup> per annum (falling over the life of the project to 2,690,000 m<sup>3</sup>) much of which is for injection, and approximately 185,000 m<sup>3</sup> per annum of groundwater at peak production and declining thereafter. For Kingfisher, the planned capacity of the intake station is 390 m<sup>3</sup>/hr (circa 3,400,000 m<sup>3</sup>/year), which includes provision for the maximum make-up injection water demand. These demands are negligible with respect to the volume of Lake Albert (combined less than 0.05%) and the flux of water through the lake on the Victoria Nile.

## 5.4 PS4 – Community Health, Safety and Security

The LESC considers that for PS4, EACOP Ltd has in place plans, procedures and resources that meet Lenders' requirements in the areas of community health, safety, security and Project Induced In-Migration (PIIM)

---

<sup>25</sup> The dam is reported (RSK proposal April 2003) to currently supply 27,000 m<sup>3</sup>/d and is planned to be upgraded to be able supply 45,000 m<sup>3</sup>/d. EACOP will require less than 1% of the currently available supply.

management. An EACOP Project Social Manager for Uganda and Tanzania has been appointed to oversee contractor construction Community Health, Safety and Security (CHSS) performance and Project Social Teams for both countries have been recruited and received training. The Project Social team provides technical guidance to contractors to develop CHSS implementation plans (including PIIM). Field-based Project Social resources assure contractor implementation of CHSS measures and their effectiveness.

For both Uganda and Tanzania, ESIA with community health and safety baselines, risks and impacts, and mitigations have been completed. ESIA baseline studies included a HRIA (2018), a security and human rights field survey in Tanzania and a desktop review of human rights and security risks in Uganda. Health Impact Assessments were undertaken in both Uganda and Tanzania (see ES-Human Rights).

EACOP Ltd has completed construction phase Social Management Plans for Uganda and Tanzania, incorporating human rights provisions. EACOP Ltd has also completed a CHSS DMP and CCPs for both countries. Contractors are tasked with addressing social impacts in their CIPPs. Recognizing the varying social performance capacities of contractors, EACOP Ltd has provided Project social performance resources to mentor them during CIPP preparation and implementation.

A Project Social Management organization, part of the Project H3SE Team, has been established. The Social team, led by an experienced Social Manager, includes Social Coordinators and Community Relations Supervisors (CSRs). Some LSOC members have transitioned to CRS roles. The Project Social team in Tanzania, including social, cultural heritage and industrial relations resources has been fully staffed since late August 2023. In Uganda, social resources for the Project are provided through LSOC and additional social resources (including the full industrial relations team) will be hired, as required, within the government-approved resourcing plan.

Through Q1 2023, EACOP reports that the Social Team has provided close technical oversight and guidance to DOCG, WASCO ISOAF, the Tanzanian ECW Contractors, and from late Q2 2023 CPP on their social management plans and procedures for building contractor social resources and capacity. So far, EACOP reports, results have been encouraging. This early work with Tanzanian companies has helped develop the competence of the Community Relations Supervisors in assuring CIPP implementation and to set the standard for Package Managers on the processes to be followed with larger contractors going forward.

EACOP LSOC community road safety awareness programs around the Early Works sites, that included formation of Road Safety Clubs, a road safety song, and theatre developed by the Tanzania House of Talents performed in villages, has been augmented by contractor road safety campaigns developed by contractors and the Project H3SE organization. For example, a DOCG MST road safety campaign for upgrade of 7 km of road focuses on door-to-door awareness-raising about pending road safety hazards, recruitment of flag-persons to support traffic management, recruitment of local workers to assist school children crossing roads and coordination with District Traffic Officers to assist in road safety messaging.

By EACOP's account, solid progress is being made in integrating EACOP corporate (LSOC), Project (the Project Social Team) and contractor resources to address CHSS risks and impacts. The effectiveness of this integrated approach and its scalability to the main pipeline contract will be evaluated once the LESC construction monitoring commences.

Since the start of early works activities at MCPYs and the Tanga Marine Storage Terminal, LSOC CLOs have been guiding contractor social performance and stakeholder engagement in Project affected communities. Project Environmental Advisors are also in place. Early Works have been ongoing for over 18 months. The LESC will be looking for evidence of CHSS monitoring such as described in the E&S Monitoring and Reporting DMP (e.g., monitoring reports) as part of the construction monitoring phase.

The Uganda and Tanzanian Host Government Agreements (HGAs) contain security provisions that define the respective roles of the governments and EACOP Ltd. Amongst other matters, the HGAs outline some basic Human Rights standards to be adhered to including the requirement for government and company security to be trained on the Voluntary Principles on Security and Human Rights (2000) prior to engaging in security functions. EACOP Ltd is to facilitate and pay for such training.

Inaugural meetings of the Tanzania HGA Security Committee and Uganda HGA Security Committee were held in February 2023 and August 2023 respectively. With support from EACOP, the Joint Intergovernmental Security Committee (formed under the IGA between the Government of Uganda and the Government of Tanzania) has completed fact finding missions in Tanzania in February 2023 and Uganda in April 2023.

EACOP Ltd has prepared draft Security Memorandums of Understanding (MOUs) to be signed with the Governments of Uganda and Tanzania that further elaborate on security matters and related human rights obligations. These are presently under consideration by the Governments of Uganda and Tanzania. These MOUs elaborate on the Human Rights standards, roles and responsibilities, codes of conduct and other matters, and will provide important protections for Project affected communities, EACOP Ltd and its lenders. The MOUs will also be a demonstration to the outside world that the Governments of Uganda and Tanzania are committed to upholding Human Rights.

EACOP is making steady progress in implementing its Construction Phase Security Philosophy. Progress includes:

- i) A Security Management Plan for Construction Phase has been completed clearly setting out the scope of MoUs with Government/Government Security Forces, requirements for contractor VPSHR implementation plans, relations with Government security forces, and more;
- ii) Recruitment for key positions in the EACOP Ltd security organization in both Uganda and Tanzania has been completed – a Security Coordinator for Uganda has been hired; and, the security organization includes Community and Security Coordinators to be involved in regular, active engagement with PACs;
- iii) An Intergovernmental Security Committee (20 members, 10 each from Uganda and Tanzania comprised mainly of defence force personnel, but also with police, and petroleum authority representatives) has been formed and conducted visits along the pipeline route and facilities sites in both countries;
- iv) In Tanzania, an HGA Security Committee has been convened and held its first meetings;
- v) EACOP Ltd submitted draft security MoUs for Government of Tanzania consideration on 28 March 2023 and Government of Uganda consideration on 24 May 2023;
- vi) A VPSHR Risk Assessment had been completed for Tanzania which made important recommendations related to wording/obligations of parties in the draft EACOP-Government security MoU and updating of risk assessments related to impact of security on communities, amongst other matters;
- vii) EACOP is working on developing a VPHSR training program, but its scope and targeted participants have yet to be agreed with the respective governments;
- viii) An external party completed a maritime security risk assessment of marine works, including consideration of the potential to accommodate community access for gleaning activities around the jetty; and
- ix) A first meeting of the Uganda HGA Security Committee was held on 15 August 2023 and a tour of the Uganda EACOP pipeline RoW followed in September 2023.

A PIIM and Human Rights Manager has been appointed to oversee PIIM management for both EACOP Tanzania and Uganda. Risks and impacts likely to arise because of PIIM have been identified in the Uganda



and Tanzania ESIA's and HRIA. Updated assessments of likely PIIM hotspots have been completed. These describe the key drivers for PIIM; likely "hot spots" including Project components or districts likely to be more affected; the potential impacts of PIIM during construction; and the level of preparedness of government and communities.

The EACOP Uganda and Tanzania Social Management Plan (SMP) included sections on the PIIM Management Strategy. This strategy has been elaborated into a PIIM Management Implementation Plan (June 2022). The implementation plan describes 6 main component activities, namely:

- Promoting awareness;
- Establishment of PIIM Working Groups for identified PIIM hotspots;
- Management of local recruitment and employee housing;
- Delivery of PIIM mitigation programs
- Use of satellite imagery for monitoring; and
- Ongoing community-level monitoring.
- Recent PIIM related activities have included:
- Implementing a PIIM awareness media campaign;
- Promoting awareness of PIIM issues through Community Relations Coordinator and Community Relations Supervisor engagements with PACs;
- Facilitating regular PIIM Working Group meetings at PIIM hotspots;
- Implementation of a PIIM Monitoring Plan;
- Ongoing community level monitoring, particularly in Sojo and Chongoleani; and
- The Project Social Team continues to work with contractors on recruitment procedures with a particular focus on discouraging in-migration.

Monitoring in Tanzania (Q1 2023) revealed a core group of about 40 in-migrants remain in the Chongoleani area (adjacent the MST). The group is regularly engaged by EACOP and Tanga Municipal officers and advised that jobs will only be for local workers. Smaller numbers of migrants have been encountered in the vicinity of MCPY-15 and MCPY-09 / Coating Yard at Sojo village. Satellite data has been acquired and analysed to reveal new structures covering hotspots in Uganda and Tanzania on a quarterly basis starting late 2022. A PIIM Coordinator has been recruited in Tanzania to undertake more PIIM field monitoring and to strengthen coordination on PIIM matters with district authorities.

EACOP Ltd has developed an Emergency Response and Crisis Management Plan as part of the EIMS, a Critical Incident Management Plan and Critical Incident Pocket Guide. Contractors are being supported by the Security team, H3SE functions and Social Team to develop site level Emergency Response Plans. Preparation includes liaison with local government and communities to assess local capacity. It is planned that the Project Social team will support messaging around local ERP content including roles and responsibilities relevant to communities and key local stakeholders to accord with PS 4 (para. 11).

## 5.5 PS5 – Land Acquisition and Involuntary Resettlement

The LESC considers that EACOP Ltd land acquisition and resettlement documentation is compliant with IFC PS5.

Project impacts on land and people are summarized in the following table. The table does not include fishers or inter-tidal gleaners who will be displaced by marine construction works and exclusion zones at Chongoleani.

**Table 1: EACOP Affected Land and Households (Pipeline, Priority Areas and AGIs) - March 2024**

	Physically displaced households (no.)	Economically displaced PAPs (no.)	Affected land area (compensated)
Uganda	195*	3,465	2,321 acres**
Tanzania	344	9,560***	9,306 acres****
Total	539	13,025	11,627 acres

\* 198 households own 219 affected dwellings – some households will lose more than one dwelling.

\*\* Excludes 419 acres of national forest reserve, wetlands, acquired but not compensated.

\*\*\* Includes landholders, land tenants and informal users.

\*\*\*\* Includes construction facilities (e.g. Coating Yard, two main construction camps, ten main camps and pipe yards and MCPY access roads), 680 acres; and, operational facilities (e.g. export pipeline with the 30 m wide corridor, additional temporary construction workspace, AGIs including a marine storage terminal, four pumping stations, two pressure reduction stations, main valve stations, electrical substations, AGI access roads etc.), 8,626 acres.

The Project has recently reconciled land, physical displacement and economic displacement requirements resulting from project micro re-routing for social, environmental and constructability reasons which has resulted in some small adjustments to the figures in Table 1. In Uganda, land is being acquired for a new MCPY-02 location, but this additional area will be cancelled out assuming the originally selected MCPY-02 location is relinquished.

Overall, the Project has developed robust RAPs for Uganda and Tanzania. The resettlement documents provide a clear picture of the policy and legislative framework, socio-economic context, nature and magnitude of displacement impacts, and measures taken to avoid and minimize displacement. They also detail compensation and mitigation measures and implementing arrangements. A thorough livelihood baseline has been used to inform a livelihood restoration strategy. Vulnerability assessments have been undertaken and appropriate vulnerable assistance measures implemented. Detailed budgets and schedules are presented. The Project RAPs define many good practice procedures for activities such as replacement house plot delivery, replacement house construction, provision of replacement agricultural land, transitional support, and vulnerable assistance. In both countries, valuation rates have been adjusted to reflect the time that has elapsed since land and asset valuation surveys were completed. In Tanzania, 2018 compensation was adjusted by an additional 12.24% interest (annual compounded interest of 8% for an 18-month maximum interest period), an inflation uplift on crops and trees, and an increase in compensation rates for land and structures based on changes in market price where identified by market research. The adjustments varied depending on when compensation was paid to PAPs. In Uganda, compensation amounts were uplifted by 15% p.a. simple interest for the period 2018-2021. In both countries, the Project has also undertaken land market studies to ensure that the compensation adjustments for land match or exceed actual changes in market price.

Despite the claims made by several international NGOs, the LESC has generally found that the Project Affected Persons (PAPs) in both Uganda and Tanzania were satisfied with the compensation they received, in no small part due to the 'uplifts' that the Project applied.

In Uganda, EACOP Ltd has recently obtained Government of Uganda's agreement to include within the leases the possibility for displaced households to resume their use of land in the pipeline corridor for growing crops, subject to some restrictions once pipeline construction is completed. Planting of deep-rooted vegetation (e.g.,

trees) and erection of structures will not be allowed. The mechanism for how use resumption will be achieved is still to be resolved. This provides a significant safety net for pipeline-displaced households and reduces potential Project impacts on long-term livelihood – a very good outcome.



Figure 29: Examples of replacement housing nearing completion in Uganda (Source: EACOP, 2022)

In Uganda, 95 percent (n=3,483) of the 3,660 compensation agreements needed for Priority Areas and pipeline access have been signed and, 93 percent (n=3,387) have been paid their compensation. All 177 needed replacement houses have been completed and handed over. All 71 graves belonging to physically displaced PAPs have been relocated and 97 percent (n=637) of the other 659 graves to be moved have been relocated as of early January 2024. Twelve out of 24 shrines have been relocated. Notices to vacate have been issued to 84 percent (3,058/3,660) of displaced households. 86 percent of households (2,938/3,400) eligible for livelihood restoration have started their programs. EACOP Ltd notes that 112 PAPs have not yet signed compensation agreements and may need to be referred for the Attorney General to process with compensation to be held in escrow. This group is made up of absentees, PAPs yet to be identified, parties in various kinds of dispute and the like.

In Uganda, 2,246 project affected households are eligible for transitional support. About 53 percent of these households were receiving food baskets as of January 2024. This number will increase as more households vacate the pipeline ROW. About 3,126 PAPs have enrolled for livelihood restoration including agricultural improvement programs, livestock productivity enhancement, sustainable water solutions, vocational training and enterprise development. In Tanzania, land acquisition for Priority Areas<sup>26</sup> was completed in Q4 2021. Thirty-four households were physically displaced and a further 356 households were economically displaced. Thirty of the physically displaced households elected to receive a Project-built replacement house or houses. Four elected to receive cash compensation and self-build their own replacement dwellings. Of the 390 project affected households, thirty-six selected Project allocated replacement land, with forty-two replacement land parcels being allocated to them, and the remainder chose cash compensation. By November 2022, compensation payments and allocation of replacement housing and agricultural plots were complete. All forty-three Priority Area replacement houses were completed and handed over to PAPs by mid-December 2022. EACOP Ltd assisted the physically displaced households to move into temporary rental housing while their replacement

<sup>26</sup> In Tanzania, Priority Areas consist of the Coating Yard and main construction camps and pipe yards: MCPY 05 – MCPY 16.

houses were constructed. Households received transitional food support for periods ranging from 12 to 18 months, depending on the agricultural calendar and when their livelihood program was started. Households participated in agricultural livelihood programs. Two seasons of maize along with other main and secondary crops have been harvested at the Coating Yard area. Poultry, livestock husbandry and beekeeping programs have commenced at the Priority Area sites. Households with special needs or vulnerabilities received targeted support and were regularly monitored.

On the Tanzania section of the pipeline, as of March 2024, 99 percent (n=9,823) of the needed 9,904 agreements have been signed and compensation paid. Compensation for the remaining eighty-one unsigned agreements is retained in escrow.<sup>27</sup> All of the 340 replacement houses needed for the pipeline and Priority Areas have been completed and handed over to PAPs. Going forward, the focus will be on delivering transitional support and scaling up livelihood restoration programs. Efforts to prioritize local employment including jobs for women and displaced people at the Coating Yard, MCPY-08, and the MST have been effective.

Land access for the pipeline across the Zongomera Industrial Park, previously flagged by the LESC as challenging, has been achieved. EACOP still has work to do in terms of coordinating infrastructure delivery for replacement plots. Regular monitoring of resettlement and livelihood programs is ongoing with monthly reports being prepared.

A particularly challenging component of EACOP Ltd's livelihood restoration program is that associated with households displaced by MST on the Chongoleani peninsula (covered by the SRAP/LRP for the MST and Chongoleani). The Cumulative Impact Assessment has revealed the land use pressures on Chongoleani and Putini communities. Putini (215 households) is about 800 meters west of the MST entrance. Since 2017, Putini and Chongoleani communities have experienced a cumulative loss of about 526 ha of agricultural land and economic trees (the majority of Putini's productive land) due to industrial zoning and land acquisition by developers. EACOP's land acquisition, 78 ha, accounts for 14 percent of this loss.

The suite of livelihood resources that Putini residents rely on (e.g., arable land, economic trees, foraging area, gleaning area, fishing grounds) has been severely reduced and the community is now surrounded by an area zoned for oil and LPG storage. If even a small number of the listed developments are realized, Putini will find itself in an environment incompatible with residential use. Aware of this, EACOP Ltd is implementing multi-faceted livelihood programs and has been proactive in engaging with Tanga City Council about potential availability of replacement agricultural land and establishment of a working group to coordinate development of the Chongoleani Peninsula.

For Chongoleani and Putini, EACOP Ltd is implementing an extensive program of transitional support, terrestrial and marine livelihood programs, vocational training and small business development. The LESC's view is that the livelihood circumstances of Putini residents remain quite precarious and that the options for replacement agricultural land must continue to be explored. A Tanga City Council-led resettlement program for Putini may be necessary in the future.

EACOP Ltd has developed a roadmap for defining access around the jetty for gleaners and fishers and for recommending a preferred approach to the relevant government authorities well ahead of the jetty becoming operational in 2025. The LESC is aware that the Tanzania Ports Authority (TPA) and Tanzania Shipping Agencies Corporation (TASAC) will have to review EACOP's recommendations as part of the Port Facilities Security Plan (PFSP). TASAC will be the national authority responsible for final decisions on security access under the International Security of Ports and Ships (ISPS) Code.

---

<sup>27</sup> The remaining unsigned agreements are due to PAPs who cannot be located (n=41) or circumstances where the rightful beneficiary of the compensation cannot be agreed due to intra-family or inter-landholder disputes.

During a site visit in November 2023, the LESC met with the land and social performance teams of the Kingfisher and Tilenga projects, both of which have substantial land acquisition and resettlement programs.

For the Kingfisher project, land access and resettlement are substantially complete with some transfer of titles ongoing. All replacement housing is finished and handed over. Land access and resettlement was managed through four RAPs covering the CPF and wellpads, the Buhuuka-Kabalega feeder pipeline, and safety buffers, borrow and spoil pits. Initial livelihood restoration programs encompassing financial literacy training, business development, livestock and agricultural development, vocational skills training for youth and aquaculture, have been completed.

On the Tilenga project, 99 percent (n=5,258) of the 5,576 compensation agreements needed to implement the project have been signed and 99 percent (n=5,228) of households have received their compensation. Of the 235 needed replacement houses, 93 percent (n=219) are complete with 99.5% (218 / 219) handed over. The last 7 percent (n=16) are under construction, to be completed in April and May 2024. In March 2024, the LESC inspected well-advanced agricultural and livestock programs. Tilenga has nine ongoing court cases including two over planned wellpads. Tilenga has well developed RAPs, livelihood programs and E&S management plans. It has experienced and well-managed land and social performance teams.

The LESC noted the need to clarify roles and the ESMS framework to be applied to construction of the Tilenga feeder pipeline. As operator, Tilenga will have E&S oversight, but the EACOP pipeline contractor will construct the feeder pipeline.

In summary, the advanced state of Project land acquisition and resettlement in both countries has minimized the risk of contractor delays in accessing land for pipeline construction.

## **5.6 PS6 – Biodiversity Conservation and Sustainable Management of Living Natural Resources**

For PS6, LESC opinion is that EACOP Ltd has made good progress towards meeting lenders' requirements. At this late stage in due diligence, only a few gaps in compliance remain. Firstly, a technical systematic review of ecosystem services is underway, due for completion in July 2024 – the LESC currently foresee no reason why this will not meet requirements once complete. Secondly, gaps still exist in demonstrating Associated Facility PS6 compliance, namely, Kingfisher's biodiversity management program – for this latter gap, the LESC cannot currently predict a timeframe for compliance. Thirdly, the LESC awaits formal opinion from ARRC regarding EACOP's approach to mitigating impacts on chimpanzees – see ESAP PS6 items - Biodiversity section.

### ***Identification and Avoidance of Critical and Natural Habitats***

Although set in a landscape of widespread conversion to Modified Habitat, the Project will impact a number of ecologically sensitive habitats deemed Natural and Critical Habitat (CH), CH-qualifying species, including charismatic species, threatened ecosystems and threatened species likely to be of wider stakeholder concern. The EACOP pipeline will also traverse a number of protected and internationally recognised areas, none of which are Ramsar or listed on the World Database of Protected Areas as IUCN management category I-IV (although Associated Facility Tilenga will have permanent footprint in IUCN category II and temporary construction footprint in a Ramsar site).

Terrestrially, satellite imagery for a 2km wide pipeline corridor was obtained for the entire length of the pipeline route, from which habitat mapping for the linear corridor was derived, assessed and informed the ESIA. Habitats are now fully mapped and classified across a minimum 5km-wide RoW corridor along the length of the pipeline RoW, expanding out to a 10km assessment for protected areas; Kingfisher and the Tilenga feeder pipelines were similarly assessed. Ground-truthing biodiversity field studies were completed during 2022 at key locations for previously identified Critical and Natural Habitat and CH-qualifying species, and threatened ecosystems –



including Eastern chimpanzee, Ashy red colobus monkey, Pancake tortoise, the *Apalis karamojae* and several large charismatic mammal species of broad stakeholder concern. The Critical and Natural Habitat analyses are now finalised, and route design and fine-scale alignment negotiations are complete. The updated analyses have informed site-specific Avoidance Scenarios which have in turn informed detailed pipeline routing negotiations documented in engineering-led Change Proposal Notices (CPNs) – these confirm amended routing and reduced RoW where this has been possible in Natural and Critical Habitat. A number of Avoidance Scenarios were provided to the LESC along with a number of CPNs. In this regard, the LESC have closed ESAP action item PS 6.2.

The ESIA required the development of a biodiversity survey strategy so that pre-construction surveys could be defined; the Project have now developed Pre-Clearance Survey Guidance (Oct 2023), so the LESC have closed ESAP action item PS 6.6.

For river and watercourse crossings, EACOP has committed that the contractor will develop site specific construction/restoration method statements, each of which will be reviewed and approved by EACOP. A Watercourse and Wetland Crossing Plan (WWCP) for Tanzania has been provided (Nov 2023), whilst the Uganda plan is nearing completion. This DMP includes cross-references to freshwater-relevant ESIA and GIIP mitigation measures. Specific provisions are included for crossing watercourses that constitute Critical Habitats, whether due to comprising Lake Albert and Victoria catchments or for CH fish species at specific KP locations. The Project have confirmed that currently they envisage two rivers will be crossed using HDD in Tanzania, and other watercourse/wetlands will be crossed with a combination of mitigation measures noted in the BAP (including construction preference in dry season). The BAP predicts no significant residual impacts however Additional Conservation Actions (ACAs) within the offset program are being planned. As noted in previous LESC reports, construction over multiple freshwater work-fronts to target watercourse crossings all within the various dry seasons will likely be a scheduling challenge and will be a focus area for LESC during compliance monitoring.

For marine, the LOF and related shipping and aids to navigation are within Critical Habitat and there are numerous protected and internationally recognised areas of biodiversity importance areas within the Area of Influence. Three marine Critical Habitats have been identified: mangrove, seagrass, and coral. Initially seven Critical Habitat-qualifying species were identified, but this was reduced to six through the CHA studies and marine BAP. PS6 requirements for these species are further refined within the marine BAP and it has been determined that there will only be residual impacts on one of these species, the Indian Ocean humpback dolphin, with offset requirements for other species being precautionary. All data gaps relating to these habitats and species have been closed, although surveys continue through ACAs within the offsetting program, that are providing additional data some of which continues to feed into construction and operational planning.

There was some additional impact assessment as part of the Jetty Shortening Study and through the marine BAP and residual impacts have been determined using an Avoid, Mitigate, Restore, Offset approach. There has also been further assessment of alternatives to demonstrate that viable options that avoid Critical Habitat have been considered. The Marine Environmental Sensitivities Guidance report was prepared in March 2023 by EACOP as per ESAP item PS6.18. The report includes guidance on Critical Habitat avoidance and the ESAP item was closed. The marine contractor's Biodiversity Management CIPP incorporates these avoidance measures.

### **Managing Impacts on Biodiversity and Natural Resources**

IFC PS6 requires the client's Biodiversity Management Plan (BMP) to be auditable and integrated into the Project's ESMS. Building on the EIMS process reviewed in PS1 above, the Biodiversity DMP informs the Biodiversity CCP to assess and monitor implementation of the Contractor's Biodiversity CIPP. EACOP's Corporate Team have developed both the Biodiversity DMP and the CCP.

EACOP's Biodiversity DMP, which covers both terrestrial and marine, has been further revised since the LESC's last review and is now an operational document issued as Rev.1, and fully linked into the EIMS/ESMS. It is intended to provide the overarching framework for a number of topic-specific biodiversity-relevant plans including various Species Action Plans, a Bushmeat Management Plan, a Human Wildlife Conflict Plan, Habitat Action Plans, a Watercourse Crossing & Reinstatement Plan, Marine Environmental Sensitivities Guidance, Site-specific Reinstatement Plans, Pre-clearance Guidelines, Biodiversity Monitoring and Evaluation Plans (BMEPs), the Biodiversity Action Plans (BAPs) and Biodiversity Offset Management Plans (BOMPs). Pipeline construction is due to commence early 2024. LOF construction commenced in autumn of 2023 and early works construction is already underway (including the Marine Storage Terminal and Pipe Coating Yard). The plans have been further developed through 2023. The Biodiversity DMP V1 now includes the additional mitigation measures as derived from the updated habitat mapping work undertaken 2021/2022, and the terrestrial sensitivities are now listed in an Appendix.

Marine avoidance, mitigation and restoration measures, have been added to the body of the Biodiversity DMP in standalone tables for the Plan, Do, Check, Act phases. However, it still does not appear to be a comprehensive and consistent list. EACOP has explained that their focus has been on supporting the development of comprehensive CIPPs by the marine contractor. Although detailed review of the CIPPs is not a component of this phase of the ESDD, the LESC has screened the marine CIPPs, and they are comprehensive. However, the inconsistencies in the Biodiversity DMP should still be resolved. Further discussion of the marine CIPPs is provided in the following paragraphs.

Linkages from DMP sections to other relevant management plans & documentation should be included or made more explicit, for example: the maximum RoW construction width of 30m is not mentioned yet are found in the engineering routing CPNs (as per routing text above); additional mitigation measures relevant to the 'Act' Stage (in Plan-Do-Check-Act) regarding monitoring against thresholds and adaptive management are necessary. The DMP should include all mitigation measures for implementation in greater detail; those relevant only for Contractor implementation should also be reflected in the CCP. The DMP includes KPIs, although not all are suitable to inform adaptive management and EACOP should reassess these.

The updated Biodiversity CCP includes contractor-relevant ESIA mitigation measures, plus those derived from ESIA approval conditions. It now includes reference to impact avoidance and minimisation related to terrestrial Critical Habitat areas, updated to reflect the 2020/2021 mapping. The LESC notes a number of good GIIP measures are also included. The Biodiversity CCP now<sup>28</sup> also includes marine mitigations and EACOP has provided a concordance table to demonstrate that mitigations have been captured, including those developed in the marine BAP. EACOP has also prepared a Vessel E&S Management Plan (CCP) that includes avoidance and mitigation measures for construction. The CCPs reference the Marine Environmental Sensitivities Guidance report. The guidance report is comprehensive, and as explained above EACOP is relying on the CIPPs to deliver the avoidance and mitigation measures.

A marine contractor with extensive international experience has been selected for the LOF construction who has prepared the marine CIPPs. The marine Biodiversity, Natural Resources, Waste and Chemical CIPPs were provided, and the avoidance and mitigation measure seem to consistently reflect those in other documents, including the marine BAP. Examples include the management and monitoring of underwater noise and suspended sediment, and no-go areas for vessels, including anchoring. The marine contractor has further defined these measures for implementation and the marine CIPPs appear comprehensive. However, there is a specific question mark over the implementation of pre-construction surveys. The Biodiversity DMP, Vessel E&S Management CCP and Marine Sensitivities Management Guidance include measures relating to pre-

---

<sup>28</sup> Biodiversity CCP provided as Vers. 4 although the version number and document date require updating following later amendments.

construction surveys for marine Critical Habitat, noting that there are qualifiers such as 'where required', and leave it to the CIPPs to define the need for and scope of pre-construction surveys. However, the marine Biodiversity CIPP is unclear on this subject and references the marine Critical Habitat Impact and Mitigation Assessment (CHIMA) for pre-construction surveys, which we understand are out of date. A pre-clearance check is also presented in the marine Biodiversity CIPP but there is no detail on what this involved and if it met the intent of the pre-construction surveys. The requirement for and implementation of pre-construction surveys should be clarified. In addition, we understand that the CIPPs have been reviewed and approved by EACOP Ltd, however the versions shared with the LESC were Issued for Review only and final versions should be provided.

EACOP Ltd has an experienced marine biodiversity coordinator who is based in Tanga and is supporting the marine contractor. Extensive oversight from EACOP Ltd will continue to be required through construction.

It is LESC opinion that the DMP and CCP would still benefit from further editing to ensure measures are fully and consistently integrated within the management system. and cross references between documents are accurate and up to date. This will also make for a more efficient and robust auditing process. However, at this stage the LESC feel that the management system is sufficiently developed and ESAP items 6.4 and 6.16 have been closed.

Operational management planning for the MST and LOF, including shipping, is ongoing. The extent of the assessment of shipping has been determined and used in the determination of the Aol and therefore ESAP action item 6.13 was closed. Oil Spill Contingency Planning is a key component of this and EACOP confirmed that it is ongoing for operations, including training, procurement of additional equipment and collaboration with government and the TPA is ongoing. For construction of the jetty oil spill contingency planning and resources are provided by the marine contractor, and an Oil Spill contingency Plan, is within the marine CIPPs. The terrestrial construction plans have also been completed. Linked to this is the importance of Alien Invasive Species management. Monitoring is defined in the Alien Invasive Species – Marine – Management Plan and therefore ESAP item 6.22 was closed.

### ***Biodiversity Action Planning and NNL/NG rationale***

The three Biodiversity Action Plans (BAPs) described in the last LESC report<sup>29</sup> have now been further developed, one for each of terrestrial/freshwater Uganda and Tanzania, and one for marine at the Tanzania coast (Rev.0 Jan 2024). The BAPs are considered to be DMPs in the Project's EIMS management system structure. Although 'Issued for Use' the final Jan 2024 Rev.0 documents should be numbered Rev.1 and Issued for Use, in line with standard management system practice (this point is valid for all new BAPs, BMEPs and BOMPS as noted below). An updated suite of biodiversity management plans should be provided to the LESC prior to compliance monitoring).

For terrestrial, building on the 2020/2021 updated habitat mapping, the BAPs list the Natural and Critical Habitats and CH-qualifying species where there are likely to be significant residual impacts. The BAP tables provide targeted KP-location habitat-specific descriptions and for each species, threatened ecosystem and protected area, provide a mitigation hierarchy of measures. Similar is provided in the marine BAP, where the avoid, mitigate, restore and offset approach is well laid out for the Critical Habitat and qualifying species.

The BAPs provided are sufficient to fulfil the required deliverables, so the ESAP action 6.5 is closed. Both the terrestrial and marine BAPs, include indicative significant residual calculations that exclude on site restoration activities (until more certainty is gained in restoration success). Habitat loss calculations are included for Critical/Natural habitat, for CH-qualifying species and for protected or recognised areas. Data on impacted areas

---

<sup>29</sup> Golder Document No. 20399033-006-RL0-REV.2 dated January 2023.

will continue be refined through detailed design and construction planning therefore residual impact calculations will be updated in due course. The BAPs present an overview of offset requirements and opportunities by species and habitat, further expanded within the BOMPs (see below).

### **Biodiversity Offsets**

Identification of the type and scale of significant residual impacts is key to understanding the feasibility of delivering sufficient biodiversity gains to offset losses. An assessment of the feasibility of achieving no net loss (NNL) and net gain (NG) has been a key lender' concern. A draft EACOP Biodiversity Offsetting Strategy (BOS) was developed in 2022 by the CHA technical consultants. The BOS presents EACOP's Project-wide strategic approach to achieve NNL and NG, providing a framework for offsetting any residual direct, indirect, induced and cumulative impacts that can be anticipated to remain, despite implementation of the previous mitigation hierarchy steps. The BOS includes a number of potential offset scenarios planned around various activities over the next 1-3 years i.e., opportunities in both Uganda and Tanzania, both terrestrial and marine, to enable offset feasibility to be better understood.

Three BOMPs have been developed (Rev.0, Jan 2024), using principles within the Business and Biodiversity Offsets Programme (BBOP) Standard on Biodiversity Offsets and World Bank offset guidance. The BOMPs present EACOP's general approach to NNL and NG describing how both biodiversity offsets and ACAs will be used to achieve Lender requirements. For loss/gain accounting, the measures are in alignment with GIIP for offset accounting (in this instance, as implemented by the UK government). The approach uses habitat type and area as the basic unit of measurement (akin to the traditional habitat hectare approach), then applies ratings for distinctiveness and condition, resulting in Biodiversity Units (BUs, the metric currency) used to track loss and gain through time. The BOMPs define that NG will be achieved when the residual impact (as measured in BUs) is less than the offsetting proposals (also measured in BUs), with a minimum gain of 10% targeted for each biodiversity feature requiring gain. They include the use of multipliers for example, to account for time lag between loss and fully functional gain. The Tanzania BOMP notes the potential use of multipliers, but the BOMP section is yet to be completed. For marine, conservative area estimates, including Partial Loss buffers, appear sufficient to provide some contingency, in addition to the 10% gain.

Offset program "scenarios" are noted in the BAPs (indicating the type of conservation support that could be provided) and explored in more detail in the BOMPs. For each biodiversity feature requiring NNL/NG, the type of gain required is presented (whether offsets or ACAs), the identified risks to delivery, any stakeholder engagement undertaken or planned for each biodiversity feature, an initial implementation schedule and alignment with Offset principles of Additionality, Equivalence and Permanence and existing conservation initiatives. Proposed offset program monitoring indicators are presented including predicted success factors over the first five years of offset delivery. EACOP has undertaken a number of consultations with various species experts to identify feasible conservation program options suitable for inclusion in the offset program e.g., for red colobus and itigi-thicket. A suite of marine offsetting options is proposed based on extensive engagement with local marine biodiversity specialists, and additional research and survey efforts. These include averted losses, ACAs, such as additional data gathering and research studies, Critical Habitat restoration, and support for sustainable fishing practices. EACOP Ltd commenced many of the marine ACAs in 2022 and 2023, and has selected and is entering into contracts with organizations for Critical Habitat restoration as an offset, including University of Dar es Salaam and MWAMBAO, who the LESC met with during the November 2023 site visit. The feasibility of these restoration offsets has been considered. The marine BOMP supports Net Gain in compliance with PS6.

Of particular note is the work EACOP and their external consultants have progressed on the establishment of an independent Conservation Trust Fund in Tanzania (one already exists in Uganda) to act as a funding mechanism for future support to conservation programs.

The 2<sup>nd</sup> Progress DD LESC report noted that EACOP Ltd had approved an internal budget for initial development of each of these offset scenarios for the duration of the construction phase (USD figures shared with LESC). However, the Project needs to demonstrate that it has budgeted sufficiently for the implementation and costs of biodiversity offsets for the duration of impact. The LESC have again discussed with EACOP the importance of demonstrating it has planned sufficiently for the long-term costs of offset program support. A strategy describing and committing to the long-term budget necessary to support and maintain long-term gains is required for Lender assurance: this has not yet been forthcoming. This is not a direct requirement of IFC PS6 but is considered to be GIIP – EACOP Ltd state this will be provided prior to Financial Close.

The LESC considers the approach and scenario options presented in the BOMPs to provide a robust foundation for future demonstration of NNL/NG, and the ESAP item 6.12 is now considered closed.

### ***Biodiversity Monitoring and Evaluation***

Previous LESC reports flagged the urgency of BMEP development so that EACOP can indicate their intentions for monitoring and evaluating the management of negative impacts. EACOP waited until the habitat mapping and BAP and BOMP development was complete so that impacts on Critical Habitat and qualifying species (along with proposed offset / conservation activities) were better understood. Terrestrial and marine Rev.1 BMEPs were issued in Oct 2023, stating these were 'Issued for Use'. For this final DD report, EACOP Ltd have provided BMEPs dated Jan 2024, as Issued for Use but as Rev.0 - EACOP Ltd should ensure sufficient document control so that revision numbers, versions and issuance dates are not contradictory, to avoid confusion in multiple versions.

The BMEPs form part of the ESMS and detail the requirements for all biodiversity monitoring activities required by the ESIA and the BAPs. The BMEPs contain detailed tables listing indicators for PS6-relevant biodiversity features at specific locations, targets to achieve, thresholds for corrective action, monitoring frequencies, and method overviews. The tables also list corrective actions for implementation when necessary.

The updated Marine BMEP now contains a detailed plan for the implementation of biodiversity monitoring in the marine environment.

The ESAP action item 6.7 is now considered closed. However, an aspect of monitoring important at this early construction stage not currently apparent in the BMEP is to detect and prevent impacts to freshwater ecology downstream of any construction activities. The LESC recommends EACOP Ltd consider adoption of macroinvertebrate sampling, to study freshwater macroinvertebrate communities (diversity and abundance of indicator species) to characterise the health of watercourses that may be potentially affected by increased sedimentation from sites upstream. Data from pre-impact, during-impact and post-impact sites can be used to compare with reference/control sites, to provide assurance that increased sedimentation from sites is not adversely affecting downstream ecological communities.

In the previous ESDD report a concern was highlighted that there was not a clear commitment to reinstatement/restoration of marine Critical Habitats impacted by the Project based on the Avoid-Mitigate-Reinstatement-Offset approach, and that the approach to monitoring and defining reinstatement requirements had not yet been presented in the draft BMEP. This is now clear in the updated BOMP and BMEP and therefore, ESAP item 6.19 is now closed. The LESC understands that restoration will be the responsibility of EACOP Ltd.

### ***Biodiversity-specific Stakeholder Engagement***

Consultation with stakeholders in-country (including science-based conservation NGOs, protected area agencies, wildlife authorities, specialist species researchers) on residual impacts and offset options appears to be constructive. Extracts from PS6-relevant stakeholder mapping for both Uganda and Tanzania have been provided, along with forward looking live stakeholder engagement plans – the ESAP item 6.9 is now closed. The LESC is not aware of any disagreements with in-country stakeholders EACOP have met with face-to-face



over residual impacts or disputes on the appropriateness of proposed offset options. One issue raised was that a few supportive chimpanzee conservation NGOs would prefer to not receive monies directly from oil companies, and instead should make use of conservation trust funds (see below). EACOP states in-country consultation is ongoing and will continue post Financial Close. Internationally and nationally, some activists and advocacy groups continue to raise issues related to residual impacts on communities and wildlife which they consider inappropriate e.g., Stop EACOP, AFIEGO<sup>30</sup> and others.

With regard to primates in the Albertine Graben, EACOP advise their consultations with Eastern Chimpanzee stakeholders in Uganda has continued (in conjunction with TEPU for Tilenga), and organisations appear happy to engage in dialogue and direct the companies towards the best conservation activities and outcomes. EACOP has engaged with several members of the Northern Albertine Rift Chimpanzee Group during 2023. Engagement with IUCN's ARRC taskforce<sup>25</sup> representatives has continued, focussing during 2023 on their requirements and recommendations for the Projects Chimpanzee Action Plan (ChAP), indirect impacts mitigation and technical components of a genomics study for chimpanzees in the northern Albertine Rift. The LESC spoke with two ARRC representatives in Nov 2023 and can confirm that engagement between EACOP and ARRC has continued. ARRC advised the LESC that they've moved on from their linear engagement process as presented on their website<sup>31</sup>, (resulting in production of a single Statement of Engagement), due to their desire to engage on a more ongoing, iterative basis with those projects where the ARRC panel has agreed to do so.

For this ESDD update (relating to open ESAP item PS6.26), EACOP have provided a statement from ARRC in late March, dated Dec 14th. ARRC's statement provides a summary of engagement for the period 2021-2023 and notes that EACOP and TEPU have made progress towards addressing their impacts on chimpanzees since the start of engagement, especially with regard to collaborative workshops and discussions on the need to work at the landscape level. They note this necessary, more-coordinated approach will be addressed through a landscape-scale NARCAP<sup>32</sup> that will also include actions taken by CNOOC (for Kingfisher), whose direct impacts have not yet been assessed by the ARRC Taskforce. An area in which ARRC and EACOP/TEPU have not yet reached agreement is on the extent of indirect impacts and their mitigation: ARRC's statement confirms a significant concern being the construction of 'oil roads' by the government with associated impacts on chimpanzees and their habitat (e.g. from construction activities and enhanced vehicular access). ARRC state that without sight of the NARCAP to understand landscape management of direct and indirect impacts, they find it difficult to evaluate the overall project impact and therefore agree on residual impacts and associated offset requirements. They stress the urgent need for increased protection of the Bugoma and Budongo Forest Reserves, otherwise efforts to protect chimpanzees around the Bugoma-Wambabya corridor through which the EACOP pipeline is routed will be meaningless. Nevertheless, they do acknowledge activities such as reforestation of the corridor being financed by the companies as well as chimpanzee surveys along oil roads and education programs around Budongo. They request a draft of the NARCAP be provided in Q1 2024 and the start of genetic chimpanzee surveying as soon as possible. In response, EACOP have provided a letter returned to ARRC in March 2024. This reiterates that the upgrading or construction of new roads in Uganda is the responsibility of the Uganda National Road Authority (UNRA), and that company engagement with UNRA is ongoing although acknowledges UNRA's implementation of mitigation measures has been slow. EACOP considers the NARCAP a strategic way to improve progress on such actions, plus help address wider indirect impacts. In the LESC opinion, it is through ARRC's input and acceptance of a NARCAP Rev.1, that Lenders can be fully assured of the IUCN's SSG PSG SGA acceptance of the mitigation strategy (as required by GN73 of IFC PS6), allowing closure of item PS6.26. The LESC has not reviewed the technical proposal for

<sup>30</sup> AFIEGA Africa Institute for Energy Governance.

<sup>31</sup> ARRC's engagement process, presented at: <https://www.arrctaskforce.org/our-process> (at 25th Mar 2024)

<sup>32</sup> NARCAP being the company-led North Albertine Rift Chimpanzee Action Plan

development of the NARCAP in detail, but EACOP's proposed multi-partner approach appears sound, as long as its development and implementation are transparent, it reflects actions to address both direct and indirect impacts where appropriate and it continues to inform/be informed by wider regional requirements for chimpanzee protection.

EACOP Ltd has continued engagement with the external stakeholder panel the Independent Biodiversity and Livelihoods Advisory Committee (IBLAC) comprising international and national specialists in their field. The LESC have engaged with IBLAC representatives at various opportunities during the Due Diligence process (see previous reports). Their first Annual Report for 2022 was published<sup>33</sup>. The recruitment of Professor Yunus Mgaya to the IBLAC as the marine/fisheries expert that facilitated the closure of ESAP item 6.20 was confirmed in the IBLAC's 2022 Annual Report. Professor Yunus Mgaya is now engaged with EACOP and attended the 2023 annual visit. The visit included engagements with several government agency representatives and visits to a number of key EACOP impact and offset program sites.

EACOP has arranged three marine workshops that have been well attended by government, academia, and NGOs. This is part of extensive and continuing efforts by EACOP Ltd to collaborate with and encourage collaboration between marine specialists and users in Tanzania. A workshop for freshwater conservation specialists was held during 2023.

### **Protected/Internationally Recognized Areas**

Along its length, the EACOP pipeline intersects a number of local/national legally protected areas and internationally recognized areas, most notably in Tanzania. Following EACOP's previous extensive boundary-confirmation research, boundary locations are now fully determined. Previous studies note widespread decline in the extent and quality of many protected/recognised areas, although many retain areas of Natural Habitat, including CH-qualifying species and threatened ecosystems. The majority of protected areas and internationally recognised areas which the Project will affect (either traverse, or in close proximity to) do not have government-approved management plans in place. There remains a significant opportunity for EACOP Ltd to liaise with all relevant agencies and protected area stakeholders to develop such plans that are based not only on retention of ecological value but also have community-based natural resource management programs at their core. As noted in the last LESC report, EACOP has focused relationship building in Tanzania with TANAPA (Tanzania's national parks authority) and now a signed MoU has been provided, formalising the collaboration between TANAPA and EACOP on research, monitoring, biodiversity conservation and natural resource management of Burigi-Chato National Park. Next, an agreed Scope of Work will be developed to outline various activities to be undertaken in support of the MoU objectives. In LESC opinion, the MoU should provide increased certainty of conservation activities within the Park to meet Lender requirements, especially if the development of a formal Park Management Plan is prioritised.

For other protected and recognised areas, EACOP has now developed an Engagement Strategy specifically for Ugandan and Tanzanian government entities responsible for protected areas. With the existing Host Government Agreement as the foundation, the Strategy presents the current level of engagement with each government entity to date (forestry, water and environment, wildlife authorities), and proposed engagement to achieve offset and conservation activities related specifically to protected area management and conservation support, for example at Taala Forest Reserve (FR) in Uganda, Mgori FR in Tanzania, and Tanga Coelacanth Marine Park. These are early days in what should be long-term relationships, but the Strategy clearly lays out EACOP's intention for continued ongoing engagement on matters relating to conservation support for protected/recognised areas – ESAP item 6.8 is now closed.

---

<sup>33</sup> Available from: <https://eacop.com/eacop-reports/> and search for IBLAC.

The closest marine protected area to the LOF is the Tanga Coelacanth Marine Park, through which Project related vessels are expected to transit. The only vessel transits within the Tanga Coelacanth Marine Park during construction are to/from Tanga port, which are discussed in the Marine Environmental Sensitivities Guidance. Vessels use the main shipping navigation channel for approaches to Tanga Port which is not considered an AOI of the Project. Potential impacts on other marine protected areas are primarily related to shipping, which will be covered through operational planning, including Oil Spill Contingency Planning.

### ***Tanga Cumulative Impact Assessment***

The need for a Cumulative Impact Assessment (CIA) of the marine environment is identified in ESAP item 6.15 and broader concern regarding cumulative impacts in and around the Chongoleani Peninsula was raised by IBLAC in their 2022 annual report. A CIA for Tanga has now been completed. It is a comprehensive assessment that also includes the terrestrial environment in and around the MST and the social impacts of the MST and LOF. Much effort has been made to understand the existing and foreseeable projects and activities that could lead to cumulative impacts, and these are extensive. Projects are categorized into those that are potentially induced by EACOP and reasonably defined or foreseeable third-party projects. Significant cumulative impacts are defined. Those impacts that relate to marine Critical Habitat are permanent loss of mangroves, if not reinstated, and damage to coral reefs. The marine BOMP includes avoidance, mitigation, restoration and offsetting for these Critical Habitats and one of the Offset design principles is to focus on cumulative threats as well as residual impacts. Other significant impacts are more challenging to manage and EACOP acknowledges the lack of control and limited influence it has over these third-party developments. However, a Cumulative Impact Management Strategy and associated Cumulative Impacts Management and Monitoring Plan have been developed and EACOP has organized meetings with and secured some buy-in from stakeholders, as described in the Stakeholder meetings for Tanga Cumulative Impacts Management Strategy Summary Report. ESAP item 6.15 is closed.

### ***Ecosystem Services***

As noted in the last LESC report, impacts related to both Type I and II ecosystem services need updated assessments and prioritisation with affected communities. The Project should ensure the management system for PIIM impacts management and monitoring is cognizant of impacts on priority ecosystem services, so that PS6-specific requirements can also be demonstrated. EACOP's external technical consultants are performing a full review of EACOP's current status of knowledge and management of ecosystem services, according to a Proposal shared previously. The work program includes both desktop and in-country study, focussing on the identification of priority ecosystem services, performing a gap analysis on current information, establishing an updated baseline, an impact assessment and development of a mitigation strategy that should meet IFC PS6 requirements. The timeframe indicates this work should be complete in July 2024 – ESAP item 6.10 is retained until such time that this assessment work is complete to lender standards.

EACOP Ltd (and its AFs) have and will continue to have potentially significant direct and indirect impacts on biodiversity and ecosystem services across the wider landscape, including from in-migration, increased natural resource extraction, and enhanced access via construction tracks and permanent roads. There has been significant land use change across parts of the landscape from human pressures over several decades, likely accelerated by oil and gas development; therefore, studies undertaken now will likely be representative of an already shifted baseline. As offset programs and additional conservation activities are further considered and planned, there needs to be urgency in any actions intended to retain the ecological and ecosystem service value that currently remains across the landscape. Programs to sustainably restore lost biodiversity and ecosystem service values will need long-term commitment, cross-sector collaboration, and buy-in from both government and conservation stakeholders.

## **Associated Facilities**

As AFs, both Tilenga and Kingfisher Projects also have detailed ESIA's, with mitigation measures relating to both biodiversity and ecosystem services feeding into management plans.

Tilenga's vision is "To leave MFNP, and when feasible its surrounding landscape, in better ecological condition than if the Project had not taken place, by achieving a positive effect for biodiversity." Tilenga has developed Biodiversity and Ecosystem Service Management Plans and Action Plans (amongst other management plans) and has retained external biodiversity specialists supporting the development of their Net Gain program. They continue to engage with Uganda Wildlife Authority, NEMA and other agencies, and draft MoUs have been provided indicating the types of collaborations TEPU are putting in place. Letters of support for Tilenga's Net Gain program from UWA, NFA and MWE have been provided – ESAP item 6.24 is now closed.

The Tilenga development will require permanent production well pads and access tracks within an IUCN Management Category II protected area and will therefore have significant impacts in one of Uganda's wildlife tourist hotspots. Tilenga's Critical Habitat Assessment Interpretations and Recommendations (CHAIR) report prepared by their technical consultants in 2017 raised a number of recommendations on additional research required. The LESC had requested specific updates on the implementation of these recommendation or findings resulting from implementation, and details on additional studies have now been provided – ESAP item 6.23 is now closed. There will be temporary construction footprint within an internationally recognized Ramsar site, including temporary track access to pads for Horizontal Directional Drilling under the Victoria Nile to connect fields in MFNP to the CPF. Although there will be temporary and permanent impacts in very sensitive habitats related to Tilenga construction and operations, from the documentation seen and discussions held through the course of the DD process, it appears that TEPU has taken reasonable steps to manage those impacts (assuming those plans are implemented accordingly, and recommended research gaps filled).

Nevertheless, there will be significant residual impacts. Lenders will be aware there is the potential for both actual and perceived significant impacts to biodiversity if mitigation measures are not carefully planned and managed in such a sensitive, high-profile environment<sup>34</sup> against Albertine Graben oil development in general, and more specifically at the EACOP project and Tilenga. Whilst internally the projects are separate, some external stakeholders consider them as if one oil development project. Activists have been targeting potential Lenders to 'stop the flow of money', highlighting perceived and potential impacts to wildlife related to oil development in the Albertine Rift. Reputational risks will depend not only on the effective management of direct, indirect, and cumulative impacts, but also on successful engagement and transparency, all of which the Tilenga Project has committed to. Stakeholders like the IBLAC and ARRC Taskforce appear to consider the development a significant risk but also sufficiently appropriate (if well managed) that they have agreed to ongoing engagement.

In early 2021 Kingfisher advised they were updating their suite of plans due to the time lag since ESIA approval and a changing baseline. The LESC were told that a number of Critical Habitat studies were to be refreshed once the updated baseline studies were complete, then the CHA would be updated. They stated a NG program was intended once the recommendations from the updated studies were known.

However, the whole biodiversity program was then stalled as CNOOC senior management were awaiting internal FID. Kingfisher's process to achieve compliance with PS6 requirements is therefore well behind their previously predicted schedule. Again, for this Final Due Diligence report, little information was available on CNOOC's strategic or systematic biodiversity program. The LESC are unable to establish whether Kingfisher AF is meeting Lender requirements, and there is no schedule available to indicate when compliance might be

---

<sup>34</sup> For example, see [www.stopeacop.com](http://www.stopeacop.com)

achieved. ESAP item 6.26 was expanded in the LESC's last iteration of the ESAP to include the outstanding Kingfisher-specific components of item 6.25 – so item 6.26 remains open. The LESC acknowledge that EACOP has made significant efforts to encourage CNOOC to align with Lender requirements, and again strongly recommend EACOP Ltd continue to make every effort to bring the performance of the AF into a position of compliance with PS6.

## 5.7 PS7 – Indigenous Peoples

The LESC is of the opinion that the substantive conditions for land access to commence under IFC PS7 have now been achieved.

In Uganda, the EACOP Project does not traverse any lands traditionally owned by, or under the customary use of, any ethnic groups that meet international definitions for Indigenous Peoples.

In Tanzania, the Project has identified four indigenous groups, the Akie, Taturu, Barabaig and Maasai, whose ancestral land, or historical land, territories and resources are traversed by the EACOP pipeline. The Akie are hunter-gatherers while the Taturu, Barabaig, and Maasai are pastoralists. The Barabaig and Taturu are sub-groups of the Datoga people. All four groups meet the criteria for Indigenous People as established by the African Commission and IFC PS7. For these, EACOP Ltd has, in consultation with traditional leaders of the four indigenous groups, the local NGOs concerned with indigenous people's rights, and by the Government of Tanzania, elected to use the phrase "Vulnerable Ethnic Groups self-identifying as Indigenous Peoples" (VEGSIAIPs) to refer to "Indigenous People" as defined by IFC PS7.

EACOP Ltd has made excellent progress towards meeting Lenders' requirements related to PS7 and the LESC is of the opinion that the substantive conditions for land access to commence have now been achieved. The Project has facilitated:

- Ongoing consultation and engagement with VEGSIAIPs since November 2019;
- Engagement of a Tanzanian indigenous peoples' specialist to undertake more culturally specific engagements and facilitate the discussion and negotiation of key agreements;
- Ongoing support to VEGSIAIPs through NGOs trusted by the traditional leaders and communities including the Pastoralist Indigenous Non-Governmental Forum (PINGOs Forum), Parakuiyo Pastoralists Indigenous Community Development Organization (PAICODEO) and Ujaama Community Resources Team (UCRT);
- Completion of an ethnographic study to confirm the indigenous groups affected by the EACOP project and the extent of their affected tangible and intangible interests;
- Negotiation and signing of a VEGSIAIP framework agreement that focused on seven areas: ICP, capacity building, grievance management, managing impacts, promoting access to benefits and engagement with government (28 October 2021);
- Re-routing of the pipeline alignment in specific locations to avoid certain sites and landscape features that VEGSIAIPs identified as having cultural or spiritual significance;
- Signing by EACOP Ltd and the traditional leaders of the VEGSIAIP communities witnessed by NGOs and specialist adviser of an Indigenous Peoples Plan ("EACOP Plan for Vulnerable Ethnic Groups Self-Identifying as Indigenous Peoples in Tanzania, 16 September 2022);
- Negotiation and signing of a free, prior and informed consent (FPIC) Agreement between EACOP Ltd and the Akie Community of Napilikunya (6 July 2022); and



- Negotiation and signing of an FPIC Agreement between EACOP Ltd and the Taturu Community of Mwamayoka Street, Igunga District (21 March 2023).

In terms of FPIC, based on recommendations from the ethnographic study, the Sliding Scale Approach (SSA) introduced by the Inter-American Court of Human Rights and endorsed by the UN Human Rights Committee and the Committee on Economic, Social and Cultural Rights was adopted:

Full FPIC was achieved with the Akie hunter-gatherers because the pipeline will have negative impacts on their ancestral land, baobab trees and other sites of high spiritual significance to the whole Akie community; and

Ongoing Informed Consultation and Participation (ICP) has been and will continue to be undertaken with the Barabaig, Taturu and Maasai because, by restoring the pipeline RoW to grassland after construction, the pastoralist groups will be able to continue their livelihoods with only short-term duration of loss of access to land and without any profound social and economic changes in their lives.

EACOP Ltd rerouted the pipeline to avoid the Taturu *Bung'eda* (grave sites) so there were no impacts on Taturu cultural heritage. However, the community still felt the need for EACOP to sign an agreement with them, so an FPIC agreement was negotiated and signed. It was a major event for the Taturu.

Through the EACOP Plan for VEGSIAIPs, EACOP has committed to ongoing quarterly engagements with traditional leaders of the Akie, Taturu, Barabaig and Maasai (including female leaders and influential women) and with community members including women, youth and elders.

## 5.8 PS8 – Cultural Heritage

For PS8, the LESC considers that EACOP Ltd is generally compliant with Lenders' requirements, with only one ESAP action regarding Kingfisher Cultural Heritage Management Plan in progress. Due to the overall length of the pipeline and the number of AGIs, there are potential risks of impacting and/or interfering with cultural heritage elements, both of tangible and intangible nature and extensive and comprehensive effort has been undertaken to date and continues for the identification of cultural heritage potentially impacted by Project activities. Avoidance is the most effective measure to reduce impacts on cultural heritage and the route selection and the location of AGIs has required an iterative process of gradual route refinement based on a set of technical, environmental, and social criteria. The final proposed route and AGIs location have been selected to strike the optimum balance between the relevant socioeconomic, environmental, and technical factors including impacts on sites of cultural heritage and religious value. No known nationally or internationally designated sites or critical cultural heritage or sites that meet IFC criteria as non-replicable have been identified within the study areas of the Project.

Field surveys identifying cultural heritage elements along the pipeline route were completed during both ESIA and RAP preparation. As indicated in the Cultural Heritage Management Plan (CHMP), additional pre-construction surveys are required in both countries to close any gaps in the geographical coverage of the Cultural Heritage assessments.

As reported, in Tanzania pre-construction surface and sub-surface surveys of all MCPYs and Very High Importance sites were completed mid-2021 to Q1, 2022 by EACOP Ltd. prior to MCPY and TIS Early Civil Works contractor mobilisation. Cultural Heritage resources were mobilised by EACOP Ltd. in Q3, 2022 to MST for oversight of site vegetation clearance, enabling further Cultural Heritage assessment during ground disturbance.

The Tanzanian consultancy that delivered the pre-construction surveys was successful in the call for tender to provide initial 12-month cultural heritage services during construction. The services contract started August 2022 and provided call-off Tanzanian Cultural Heritage resources to perform the watching brief during new ground disturbance, Cultural Heritage inductions and training, and implement the EACOP Chance Find

Procedure in response to actual or potential chance finds. Cultural Heritage monitors were deployed to all relevant Tanzania work sites from August 2022 through to the end of the contract period in July 2023. The first 12 months of the cultural heritage services contract provided opportunities to test the implementation model and seek improvements in managing outcomes of the watching brief in advance of main Pipeline, AGI, and MST construction.

In early 2023 it was decided to bring Cultural Heritage leadership in-house and a Project Cultural Heritage Lead (Tanzania) started May 2023. The role provides technical oversight of cultural heritage field work, assess and lead investigations, and is the liaison between EACOP Ltd and Tanzanian Department of Antiquities. After the conclusion of the initial cultural heritage services contract in July 2023, the Cultural Heritage Lead delivered Cultural Heritage site investigations, inductions and trainings of the Tanzania AGI sites prior to AGI early construction works contractor mobilisation, and oversight of MST activities while a revised cultural heritage services contract was prepared.

The new call-off contract for Cultural Heritage resources was enacted in October 2023. A new contractor was awarded the work. The provision of call-off Cultural Heritage resources remains unchanged however, all Cultural Heritage resources now report to, and are coordinated by the Project Cultural Heritage Lead. A number of Cultural Heritage resources from the previous contract have been retained. At mid-December 2023 Cultural Heritage Monitors are at all work sites currently undertaking new ground disturbance: MST, MCPY-16, PSt-6, PRS-1 and PRS-2 observing construction activities.

As reported, in Uganda during 2023 the Cultural Heritage Specialist seconded from the Department of Museums and Monuments of the Ministry of Wildlife, Tourism and Antiquities through a MoU conducted contractor inductions, pre-clearance surveys of MCPY-01, PSt1 and PSt2, surveyed the proposed new MCPY-02 site, provided Cultural Heritage oversight during geotechnical activities at PSt1 and PSt2, and led shrine relocations for those identified during RAP planning and new shrines subsequently discovered. During Q2- Q3, Uganda LSOC progressed the call for tender for a cultural heritage services contractor to complete RoW pre-clearance surveys and undertake the watching brief during construction activities, with the ongoing support of the Cultural Heritage Specialist until the new contractor for these services was fully mobilised. These new Cultural Heritage resources are currently implementing watching brief at MCPY-03, PSt-1 and PSt-2.

## **Human Rights**

Upon forming a company in February 2022, one of EACOP Ltd.'s first actions were to publicize its Human Rights Policy<sup>35</sup>. Through this policy, EACOP Ltd commits to respect human rights and applicable laws and to follow the UN Guiding Principles on Business and Human Rights, the United Nations Global Compact Principles, Guidelines for Multinational Enterprises and the fundamental conventions of the International Labor Organization and the Principles on Security and Human Rights. These commitments have been cascaded through EACOP's DMPs, CCPs and procurement procedures with clear human rights expectations, monitoring and reporting requirements defined for the Project's contractors and suppliers. Amongst other matters, the Human Rights Policy also recognises the important role of human rights defenders (as defined in the UN Declaration on Human Rights Defenders of 1998) in the promotion and protection of human rights. This provides EACOP Ltd with the platform to take a public stance on this issue in future.

The Human Rights Due Diligence Report (December 2022) characterized itself as not simply an update of the 2018 HRIA but as supporting the Project's move from the "assessment phase" to the "integration and action phase" of HRDD under the UN Guiding Principles on Business and Human Rights. It is logical that human rights

---

<sup>35</sup> Available at: [EACOP Human Rights Policy – EACOP](#)

actions are integrated with EACOP Integrated Management System (EIMS) rather than treated as parallel or standalone activities.

The updated Human Rights Due Diligence Report validates EACOP's Salient Human Rights Issues as follows:

- Interactions with public security forces;
- Community Safety (road safety);
- Contractor and supplier workers' rights;
- Land and resettlement;
- Indigenous Peoples (Tanzania);
- Women's rights;
- Marine livelihoods (Tanzania); and
- Right to information and consultation.

Other initiatives by EACOP Ltd to integrate human rights into its activities include:

- Commitments to respect international human rights are contained in the IGA and HGAs signed by the Governments of Uganda and Tanzania and EACOP Ltd;
- ESIA for Uganda and Tanzania incorporated input about human rights standards, potential impacts and mitigation measures that were integrated into the relevant sections of this ESIA;
- A Provisional HRIA for EACOP activities in Uganda and Tanzania was prepared in September 2018;
- A VPHSR Risk Assessment was undertaken as part of the updated HRIA – this informed the drafting of the country Security MOUs and updating of the Security Risk Assessment;
- Quarterly engagements and briefings have been held with national and international human rights advocacy NGOs;
- An EACOP Human Rights Steering Committee chaired by the EACOP Ltd Managing Director was formed and has held five meetings to date, with the next meeting set for February 2024;
- Training on the Human Rights Policy has been provided to EACOP Ltd staff, contractors, and invited third parties (e.g., Global Rights Alert in Uganda) and monthly one-hour human rights sessions are planned for all employees to reinforce the salient human rights issues and framework;
- EACOP has issued guidance on human rights due diligence and contractual provisions for incorporation in supply chain contracts; and
- EACOP has been testing "workers' voice technology" that involves collecting feedback on working conditions directly from workers through surveys sent to their mobile phones – the technology is being tested with three contractors at present.

Overall, EACOP Ltd has made excellent progress in undertaking Human Rights Due Diligence reviews, developing a Human Rights Policy for integrating human rights expectations within its ESMS, and defining ongoing human rights monitoring and reporting commitments.

The Tilenga Project undertook a "Tilenga Human Rights Impact Assessment on Government and Private Security Forces" using the methodology for a VPSHR Risk Assessment (see footnote 8) which includes risks

related to the potential for conflict, security provisioning, governance, socio-economic conditions, and the physical environment. This informed an MOU between Tilenga and the Government Security Forces, now executed.

The Kingfisher project is in the process of negotiating an MOU with the Uganda government security forces pertaining to their day-to-day security operations on the Buhuka flats. The Kingfisher project has provided an updated Security Risk Assessment (undated) that identified a range of gaps and recommendations. A time-bound corrective action plan should be prepared to address the findings of the Security Risk Assessment.

A legal action brought against TotalEnergies Uganda in 2019 under France's Duty of Vigilance Law by six French and Ugandan NGOs (Amis de la Terre France, Africa Institute for Energy Governance (AFIEGO), le "Comité catholique contre la faim et pour le développement" (CCFD - Terre solidaire), Action Aid France, National Association of Professional Environmentalists (NAPE) and le Collectif éthique sur l'étiquette) was dismissed by the Paris Civil Court on procedural grounds on 28 February 2023.

## Gender

EACOP Ltd formally adopted a Gender Equality and Social Inclusion Policy in November 2023. Amongst other matters, the policy commits to driving gender balance, participation, and women's leadership at all levels of the EACOP organization. The policy also extends to EACOP's enterprise development activities, supply chain, and procurement, and to advocating gender equality in EACOP's broader community outreach activities.

The LESC has observed that EACOP Ltd has sought to achieve gender balance in its ESIA baseline studies, analysis of impacts, stakeholder engagement, resettlement planning and implementation.

ESIA baseline studies included key informant interviews and focus group discussions with individuals and groups of women including widows, single mothers, women household heads, women engaged in business and agriculture and women from vulnerable ethnic groups. In engagement with households, particular attention has been paid to ensuring the participation of both male and female household members. Data and findings have been disaggregated to differentiate the views of women and men.

EACOP's stakeholder engagement teams, land teams and community liaison teams include male and female officers to ensure that robust and focused engagement of women takes place. The Stakeholder Engagement Plan requires focus group discussions specifically with women and meetings for women only. EACOP Uganda held awareness campaigns on Gender based Violence in cooperation with the Ministry of Gender and the districts' action centers under the coordination of its recently appointed Gender & Inclusion Coordinator.

Particular attention has been paid to safeguarding women's rights by ensuring their presence and involvement at key steps of the land acquisition and resettlement process such as:

- Socio-economic surveys with households have included involvement and engagement with both spouses. Data is collected on pre-existing factors which may make a household vulnerable and less able to cope with displacement impacts. The vulnerability criteria consider factors related to gender and women's rights, for example GBV risks. Potentially vulnerable individuals and households are identified and placed on a Vulnerable Household Register and qualify for additional assistance and support;
- Land and asset surveys, disclosure of compensation values, entitlement briefings and signing of compensation agreements are undertaken jointly with both spouses. Other household members or representatives are also engaged where appropriate;
- The compensation agreement includes spousal consent. The process supports the involvement of spouses in the selection of compensation packages (e.g., replacement housing verses cash compensation);

- Payment of compensation is into a joint bank account – joint bank accounts were opened specifically for this purpose even where the male household head may have had an account in his sole name;
- Where the project identifies concerns or risks regarding women's and children's rights additional support and time is made available to the household. The selection of a compensation option may have risks to women and children. For example, cash compensation for a household's dwelling is considered in some contexts riskier than accepting replacement housing;
- Third-party independent advisors for PAPs, spouses and other household members are available during the entitlement briefings and reflection period up to compensation agreement signing;
- The Project has introduced steps to reduce the potential risks of cash compensation including payments into joint bank accounts, financial literacy training, as well as Money Management and Household Budgeting training with spouses present; and
- Transitional support and livelihood restoration is structured to ensure female members of the households receive support, rather than only the household head. Financial management training session is provided to men and women prior to them receiving compensation as one strategy to reduce risk of Gender Based Violence.

Early Project recruitment activities have focused on encouraging women to apply across all project positions. The Replacement Housing construction at Sojo employed 16 women in various roles including as trainee masons. Early Works contractors in Tanzania, Milembe and ISOAF, have labour management plans that require job advertisements to encourage women to apply for any position with clear statements about non-discrimination and equal pay. Also, EACOP's Labour Management CCP, shared with all contractors, requires that all bidders include targets stipulating the minimum numbers of women, people with disabilities, or other vulnerable groups that will be hired.

Both Uganda and Tanzania have recently completed Gender and Inclusion Impact Assessments and Gender and Inclusion Action Plans. These documents have been prepared with broad consultation and to a high standard. They provide clear guidance on the gender impacts and risks that need to be managed in EACOP and its contractors' operations. The LESC considers that with the implementation of these plans, EACOP Ltd will be consistent with or exceeding good international practice.



## Signature Page

**WSP Italia S.r.l.**



Federico Breda  
*Project Manager*



Giovanni De Franchi  
*Project Director*

FB/GDF/SUB

C.F. e P.IVA 03674811009

Registro Imprese Torino

R.E.A. Torino N. TO-938498

Capitale sociale Euro 105.200,00 i.v.

Società soggetta a direzione e coordinamento di WSP Global Inc. ex art. 2497 c.c.



**wsp.com**



**wsp.com**