



MEXINOL
Environmental and
Social Impact
Assessment
**NON-TECHNICAL
SUMMARY**
Final | May 2025

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- This Non-Technical Summary (in Spanish)
- This Non-Technical Summary (in mayo-yoreme)
- The Stakeholder Engagement Plan (SEP), including the Community Feedback Mechanism

NON-TECHNICAL SUMMARY

Introduction

Overview

Transition Industries LLC (Transition Industries), based in Houston, TX, is a developer of ultra-low carbon methanol and hydrogen projects in North America to address climate change and promote environmental and social (E&S) sustainability.

Transition Industries, is developing a 6,130 metric tons per day (mtpd) methanol production unit in the municipality of Ahome, northern Sinaloa, Mexico. Pacifico Mexinol (“Mexinol” or “the Project”) is a subsidiary of Transition Industries. The final product from the production plant, methanol, will be transferred through a dedicated pipeline to an existing jetty in the Port of Topolobampo for export, with an estimated throughput of 2.24 million tons/year.

Under the Constitución Política de los Estados Unidos Mexicanos, developers are required to conduct a ‘Manifestación de Impacto Ambiental’ (MIA), prior to beginning construction in order to determine environmental impacts and mitigations.

Following the development of the MIA, a legal requirement in Mexico, Transition Industries has developed an internationally compliant environmental and social impact assessment (ESIA). This ESIA uses results from the MIA and other assessments to supplement the findings based on updated design and engineering changes. It complies with national legislation as well as the International Finance Corporation (IFC) Performance Standards (PS) on Environmental and Social Sustainability.

This non-technical summary presents the findings of the ESIA undertaken for the proposed Project. It also includes details pertaining to the findings of the MIA.

Background

The Environmental Impact Assessment (EIA) process for the Project began with the development of the MIA and the environmental risk assessment (ERA), submitted by Mexinol to the Ministry of Environment and Natural Resources (SEMARNAT) in May 2022. This was followed by the development of a Supplementary Lenders Information Package (SLIP) to complement the MIA in June 2022 in order to obtain international loans. The Project received an Authorization Letter (permit number: SRA/DGIRA/DG-04243-23) from the Mexican authorities in November 2023, with various permitting conditions, which have been met, in accordance with the progress the Project phase. A MIA addendum was submitted in February 2024 to take into account the positive design changes, including the project going Net Zero, in March 2024 the Project addendum received a permit by Official Document No. SRA/DGIRA/DG-01117-24..



Following this, Transition Industries signed a Joint Project Development Agreement (JPDA) with the IFC, enabling the Project to benefit from IFC expertise to support the Project financing and environmental and social compliance. The JPDA requires an updated ESIA that complies with IFC PS.

This updated ESIA does not replace the MIA but rather uses the information from the MIA to update the findings and assess other resources required for international standards. A description of the process is presented in figure 1.

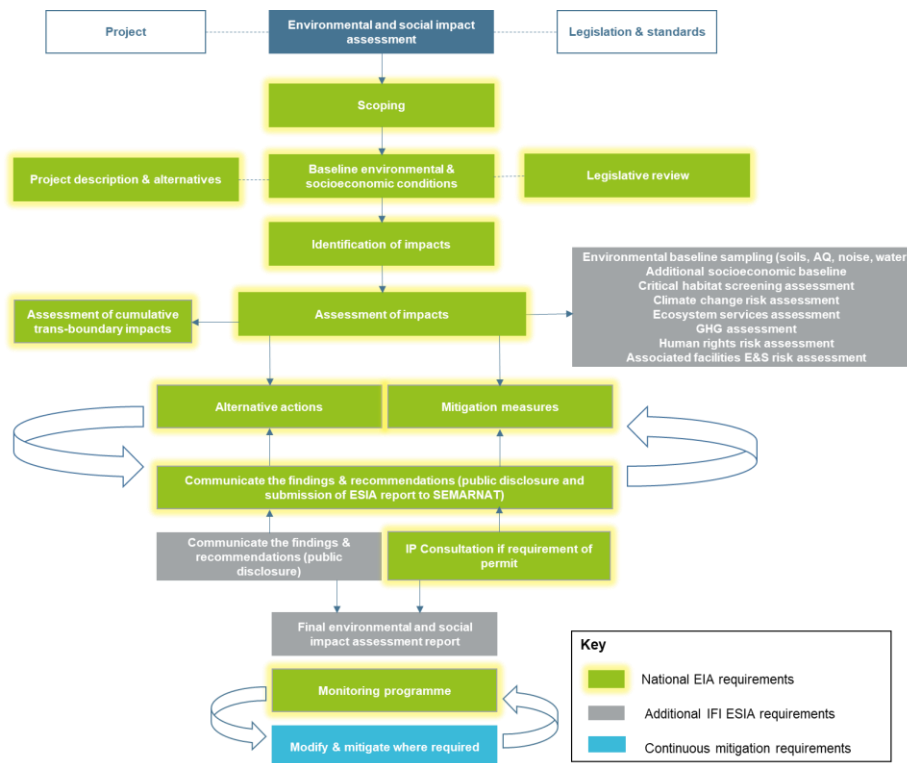


Figure 1: MIA/ESIA process

Purpose of the ESIA

The ESIA objectives are to:

- identify the relevant laws and standards (local laws and regulations, international conventions and Project standards) with which the Project and the ESIA must comply
- utilize relevant information from the MIA and other studies completed since 2021
- identify potential environmental and socio-economic risks and impacts associated with the Project
- manage environmental and socioeconomic risks and impacts by reducing the probability and/or magnitude of adverse impacts arising from the Project, through the development of mitigation measures
- enhance or maximize any beneficial environmental and socio-economic impacts arising from the Project, through the development of enhancement measures
- ensure that the mitigation and enhancement measures are incorporated into management plans that will be implemented by contractors and subcontractors.

Legislative framework

The ESIA was developed to comply with Mexican laws, applicable international/regional conventions, protocols and agreements, IFC Performance Standards, World Bank/IFC Environmental, Health and Social Guidelines, Equator Principles, and good international industry practice.

ESIA package of documents

The ESIA has been developed alongside several other documents, as summarized below. These documents are included as appendices in the ESIA.

- Biodiversity Management Plan (BMP): The BMP defines the approach to reduce impacts on biodiversity prior to, during and post construction. The plan also includes provisions to achieve no net loss of natural habitat, through implementation of the mitigation hierarchy and proposed compensation measures.
- Stakeholder Engagement Plan (SEP): The SEP outlines the strategies and actions taken to engage with stakeholders throughout the Project's lifecycle.
- Indigenous Peoples Planning Framework (IPPF): The IPPF guides the Transmission Line proponent on dedicated activities to minimize and/or compensate for adverse social and economic impacts and identify opportunities and actions to enhance positive impacts of the project on the Indigenous Peoples.
- Supplemental Land Document: Prepared by the Project to describe in further detail the various aspects related to land acquisition for the Project.

A 43 km transmission line will be constructed to support the Project. As an associated facility, it is not included within the main scope of the ESIA but rather a preliminary ESIA exercise has been conducted based on available information and the most updated route. A separate IFC-aligned ESIA process will be conducted by the Transmission Line proponent once design and engineering have been finalized and key financing milestones are reached.

Project description

Project overview

Transition Industries is acting as the developer, in partnership with the IFC, to construct a methanol production plant on previously used agricultural land in the industrial corridor towards the Port of Topolobampo, in the municipality of Ahome, northern Sinaloa. All land that will be used for the project has been purchased by Mexinol in individual private land purchase agreements or leases as per local and Mexican law and documented following international standards.

The Project plans to produce 6,130 mtpd of methanol and will utilize AdWinMethanol Zero® technology when operational, which is the most advanced technology in terms of energy use with no greenhouse gas (GHG) environmental emissions. The Mexinol Plant will be the first Net Zero facility of its kind and scale globally.

With the AdWinMethanol Zero® technology, CO₂, NO_x and other emissions are reduced to nearly zero. This is accomplished by replacing the typical fuel gas fire heaters by electric heaters, and also by taking all the CO₂ generated within the plant from the natural gas feed and converting it into methanol. To do so, extra hydrogen is needed, which will be generated with a water electrolysis facility utilizing electric energy.



Mexinol is expected to be the world's largest ultra-low-carbon methanol facility, producing approximately 300,000 MT of green methanol from captured carbon and green hydrogen, and 1.8 million MT of blue methanol per year from natural gas with carbon capture.

The transport pipeline will be buried alongside the existing gas line to the port of Topolobampo. An existing dock will be used to load vessels to transport the methanol worldwide.

Project Components

The onsite Project components, as shown in Figure 2, include the following:

- methanol processing plant
- wastewater treatment plant (WWTP)
- air separation unit (ASU)
- hydrogen production plant (electrolyser)
- power supply and distribution system (including substation)
- building infrastructure (including the following: administrative building, control room, warehouse, workshop, laboratory, security building, fire equipment room and engine control center)
- Six bunded storage tanks
- plant storm drainage system
- perimeter fence.

The offsite Project components include:

- main and secondary access roads
- JAPAMA pipelines (24" and 16") for pre-treated water transfer and return of the rejected water from the Project site to the JAPAMA pre-treated water transfer pumping station
- methanol transfer pipelines and vapor recover pipelines (28" and 8", respectively) and fiber optic cables
- connection to the existing TC Topolobampo natural gas pipeline located parallel to the project site and installation of a meter on the site upgrading of the existing jetty at the Port of Topolobampo to allow the methanol loading operations.

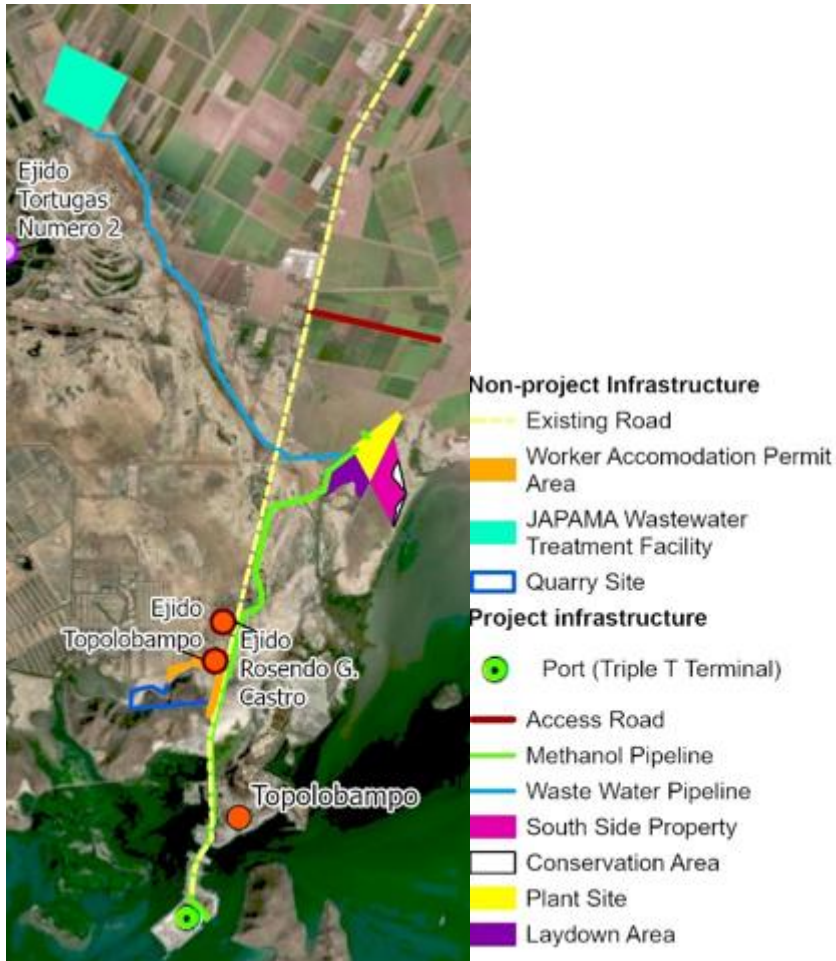


Figure 2: Onsite Project components

The Project's planned water treatment process is depicted in Figure 3 and described below.

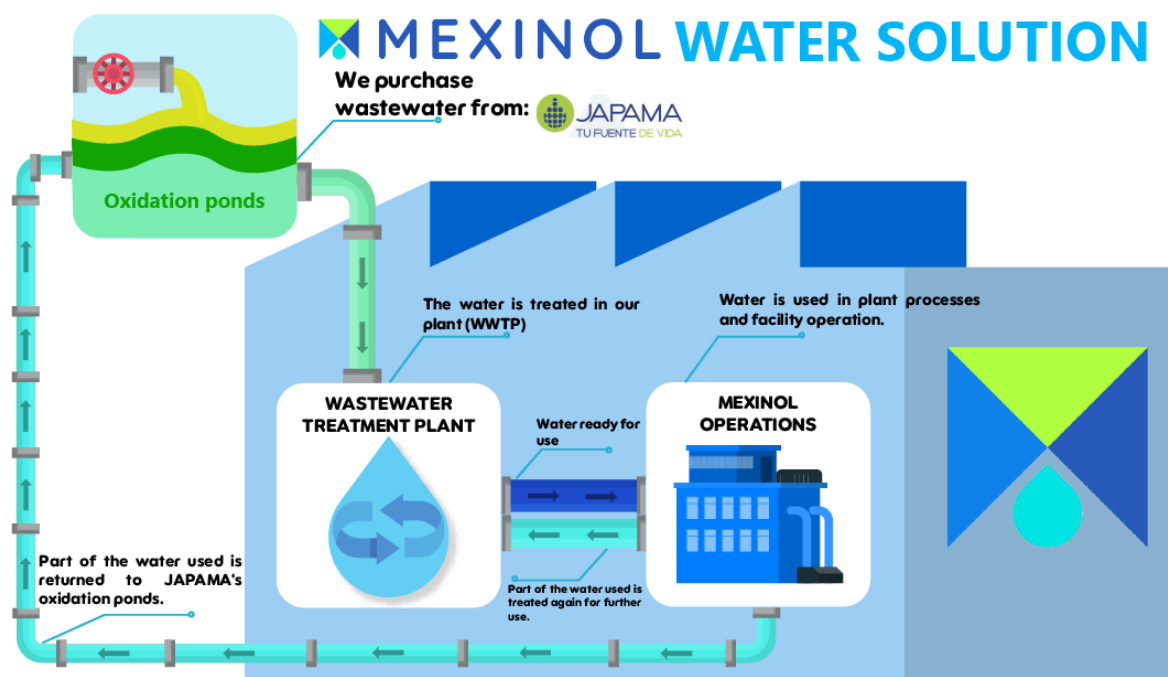


Figure 3: Project's planned water treatment process

The methanol production unit will be connected to the Mexican national grid through a 400 KVA, 43 km power transmission line (as shown in Figure 5) which is considered an associated facility of this Project. The electricity will be under a Power Purchase Agreement (PPA) with a local contractor (energy wholesaler), who will be responsible for ensuring continuous power availability.

The total area occupied by the Project will be approximately 130 hectares (ha) including the main process and utilities plant, the port facilities for methanol export, the temporary and permanent right-of-way (RoW) for the pipelines, and additional areas used for the construction of methanol export pipelines to the port, and the JAPAMA water supply pipelines.

The Project is considering alternatives for accommodating non-local workers during construction, including housing up to 200 to 300 staff in existing lodging (rental houses, hotels) in and around Los Mochis and 1,220 workers in a worker camp. The worker camp will be installed on the property in an industrial area, adjacent to the existing quarry which has necessary land permits and regulatory requirements to house a worker accommodation. The area is located to the east of Los Mochis, near the Topolobampo bypass road, and 8 km from the Project site, with a travel time of 10 minutes.

Associated Facility

An associated facility is a facility that would not have been constructed if the Project did not exist, and without which the Project would not be viable. The associated facility for the Project, includes a new substation at the methanol production plant to connect to the national electrical grid via the main 400 kV substation, including a 43 km high-voltage transmission line from the CFE Choacahui Power Substation to the Project site.

It is important to note that this facility is not considered in the Mexinol MIA or ESIA (other than an initial environmental and social impact assessment) as the Transmission Line project proponent is responsible according to Mexican law to complete the required environmental and social studies, including a MIA. The project proponent will also be required to complete a full internationally aligned ESIA. The results of these studies will be shared with the public when they are completed.

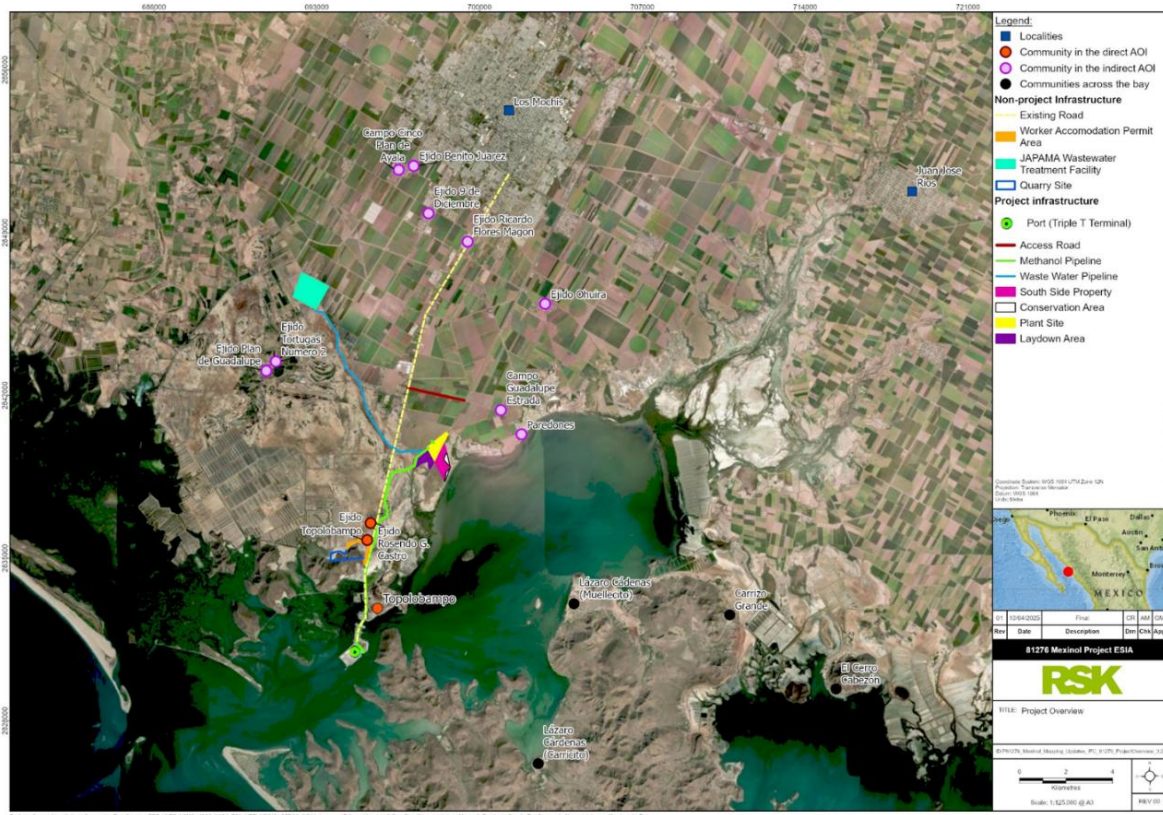


Figure 4: Project location and overview

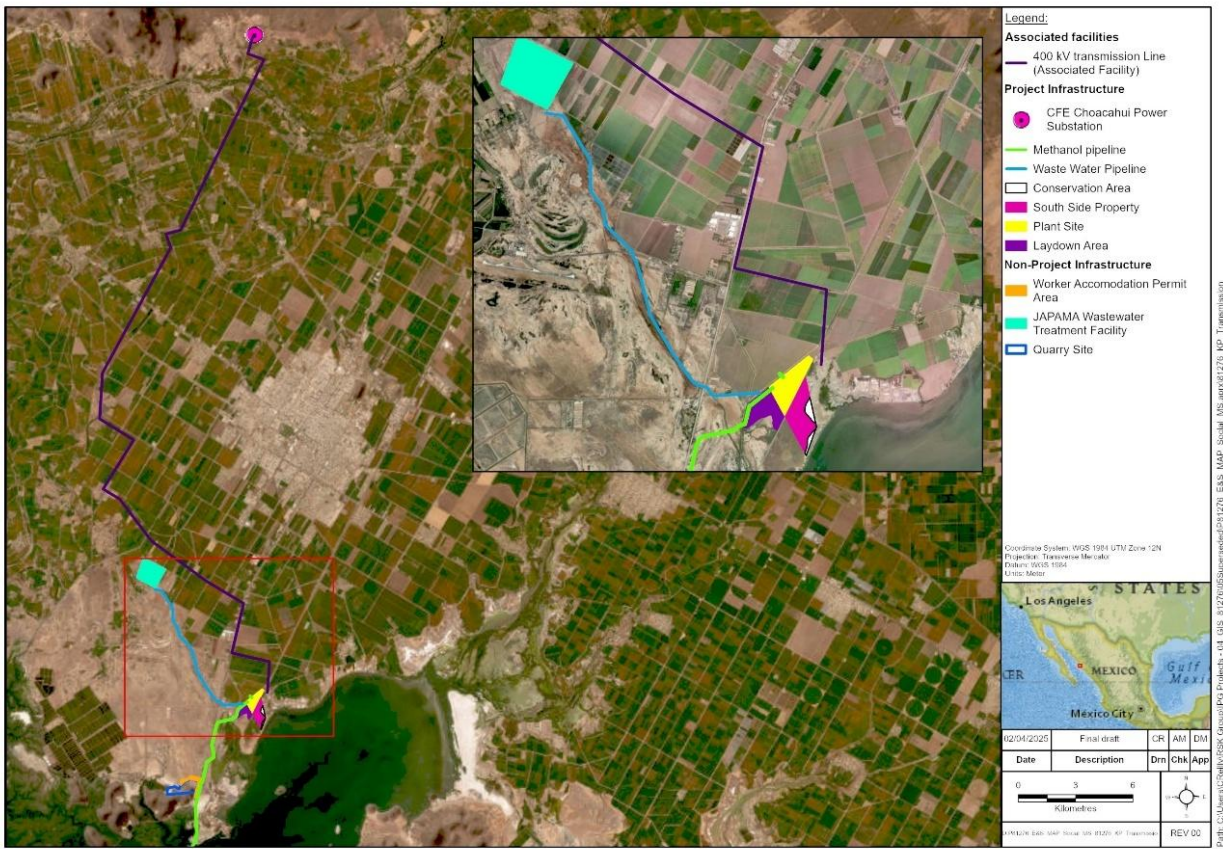


Figure 5: Associated facility

Project Phases and Schedule

The Project follows the engineering, procurement, and construction (EPC) approach, which ensures a streamlined and efficient process from start to finish. The engineering phase focuses on the planning and design of the plant, ensuring all technical and regulatory requirements are met. The procurement phase involves sourcing and acquiring all necessary materials, equipment, and services, emphasizing timely delivery and quality. The construction phase includes the actual building and assembly of the plant, adhering to strict safety and quality standards.

The construction phases, and subsequent operations and decommissioning phases are summarized in Table 1 below.

Table 1: Project phases and schedule

Early-works	Construction	Operation and maintenance	Decommissioning
Late 2025 to mid 2026	Mid 2026 to late 2028	Mid 2029 + 30 years	+30 years
Including activities such as: <ul style="list-style-type: none"> clearing vegetation earthworks clearing, levelling and compacting the Project site water course filling water pumping 	Construction of the methanol production plant, methanol pipelines, WWTP, water pipelines, upgrading of port facilities, and other infrastructure described in the Project	The methanol production plant is expected to remain operational for at least 30 years and will be operated by Transition Industries. The operational phase involves continuous	Decommissioning of the methanol production plant is expected to span 24 months. This process aims to safely dismantle the facility while minimising environmental impact and ensuring

Early-works	Construction	Operation and maintenance	Decommissioning
<ul style="list-style-type: none"> • soil excavation • relocation of 8 overhead power lines from the site • upgrading access roads 	<p>components. Includes activities such as:</p> <ul style="list-style-type: none"> • installation of pipelines, buildings, internal roads, fencing etc. • pre-commissioning and testing of systems to ensure they are installed correctly • post-construction clean-up and rehabilitation of Project site • commissioning to test and verify that the systems work correctly and as per design specification. 	<p>monitoring, optimization, and management of all processes to ensure efficient, safe, and environmentally compliant production while adhering to net-zero carbon emission goals. Key activities include</p> <ul style="list-style-type: none"> • process control, maintenance • safety management • environmental compliance • performance optimisation. 	<p>compliance with all regulatory requirements. Taking a precautionary approach, the impacts of decommissioning are expected to be similar to those during the construction phase. Activities involve:</p> <ul style="list-style-type: none"> • safe shutdown of all operational systems • hazardous materials identified, handled and disposed to prevent any risk of contamination • physical dismantling of infrastructure • rehabilitation of the Project site

Workforce

For the facility construction, the Project will employ an average of up to 1,500 workers over the approximately 36 months construction period with over 3,500 workers during the peak construction period in month 22). These workers will be contracted by the EPC (i.e., contractors, subcontractors, suppliers). An additional ~100 workers will be contracted through the pipeline construction contractor for the pipeline construction, and it is expected an additional up ~100 workers for other components, including the WWTP. It is possible these numbers will grow once the final contracts are signed with the EPCs.

An example summary of the EPC workforce is provided below in Figure 6.

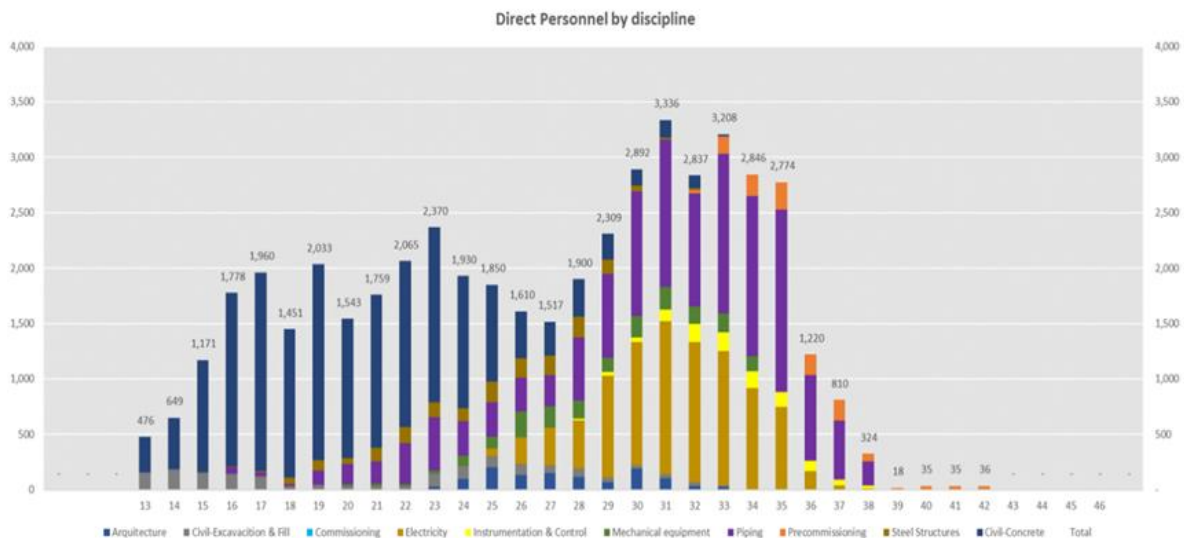


Figure 6: Project workforce

Alternative development options

During the early stages of Project development, including the feasibility study and design development, various alternatives were considered. These considerations help with decisions regarding site selection and design approaches, to enable the Project to avoid and/or reduce negative impacts and enhance positive impacts on the physical, biological and socioeconomic environment. The following options were considered:

- Project site location, considering land topography, land use, distance from communities and infrastructure
- Project design, including construction methods, alternative technologies and processes, including for water use, energy use, and management of hazardous and non-hazardous materials.

The ‘do nothing’ scenario was also considered as a hypothetical alternative, which would comprise not developing the methanol production facility. The consideration of this scenario supports the justification of the Project. Methanol is a versatile and essential compound used in everyday industrial and consumer products and energy-related applications. The global methanol demand is growing, including in countries in the Pacific Basin. Without the Project, this demand growth may be satisfied by the development of Projects with more environmentally adverse impacts. Alternative methanol Projects may not adopt “zero impact/positive impact” GHG emissions and water solutions, and could have higher transportation distances (and, therefore, emissions) to reach Pacific markets.

ESIA study area

The study area used to develop the ESIA was determined by the Project’s area of influence (AoI), which was based on:

- direct and indirect impacts on environmental and social receptors from the Project’s activities and facilities that are directly owned, operated or managed (including by contractors) and that are a component of the Project
- impacts from unplanned but predictable events caused by the Project.

For the assessment of the environmental, biological and socio-economic environment, the following Project Aols were used:

- Physical environment: Separate Aols were used for air quality; noise and vibration; soils; landscape and visual amenity; geology, geomorphology and geohazards; soils, hydrogeology and hydrology.
- Biological environment: The ecological (biodiversity) Aol encompasses (i) the area physically affected by vegetation clearance, earth moving and trenching activities (infrastructure footprint and construction activities within a 50 m buffer zone either side of the pipeline route and around the methanol plant site), and (ii) the adjacent areas affected by dust, noise, traffic and increased human presence (radius of ~500 m from construction sites).
- Socio-economic environment:
 - Direct Aol: Project-affected communities (PACs) within closest proximity to the Project infrastructure, including Ejido Rosendo G. Castro, Topolobampo and Ejido Topolobampo
 - Indirect Aol: A wider zone (up to 12 km) surrounding the direct Aol, which may experience indirect impacts such as worker presence, housing impacts, changes to baseline contexts for health and social conflict, and positive impacts including increased employment and multiplier economic effects.
 - Regional/national Aol: To study indirect or cumulative impacts at the regional or national scale.

PACs within the socio-economic direct and indirect Aol are detailed below.

Project Affected Communities

Communities located in and around the project activities are described in Table 2 below.

Those Direct Aol communities located closest to the methanol pipeline, water pipeline, and port (Topolobampo, Ejido Topolobampo and Ejido Rosendo G Castro) will only experience negative impacts during the construction phase which is why they are considered within the Direct Aol.)

Table 2: Distance between Project and communities

Community Name	Approximate Distance (km)			
	Facility	Methanol Pipeline	Water Pipeline / JAPAMA	Port
Paredones	3.6	4.6	4.5	
Campo Guadalupe Estrada	3.2	3.6	3.8	
Ejido Rosendo G Castro	4.3	0.3	3.3	
Ejido Topolobampo	4.9	0.3	4.0	
Ejido Ohuira	7.7	8.1	7.4 / 10.1	
Carrizo Grande	14.4			
El Cerro Cabezón	20			
Lázaro Cárdenas (Muellecito)	8.8	9.2		
Lázaro Cárdenas (Carricito)	14.2	8.9		8.9
Ejido Ricardo Flores Magón	9	9	7.5 / 7.1	
Ejido Tortugas Numero 2			2 / 3.4	

Community Name	Approximate Distance (km)			
	Facility	Methanol Pipeline	Water Pipeline / JAPAMA	Port
Ejido Plan de Guadalupe			2 / 3.4	
Campo Cinco Plan de Ayala			6.5	
Ejido Benito Juárez			5.9	
Ejido 9 de Diciembre			7.1	

Stakeholder engagement and information disclosure

A key element of the ESIA was to identify stakeholders and determine their potential interest, influence or link to the Project Aol through a systematic analysis, followed by engagement with these identified groups.

Accordingly, a Stakeholder Engagement Plan (SEP) has been developed, which outlines the strategies and actions taken to engage with stakeholders throughout the Project's lifecycle. This plan is crucial for ensuring that all relevant parties are informed and consulted. The SEP is designed to meet both national and international standards.

The primary objectives of the SEP are to identify stakeholders and understand their concerns, ensure transparent and accessible communication, foster mutual respect and trust, and provide a platform for ongoing consultation and feedback. This approach helps to integrate stakeholder feedback into the Project planning and decision-making processes, ensuring that their needs and concerns are addressed effectively. The SEP also aims to establish effective systems for grievance redressal and dispute resolution, including a community feedback mechanism, which are crucial for maintaining good relations with the community. The key tasks in implementing the community feedback mechanism are summarised in Figure 7.

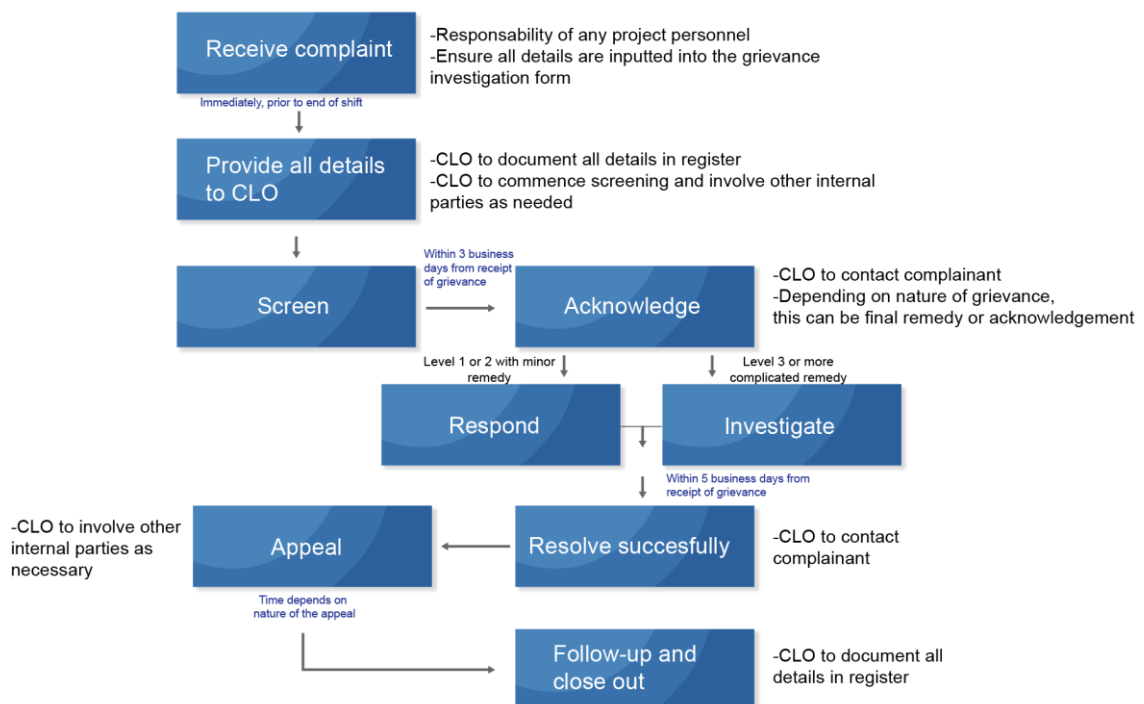


Figure 7: Community feedback mechanism

Stakeholder identification and analysis are continuous processes that evolve as the Project progresses. The SEP categorizes stakeholders into different tiers based on the level at which they are impacted and their interest in the Project, ranging from government authorities, those directly affected by the Project's footprint to civil society organizations and broader community groups who utilize local facilities and services. This categorization helps tailor engagement strategies to the needs and influence of each group, ensuring effective communication and involvement.

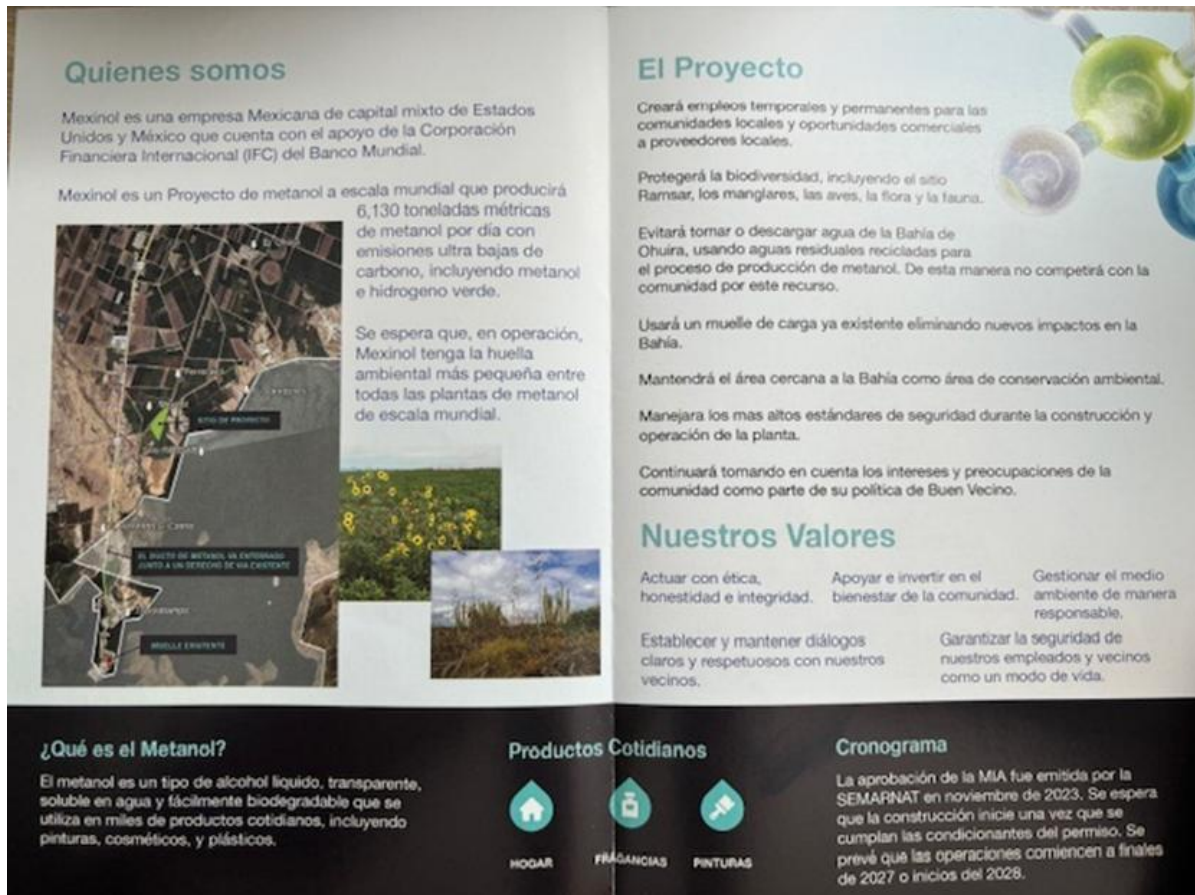


Figure 8: Stakeholder engagement flyer

Engagement activities to date have included hundreds of meetings, including a mix of public meetings, formal consultations with government officials, and targeted discussions with specific community groups. These have involved federal, state, and municipal authorities, local communities, civil society organizations, and public infrastructure companies. Federal engagement began in March 2021 with SEMARNAT for the MIA permitting process and included the relevant aspects for the procedure at the National Institute of Indigenous Peoples (INPI). State and municipal engagements focused on permitting, urban planning and water management, while collaboration with infrastructure companies addressed issues and potential impacts related to the construction and operation phases. By November 2023, after various consultations and public notices, the permit was issued.

“Feedback from community engagement over the past few years led to the development of a set of purpose-driven design solutions aligned with our core values. We will have no impact on the Bay; our facilities are Net Zero to prevent pollution; we use clean, renewable energy; and we promote economic development aligned with community interests.”

The objectives of community engagement to date have been to update stakeholders, gather their feedback, and integrate their opinions into the design and engineering, ESIA and related management plans. Engagement with communities has included extensive interactions with indigenous and fishing communities to discuss environmental impacts, transportation strategies, the methanol production process, and emergency protocols. Engagement has included positive feedback on the wastewater management plan from meetings held in 2021 with community members and leaders, including the faculty from the Autonomous Indigenous University of Mexico (UAIM) and the Consultative Council of the Mayo Yoreme Nation.

While there is opposition from some civil society movements against chemical projects, Transition Industries has maintained positive dialogues with groups to address concerns and refine the project design. In 2023 to 2025, a community needs assessment was completed by UAIM and an Indigenous Peoples community characterization study by Aosenuma (consultancy firm based in Mexico City that assesses social and environmental risks of projects), aiming to inform development priorities and incorporate stakeholder feedback into the project's Strategic Community Investment Program.



Figure 9: Stakeholder Engagement Activities

Preliminary Version of ESIA Public Disclosure

A voluntary, non-statutory public disclosure of the Preliminary Version of ESIA took place in July and August 2024. Transition Industries and Pacifico Mexinol advertised the two public meetings, Non-technical Summary (NTS) links and contact information on social media and in the major newspapers. Over 500 copies of the ESIA information brochure with links and contact details, over 150+ NTS Spanish hard copies and 50+ in Mayo-Yoreme hard copies were shared with IP community members. Additionally, over 500 Mexinol feedback/contact cards were also distributed during the public disclosure meetings. Over 1,000 copies of the ESIA, NTS, and MIA were downloaded.

A 30-day public comment period began upon disclosure of the ESIA to the local public and it was extended by 15 days to attract more comments and engagement. As part of the disclosure process, the Project consulted members of the public and interested bodies and organizations to disclose and discuss the results of the ESIA. A total of 562 people attended the 15 public disclosure meetings. Of these, 159 participants asked questions, expressed opinions and provided comments of which 21% referred to community benefits (good neighbor policy and job opportunities), followed by 20% who inquired about the project description (methanol process, timeline, ownership, etc.), stakeholder engagement (15%), and risks (14%).

All relevant questions, comments and concerns were taken into consideration in the Final ESIA. There were no significant updates to the findings of the ESIA between the Draft ESIA version which was originally disclosed and the Final ESIA.

Current state of the environment

This section describes the current state of the environment in the Project Aol and has been produced using both primary and secondary data.

When describing the current state of the environment, receptors were identified, which are a feature or component of the natural or human environment, such as air quality, flora and fauna, and community health and safety. These are sometimes referred to as valued components (VCs), reflecting the importance of receptors to participants in an impact assessment process.



Figure 10: Environmental Studies

Physical environment

Air quality

The Project site is not far from the Los Mochis-Topolobampo highway, and as a result, it is expected that air quality is affected by transport emissions from local traffic as the primary source of pollution. Primary data collection was undertaken at twelve monitoring locations over five days in April-May 2024, within the proposed Mexinol plant and dedicated pipeline to an existing jetty in the Port of Topolobampo. Most of the monitoring locations were dusty, as many were in close proximity to major highways, the Port of Topolobampo and the PEMEX export facility, and the terrain was dry and it was windy. A review of the monitoring data available from the air quality monitoring carried out suggests that particulate matter (PM₁₀ and PM_{2.5}) levels don't exceed the 24-hour Mexico Air Quality standards. Monitoring suggests no exceedance of the nitrogen dioxide (NO₂), sulphur dioxide (SO₂), hydrogen sulphide (H₂S) or ozone (O₃) assessment criteria at monitoring locations.

Noise and vibration

Baseline noise surveys were carried out at eight locations over five days in May 2024 to characterize the existing acoustic environment at noise sensitive receptors surrounding the development site. The majority of the monitoring locations were situated in rural environments, adjacent to isolated dwellings, with three of the eight locations positioned within the nearest town of Topolobampo. Those positions outside of Topolobampo were primarily adjacent to agricultural farmland. Baseline noise monitoring was undertaken at positions adjacent to those nearest to sensitive receptors or at positions representative of those sensitive receptors.

Daytime noise levels ranged between 38 and 59 decibels (dB) L_{Aeq, 3hrs}, with night-time levels ranging between 37 and 59 dB L_{Aeq, 1hr}. Noise levels were generally higher at monitoring positions with greater proximity to transportation sources, particularly Los Mochis-Topolobampo highway and operations associated with the Port of Topolobampo.

The primary noise-generating activities observed included motorcycles, cars, trucks and the passing of trains, activities associated with ship movements (including engines and sounding of horns), farming and livestock keeping, domestic activities such as gardening (using petrol equipment), and natural sources such as bird song and animals.

Landscape and visual amenity

The Project site is located on a flat, open farmland plain. It is dominated by a broad horizon, reinforced by extended linear infrastructure in the forms of the Los Mochis-Topolobampo highway, railway and overhead lines, and punctuated by the vertical forms of telegraph poles and electricity pylons. The landscape is a patchwork of intersecting irrigated fields and arid bare ground, with field boundaries formed either by scrubby vegetation or irrigation ditches. Buildings are generally absent, other than an isolated poultry farm sheds and distant views to the industrial plants to the south. Due to the flatness of the landscape, the lagoon to the west is not apparent, but the rugged, elevated coastline peaks form a distinctive horizon to the south.

Geology

Sinaloa is located within the "Pacific Coastal Plain" physiographic province, a region characterized by its predominantly flat relief, consisting mainly of a narrow, elongated coastal plain covered mostly by alluvium deposited by rivers descending from the Sierra Madre Occidental. Typical landforms in this area include dunes and alluvial fans, typical of depositional dynamics.

The study area is located within the tectonic influence of the Laramide orogenesis, which formed the Rocky Mountains. Sedimentary and volcanic rocks prevail.

Soils

The MIA indicates that eight soil types are recorded according to INEGI's mapping. Vertisols (46.6%) and solonchak (29.965%) predominate and are distributed over most of the plain. The northern site where the Project site will be built has vertisol soils, while the pipeline, for most of its route, will be in solonchak soil.

A desk study was conducted to identify potential sources of land contamination, as well as a walkover survey and drone survey undertaken in June 2024. The desk study results do not indicate any registered contaminated land sites/events in the Aol, and the results of the walkover survey and drone imagery indicate that there are no potential sources of contamination or evidence of existing soil contamination in the Aol of the Project components. To further characterise the soil quality in the Aol a soil sampling program was undertaken in June 2024 within the methanol production plant site boundaries and at other selected locations. No exceedances were observed for any parameters.

Surface water

The Fuerte River is the largest surface water body in the area; it flows towards the coast and discharges into Topolobampo Bay. The month with the highest runoff is August and the month with the least runoff is May. The river receives runoff through numerous canals and irrigation ditches and shrimp farms. In addition, there are three drains for sewage and industrial waste, two of them coming from the City of Los Mochis and the other from the City of Juan José Ríos. Discharge from the drains and canals typically increase during the summer season due to rainfall. Surface water quality in the irrigation canals is generally considered to be good.

A walkover survey was undertaken in May 2024 that indicated that several surface water features are crossed by the JAPAMA pipeline route and the methanol pipeline route.

Groundwater

The Project area lies above the Río Fuerte aquifer (Quaternary alluvium). The data available from CONAGUA in 2022 indicates that the water table is shallow in the local area with approximate

depths of between 2.7 m below ground level (mbgl) and 6.2 mbgl. Groundwater monitoring wells were installed in May 2024; samples were collected in May 2024 from 5 locations.

A desk study was undertaken to identify groundwater abstraction points in the study area.

Regarding groundwater abstraction points in the Project Aol, the nearest wells were found to be north and northwest of Los Mochis; all of these wells abstract water from the Rio Fuerte aquifer. These wells are most likely used for crop irrigation. The water quality in these wells is generally good with a few exceptions where levels of arsenic, coliforms, fluoride, iron and manganese are slightly above the Mexican water quality standards. No wells were identified in the area south of Los Mochis in the vicinity of the methanol plant and the JAPAMA WWTP.

Water quality monitoring continues where the wastewater exits the JAPAMA ponds into the canal towards the Bay of Ohuira. Laboratory testing results for the JAPAMA discharge that will eventually go to the Mexinol Plant are collected two times per month for 12 months to collect baseline data. All water being that will be sent back to JAPAMA will meet the appropriate standards.

Biological environment

Over the last three years a range of ecological surveys have been undertaken within the Project's ecological study area. Surveys of vegetation, herpetofauna, ornithology and mammals were conducted by independent local environmental firms E3 and IGA in May 2021, January 2022, and December 2023. Additionally, the bat cave which is located several km from the project's ecological study area was surveyed in May 2021. An SLR international biodiversity specialist verified data during a field visit in February 2024 and B+F conducted various site visits and studies in 2024.

Legally protected, internationally or nationally recognized areas

Four legally protected, internationally or nationally recognized areas are located near the Project's ecological Aol. Two of these areas are nationally protected; the Topolobampo-Caimanero Marshes and the Regional Hydrological Area. Two of these areas are internationally protected; the Lagunas de Santa María-Topolobampo-Ohuira Ramsar Site and World Heritage Site and UNESCO Biosphere Reserve (which is also the Bahia Lechuguilla Important Bird Area) and the Islas de Golfo de California Flora and Fauna Protection Area.

Approximately 1.4 km of pipeline will cross the Lagunas de Santa María-Topolobampo-Ohuira Ramsar/IBA boundary. The section of pipeline which crosses the Ramsar/IBA boundary, is aligned next to the Los Mochis-Topolobampo Road. The botanical surveyors described this section of habitat as being highly degraded and significantly modified from its original mangrove habitat by industrial development and due to the alteration of surface hydrology. The water flow across the area has been altered by the construction of a highway, and by the construction of a railway. There is no vegetation and no mangrove in this area.

Critical habitat assessment

A Critical Habitat Assessment (CHA) was undertaken by experts with the environmental company SLR in May 2024, as well as an Internationally Recognized Areas Assessment (IRAA), based on the European Union's Appropriate Assessment methodology. The results of the CHA and IRAA concluded that although the Project partially overlaps with a Ramsar site with the potential to qualify as critical habitat due to the migratory/congregatory wetland birds (Criterion 3), the area that could be affected by the Project does not qualify as critical habitat and the Project would have no likely significant effects on the qualifying features of the internationally recognized sites.



Figure 11: Examples of local biodiversity

Priority habitats

The majority of the Project's ecological Aol comprises modified habitat which has been modified and fragmented for at least 50 years as a result of agriculture activities and urban development. Approximately 1,058 ha (32%) of the Project's ecological Aol comprises natural habitat and 2,246 ha (68%) is modified habitat, much of which is highly transformed for irrigated agriculture and settlement. Many of the natural habitats are showing signs of fragmentation and degradation as a result of land use changes in the Project area, such as the construction of roads, railways and irrigation canals. These land use changes have also altered the natural hydrology of the Project's ecological Aol.

Modified habitats in the project's ecological Aol include: annual and semi-permanent irrigated agriculture, bare areas / no vegetation, and human settlement / urban areas.

Natural habitats in the project's ecological Aol include: xerophytic vegetation, marine water, mangrove swamp, sarcocaula scrub, open water.

None of the natural habitats within the Project's ecological Aol are rare or threatened, critical habitat triggers or commonly occurring in the regional and national scales. That said, loss of one mangrove tree and xerophytic vegetation will be offset in accordance with national legislation and MIA permitting requirements.

Priority flora and fauna

A total of 83 plant species were recorded during field surveys. Five priority fauna (plant) species were identified in the area that could be affected by the project. These species are priority because they are protected under Mexican law (NOM-059-SEMARNAT-2010), and some are only found in the Pacific Coast of Mexico (called endemic species).

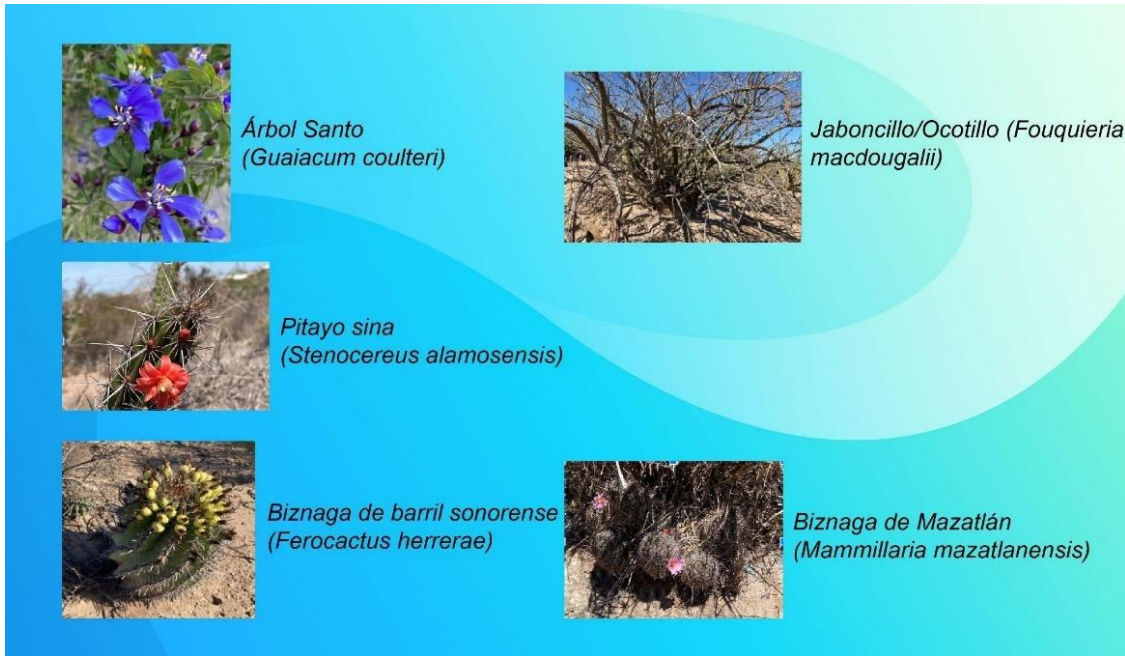


Figure 12: Priority flora in the ecological Aol

A total of 16 species of mammals were confirmed during fieldwork. No priority mammals, amphibians, lizards or aquatic species were identified in the area that could be affected by the project.

A total of 130 species of birds were confirmed during fieldwork. Ten priority birds were identified because they are either classified as threatened or have special protection under Mexican law (NOM-059-SEMARNAT-2010).



Figure 13: Priority fauna in the ecological Aol

Ecosystem services

In total, 15 ecosystem services (ES) were identified; four provisioning, four cultural and seven regulating/supporting.

Key provisioning services include services derived from agricultural land such as crop cultivation for both subsistence and commercial sale purposes and livestock farming, primarily of cattle and goats. Further key provisioning services include those derived from the Bay of Ohuira and surrounding habitats, such as wild plants and other natural resources (i.e. fish / shellfish). These provisioning services are unlikely to be impacted by the Project or prevent others from benefiting from the service.

Key regulating and supporting services provided by the coastal marine ecosystem and Bay of Ohuira located close to the Project area include mangrove habitats which provide shoreline protection (i.e., from storm surges), erosion prevention and soil retention for coastal communities. These regulating services were considered unlikely to be affected by the Project or impact the ability of beneficiaries to benefit from these services.

Key cultural services identified include spiritual and aesthetic value provided for local communities by the Bay of Ohuira, cultural connection to the land and aesthetic value of the landscape, traditional knowledge and livelihoods, and rituals and ceremonies. These ES were considered priority services for the assessment as Project-related in-migration of people from outside the region could weaken cultural traditions, languages, practices, knowledge, and skills and visual / landscape impacts associated with the Project could further reduce cultural connections to land and the cultural aesthetic value of the landscape (i.e. for key beneficiaries and sectors such as tourism).

Socio-economic environment

Demographics

The Project is based in Sinaloa State, in the Ahome Municipality, population 459,310 in 2020. The Project's Direct AoI, the area in the immediate vicinity of Project activities, includes the settlements of Ejido Rosendo G. Castro, Topolobampo and Ejido Topolobampo. An additional 10 PACs and a nearby city, Los Mochis, are considered indirectly impacted. The total population across these affected communities is 315,500.

Migration into Ahome is minimal and most workers in Los Mochis are locals from Sinaloa State. Despite a significant national rise in Mexican emigration to the United States and other Organization for Economic Co-operation and Development (OECD) countries, the job opportunities available in Los Mochis, driven by multinational investments, is encouraging young people to stay.

Spanish is the predominant language in Ahome, although indigenous languages such as Mayo-Yoreme, Tarahumara, and Náhuatl are spoken by a small fraction of the population.

Most residents identify as Catholic, followed by evangelical Protestant. It is common for some Indigenous Groups to practice blended religious traditions, often Catholicism with indigenous beliefs.

Cultural values are expressed in the celebration of cultural spaces, fairs, and indigenous culture more generally, including the tradition of Tambora Sinaloense Music. While cathedrals, buildings and archaeological sites have cultural importance, no significant historical or archaeological sites were identified within the Direct AoI.

While 25.3% of the population in the Municipality of Ahome, were classified as living in moderate poverty in 2020 and 2.4% in extreme poverty, the Project area has been described as having a low rate of marginalization of its vulnerable people. However vulnerable groups are present to some extent within the PACs. This includes the elderly, disabled, female-headed households, the poor, and indigenous populations. In 2020, 5% of Ahome's population had disabilities. The percentage of elderly people reaches as high as 25% in one of the PACs and the percentage of female-headed households surpasses 30% in 10 of the affected communities.

Indigenous Peoples

Mexico has one of the highest indigenous populations globally, however, most power structures and organizations, such as municipal authorities and church leadership, are controlled by non-indigenous people (Yoris). In Sinaloa, indigenous groups include Mayo-Yoreme, Tepehuans del Sur, and Tarahumara. In Ahome, 3,761 individuals identify as Afro-Mexican or Afro-descendant, and about 13,733 belong to indigenous groups. Of these, 4,400 speak at least one indigenous language. Within the indirectly affected communities, Ejido Ohuira and Paredones are communities with indigenous groups present.

In Ejido Ohuira, knowledge of origins and history is mostly held by older individuals, passed down orally through families. The population values the environment highly, and strong cultural value is placed on the sea and Bay of Ohuira in particular. In Paredones, the sea is also crucial, providing economic benefits and being considered vital for sustaining life.



Figure 14: Cultural practices of Indigenous Peoples

Economy and livelihoods

The main economic sectors in Sinaloa State are agriculture, retail, services, accommodation, food, and manufacturing, with significant foreign direct investment boosting industrial development. For Ahome, the export of fresh and chilled vegetables is the main export with advanced agricultural practices and consistent water supply from nearby reservoirs helping to keep agriculture profitable. Potatoes are the crop with the highest production value, followed by maize and wheat. Small-scale farmers tend to cultivate crops such as chard, beetroot, radishes, cilantro, safflower and onions.

Fishing is also an important economic activity in Ahome, with shrimp farming being particularly significant. There are reported to be 12 fishing confederations within communities surrounding the project, each comprising approximately 40 cooperatives. Currently, there are thought to be at least 7,000 unlicensed fisherfolk in the municipality of Ahome who do not belong to cooperatives, many of whom secretly fish at night. Tourism is growing, especially in the Topolobampo area and Los Mochis, with the majority of visitors being domestic. Commerce in Ahome includes a variety of establishments, from small shops to larger markets, with around 800 industry-related businesses

in and around Los Mochis. Various companies involved in food processing, grocery wholesale and utilities have production facilities in the Los Mochis area as well as a chemical company.

In 2020, 60% of Ahome's population over 15 were economically active. In 2021, women's participation in Mexico's labor market was 49.1%. About 60% of employed women work in informal sectors with minimal social security, instability, and low wages.

Land

The Project requires land that has been managed within 3 different systems: public, private, and Ejido land. Ejido land is agrarian land managed within a traditional system, held communally but with individual use. Each system follows different acquisition laws. Since 2018, the Project has acquired 152.14 hectares, mostly Ejido and private land. This includes 15.08 hectares of public land with some use of access agreements on Ejido land. Land valuation has been transparent, and land was bought at above market prices in a “willing seller, willing buyer” process.

Community health, safety, security and human rights

The Mexican health system has three main components: an employment-based social insurance scheme, public assistance for the uninsured supported by a financial protection scheme, and a private sector health component. About 81% of the population of Ahome have health service insurance, above the national average of approximately 70%. As of May 2021, Ahome had 60 public health centres and 60 hospitals. Traditional medicine and healers (curanderos) were once common in Ahome but are in decline. The main health concerns in Los Mochis and nearby communities include diarrhoea, respiratory diseases, cervical and breast cancer, tuberculosis, and malnutrition. Other issues that have been reported as a concern in municipality are teenage pregnancy and drug abuse.

In 2018, Mexico had a homicide rate of 29.07 per 100,000, with high rates of violent crime in Sinaloa State. Domestic violence and vehicle theft are common in Ahome. However, PACs generally report good community safety. They also report no significant road traffic accidents.

Potential human rights concerns in the area include violence and threats against migrants, women, Indigenous Peoples, LGBTQ+ individuals, and people with disabilities, as well as human trafficking and child labor. Gender-based violence and harassment (GBVH) is common in Mexico, with 66.1% of women experiencing some form of violence, and 34% suffering physical violence from partners. In 2020, Sinaloa State reported 26 femicides, including five in Ahome. GBVH is a serious issue within the PACs although it typically goes unreported.

Education

Ahome's literacy rate is 97.65% for those over 15. About a quarter of adults have completed high school, while 17.8% have only elementary education. Most people in affected communities have completed primary education. Literacy rates in these communities are similar to the municipal level, averaging 96%.

Social infrastructure

Drinking water for Los Mochis and the PACs comes from three dams and the water is distributed to the city's three treatment plants via canals. On average, 94% of dwellings are connected to the public drainage network, and not many households lack access to water. Community leaders report good water quality and no supply issues, despite the dry period each year. Despite this many avoid drinking directly from the tap.

The garbage collection service covers most of Ahome however garbage accumulation has been reported in parts of the municipality, especially smaller communities.

Access to energy at the household level is widespread and most PACs are connected to the electricity grid.

The main road network, the main Los Mochis-Topolobampo highway, is in great condition. However, most PACs are connected to it through unpaved roads.

Most PACs have access to a cell phone and there is widespread mobile internet network coverage.

Impact assessment and mitigation measures

Environmental and social impact assessment methodology

The ESIA methodology is similar to the MIA methodology.

Impacts for each phase of the project have been assessed on the

- physical environment
- biological environment
- socio-economic environment.

The impact assessment also considers unplanned events (e.g. spills, damage to crops) and assesses any transboundary or cumulative impacts identified at the time of writing. The transmission line associated facility was also initially assessed.

Table 3 lists the main topics that were studied in the MIA and ESIA. Topics that are highlighted in blue were studied both in the MIA and ESIA. Topics highlighted in green were studied in the ESIA but not in the MIA. **This ESIA includes relevant findings from the MIA and additional information obtained from studies and fieldwork undertaken since 2021.**

Table 3: Summary showing topics considered in the MIA and ESIA

Overarching theme	List of topics considered in the MIA		List of topics considered in the ESIA	
Physical environment	Air Quality			
	Noise and Vibration			
	Landscape and Visual Amenity			
	Geology, geomorphology, and geohazards			
	Soil			
	Hydrology (surface and groundwater)			
Biological Environment	Vegetation		Biodiversity	
			Ecoregions	
			Protected areas	
	Fauna		Natural and modified habitats	
			Critical habitat and priority diversity values	
			Invasive species	
Socioeconomic Environment	Landscape	Aquaculture	Government and systems for planning and development	Human rights
	Demographics	Tourism	Population (including population change and migration)	Community, safety, security and welfare
	Indigenous Peoples	Commercial		Cultural heritage
	Services	Industry	Ethnicity, language and religion	Vulnerable groups
	Vulnerability	Infrastructure (port, communications, energy, waste management, wastewater management)	Health (including water, sanitation and waste)	Indigenous Peoples
	Employment		Energy access, housing and social infrastructure	Gender (including gender-based violence and harassment)
	Agriculture	Fishing	Education and skills	Ecosystems services
			Economy and livelihoods (including economically active population)	
			Wealth and poverty	Local business
			Farming and agriculture and fishing	Land use, land ownership and land impacts

Impact magnitude

Impact magnitude is defined according to its intensity (degree of the predicted change to the receptor), the duration (time) of the impact, and the frequency (probability). The criteria for four different grades of impact magnitude were defined from 1 (very low) to 4 (high), based on definitions of negative effects. A rating of 0 is also provided for beneficial (positive) effects.

Receptor sensitivity

For the impact assessment, professional judgement was used to assess the quality and sensitivity of the receptor or aspect affected by the impact, taking into account its local, regional, national and international designations, its importance to the local or wider community and its economic value. The assessment of the sensitivity of human receptors, for example, a household, community or wider social group, has taken into account their likely response to change and their ability to adapt to and manage the effects of the impact. Stakeholder concerns associated with the type of receptor and the potential for cumulative impacts to occur have also been taken into consideration.

The sensitivity of receptors has been determined based on four categories, from 1 (very low) to 4 (high).

Impact significance

The impacts were assessed by examining both the magnitude of the impact and the sensitivity of the receptor that is affected. Together, the magnitude of the impact (1 – 4) and the sensitivity of the receptor(s) (1 – 4) allows the forecast of the impact significance. This interaction between magnitude and sensitivity can be expressed as a matrix, shown in Figure 15, thereby bringing a transparent structure to complex interactions.

Importance			Sensitivity assessment			
			Very low	low	Medium	High
		0 Positive	1	2	3	4
Magnitude assessment	Very low	1	1 Insignificant	2 Insignificant	3 Minor	4 Minor
	low	2	2 Insignificant	4 Minor	6 Moderate	8 Moderate
	Medium	3	3 Minor	6 Moderate	9 Moderate	12 Major
	High	4	4 Minor	8 Moderate	12 Major	16 Major

Figure 15: Significance matrix

The significance of the overall assessment for each environmental and social aspect was defined as major, moderate, minor, negligible or positive. **Major and moderate impacts are considered**

'significant' and require the identification of possible mitigation measures. Impacts of minor or negligible impact are considered not to warrant additional mitigation measures, although in some cases low-cost actions are proposed that would be expected to further reduce corresponding impact significance.

Mitigation measures

Mitigation measures are proposed to reduce potential negative impacts ranked moderate or major, and enhancement measures recommended to maximize potential positive impacts where possible. The mitigation hierarchy (avoid, reduce, repair/remedy, compensate in kind) is followed for identifying appropriate mitigation measures to ensure that, wherever possible, potential negative impacts are mitigated at the source rather than mitigated through restoration after the impact has occurred. **These mitigation measures form the basis of the Project's Environmental and Social Commitments.**

Residual impacts

The assessment of residual impacts is based on the effective implementation of avoidance, mitigation and management measures for adverse impacts, and measures to optimise benefits. Residual impacts with initial significance ratings of moderate or major are discussed in more detail and required additional mitigation measures specific to that impact to reduce the impact significance down to an acceptable level. In some cases, 'additional' measures have been proposed even though significance is rated at 'minor' or less.

Cumulative impacts

Cumulative impacts result from the successive, incremental and/or combined effects of a project or activity, when added to other past, existing, planned and/or reasonably anticipated future ones. A cumulative impact assessment (CIA) was undertaken as part of the ESIA using a 15 km radius around the Project footprint as a precautionary study area and the lifetime of the Project as the temporal boundary. Valued components (VCs) and potential sources of cumulative impacts (SCIs) were identified, and interactions between them and the Mexinol Project assessed to determine whether cumulative impacts may occur.

Several potential significant cumulative impacts were identified between the Project and other SCIs, including: the associated facilities; past and present activities that continue to affect the current and predicted future of VCs, such as operational activities at the port of Topolobampo; planned third-party developments, including the Gas y Petroquímica de Occidente Topolobampo Complex and Vista Pacifico Liquefied Natural Gas; and induced development of facilities and services. The VCs potentially impacted include climate, economy and social cohesion, infrastructure and services, community health, safety and security, and cultural heritage.

Where significant cumulative impacts may occur, or as a precautionary approach for non-significant cumulative impacts, additional mitigation measures are proposed beyond the existing management and/or monitoring measures to be implemented by Transition Industries to mitigate Project impacts. See

for a summary of mitigation measures.

Summary of environmental and social impacts and mitigation measures

Evaluation of the impacts, considering the application of mitigation and monitoring measures, reveals that most residual impacts can be classified as having a 'minor' level of significance.

The MIA and ESIA did not identify any issues of major significance that could not be mitigated such that the proposed Project was not acceptable from an environmental and social perspective.

A summary of the positive impacts and enhancement measures related to each positive impact as committed to in the MIA and the ESIA is provided in Table 4Table 4.

Table 4: Key positive impacts and enhancement measures

Receptor / Valued component	Project activity	Description of impact	Key enhancement measures
Construction phase			
Economy	Purchasing of local goods and services providing opportunities for regional and local businesses	Economic benefits to local businesses and economy	<ul style="list-style-type: none"> • Coordination between Project and local business networks such as CODESIN (Sinaloa Economic Development Council). • Ensure that local business organizations are committed to working with contractors. • Ensure that local business and employment opportunities are communicated. • Commitment to buy goods and services from local suppliers • Build partnerships with universities and higher education to support research, training and development programs. • List specific requirements for contractors regarding procurement, hiring of workers and capacity building; and structure contracts to improve chances of local and national suppliers being selected.
Employment and skills	Job opportunities	Creation of local job opportunities	<ul style="list-style-type: none"> • Local recruitment and training targets. • Clear, open, accessible and fair hiring procedures that prioritize local workers, especially for unskilled (manual) labor in the project area. • Statistics on employment based on community, Indigenous People (IP), gender, skill level and disability. • Coordination with IP leaders and representatives from vulnerable groups to understand how they want to be informed about potential job opportunities. • Work with local universities and education establishments to support development and availability of skills training. • Targets for contractor worker training programs. • Workers to be given with certificates/references at the end of their contracts. • Workers to be able to raise concerns during Project.
Operations phase			
Economy	Taxes paid by Project and purchase of clean energy certificates	Increased state revenue and national investment in renewables sector	<ul style="list-style-type: none"> • Working with local and national government agencies to advocate for investment in communities using Project earnings.

Receptor / Valued component	Project activity	Description of impact	Key enhancement measures
Employment and skills	Job opportunities,	Household income, skills and employability	<ul style="list-style-type: none"> • Skills training and professional development opportunities. • Support pre-employment of skills training. • Worker training records to be passed onto Project proponent. • Workers to be able to raise concerns in a clear and fair way.
Social infrastructure and services	Development of water treatment system for treated and unused water	Improved water quality	<ul style="list-style-type: none"> • Monitoring JAPAMA discharge water quality to be checked against Mexican and international standards.

A summary of negative impacts and proposed mitigation measures (as committed to in the MIA and the ESIA) is presented in Table 5; only impacts that have a pre-mitigation impact significance score of 'moderate' or above prior to the assignment of mitigation measures are included. Impacts that have a pre-mitigation impact significant of 'minor' or 'negligible' do not require mitigation measures. The ESIA contains approximately 220 mitigations and management measures, which include 146 from the MIA. Only key mitigation measures are provided in the table below. The Project's Commitments Register / Database is available upon request to any interested stakeholder.

Possible impacts after implementing management measures and management plans.
No significant (Moderate or higher) residual adverse impacts were identified.

Before applying measures	Possible impacts	After applying measures	Variation
7	POSITIVE	7	0
24	INSIGNIFICANT	41	17
42	MINOR	53	11
29	MODERATE	0	-29
1	MAJOR	0	-1
103	TOTAL	101	-2



No significant residual adverse impacts were identified.

Table 5: Summary of negative impacts and mitigation measures

Receptor / Valued component	Project activity	Description of impact	Key mitigation measures	Residual impact significance
Construction phase				
Air quality	Excavation of trenches for pipelines	Formation of dust due to excavation and transport	<ul style="list-style-type: none"> • Plan site layout so that machinery and dust causing activities are located away from receptors as far as possible. • Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site. • Ensure sand and other aggregates are stored in areas where they are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place. • Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction. • Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate. • Use enclosed chutes and covered skips. • Minimize drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate. • Monitoring, including regular site inspections, recording exceptional incidents causing dust, and dust and air quality complaints and measures taken. 	Minor

Receptor / Valued component	Project activity	Description of impact	Key mitigation measures	Residual impact significance
Noise	Pipeline construction and port upgrade works	Noise disturbance	<ul style="list-style-type: none"> • Ensure machinery and equipment complies with the Official Mexican Standard NOM-080-SEMARNAT-1994, which establishes the maximum permissible noise emission limits from motor vehicles and their measurement method. • All vehicles, equipment and noise control measures to be maintained and in good and efficient working order and operated to minimize noise emissions as prescribed by the manufacturer. • Perform a detailed noise modelling and design review exercise to determine the noise levels of construction operations at the nearest noise-sensitive receptors. 	Minor
Surface water	Excavation of pipeline trenches	Erosion of channel banks, sediment contamination of surface waters	<ul style="list-style-type: none"> • At crossings under irrigation channels and other surface water bodies, exercise extra vigilance to avoid soil and other material from entering the channel/surface water body. • Location specific method statements for Horizontal Directional Drilling (HDD) at watercourse crossings will be prepared where necessary to address construction activities at irrigation channels crossed by the methanol pipeline and the JAPAMA pipelines. • Survey, maintain integrity of, and reinstate where necessary existing irrigation and drainage infrastructure. • Appropriate transportation, storage, handling and disposal of hazardous materials. • Refuelling away from sensitive areas and according to defined procedure. • Spill response preparedness (procedure, spill kits, training). • HDD muds to be water based. • The discharge of any waste into intermittent runoff, irrigation canals, or to the Bay of Ohuira will be prohibited. Mexinol will not discharge wastewater to the Bay of Ohuira, all water will be retreated and recycled in the Mexinol wastewater treatment plant (WWTP). • Discharge of any dewatering water during HDD will be monitored to prevent impacts to surface water and groundwater quality and will be in accordance with Mexican regulations (e.g. permits). 	Minor

Receptor / Valued component	Project activity	Description of impact	Key mitigation measures	Residual impact significance
Landscape and visual amenity	Site clearance and construction activities	Views of the construction work at the plant site and methanol pipeline on people living in, working in or visiting Ejido G Rosendo and Isla de Patos	<ul style="list-style-type: none"> • Install “green areas” with preference for natural vegetation within the conservation area in the southern portion of the site. • Conservation of natural vegetation (i.e., mangroves) located in the southern area of the Project. • Areas to be cleared will be delimited, the surface should not be greater than the hectares that correspond to the permanent and temporary ROW as well as additional areas. • After the final cleaning and restoration of the areas that were cleared, the soil will be loosened to induce natural revegetation. 	N/A
Habitat and flora	Land clearance for construction of the methanol and JAPAMA pipelines	Natural habitat loss, fragmentation and edge effects	<ul style="list-style-type: none"> • Implement HDD during construction to minimize impacts on sensitive vegetation (i.e. natural habitats) where possible. • Demarcate patches of sensitive sarcocaule vegetation and nearby mangrove trees with marking pegs or tape as ‘no-go zones’ to prevent damage by vehicles or workforce during land clearance. • Demarcate vehicle access routes, turning circles and parking areas to existing tracks or degraded routes or sites where possible and instruct staff not to traverse areas outside of these areas. • Minimize construction footprints by clearly designating work areas on site development plans and no-go zones. Routine checks will be undertaken to ensure vegetation clearance is confined to defined areas of disturbance. • Minimize clearance of natural vegetation and habitats where possible. • Herbicide and fire will not be permitted as a means to clear vegetation during construction. • Develop and implement a Natural Habitat Restoration Plan or protocol to re-establish native species and support natural ecological processes in the construction areas and conservation area. • Progressive rehabilitation of natural habitat will be undertaken where possible through seeding (using seeds of local provenance that are devoid of alien invasive species (AIS) and pathogens) and natural revegetation. 	Minor

Receptor / Valued component	Project activity	Description of impact	Key mitigation measures	Residual impact significance
			<ul style="list-style-type: none"> • Implement topsoil management in accordance with a Topsoil Management Plan or procedure. Remove topsoil from the cleared area and place in designated stockpile areas and protect from wind and water erosion (e.g., with geotextile covering). Scarify/loosen compacted soils in temporary work areas and replace the topsoil across these areas to facilitate revegetation. • The Project itself does not require offsetting because it is not expected to have a significant impact on biodiversity and does not qualify for critical habitat. However, the Project plans to provide compensation equating to an area that is at least 10% of the Project footprint, even if the impacted/lost habitat type is less than this. This will enable the project to achieve no net loss of natural habitat. These measures are expected to include approximately 6 ha of reforestation (i.e., scrubbing) and cactus planting, plus 6 ha of mangrove restoration. As no mangrove habitat is expected to be impacted by the Project, the mangrove restoration is therefore considered to be an additionality (SLR Consulting Limited, 2024a). • The Project commits to additional conservation programs to promote and enhance the conservation aims and effective management of the area as per IFC PS6. This includes: <ul style="list-style-type: none"> ○ An initial two-year program with the National Forestry Commission (Comisión Nacional Forestal (CONAFOR)) to participate in CONAFOR’s Sustainable Forest Development for Well-being Program ○ A 15 ha ‘conservation area’ on the south tract of the methanol production plant (between the railroad and the Ohuira Bay) will be delimited. This area has natural vegetation and will not be developed or subject to land use change. It can also be used to translocate native flora outside of the Project footprint, if determined appropriate by the ecologist (2022; 2021). (The areas of the south tract that have been developed for agricultural use will be used to deposit topsoil removed during 	

Receptor / Valued component	Project activity	Description of impact	Key mitigation measures	Residual impact significance
			<p>early works from the north tract and will remain in agricultural use.)</p> <ul style="list-style-type: none"> The BMP outlines a more detailed approach to ensure no net loss of natural habitat. 	
Habitat and flora	Land clearance for construction of the methanol and JAPAMA pipelines	Clearance of priority flora	<ul style="list-style-type: none"> Undertake pre-construction surveys of selected portions of the pipeline routes to identify fauna and flora search and rescue needs, specifically protected species. May include contracting with a local botanist prior to early works to specify requirements and to mark individuals that should be avoided where possible or which are feasible to move. This should potentially include harvesting of seed if feasible for replanting elsewhere and identification of suitable relocations. Identify areas for translocation of species and potentially retain some native plants for landscaping of the plant area/reconditioning activities. 	Minor
Habitat and flora	Construction vehicle and heavy machinery movements	Fugitive dust emissions and adverse impacts to priority flora	<ul style="list-style-type: none"> Earthworks and dust-generating activities will be avoided during windy conditions. Implement industry standard dust suppression along access roads during hot, dry, and windy conditions to minimize dust impacts on vegetation (and local communities) e.g. the use of water. The stabilization of landforms and implementation of erosion prevention measures. Limit vehicle speeds to 30 km/hour on construction roads. Adherence to the Traffic Management Plan at all times. Demarcate vehicle access routes, turning circles and parking areas to existing tracks or degraded routes or sites where possible and instruct staff not to traverse areas outside of these areas. 	Minor
Habitat and flora	Construction activities including trenching for construction of the methanol	Changes in hydrology and water and impacts to priority flora	<ul style="list-style-type: none"> Remove excavated material that is not needed as fill material for the pipelines either for use in construction site founding material, as berms around the plant or landscaping within the plant area or disposed of in other degraded areas where it may need to be contoured to a natural profile to allow natural revegetation if possible. 	Minor

Receptor / Valued component	Project activity	Description of impact	Key mitigation measures	Residual impact significance
	and JAPAMA pipelines, and the use of fuel, oil, solvents etc.		<p>Reseeding with indigenous species may be required if natural revegetation does not occur within two years or to suppress dust.</p> <ul style="list-style-type: none"> Evaluate the requirement for installing subsurface drainage measures where the pipelines cross wet areas to reduce the risk of ponding/water collection upslope of the pipelines. 	
Habitat and flora	Collection, transportation, handling and storage of construction materials	Introduction and/or spread of AIS and adverse impacts to natural habitats and priority flora	<ul style="list-style-type: none"> An AIS prevention protocol will be implemented to prevent and minimize the risk of introduction and transfer of invasive species (i.e., <i>Tamarix chinensis</i>). This will include the avoidance of affected areas by staff and vehicles where possible and include washdown procedures of Project vehicles moving from areas known to be affected by AIS. Non-invasive local species will only be used for revegetation. 	Negligible
Habitat and flora	Presence of construction workforce on site	Induced access and Project-related in-migration and adverse impacts to priority flora	<ul style="list-style-type: none"> Staff will be restricted from walking outside of designated areas (e.g., for rest breaks) including walking through the designated 'conservation area' or down to the edge of the Bay of Ohuira to minimize risk of scaring off waterbirds from foraging areas. A designated shaded area will be provided for staff to take breaks equipped with litter bins (protected from wind) that shall be routinely cleared to prevent wind blow litter and pollution of the adjacent areas. Staff induction and toolbox talks shall explain the importance of conservation, and prohibitions on trampling vegetation or harvesting plants (or wildlife), and prevention of littering, fires or use of the environment as a latrine. 	Minor
Habitat and flora	Generation of construction waste, use of plant, equipment and construction vehicles	Waste accumulation in nearby habitats and impacts to priority flora	<ul style="list-style-type: none"> Appropriate waste management procedures will be developed and implemented. A Project ban on open burning of waste will be implemented. The risk of adverse impacts to habitats and flora from accidental spills of diesel fuel and non-hazardous waste will be minimised through the effective implementation of emergency preparedness and response management measures for pollution events. Monitor the construction area for any spills of oils, fuel or lubricants, and ensure any spills detected are cleaned up immediately, and the 	Minor

Receptor / Valued component	Project activity	Description of impact	Key mitigation measures	Residual impact significance
			spill site is monitored for remaining contaminants. Any contaminated material shall be disposed of appropriately as hazardous waste.	
Fauna and their habitats	Mobilisation and construction work involve collection, transportation, handling, storage, and waste disposal	Disturbance and displacement of priority birds from AIS and pests	<ul style="list-style-type: none"> The AIS prevention protocol will minimize the risk of transfer of invasive species from affected areas along the methanol pipeline route into the other Project areas and surrounds. This will include washdown procedures of Project vehicles moving from areas known to be affected by AIS. Effective waste management practices will be maintained during construction to minimize the risk of attracting pests species to area. A pest control program will also be put in place to minimize the risk of pest outbreaks. 	Minor
Community health, safety, security and welfare	Increased construction traffic	Delays, increased journey times and reduced road safety due to increased construction-related traffic	<ul style="list-style-type: none"> Ensure the Traffic Management Plan gives guidance on road safety risk analysis, includes the planning of transport routes along with journey management, and identifies road safety concerns. Ensure the Community Road Safety Program raises awareness of road safety risks in local groups such as school children, elderly and disabled. Stakeholder Engagement Plan to include ways to meet with members of project-affect communities to discuss traffic and other health and safety worries. 	Minor
	Increased hiring of workers Increased hiring of workers	Increased Gender-Based Violence and Harassment (GBVH) caused by arrival of workers not from the area	<ul style="list-style-type: none"> Work with local non-governmental organizations (NGO), civil society, Department of Female Affairs to raise awareness about and GBVH. Implement GBVH Risk Management Plan and policy on gender equality and inclusion. Ensure worksites and accommodation facilities are safe and accessible and that women have their own facilities. 	Minor

Receptor / Valued component	Project activity	Description of impact	Key mitigation measures	Residual impact significance
		Increased gender-based violence and harassment within the workforce	<ul style="list-style-type: none"> • Ensure there is a female camp administrator or assistant that is trained to work with females so that they feel comfortable to speak up with any concerns around jobs and working conditions. • Prostitution to be strictly prohibited on worksites and at the accommodation facilities. • Appoint a female to be in charge of GBVH issues and provide reporting mechanisms that allow for confidentiality. • Develop both a community grievance mechanism and a worker grievance mechanism so that local women and workers can report concerns/worries. • Ensure information is gathered regularly on worker and community attitudes towards GBVH and that it is recorded and monitored so that, if needed, plans to improve the situation can be developed. • Develop training and activities to raise awareness on GBVH policies and procedures with the offices/teams of the contractors. 	Minor
Cultural heritage	Arrival of construction workers	Potential impacts on cultural heritage sites caused by arrival of workers that are not from the project area	<ul style="list-style-type: none"> • Ensure that measures are in place to maintain community access to important cultural sites. • Cultural Heritage Management Plan will include processes to monitor cultural sites with details on what would happen if an important unknown cultural site was found during the construction phase. • Make sure workers, contractors and sub-contractors are made aware of the presence and locations of cultural sites in the project area during their training process. 	Minor
Employment and skills	Job opportunities, training and skills development	Increased employment gap between females and males due to higher proportion of construction jobs given to men	<ul style="list-style-type: none"> • Hire a local gender specialist to help with the development of gender equality strategy. • The strategy will include specific programs to support workplace diversity. • The Strategic Community Investment Plan will include measures to help women get better access to skills and training relevant to construction sector that will strengthen their ability to obtain jobs. This would be undertaken in partnership with the Department of Female Affairs, local schools and universities. 	Minor

Receptor / Valued component	Project activity	Description of impact	Key mitigation measures	Residual impact significance
Social infrastructure and services	Hiring of construction workers	Increased pressure on local services and infrastructure	<ul style="list-style-type: none"> Regularly monitor the impact that the workforce has on housing demand, local tourism, restaurants and access to recreation facilities. Identify alternative accommodation options for Project workers such as increasing the worker accommodation camp size if the arrival of workers increases cost of housing for local communities. 	Minor
Working conditions	Project employment	Contractors and sub-contractors not able to provide suitable accommodation	<ul style="list-style-type: none"> Ensure that accommodation (both at the construction camps and off-site) complies with internationally accepted standards that include minimum space requirements per worker, safe supply of drinking water, safe waste management systems, access to medical services, protection against cold or warm conditions as well as measures to protect worker rights more generally. Ensure accommodation is clean, safe and easily accessible. Provide training for all contractors and sub-contractors on workers' rights including the mechanisms available for reporting issues with accommodation. Checks to be conducted on accommodation to make sure standards are being met and ensure that recreation areas are suitable for all workers (male or female). Training for all companies and workers on the project during their induction period to set out workers' rights and the worker grievance mechanism. Details must be provided in the Occupational Health and Safety Management Plan how accommodation facilities will be made safe in relation to gender and GBVH, including lockable sleeping areas, washing areas, and suitable recreational areas are provided for both men and women. Requirement for a trained female worker representative to take part in a safety committee where women's complaints and needs are discussed. 	Minor

Receptor / Valued component	Project activity	Description of impact	Key mitigation measures	Residual impact significance
Operations phase				
Landscape and visual amenity	Completed development is a further industrial facility in the landscape	Slight deterioration of the quality and integrity of the landscape; views of the completed development on people working in or visiting the Poultry Farm, Campo Estrada, Ejido G Rosendo, Isla de Patos, and Parque Industrial Topolobampo.	<ul style="list-style-type: none"> To reduce the adverse effect that will be caused, it will be necessary to implement a reforestation program with native species that guarantees the visual and landscape recovery of the area, rehabilitating its ecological functions, monitoring and maintaining it for at least two years, to guarantee the survival of the species. 	N/A
Habitat and flora	Presence of operational workforce on site	Induced access and Project-related in-migration and adverse impacts to priority flora	<ul style="list-style-type: none"> All plant staff shall be provided with designated eating areas and shall be restricted from free access to the Bay of Ohuira (as previously described) The conservation area in the southern portion of the site will need to be monitored and protected from human encroachment and development as it serves as a buffer of ~750 m between the Project and the bay. A Conservation Management Plan (CMP) will be developed for this area. 	Minor
Fauna and their habitats	Use of artificial lighting during the operation of the methanol production plant and the access road	Disturbance to priority birds	<ul style="list-style-type: none"> The use of blinds on windows in the methanol production plant to reduce light spill. The installation of capped or directional lighting on outdoor lights with the Project area and access road to minimize disturbance to fauna and birds within natural habitats where possible. 	Minor

Receptor / Valued component	Project activity	Description of impact	Key mitigation measures	Residual impact significance
Working conditions	Project employment	Poor assessment of exposure of workers to methanol (harmful chemicals)	<ul style="list-style-type: none"> Complete a detailed assessment of exposure to methanol and update the health and safety plan with the results. This will cover day to day activities as well as activities that only take place from time to time. Ensure the assessment includes control measures and outlines the limits that might trigger exposure concerns. The assessment will help to confirm when and where any exposure monitoring might be required. Confirm the need for monitoring of worker exposure to methanol and implement as necessary. 	Minor
Economy	Procurement (buying) of goods and services	Increased cost of living and pressure on for vulnerable groups caused by project procurement	<ul style="list-style-type: none"> Develop a Social Management Plan to track changes in the overall population of communities and the proportion that are classed as vulnerable. Monitoring of the prices of basic goods that are often purchased by vulnerable groups. Local Content Plan to include ways to support local communities that may be impacted by increased prices. This might include suppliers being asked to find other locations to purchase certain household items (such as food) so they don't have a big impact on local prices. 	Minor
Employment and skills	Completion of worker demobilisation after construction	End of worker contracts	<ul style="list-style-type: none"> There will be clear project-wide communications around what the construction phase employment requirements are, including the short-term nature of the construction work. Consider ways to reduce negative impacts experienced by workers whose contracts have come to an end. For some companies this may be by looking to move workers to other suitable projects in Mexico. In line with Mexican law and any collective agreements in place, all workers will receive a clear notice of when their contract will end and if applicable an end-of-contract payment. There will be a requirement to provide end of contract documentation to workers that sets out skills used and training undertaken to help them obtain jobs in the future. Implement worker grievance procedure to allow workers to raise issues that cause problems during demobilisation. 	Minor

Receptor / Valued component	Project activity	Description of impact	Key mitigation measures	Residual impact significance
Transmission Line Associated Facility Preliminary Impact Assessment (with recommendations)				
Hydrology	Construction (piling activities)	Degradation of groundwater quality or alteration of flow affecting local water users and ecosystems	<ul style="list-style-type: none"> A piling risk assessment is recommended to evaluate potential impacts to groundwater. This should include the collection of baseline data on the aquifer that will be penetrated during piling and the potential receptors. It should address impacts due to potential contamination of groundwater by concrete; cement paste or grout as well as potential impacts to groundwater flow. The contractor should be informed on the risks to implement the necessary measures to protect groundwater. 	Minor to Moderate (depending upon detailed ESIA findings)
Biodiversity	All project activities	Increased bird and bat fatalities through collisions and electrocution	<ul style="list-style-type: none"> Targeted survey as part of the IFC-aligned ESIA to assess presence of birds prone to collision to determine optimal location of bird deterrents on the line Terrestrial survey to determine stopover locations BMMP should also be developed. 	Minor to Moderate (depending upon detailed ESIA findings)
Socioeconomics – Land	Construction	Economic displacement of individuals or households due to loss of access to land-based assets or livelihoods without adequate compensation	<ul style="list-style-type: none"> Should the Transmission Line ESIA determine that the project may result in temporary or permanent economic displacement due to construction activities or RoW land acquisition, a Livelihood Restoration Plan (LRP) should be developed in advance of construction. The LRP must follow guidance as provided for IFC PS5 which stipulates that displaced communities and people must be offered compensation for the loss of assets at full replacement cost and other assistance to help them improve or restore their standards of living or livelihoods. 	Minor to Moderate (depending upon detailed ESIA findings)
Socioeconomics – Community health and wellbeing	Operations	Potential health effects (e.g., noise) from corona discharge and EMF associated with high-	<ul style="list-style-type: none"> A detailed noise assessment to international standards should be performed to inform micro-re-routing as part of the IFC-aligned ESIA process. Assessment of the potential exposure to the public to EMF should be completed against the reference levels, which are developed by the International Commission on Non-Ionizing Radiation Protection. A Community Health and Safety Management Plan should be developed and implemented 	Minor to Moderate (depending upon detailed ESIA findings)

Receptor / Valued component	Project activity	Description of impact	Key mitigation measures	Residual impact significance
		voltage transmission lines	<ul style="list-style-type: none"> Ensure the SEP includes communication about potential health risks and mitigation measures with affected stakeholders. Monitor ambient noise and air quality during construction and operation near identified sensitive locations. 	
Cumulative impacts – all Project phases				
Cumulative impacts	All project activities	All significant cumulative impacts	<ul style="list-style-type: none"> Transition Industries will consider participation, to the extent feasible and practicable, in working groups and/or industry organisations aimed at addressing management of potential cumulative impacts on regional resources to which the Project could incrementally contribute. With regards to its influence over associated facilities, Transition Industries should stipulate that all Project phases of the associated facilities are conducted in line with international standards, specifically IFC PS, to align with the Mexinol Project. The Project has undertaken a gap analysis between Mexican standards and IFC PS during the associated facilities screening, to ensure that they align with the Mexinol Project and meet international standards; the most stringent regulations or standards will be applied. This should be monitored during all phases of the Projects, for example, through auditing. Once the transmission line ESIA is complete, including the completion of a CIA in accordance with IFC PS 1, the Mexinol Project CIA should be reviewed and updated as required. 	N/A
Economy and social cohesion	All project activities	Project-induced cost of living and inflationary pressure due to procurement, increased workforce employment and Project-induced in-migration	<ul style="list-style-type: none"> The Project will utilize available influence with all contractors to ensure alignment with measures to mitigate inflationary pressure as established within the Project's Local Content Plan. The Project should regularly share the findings of monitoring (i.e. cost of living reviews, socioeconomic monitoring) with the other third-party Projects and establish a forum for collective action. The forum should establish required thresholds for vulnerable markets, sectors or goods that are at risk, and protocols for sharing key monitoring data and key actions (i.e. shifting suppliers for food or household goods, ensuring procurement from alternative regions etc.). 	N/A

Receptor / Valued component	Project activity	Description of impact	Key mitigation measures	Residual impact significance
Economy and social cohesion	All project activities	Increased social tensions and conflict over the benefits from other Projects	<ul style="list-style-type: none"> The Project should utilize available influence with all contractors to ensure alignment with its own measures to mitigate potential social tensions and conflict. The Project should collaborate with other planned third-party developments by sharing data on escalating grievances and tensions, and effective stakeholder engagement, conflict resolution and communications strategies. 	N/A
Economy and social cohesion	All project activities	Increased gender disparity caused by higher male employment uptake	<ul style="list-style-type: none"> The Project should utilize available influence with all contractors to ensure similar measures for gender equality are considered where possible, such as specific programs of support targeted at enhancing women's access to pre-employment skills and training for the construction sector. 	N/A
Infrastructure and services	All project activities	Overburden on social services and infrastructure due to worker influx and in-migration	<ul style="list-style-type: none"> The Project and contractors will work with the municipal authorities on waste management solutions and identify and qualify private hazardous waste contractors prior to the start of construction. The Project will monitor the surplus private sector accommodation needs of all contractors working on the Project and associated facilities to assess how the companies anticipate managing those accommodation needs, in particular during the Project construction stage. The Project will provide a dedicated medical facility for the use of staff and families. The Project and contractors should coordinate with the relevant municipal authorities and other planned third-party developments to monitor cumulative effects on health services, education and waste management and develop suitable solutions where required. 	N/A
Community health, safety and security	All project activities	Increased incidence of GBVH	<ul style="list-style-type: none"> The Project will utilize available influence with transmission line proponent (and contractors) to ensure alignment with measures to mitigate GBVH within the GBVH Risk Management Plan. The Project should work with these associated facilities and their contractors and other identified third-party developments, to ensure that anonymous data from the grievance mechanism is shared with the view to facilitating wider GBVH monitoring and identification of trends in reported cases of GBVH. Should any trends be identified, the Project 	N/A

Receptor / Valued component	Project activity	Description of impact	Key mitigation measures	Residual impact significance
			<p>could adapt controls and measures accordingly to address GBVH issues.</p> <ul style="list-style-type: none"> The Project should collaborate with other planned third-party developments and develop partnerships with relevant local authorities, such as the Department of Female Affairs, and relevant civil society groups, non-governmental organizations, and local social services providers to enhance service provision for the victims of GBVH or programmatic interventions to reduce GBVH risks. 	
Cultural heritage	All project activities	Influx of workers with different values and beliefs weakening local cultural practices	<ul style="list-style-type: none"> The Project will consider forming collaborations for the design and delivery of cultural awareness training with local education providers such as the UAIM who have expert knowledge in this field. 	N/A

Emergencies and risks to the environment and people

Unplanned events

An unplanned event is defined as ‘a reasonably foreseeable event that is not planned to occur as part of a Project, but which may conceivably occur as a result of Project activities (e.g., accidents), even with a low probability’. Unplanned events may occur during any phase of a Project. The risk assessment is based on the application of experience of events or incidents to predict risk in the future. Consequences of potential impacts were first determined using severity levels and definitions. The impact of unplanned events on the environment and public health and safety, and the likelihood of their occurrence, were taken into consideration.

Unplanned events have been assessed using a risk assessment matrix (RAM), which enables qualitative assessments of ‘reputation’, ‘health and safety’, ‘environment’, ‘social’ and ‘commercial’ risk. The likelihood was rated from highly unlikely to very likely (highly unlikely, unlikely, possible, probable and very likely), whilst the severity was rated from insignificant to very high (insignificant, low, medium, high and very high). The risk ranking was subsequently rated from small to critical (small, material, severe and critical). Mitigation measures were recommended for all unplanned events identified.

- Two unplanned events were given a small risk ranking:
 - Accidental loss of containment or spillage of hazardous materials, or the release of pollutants/emissions during the management of hazardous materials.
 - Unexpected damage to crops, animals or other land-based livelihood activity caused by Project infringement.
- Five unplanned events were given a medium risk ranking:
 - Accidental release of hazardous materials from storage areas, vehicles and machinery and hazardous waste areas should these areas be damaged or submerged by floodwaters resulting in contamination of soil, surface water or groundwater.
 - Unexpected outbreak of communicable disease caused by worker influx and related in-migration.
 - Marine accidents resulting in material damage, injury or fatality of another marine user.
 - The potential failure of the contractor(s) and sub-contractors working on the project facility to meet requisite occupational health and safety standards increases the risk of unsafe workplaces and conditions that could lead to workplace injuries and/or fatalities.
 - While part of the methanol plant site will be fenced and a Community Health, Safety, and Security Management Plan will be prepared for construction and operational phases as part of the project’s ESMP active civil works areas on the site, port facility, access road or pipeline will increase risks for incidents of accidental injury or death to a worker or community third party
- One unplanned event was given a severe risk ranking:
 - Traffic accidents resulting in material damage, injury or fatality of another road user or pedestrian.
- No unplanned events were given a critical risk ranking.

Quantitative risk assessment

As part of the unplanned events assessment process a quantitative risk assessment (QRA) was carried out to identify and evaluate credible risk event scenarios related to the operation of the methanol production plant and associated infrastructure. The objective of the QRA was to assess the risks, to both Project workers and the public, associated with the operations of the methanol production plant, pipeline and ship offloading.

This QRA was carried out for the analysis of potential fire, explosion and gas scenarios that could occur on site following a Loss of Containment (LOC) event. The assessment was focused on the scale and extent of the hazards on the site, and offsite risks.

The results of the QRA are consistent with the results from the ERA (see Figures below) and reconfirm that there are no significant off-site impacts from the risk scenarios identified. All of the potential impacts from the risk events are confined to the within the operational boundary of the plant and associated infrastructure.

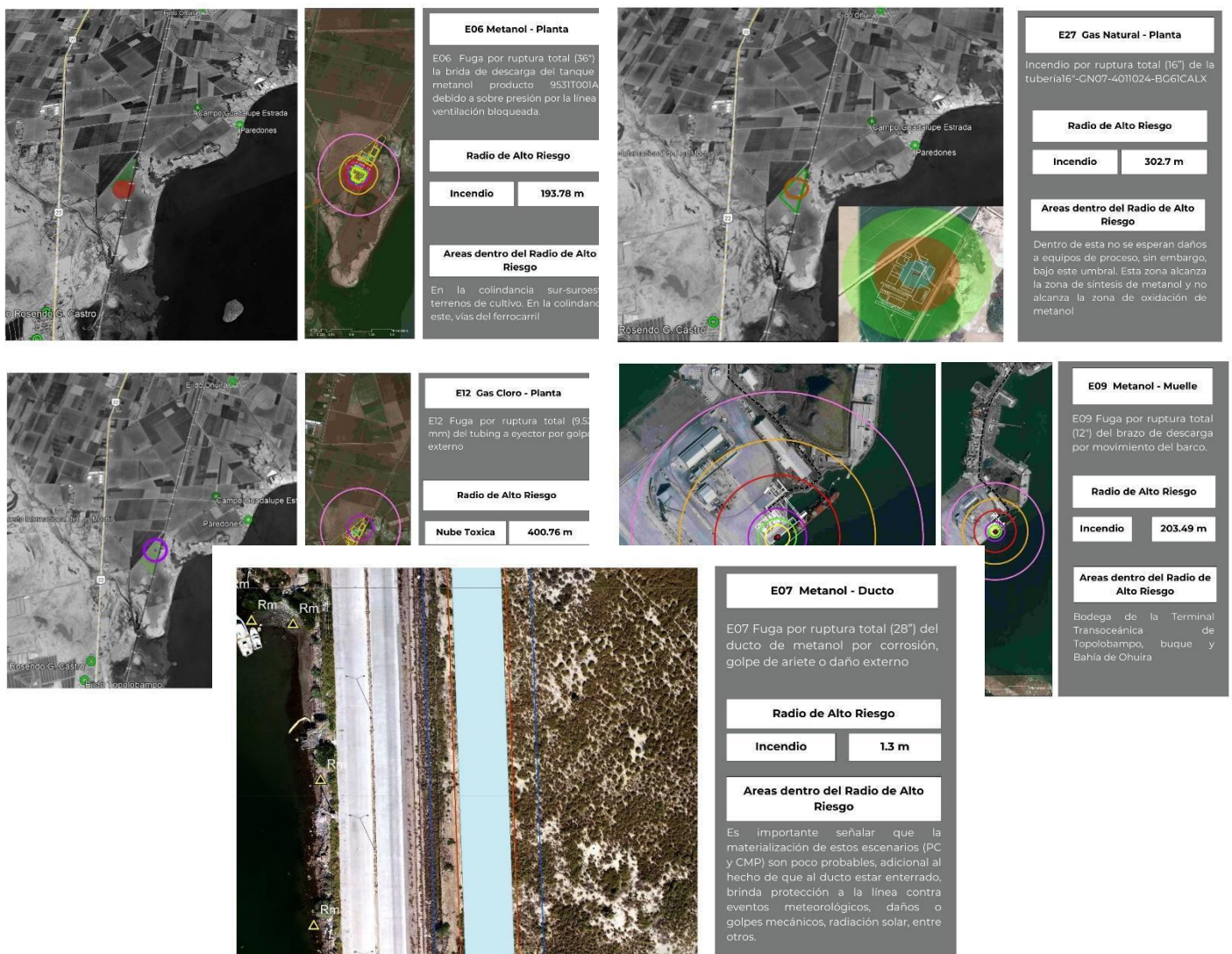


Figure 16: Results of the quantitative risk assessment

Environmental and social management and monitoring plan

Environmental and social impacts are managed throughout the full Project life cycle through the implementation of an environmental and social management system (ESMS) that includes a suite of environmental and social management and monitoring plans (ESMMPs), which address the commitments made in the ESIA. The ESMMPs will be used to minimize and/or reduce negative impacts, where these cannot be avoided, and optimize positive impacts. Preliminary key ESMMP documents for construction phase are presented in Figure 17.

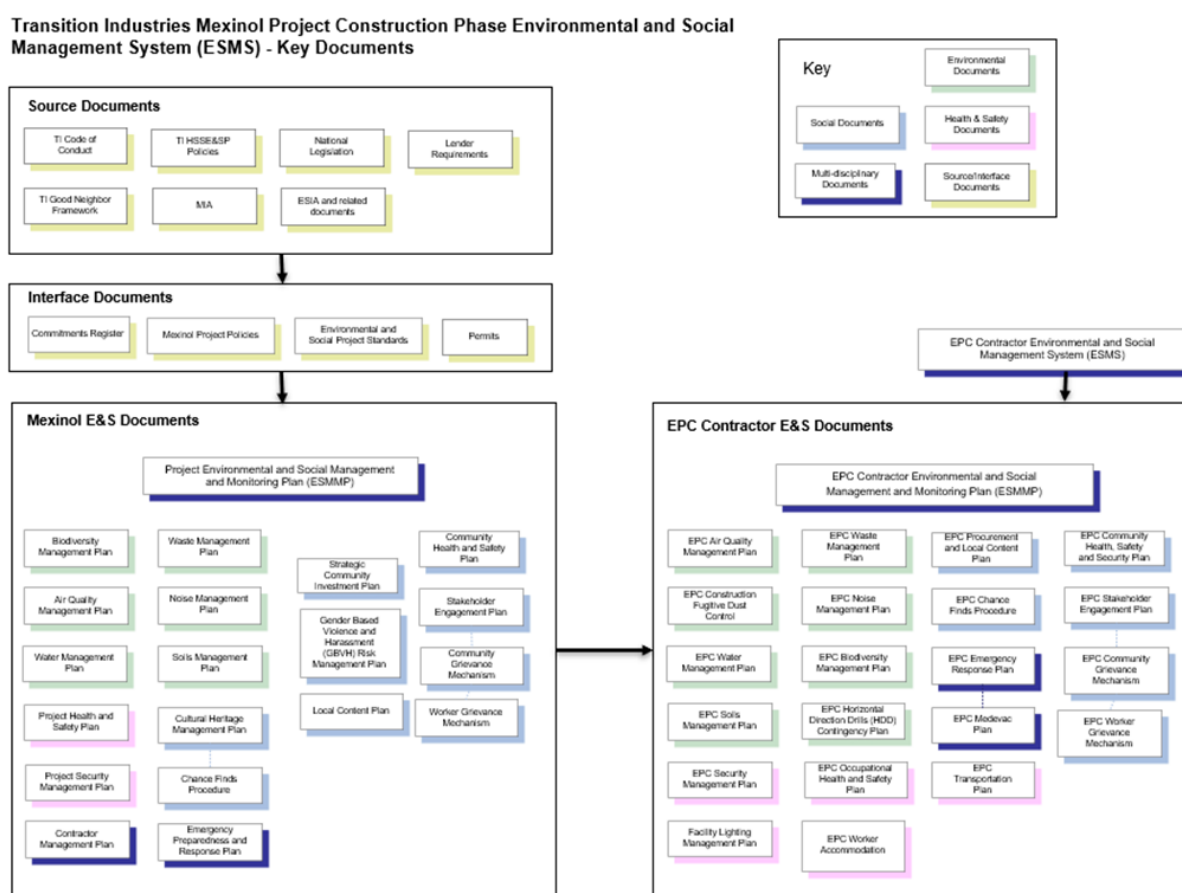


Figure 17: Mexinol Project construction phase ESMS key documents

The ESMMP documents constitute the foundation of Mexinol’s ESMS and are communicated to employees throughout the entire organization at all levels, including subcontracted employees and Mexinol and Transition Industries’ employees, as well as other stakeholders where required (e.g., shareholders, local stakeholders and communities). They will be the definitive compilation of relevant commitments agreed for the MIA permitting, and those made in this ESIA, and will be used to coordinate and review the environmental and social performance of the Project.

Contractors and subcontractors will be required to develop their own ESMS, including implementation plans that align with the Project ESMS and relevant ESMMPs, and give details of how commitments will be implemented and monitored.

The ESMMP documents are live documents and will be updated throughout the Project in response to changes in circumstance, unforeseen events, the results of monitoring, audits, and continued review, and prior to operations and decommissioning phases

Conclusions

Consistent with the MIA, the ESIA did not identify any issue of major significance that could not be mitigated to an acceptable level from an environmental and social perspective. All potential negative impacts associated with normal or planned activities and identified through the MIA and ESIA could be mitigated to reduce severity and significance to lower levels through design and operational management controls.

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