Terms of reference (ToRs) for the procurement of services above the EU threshold

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

CONFIDENTIAL

Project title:	**Processing number/cost centre:**
Enabling Long-Term defossilisation Pathways through Power-to-X (PtX Pathways)	**G-011681-001**
Country:	**Internal order:**
Germany	11681990000
Subject of the tender procedure:	**Tender number:**
Engineering support for the development of up to three PtL pilot plants in up to three countries	**10004174**

0. List of abbreviations

CAPEX	Capital expenditure
DAC	Direct Air Capture
EPC	Engineering, Procurement and Construction
FEED	Front-End Engineering Design
FEL-1	Front-End Loading 1
FEL-2	Front-End Loading 2
GTC	General Terms and Conditions of Contract for supplying services and work on behalf of the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
HAZID	Hazard identification
HSE	Health, Safety and Environment
IRR	Internal rate of return
KOMP	Cost per output monitoring and forecast
LCOX	Levelized cost of product (X)
LoI	Letter of intent
MoU	Memorandum of Understanding
NPV	Net present value
OPEX	Operating expenditure
PFD	Process Flow Diagram
P&ID	Piping and Instrumentation Diagram
PEM	Proton Exchange Membrane (electrolyzer technology)
PBtL	Power-enhanced-Biomass-to-Liquid
PtL	Power-to-Liquid
PtX	Power-to-X
QA/QC	Quality assurance / quality control
RED III	Renewable Energy Directive (recast; “RED III”)

RFNBO	Renewable Fuels of Non-Biological Origin
RMO	Risk Management Office
SOEC	Solid Oxide Electrolysis Cell (electrolyzer technology)
ToRs	Terms of reference
WP	Work Package

1. Context

The **PtX Pathways programme** is part of the International PtX Hub and supports the development of sustainable Power-to-X (PtX) markets, including hydrogen, in Morocco, South Africa, Kenya, Argentina, and other countries in the Global South. The programme works with relevant ministries to (i) develop allocation scenarios for hydrogen and PtX products, including value chain analyses, and to (ii) identify concrete business cases and derive recommendations for improving regulatory frameworks. A specific focus is placed on PtX-based fuel production for hard-to-abate sectors, in particular aviation and maritime shipping.

Despite strong growth in solar and wind generation, PtX deployment remains at an early stage. Improving regulatory conditions, increasing infrastructure investments, and growing demand for sustainable fuels are now creating a window for pilot-scale implementation. The PtX Hub supports partner countries in using this momentum to prepare the production of electricity-based sustainable aviation and marine fuels for domestic use and export.

In its current phase, starting in 2026, **PtX Pathways** will support the development of up to three Power-to-Liquids (PtL) pilot plants for industry partners in up to three partner countries (in the following "**Partners**" refers to the industry partners that shall be supported). The focus is on state-owned (petro-)chemical companies, given their financial capacity, existing infrastructure, and strategic role in national energy systems. It can also include national project developers that are planning projects of national interest or with light-house character. The pilot projects aim to reduce investment and implementation risks and to improve bankability of PtL projects by generating practical experience for future scale-up.

With this assignment, **GIZ is seeking support from a specialised engineering firm** for these pilot projects.

The following chapter describes the objectives of this assignment and sets out the tasks and outputs to be provided by the contractor.

2. Tasks to be performed by the contractor

2.1 Term

The expected term of the contract for services must be specified in the 'Special terms and conditions of contract'. The definitive term and service delivery period are set out in the contract award notification.

2.2 Objectives, work packages, tasks, deliverables and milestones

The objective of this assignment is to provide up to three (3) industrial partner companies (Partners) in up to three (3) different countries with customized technical planning documents and targeted consultancy in order for the Partners to effectively develop a Power-to-Liquid (PtL) pilot project until a FEED/EPC tendering stage.

In order to achieve this objective, the contractor shall prepare specific outputs (feasibility studies, engineering documents, tender documents, amongst others) and provide technical and procedural consultancy for the Partners along all stages of the project development process until FEED/EPC tendering.

Per PtL project, the contract comprises four work packages, which are divided into two steps:

Step 1:

- Work packages: A and B
- Objective: Definition and selection of a project concept for the plant engineering based on techno-economic feasibility analysis.

Step 2:

- Work packages: C and D
- Objective: Preparation of Plant engineering and functional EPC tender specifications.

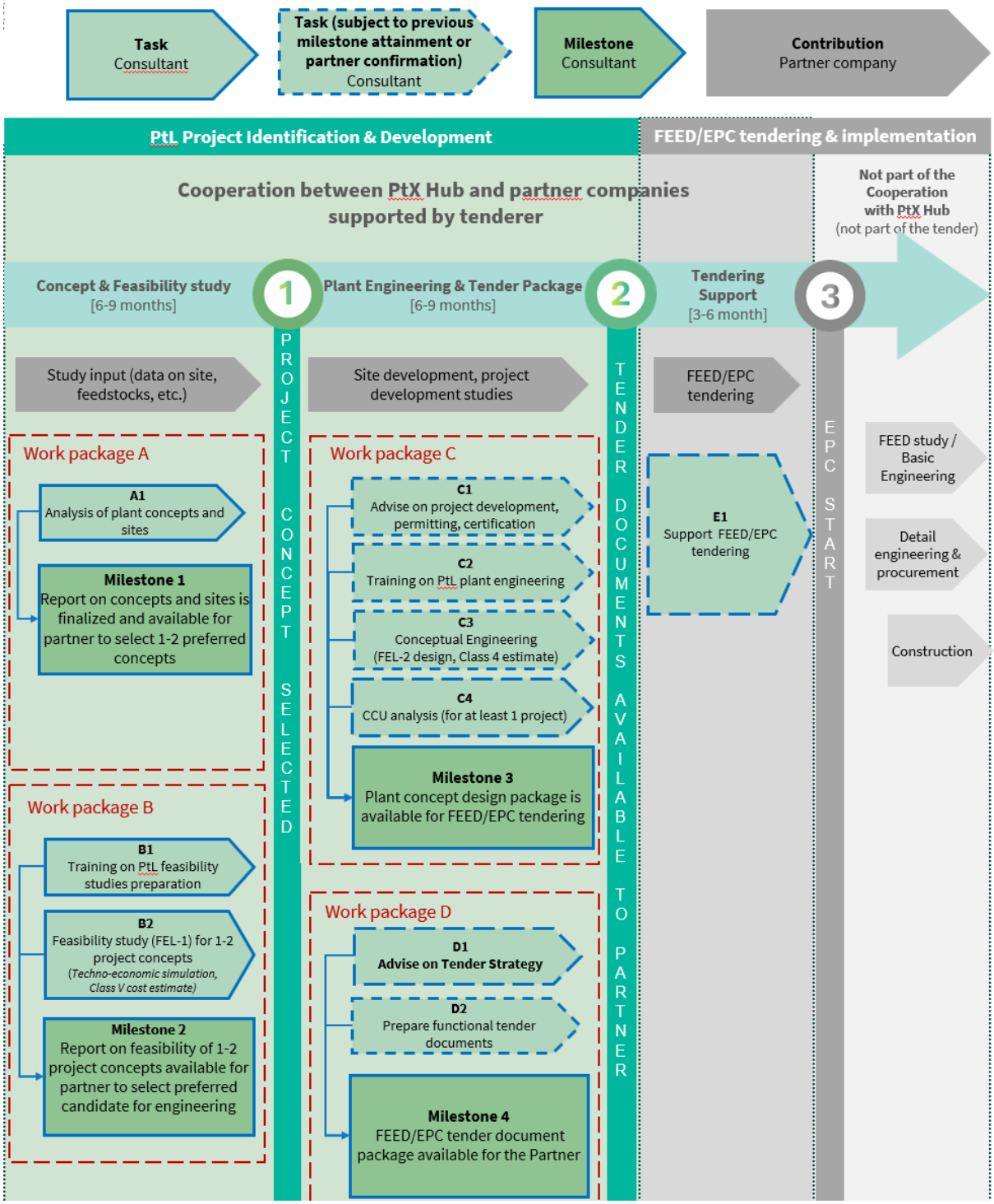
Each work package comprises several tasks with deliverables and each work package is completed with a milestone. The contractor is responsible to execute the tasks and to provide the respective deliverables for achieving the corresponding milestones and objectives.

All of the following work packages are to be realised for each of the three (3) PtL projects, unless otherwise stated in the work package description. The execution of some tasks is subject to successful attainment of the previous milestones and decision of Partners and GIZ to continue the project development process. It is indicated for the applicable task description in the task description below.

While the execution of the following work packages is confirmed for two (2) of the three Partners, the execution of the third (3.) set of work packages is subject to the successful closure of a cooperation agreement between GIZ and the third Partner which is ongoing at the time of launching this tender. The flow chart below indicates the work packages, tasks and milestones per project and Partner. They are further described in this chapter.

The precise scope of tasks may slightly deviate from the description due to each partner's individual needs, requests and the respective progress of the individual PtL project at the time of contract signature. The Contractor shall foresee such flexibility on its offer and execution concept.

Scope of Services



The Contractor must be able to entirely simulate and advise on at least the following Power-to-Liquid (PtL) or Power-enhanced-Biomass-to-Liquid (PBtL) process routes in a depth required by the tasks of this assignment:

1. Electrolysis - methanol synthesis (PtL)
2. Electrolysis - methanol synthesis – methanol-to-kerosene refining (PtL)
3. Electrolysis – Fischer-Tropsch synthesis – Integration/Coprocessing in existing refinery (PtL)
4. Electrolysis - Fischer Tropsch synthesis – syncrude-to-kerosene refining (PtL)
5. Biogas reforming - electrolysis – methanol/FT synthesis (PBtL)
6. Biomass gasification - electrolysis – methanol/FT synthesis (PBtL)

The following plant scope and system boundaries apply for the tasks listed in this chapter:

- For techno-economic simulation tasks: PtL/PBtL process routes + Renewable Energy input profiles + (in case of Task C4) Carbon capturing process
- For engineering and design document preparation: PtL/PBtL plant + (in case of Task C4) Carbon capturing plant
- For GHG balance calculation and accounting: PtL/PBtL process routes + Renewable Energy input + carbon capturing or carbon source + water source (desalination)

Per default, renewable energies shall be considered as the only energy input for the plant scope and adherence to a green fuel production scheme (e.g. RFNBO specification) shall be foreseen.

The contractor is responsible for providing the following work packages and for achieving the corresponding milestones.

Work Package A: Specification of Plant Concepts

The objective of this Work Package is to identify, define and select1-2 PtL/PBtL Plant Concepts (Site, feedstocks, process route, size/volumes, off-take etc.) for detailed analysis and comparison in the feasibility study (Work Package B).
The selection criteria will depend on each Partner's individual project goals, but will range along e.g.: Lowest CAPEX/LCOX, best market/commercialisation potential, highest learning potential, lowest implementation complexity, existing site and infrastructure.

To reach this objective, the Contractor shall perform the following tasks:

<u>Task A1: Analysis of plant concepts</u>

Until the commencement of this assignment, GIZ and the Partners will screen and outline the most relevant PtL or PBtL plant concepts based on each Partner's objectives and the local conditions and will prepare high-level plant concept specifications.

Within the first 3 weeks of the assignment, the Contractor shall review the available plant concepts and documentation and hold an introductory call with each Partner to become familiar with the local framework conditions.

In the following, a “plant concept” shall comprise at least specifications of the following elements:

- Site and plot
- Technical process route (PtL or PBtL) and key equipment
- Feedstock sources (renewable energy, water, CO2, etc.)
- Target output volume / capacity

On this basis, the contractor shall then:

- Critically analyse and verify the existing plant concepts and, where justified, correct them or propose alternative plant concepts, taking into account each Partner’s individual objectives and the respective local conditions.

- Provide in-depth advice to the Partners, if needed, on aspects relevant to plant concept definition, evaluation and selection strategy, including feedstock and utility sourcing process technology options, offtake markets, applicable regulation and certification requirements.

Within the first 4–8 weeks of the contract, the Contractor shall undertake missions to the Partner countries (approximately 1 week per project) to conduct **in-person kick-off meetings** with the relevant stakeholders (Partners and Partner ministries) and to **visit up to two (2) potential PtL plant sites** per Partner.

During the kick-off meetings, the Contractor shall present and discuss the following with the Partners:

- Proposed implementation strategy and schedule for this assignment
- Required project development activities and complementary task to be undertaken in each phase to reach the defined Milestones.

During and after the site visits, the contractor shall:

- Analyse and evaluate the site conditions, existing infrastructure and feedstock sources (renewable energy, carbon, water)
- Provide advice to the Partners, as needed, on site development and project development activities, aligned with the tasks and timeline under this assignment

Finally, the Contractor shall prepare a short and concise Plant concept and Site Analysis Report for each Partner, including:

- Comparative analysis of the existing plant concepts including feedstock sourcing (REs, CO2, water) under technical, economic and local context considerations (without any simulation)
- Comparative analysis of the identified sites including necessary site development efforts for a PtL project
- Well-founded recommendation of the 1–2 most suitable plant concept(s) (Site, feedstocks, process route, size/volumes, off-take etc.) in line with the stated objectives and local conditions

- List of missing inputs and/or information to be provided by the Partners in order to define the assumptions and parameters for the feasibility study

Milestone 1 is achieved upon submission of the final Concept and Site Analysis Report(s) following at least one review round.

The following table lists the deliverables and milestones under this Work Package, including their respective delivery period and location. The table is complementary to the description above:

Deliverables and Milestone(s) under Work Package A	**Delivery period [and location]**
Review available project information and concept documentation; Introductory call with each Partner to confirm objectives and local framework conditions; critical analysis and verification of existing plant concepts; proposal of alternative/more promising concepts where justified. Document result in a power-point.	1-3 weeks after commencement of the assignment
Advisory support to Partners on concept definition (feedstock/utility sourcing, process options, offtake, regulation, certification), as needed	Throughout WP A (on-demand)
In-country missions: in-person kick-off meetings (Partner company/ministry) and site visits to up to two (2) potential sites per Partner; presentation of implementation approach to Partners	Weeks 4–8 after commencement of the assignment (exact timing to be confirmed; approx. 1 week per project); [project country]
Site condition and infrastructure assessment; Advice on required site development and project development activities aligned with the assignment timeline.	Weeks 4–8 (during or immediately following missions)
Draft Plant concept and Site Analysis Report(s) submitted for review (per Partner)	After missions; timing within WP A (typically by week 8 or as agreed)
Milestone 1: Final Plant concept and Site Analysis Report(s) submitted after one review round.	End of WP A (after one review cycle; date to be agreed)

Work Package B: Techno-economic feasibility check

The objective of this Work Package is to verify and compare the feasibility of up to two (2) plant concepts per Partner through process simulation and economic modelling (techno-economic feasibility study), enabling the Partners to make an informed decision on the plant concepts to be taken forward to subsequent engineering and tendering.

To qualify as one individual plant concept for the feasibility study, the configuration shall require a new process simulation to be set up and run (e.g., due to a different process route or major process configuration change). Minor variations — such as alternative feedstock sourcing options or site-specific characteristics — shall be addressed within the same plant concept (simulation) through scenario sensitivity analyses.

The Contractor shall confirm which changes of key parameters would trigger a new plant concept and simulation under the above definition and which changes can be covered within one simulation.

Task B1: Partner training on feasibility studies

The Contractor shall conduct one half-day online training session for each Partner on the preparation of techno-economic feasibility studies for PtL projects. The objective of the training is to familiarize the Partners with the methodology, key assumptions, data requirements, and expected outputs of the feasibility analysis to be conducted under Work Package B, enabling effective engagement and informed decision-making throughout the study.

The Contractor shall provide a set of training materials to the Partners (slide deck and, where relevant, supporting documents).

Task B2: Techno-economic feasibility study

The Contractor shall prepare a comparative techno-economic feasibility study for up to two (2) plant concepts per Partner. The feasibility study shall enable a robust evaluation and comparison of the plant concepts and shall include, at a minimum, the following elements:

- Book of assumptions documenting all relevant assumptions and input parameters systematically
- Site, plot and infrastructure assessment.
- Process simulation and technical description, including preliminary process flow diagram (PFD), equipment description and sizing, definition of interfaces/battery limits, and energy and utilities/consumables requirements(min. FEL-1 level)
- Compliance check of the proposed technical design and product quality with the selected certification scheme (e.g. RED III, RFNBO)
- CAPEX estimate at AACE Class 5 level, based on an economic model and, where applicable, indicative technology provider/supplier information.
- OPEX estimate (fixed and variable, including key consumables and utilities)
- Economic model including cash-flow analysis and profitability assessment (e.g., LCOX, NPV, IRR), based on clearly documented assumptions.
- Risk analysis and mapping, including proposed mitigation measures and key sensitivities.

- Clear recommendation of the most suitable plant concept under different perspectives (techno-economic, strategic, market-related, practical implementation).

The study shall provide a sound techno-economic benchmark of the plant concept(s). Further engineering and design depth will be elaborated under work package C.

Minimum scope of technical simulation.

The process simulation shall include, at a minimum, the following elements (to be adapted to local conditions and the selected concept):

- Renewable electricity supply: an optimized mix of wind and PV generation capacity at sites to be confirmed shall be simulated. If on-site measurement data is not available, the contractor shall provide renewable energy resource profiles (hourly time series) from renowned data sources.
- Water supply: appropriate water treatment systems depending on the water source
- CO2 supply: DAC system and interface for external CO2 delivery (e.g., truck or other mobile storage), as applicable.
- Electrolysis: e.g., PEM, AEL, SOEC, including auxiliary systems.
- Synthesis and upgrading: synthesis and upgrading units depending on the selected process route, to achieve the specified product quality e.g.:
    - Fischer–Tropsch syncrude (FT-SPK) for co-processing or upgrading to e-SAF (ASTM D1655, ASTM7566)
    - Synthetic methanol (IMPCA AA grade or as agreed) for use as chemical feedstock or marine fuel

As part of task B2, the Contractor shall facilitate one interactive in-person workshop (about half-day to one day in duration; may be changed to online if necessary and aligned with all parties) with each Partner to present and discuss the preliminary comparative techno-economic feasibility study results. The objective of the workshop is to review the assumptions, key findings and trade-offs, collect Partner feedback and comments, and agree on any required clarifications or targeted sensitivity analyses. The workshop shall also serve to prepare and structure the Partner's decision-making process towards selecting the preferred plant concept to be taken forward to subsequent engineering and tendering, including agreement on next steps, responsibilities, and an indicative decision timeline.

Deliverables and formats

The Contractor shall deliver the following outputs in the formats specified below:

- Study reports: MS Word and PDF
- Process simulation outputs: raw model/data files in a well-established process design software format that can be shared with the Partners, plus a PDF summary of key results for visualization
- Economic model / cash-flow analysis: MS Excel including input data, calculations, and outputs; and, where available, an advanced model format suitable for visualization

The following table lists the deliverables and milestones under this work package, including their respective delivery period and location. The table is complementary to the description and conditions above:

Deliverables and Milestone(s) under Work Package B	**Delivery period [and location]**
Task B1: Half-day online training on feasibility studies per Partner and deliver training materials (slide deck + supporting documents, as applicable); documentation via short report incl. participants overview and training documents]	Weeks 1–2 of WP B; scheduled per Partner; [online]
Draft comparative techno-economic feasibility study for up to two (2) plant concepts per Partner	6 weeks after approval by Partner of project concepts to be compared (based on WP A)
Workshop on feasibility study results (report presentation & recommendations); documentation via short report incl. participants lists and photos]	1-2 weeks after completion of draft feasibility study; [project country]
Milestone 2: Final techno-economic feasibility report on up to two (2) plant concepts available for partner to select preferred candidate for engineering	Within 2 weeks after the workshop and presentation of the draft feasibility study results to the partner.

Work package C: Plant engineering

For each of the three Partners, the implementation of Work Package C is subject to the successful attainment of Milestone 2 (including decision on respective plant concept for further steps) and to the confirmation of Partner and GIZ to continue the project development process.

The objective of Work Package C is to develop a conceptual plant engineering (FEL-2) and refined plant cost estimate (AACE Class 4) for the selected plant concept under Milestone 2. The conceptual plant design shall have a level of detail that serves as a basis of design for a FEED study and as technical specification for a combined or staged FEED/EPC tender as will be agreed with the Partners.

Task C1 Advisory support: project development, permitting and certification

The Contractor shall advise the Partners on the site development, permitting, and certification activities required to ensure:

a) the timely availability of data and documentation, in appropriate quality, necessary to complete the conceptual engineering package; and
b) the timely commencement of FEED/EPC tendering in line with the project schedule.

This scope may include, inter alia, advisory services and/or evaluations related to:

- Site development and permitting steps required to achieve tender readiness
- Site development and permitting requirements to enable a RED III-compliant certification process and potential commercialization of the product as RFNBO fuel
- Review and assessment of site studies and permitting activities performed by the Partners and/or third parties
- Definition and review of QA/QC and HSE requirements and measures to enable the safe, compliant, and reliable construction and operation of the PtL plant and associated renewable energy facilities (as applicable)

The Contractor shall provide:

- An integrated project development plan and timeline covering the major project milestones and activities during FEL-2, FEED and EPC execution
- A consolidated list of required documents, data, and studies (including responsible parties and target deadlines) to be provided by the Partners and/or third parties in order to meet the project development plan and timeline

Task C2: Training on PtL plant engineering

The Contractor shall deliver a one-day (1) training session for each Partner on PtL process simulation and PtL plant engineering for about ten (10) participants from the respective Partner institution. The training shall be aligned, and where possible combined, with the engineering deliverables under Work Package C and shall support effective Partner review and informed participation during the engineering phase.

Task C3: Conceptual engineering (FEL-2 engineering)

The Contractor shall prepare a conceptual engineering and design package (FEL-2) that serves as a basis of design for a FEED study and as technical specification for a combined or staged FEED/EPC tender as will be agreed with the Partners.

The engineering package shall specify the key performance indicators (KPIs), the selected process route, inputs and outputs, applicable standards, and the project boundary conditions.

The engineering package shall include, at a minimum (to be confirmed under Work Package A), the following documents and deliverables:

- Basis of Design (BoD) specifications, including functional and performance requirements
- Process description
- Drawings (e.g., BFDs, PFDs, plot plan and/or layout drawings at an FEL-2 level of detail)

- Equipment list and preliminary equipment specifications/datasheets
- Interface and battery limit specifications
- Input/output definitions (feed/product specifications, utilities, and emissions/effluents as applicable)
- GHG balance calculation
- QA/QC requirements
- HSE requirements

The preparation of the engineering package shall be carried out in close collaboration with the relevant engineering experts of the respective Partner, with the objective of transferring know-how on PtL process engineering. For this purpose, an integrated project team comprising experts from the Contractor, the respective Partner, and GIZ shall be established and shall hold regular coordination and feedback meetings throughout the engineering activities.

The Contractor shall advise the Partners on technology and licensor options and whether one technology and licensor should already be fixed at this stage or at subsequent FEED and EPC tendering. If so, Contractor shall facilitate and accompany contact-making and meetings with preferred licensors in order to support technology and licensor selection.

Based on the FEL-2 package, the overall CAPEX estimation of the plant shall be updated to an AACE class 4 estimate and the economic model and KPIs (LCOX, IRR, etc.) used in work package B shall be updated accordingly.

Deliverables formats:

- Study reports and narrative documents: MS Word and PDF
- Process simulation outputs: raw model/data files in a well-established process design software format that can be shared with the Partners, plus a PDF summary of key results for visualization
- Drawings: AutoCAD (and PDF for review, as applicable)

Task C4: CCU analysis

This task will be executed if sustainable CO2 cannot be supplied directly to the plant by an external party and cannot fully be produced on site by an integrated DAC system, but has to be processed from a source that requires significant additional investment. We expect this to be the case in at least 1 of the 3 cases.

In that case, the Contractor shall screen potential sustainable carbon sources around the designated project site and perform a high-level qualitative comparison to identify and recommend the most economic source to the Partner.

For this assignment “sustainable carbon” is defined as all authorized carbon/CO2 sources for RFNBO fuel production under the current EU RED regulation.

The Contractor shall then, for the selected source, define the overall CCU supply chain from sourcing, processing to delivery at the PtL plant battery limits, including:

- Source characterization: source type (e.g., sewage sludge at wastewater treatment plant, biogenic wastes from agriculture/landfills), available quantities, seasonal/operational variability, continuity of supply, logistics constraints, and ownership/stakeholder interfaces.
- CO2 generation pathway: technical process route to generate a CO2-rich stream from the selected source(s) (e.g., filtering, biogas upgrading, combustion with flue gas capture, biogas reforming, gasification or other),
- Capture and conditioning concept: CO2 capture technology and conditioning steps needed to meet PtL purity requirements or impurity thresholds; specify assumptions and acceptance ranges to be agreed with the PtL process requirements.
- Integration and utilities: assess utilities and energy demand and impacts on local infrastructure.
- CO2 transport and delivery: define the logistics concept to deliver conditioned CO2 to the PtL plant (e.g., on-site storage, trucked liquid CO2, short pipeline), including storage sizing assumptions, and interface definition at PtL battery limits.
- HSE and sustainability aspects: specify HSE considerations (handling of pressurized CO2, hazardous impurities, process safety), and sustainability constraints relevant to “sustainable CO2” to support certification requirements.
- Risks and mitigation: identify major risks and propose mitigation actions

Deliverables
For the selected solution, the Contractor shall provide a technical design package (FEL-1 level) and economic indicators, including:

- Process description and indicative equipment specification (major equipment list and sizing)
- Process flow diagram (PFD)
- Indicative layout concept (plot space requirements, battery limits and interfaces, key tie-ins).
- CO2 delivery concept (storage/transport/interface definition, including operating envelope).
- AACE Class 5 CAPEX estimate
- Indicative OPEX overview (at least key drivers such as electricity/heat, chemicals/consumables, maintenance, transport).

Key considerations and recommendations for implementation Interfaces and alignment
The Contractor shall align the CCU analysis with the selected PtL plant concept and its CO2 consumption profile, including required pressure, purity, and delivery conditions at the PtL plant battery limits.

Implementation and coordination
The Contractor shall structure the work to allow a clear “go/no-go” whether the CCU solution should be taken forward into FEED/EPC tendering.

The following table lists the deliverables and milestones under this Work Package, including their respective delivery period and location. The table is complementary to the description above:

Deliverables and Milestone(s) for Work Package C	**Delivery period [and location]**
Task C1: Ongoing advisory support on site development, permitting, certification. Provision of consolidated list of required documents and updated project execution plan.	Throughout WP C (typically week 1–end of WP C; on-demand, aligned with engineering progress)
Task C2: One day training session per Partner on PtL plant engineering (incl. training materials); short training report incl. participants lists and photos.	Weeks 2–6 of WP C; scheduled per Partner; [project country]
Task C3: FEL-2 package, Class 4 cost estimate draft submission	6-8 weeks after confirmation of selected plant concept
Task C4: CCU FEL-1 package, Class 5 cost estimate; (for one partner)	6 weeks after confirmation of carbon source to be analysed (for one partner)
Milestone 3: Final submission of engineering package after one review round (Word/PDF; model files + PDF results; AutoCAD + PDFs)	2 weeks after Partner review completion

Work package D: FEED/EPC tender preparation

The implementation of Work Package D is subject to the successful attainment of Milestone 3 and to the confirmation of the Partners to consider launching a FEED/EPC tendering process for the plant.

The objective of Work Package D is to facilitate the decision for a plant tendering and procurement strategy and, once decided, to prepare the functional specifications for a FEED/EPC tender in line with the Partners' procurement rules and standards.

To achieve this objective, the Contractor shall perform the following tasks:

Task D1: Advisory support on tender strategy

The Contractor shall advise on the procurement and tender strategy for the FEED/EPC services. This shall include advising on:

- Procurement und contracting approach (FEED+EPC option, FEED + EPC turnkey, EPC/EPCM only, etc.)

- Adequate technology licensors and engagement strategy with licensors
- Qualified suppliers and equipment portfolios for key components
- Tendering and bidder engagement strategy
- Bidder qualification strategy (RfQ/RfP) and bid evaluation methodology

The advice shall be aligned with the Partner's procurement procedures and shall aim to ensure broad market participation, competition, transparency, and timely project execution.

Task D2: Prepare functional FEED/EPC tender documents

This task is subject to the decision of the Partners to effectively launch a FEED/EPC tendering process for the plant.

The Contractor shall prepare functional tender specification for an international FEED/EPC tender process, aligned with the Partner's procurement goals and consistent with international standards. The functional tender documents shall include, at a minimum, the following:

- Basis of Design package including process design and applicable codes & standards (using engineering from Work Package C deliverables as far as possible)
- Performance and functional specifications
- Scope of Supply and Service document including battery limits, interfaces, deliverable list and responsibilities
- Site / environmental / utilities specification
- HSE and HAZIDS requirements
- QA/QC specifications (including provisions supporting product quality assurance and, where relevant, certification readiness requirements)
- Project schedule

To the extent required by the Partners, the Contractor shall additionally provide targeted advice on the following aspects:

- Tender procedure and bid submission requirements
- Bidder qualification criteria, and supplier shortlisting
- Commercial and legal terms of FEED/EPC tender
- Safeguards for timely execution, adherence to safety & quality standards, robust performance guarantees and warranties

Deliverable formats (EPC tender package)

- Tender documents and reports: MS Word and PDF
- Drawings: AutoCAD (and PDF for review, as applicable)
- Process simulation outputs (where included as annexes or referenced deliverables): raw model/data files in a well-established process design software format that can be shared with the Partners, plus a PDF summary of key results for visualization

The following table lists the deliverables and milestones under this Work Package, including their respective delivery period and location. The table is complementary to the description above:

Deliverables and Milestone(s) for Work Package D	**Delivery period [and location]**
Task D1: Tender strategy advice (Licensors engagement, Contracting, bidder shortlists and engagement, qualification and evaluation criteria; etc.)	Weeks 1–2 of WP D; refined as needed until tender launch
Task D.2: Prepare draft functional tender specification package (BoD/engineering specs/performance QA/QC; HSE; schedule)	Weeks 4–6 of WP D and 4 weeks after delivery of relevant data by partners.
Internal alignment workshop or session with Partner (review of draft package)	1-2 weeks after preparation of draft package; [online]
Milestone 4: Final functional tender specification package submitted after one review round (Word/PDF; drawings AutoCAD+PDF; simulation annexes where applicable)	Weeks 8–12 of WP D, or per agreed tender launch date

Work package E: FEED/EPC tendering

Task E1: Support FEED/EPC tendering (for 1 partner)

This task is subject to the decision of the Partner to effectively launch a FEED/EPC tendering process for the plant.

Execution of this task is foreseen for 1 partner only.

The Contractor shall, support the Partner during the FEED/EPC tendering process through general advisory services and hands-on assistance. This can include:

- support in managing bidder communications (e.g., clarifications, Q&A, and addenda)
- support in preparation of responses to interested bidders
- support in bidder qualification (RfQ results) and bid evaluation (technical and commercial RfP results)
- Preparation of evaluation notes and recommendation documents
- Support in negotiations with shortlisted bidders including alignment of technical deviations, risk allocation, contractual terms (technical/commercial/legal)

The Contractor's support shall be provided in a manner that is compatible with the Partner's procurement procedures and applicable procurement rules, and shall aim to ensure a transparent, competitive, and timely contractor selection process.

Cross-cutting services

In addition to the country-specific Work Packages described above, the following overarching services shall be provided throughout the duration of the Contract on an as-needed basis, in response to requests from the Partners. The Contractor shall act flexibly and promptly to address such needs.

Knowledge exchange and lessons-learned online-sessions between the different PtL Projects

The Contractor shall facilitate online knowledge exchange and lessons-learned sessions to enable at least two (2) different participating Partners per session to learn about their counterparts' projects, lessons learned, and experiences. At least one online session of up to sixty (60) minutes per country case shall be organized prior to the completion of Work Package B and, respectively, prior to the completion of Work Package C.

2.3 Project and knowledge management requirements

Requirements on the assignment of experts:

- The contractor is responsible for selecting, preparing, training and steering the experts assigned to carry out the advisory services.

Requirements on expenditure management and cost control:

- The contractor manages costs and expenditures, accounting processes and invoicing in line with GIZ requirements.

Monitoring and reporting requirements:

- The contractor monitors and reports on a regular basis on at least the following areas:
  - Degree to which activities are implemented
  - Degree to which the objectives, indicators and milestones listed in section 2.2 of these ToRs have been achieved
  - Adherence to project time schedule and on possible delays
  - Adherence to expert days and budget plan and on possible deviations
  - Results that have occurred in the contractor's sphere of responsibility
  - Results that have occurred outside the contractor's direct sphere of responsibility (delays caused by Partner or 3rd parties or unforeseen circumstances)
  - Development of identified risks during risk mapping or occurrence of new unforeseen risks

The Contractor shall describe its monitoring and reporting strategy and its monitoring and reporting tools to keep track of the above and to undertake corrective actions if required.

The contractor reports to GIZ as follows:

- Monthly progress reports:
  Reporting on all elements listed above.
  The Contractor shall maintain time recording at expert level and shall submit monthly timesheets per expert as well as an aggregated overview, distinguished by Work Package and task per country, showing planned vs. actual effort (expert-days) and overall progress status.
  The monthly report shall be submitted on the 10th calendar day of each month for the preceding month and shall highlight deviations, anticipated capacity constraints, and proposed corrective actions where required.

Instead of the reporting language stipulated in GIZ's General Terms and Conditions of Contract (German), the contractor provides the following reports in the following language:

British English

Backstopping requirements:

The contractor ensures appropriate backstopping. The following services form part of the standard backstopping package. In accordance with GIZ's General Terms and Conditions for supplying services and work on behalf of the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, these services – as well as the ancillary personnel costs – must be priced into the fee schedules of the staff listed in the tender:

- *The* contractor's responsibility for its own staff;
- *Ensuring* the flow of information between GIZ and the contractor's field staff;
- Process-oriented technical and conceptual steering of the consulting services;
- Technical or process-oriented Partner requests throughout all phases of the PtL project development process and throughout the duration of this assignment
- Steering adaptations to changing framework conditions;
- Performance monitoring;
- Ensuring the administrative management of the project;
- Ensuring compliance with reporting requirements;
- Making local use of and sharing the lessons learned by the contractor with the GIZ team.

2.4 Data protection and information security

The provisions on data protection and information security of the current version of GIZ's General Terms and Conditions of Contract (section 1.11 Data protection) apply.

2.5 Other requirements

Safeguards and gender measures with specific reference to services:

In order to promote gender equality and avoid or mitigate possible unintended negative impacts in its area of responsibility, the contractor should implement the following measures:

- Environmental protection and climate action (climate change mitigation/adaptation):
  - The Contractor needs to demonstrate the climate benefits of the selected PtL plant concept, by calculating and indicating the GHG balance of the conceptual plant design engineered in Work Package 3. This can be done as well as part of an export market regulatory compliance check or pre-certification check, should this be requested by the Partners.
    Throughout all plant design and engineering activities, the Contractor shall implement a HSE concept that complies with internationally recognized standards and the applicable local standards. It needs to be ensured that no emissions or waste stream are released into to environment in excess of admissible thresholds, norms and standards. Contractor needs to outline the HSE concept latest before start of Work Package.

3. Technical-methodological concept

In this section, the tenderer is required to reflect on the objectives and terms of reference of the tender at hand, describe the partner system and its processes in the area of responsibility and present the technical-methodological concept for completing the tasks listed in section 2 and achieving the set objectives. In addition, the tenderer must describe the design of the project management process.

3.1 Interpretation of objectives (section 1.1 of the assessment grid)

The tenderer is required to interpret the objectives for which it is responsible. Simple repetition of the objectives formulated in section 2 of the ToRs is not desired. Rather, the contractor is to describe and interpret the achievements and impact on the Partners that are to be directly achieved by this assignment. (section 1.1.1 of the assessment grid) Hence:

The Tenderer shall explain how it understands the assignment's objectives in terms of concrete achievements and direct added value for the Partners, beyond delivering reports and models.

The contractor must also undertake a critical examination of the ToRs (section 1.1.2 of the assessment grid), by critically assessing the proposed work plan and sequencing (Work Packages A–E) and assessing the results hypotheses and the foreseen technical development steps for achieving the objectives, or by proposing justified improvements where a more efficient or lower-risk route exists. This assessment shall cover:

I. Assessment of the technical concept and the suitability of the proposed tasks, deliverables, and milestones to create a defensible decision basis and EPC-tender readiness (including any missing "bridging" activities such as data-gaps closure, interface definition, outputs etc.)
II. (key implementation risks and constraints (e.g., data availability and quality, site/permitting uncertainties, CO_2 sourcing constraints, RE profile uncertainty, certification readiness, schedule dependencies between WPs) and corresponding mitigation measures
III. the appropriateness of the proposed personnel concept for the scheduled tasks, including availability, discipline coverage, and how specialist inputs (process simulation, cost estimation, HSE, procurement/contracting) will be mobilized at the right time.

Where the Tenderer proposes an alternative proceeding, it shall clearly state the rationale, and the expected benefit for achieving the mission objectives.

3.2 Processes and actors in the partner system (section 1.2 of the assessment grid)

- Not applicable -

3.3 Strategy (section 1.3 of the assessment grid)

The strategy for delivering the services in the tender is the core element of the technical-methodological concept. It is composed of the following elements:

- Procedure for achieving the objectives stated in section 2.2 of these ToRs
- Development of partnerships with the relevant actors
- Approaches for leverage effects and measures for scaling-up
- Consideration of environmental and social compatibility requirements (including gender equality)
- Appropriate consideration of further requirements

3.3.1 Strategic approach to achieving the objectives mentioned in the ToRs (section 1.3.1 of the assessment grid)

The tenderer is required to describe and justify the approach it plans to adopt in order to achieve the milestones, objectives and results (see section 2) for which it is responsible.

The Tenderer shall present a coherent strategy describing how it will deliver the services and achieve the objectives in Section 2.2 in an efficient, decision-oriented, and implementation-ready manner across all Work Packages.

This shall include a structured procedure that links

(i) early alignment on Partner objectives, local boundary conditions, and decision criteria,
(ii) a transparent concept and site screening leading to a limited number of well-defined project concepts,
(iii) a comparative techno-economic assessment based on documented assumptions, scenario/sensitivity analyses, and clear decision points, and
(iv) conceptual engineering and functional tender preparation with consistent battery limits, interfaces, performance requirements, and traceable cost and risk assumptions.

The Tenderer shall also describe how its approach will enable each Partner to:

i. identify and justify a preferred PtL plant concept that is robust under local conditions,
ii. understand the key techno-economic drivers and sensitivities that determine feasibility and bankability, and
iii. reach EPC-tender readiness through a coherent line of activities, deliverables and targeted consultancy from early concept definition to a tender-ready functional design package and tender preparation.

The Tenderer shall explain how it will ensure decision quality and ownership by the Partners—e.g., through structured interactions, transparent documentation of assumptions and trade-offs, and the transfer of know-how—so that Partners can credibly defend the selected option vis-à-vis ministries, regulators, financiers, and potential off-takers, and can proceed efficiently to the next project phases.

The tenderer shall also describe how it intends to achieve synergies through the implementation of similar or equivalent tasks with 3 Partners and how it intends to cope with high work loads through parallel work streams in 3 countries.

3.3.2 Building partnerships with the relevant actors (section 1.3.2 of the assessment grid)

– Not applicable –

3.3.3 Approaches for leverage effects and measures for scaling-up (section 1.3.3 of the assessment grid)

The Tenderer shall explain how it will ensure quality and consistency across countries and work packages (e.g., standardized templates, modelling and costing conventions, QA/QC gates, and regular technical reviews), while remaining flexible to Partner-specific contexts and data maturity. The Tenderer shall further describe approaches to create leverage effects and enable scaling-up, such as establishing a reusable “reference architecture” (standardized process blocks, utility concepts, and tender clauses), capturing lessons learned across country cases through structured knowledge exchange, and designing deliverables so they can be efficiently adapted to larger capacities or additional sites (e.g., modular sizing logic, replicable tender packages, and parameterized economic models).

3.3.4 Consideration of environmental and social compatibility requirements (section 1.3.4 of the assessment grid)

Gender equality

- Not applicable -

Environmental protection and climate action (climate change mitigation/adaptation)

The tenderer is required to outline how it intends to prevent negative impacts on the environment and climate through its works and present in particular the scope of its HSE concept and GHG accounting tool applicable for the PtL plant design. The tender shall include the explicit consideration of resource efficiency (energy, water, land), emissions and effluents and waste handling. (see also relevant requirements in section 2.5).

Conflict and context sensitivity

- Not applicable -

Human rights

- Not applicable -

Requirement: 'Gender equality':	0 points out of 10 (maximum)
Requirement: 'Environmental protection and climate action (climate change mitigation/adaptation)':	10 points out of 10 (maximum)
Requirement: 'Conflict and context sensitivity':	0 points out of 10 (maximum)
Requirement: 'Human rights':	0 points out of 10 (maximum)

3.4 **Project management** (section 1.4 of the assessment grid)

In this section, the tenderer presents the operational plan for implementing the services in the tender, describes the procedure for coordination with GIZ or the project and the project partners, and explains its monitoring procedure.

3.4.1 **Operational plan** (section 1.4.1 of the assessment grid)

The tenderer is required to draw up and explain an operational plan for implementing the strategy described in section 3.3. The operational plan shall include

(i) a comprehensive work plan describing all tasks (including decision points and review loops), deliverables, and milestones specified in Section 2,
(ii) an implementation schedule (timeline) showing the sequencing, durations, and milestone dates,
(iii) an assignment plan for all proposed experts, clearly stating individual roles and responsibilities, indicative assignment periods, expected level of effort (expert-days) incl. tasks solely requested for one Partner, and assignment locations (remote and in-country),
(iv) An expert day allocation grid stating the estimated expert days required for the completion of each task (A.x-E.x) for team lead, expert pool 1, expert pool 2

The operational plan shall explicitly identify all required external inputs (data, documents, decisions) per task and name the expected input providers. The Tenderer shall also describe practical mechanisms to manage missing or delayed inputs and/or decisions from third parties, ensuring that progress and deliverable quality can be maintained. The Tenderer may propose additional internal milestones beyond those defined in Section 2, provided they are clearly justified and mapped in the operational plan.

3.4.2 Coordination with GIZ or the commissioning project (section 1.4.2 of the assessment grid)

– Not applicable –

3.4.3 Steering or coordination of measures with the relevant implementing partner (section 1.4.3 of the assessment grid)

– Not applicable –

3.4.4 Monitoring (section 1.4.4 of the assessment grid)

– Not applicable –

3.5 Further requirements (section 1.5 of the assessment grid)

Project and Process-specific expertise

The Tenderer shall respond to the questions below.

(i) Process simulation and operability (2 out of 10 points)

1. The Tenderer shall describe the foreseen simulation model to be used for PtL/PBtL process simulation (software environment, simulation concept, scope and features, integration of intermittent renewable electricity, etc.) and shall list the minimum input data required to execute the simulation. (1 out of 10 points)

2. The Tenderer shall explain how feedstock intermittency and operating constraints are translated into design decisions and shall define the key sensitivity cases to be assessed. (1 out of 10 points)

(ii) Process route know-how and interfaces (4 out of 10 points)

1. For two (2) process routes (methanol-to-kerosene and FT co-processing), the Tenderer shall outline the process design with currently highest TRL/market readiness, the included main equipment, the battery limits/interfaces to be defined (including utilities tie-ins) and the main equipment sizing drivers. (2 out of 10 points)

2. The Tenderer shall describe common pitfalls or challenges observed during operation of these process routes and shall state the respective design provisions/mitigations typically implemented during engineering phases. (2 out of 10 points)

(iii) Deliverable quality and cost-estimate accuracy (4 out of 10 points)

1. The Tenderer shall specify the internal acceptance criteria for FEL-1/FEL-2 engineering packages and describe the minimum scope of FEL-1/FEL-2 engineering documents suitable to initiate (I) a FEED study and (II) a functional EPC tender. (2 out of 10 points)

2. The Tenderer shall describe its concept for Class 5 / Class 4 CAPEX estimation of the PtL plant (cost basis/benchmarks, contingencies, accuracy range etc.) and shall

explain how traceability is ensured from BoD documents to the cost estimate. (2 out of 10 points)

4. Personnel

The tenderer is required to provide 'experts' for the positions referred to and described (scope of tasks and qualifications) in this section on the basis of corresponding CVs. **The requirements on the format and content of the CVs are described in section 6.**

The qualifications mentioned below correspond to the requirements for achieving the highest number of points in the technical assessment.

'One year of professional experience' is therefore defined as a cumulative 12 expert months with at least 18 expert days per month, provided no diverging definition is specified for individual qualifications

Expert 1: Team leader with international experience (section 2.1 of the assessment grid)

This position is a key expert. A statement of availability for this expert must be attached to the tender as an annex. A statement of availability makes a contract supplement necessary should experts be exchanged.

Tasks of expert 1: (*team leader*)

- Overall accountability for the execution of Contractor's work packages (quality assurance, schedule adherence, internal deliverable clearance).
- Primary contact and interface person for Contracting Authority (GIZ), Partners, and relevant third parties; ensure structured communication and decision-making.
- Staff management: identify need for short-term inputs within budget, plan and steer assignments, mobilize experts, supervise outputs across expert pools.
- Regular reporting and presentation of work package results in line with agreed deadlines and formats.

Qualifications of expert 1: *(team leader)*

Education/training (section 2.1.1 of the assessment grid):	University degree (e.g. 'master's or German Diplom') in Chemical Engineering, Process Engineering, Energy Systems Engineering, Industrial Engineering, or other engineering field
Language (section 2.1.2 of the assessment grid):	Knowledge of *English, C1*-level in the Common European Framework of Reference for Languages
General professional experience (section 2.1.3 of the assessment grid):	12 years of professional experience as consultant, project manager or project engineer in the energy sector or chemical process plant industry

Specific professional experience (section 2.1.4 of the assessment grid*):*	4 years of professional experience working on PtL/e-fuels projects (4 points) 4 years of professional experience working on hydrogen projects (4 points) 4 years of experience on techno-economic feasibility assessments of industrial projects (2 points)
Leadership/management experience (section 2.1.5 of the assessment grid):	6 years of experience leading multi-disciplinary teams and managing budgets/timelines; demonstrated experience as project director/manager on international assignments.
International professional experience outside the country/region of assignment (section 2.1.6 of the assessment grid):	3 years of professional experience in OECD countries outside DACH
Professional experience in the country/ region of assignment (2.1.7 of the assessment grid):	3 years of professional experience in East Africa, Southeast Asia or South America (in accordance with UN DESA Statistics Division)
Experience in the field of development cooperation (section 2.1.8 of the assessment grid):	1 year of experience in development cooperation projects
Other (section 2.1.9 of the assessment grid):	6 years of technical consultancy experience for industrial clients (3 points) 4 years of professional experience in quality management of FEL engineering documents (3 points) 3 years of professional experience in industrial project development (2 points) 3 years of professional experience in EPC project management (2 points)

Expert 2: Pool 1 'Technical & Engineering' with minimum 3, maximum 5 international experts (section 2.2 of the assessment grid)

A CV for each expert must be added to the tender. A maximum of 5 CVs will be considered for the evaluation.

The actual number of experts assigned from the pool may differ from the number of experts required in section 4 of the Terms of Reference. For experts not named in the tender, GIZ must confirm before the assignment that their qualifications are equivalent to those of the short-term experts proposed in the tender.

Tasks of the expert pool

- Support the Team Leader in the overall implementation of the assignment across all Work Packages (A–D) described in chapter 2 “Tasks to be performed by the contractor”.
- Provide technical input and deliverables for plant concept definition, feasibility study, engineering package development, and technical parts of EPC tender documents.
- Provide assessments and consultancy to Partners on specific technical inquiries in meetings or in writing
- Prepare and/or review technical reports and presentations, including participation in Partner workshops and review rounds.
- Ensure technical deliverables are consistent, traceable (assumptions → design basis → outputs), and suitable for decision-making and tender readiness.
- Report writing and presentation of results to Partners.

Qualifications of the expert pool

Education/training (section 2.2.1 of the assessment grid):	All experts with a university degree (e.g. ‘master’s or German Diplom’) in one of the following engineering fields: process, chemical, mechanical, energy, environmental, electrical)
Language (section 2.2.2 of the assessment grid):	All experts with knowledge of *English, C1*-level in the Common European Framework of Reference for Languages
General professional experience (section 2.2.3 of the assessment grid):	All experts with 7 years of professional experience in the petro-chemical or energy sector.
Specific professional experience (section 2.2.4 of the assessment grid):	Please provide a table indicating which of the following criteria are covered by which experts. (Only experts listed in this table and no more than the indicated number of experts per criteria will be considered for evaluation.): 1. 2 experts with each 5 years of professional experience in engineering (FEL-2/FEL-3/Detail engineering level) of process industry plants including preparation of process engineering documents (e.g. BoD, PFDs, Heat&mass balances, P&IDs, equipment lists/datasheets) (3 out of 10 points). 2. 2 experts with each 5 years of professional experience in process simulation of PtL routes such as methanol, methanol-to-kerosene, Fischer–Tropsch (including upgrading/refinery interfaces where applicable) (3 out of 10 points). 3. 2 experts with each 5 years of professional experience in Design of electrolysis systems, H2 processing & storage systems (2 out of 10 points). 4. 1 expert with 5 years of professional experience in CCU system design (DAC, amine wash) and processing of

	biogenic carbon sources (agricultural residues, sewage water, biogas) (1 out of 10 points). 5. 1 expert with 5 years in Renewable energy (PV, Wind, BES) plant design, project development and sector coupling (1 out of 10 points).
Leadership/management experience (section 2.2.5 of the assessment grid):	– Not applicable –
International professional experience outside the country/region of assignment (section 2.2.6 of the assessment grid):	All experts with 3 years of professional experience in OECD countries outside DACH
Professional experience in the country/ region of assignment (2.2.7 of the assessment grid):	All experts with 3 years of professional experience in East Africa, Southeast Asia or South America (in accordance with UN DESA Statistics Division)
Experience in the field of development cooperation (section 2.2.8 of the assessment grid):	– Not applicable –
Other (section 2.2.9 of the assessment grid):	Pool members need to have accomplished the following tasks in sum (The required number of studies, specifications, etc. refer to different cases. It is not sufficient if e.g. 3 experts have worked on the same case/study.): - Elaboration of 3 technical feasibility studies for PtL or PBtL plants as specified under chapter 2.2 (incl. Fischer-Tropsch and Methanol routes) (3 out of 10 points) - Elaboration of FEED engineering (FEL-3) for 3 PtL or PBtL plants as specified under chapter 2.2 (incl. Fischer-Tropsch and Methanol routes) (3 out of 10 points), - Elaboration of technical specifications for 2 EPC tenders for process plant projects (2 out of 10 points), - Elaboration of site development studies for 2 RE or PtX projects at FEL-2/AACE Class 4 level (2 out of 10 points).

UN DESA regions are defined as East Africa, Central Africa, North Africa, Southern Africa, West Africa, South America, the Caribbean, Central America, North America, Central Asia, East Asia, South Asia, Southeast Asia, West Asia/Middle East, Eastern Europe, Northern Europe, Southern Europe, Western Europe, Australia, Melanesia, Micronesia and Polynesia; refer to USND methodology for country assignment.

Expert 3: Pool 2 'Economic, procurement and regulatory experts with minimum 3, maximum 4 international experts (section 2.3 of the assessment grid)

A CV for each expert must be added to the tender. A maximum of 4 CVs will be considered for the evaluation.

The actual number of experts assigned from the pool may differ from the number of experts required in section 4 of the Terms of Reference. For experts not named in the tender, GIZ must confirm before the assignment that their qualifications are equivalent to those of the short-term experts proposed in the tender.

Tasks of the expert pool

- Support the Team Leader in implementation across all Work Packages (A–D) on commercial, economic, procurement, and contractual aspects as described in chapter 2 “Tasks to be performed by the contractor”.
- Prepare and/or quality-assure techno-economic and financial models (CAPEX/OPEX, cashflow, profitability metrics) and ensure consistency with the technical basis.
- Provide expertise and consultancy on PtL off-take, market regulations and certification schemes (EU, others), project financing and financial support instruments
- Support preparation of procurement and tender strategy, EPC tender documents (commercial, contractual and legal terms, risk management), bidder qualification and evaluation aligned with Partner procurement procedures and international standards.
- Provide structured inputs for risk allocation, warranties/guarantees, acceptance testing framework (commercial implications), tender schedules, and bidder qualification/evaluation methodology.
- Report writing and presentation of results to Partners, presentation materials and support Partner workshops/review rounds.

Qualifications of the expert pool

Education/training (section 2.3.1 of the assessment grid):	All experts with a university degree (e.g. ‘master’s or German Diplom’) in Industrial Engineering, Economics, Finance, Energy Economics, Business Administration, Law
Language (section 2.3.2 of the assessment grid):	All experts with knowledge of *English, C1*-level in the Common European Framework of Reference for Languages
General professional experience (section 2.3.3 of the assessment grid):	All experts with 6 years of professional experience in the energy or process industry sector
Specific professional experience (section 2.3.4 of the assessment grid):	Please provide a table indicating which criteria are covered by which expert. (Only experts listed in this table and no more than the indicated number of experts per criteria will be considered for evaluation.): 1. 2 experts with each 5 years in economic modelling and cost estimation of energy/process plant projects (LCOX,

	NPV, IRR, sensitivities; scenario definition, documented assumptions) (3 out of 10 points). 2. 1 expert with 4 years in consultancy on certification of PtX projects and EU RED/RFNBO regulatory framework (2 out of 10 points). 3. 1 expert with 4 years in Procurement strategy development for complex industrial/energy projects (tendering approach, packaging, market engagement, bidder qualification and evaluation methodology) (2 out of 10 points). 4. 1 expert with 4 years in EPC tender preparation (ITB, evaluation criteria, tender schedules, clarifications/addenda management concepts) and EPC contractual terms preparation (performance guarantees, LDs, warranties, securities, acceptance criteria; interface with technical requirements) (2 out of 10 points). 5. 1 expert with 5 years in Project finance structuring and project finance consulting (1 out of 10 points).
Leadership/management experience (section 2.3.5 of the assessment grid):	– Not applicable –
International professional experience outside the country/region of assignment (section 2.3.6 of the assessment grid):	All experts with 3 years of professional experience in OECD countries outside DACH
Professional experience in the country/ region of assignment (2.3.7 of the assessment grid):	– Not applicable –
Experience in the field of development cooperation (section 2.3.8 of the assessment grid):	– Not applicable –
Other (section 2.3.9 of the assessment grid):	– Not applicable –

The tenderer must assign all the proposed experts to the required qualifications and clearly present them in a separate table preceding the CVs. The summary presentation must include a listing of which technical expert is assigned for which pool and which expertise should be considered for the technical evaluation. The summary presentation must mention only qualifications that are actually indicated in the CVs. Professional experience must be evidenced by meaningful references in the CVs. It is advisable to make explicit reference to each example of professional experience.

Soft skills of team members

In addition to their specialist qualifications, all team members are also expected to have the following qualifications:

- Team skills
- Initiative
- Communication skills
- Sociocultural and intercultural skills
- Efficient partner- and client-oriented working methods
- Interdisciplinary thinking

Soft skills are not evaluated.

5. Costing requirements

In your tender, please do not deviate from the specification of inputs required in these ToRs (the number of experts and expert days, the budget specified in the price schedule). This is part of the competitive tender and is used to ensure that the tenders can be compared objectively. Please note: only services that were commissioned by GIZ and rendered by the contractor will be remunerated. We would also like to point out that it may not be necessary to make use of the total number of proposed expert days.

5.1 Assignment of experts

The number of expert days corresponds to full working days.

Expert	Expert days in the country of residence /remote	Availability of expert in the country of assignment* in expert days	Expert days in total	Consecutive stay > 3 months (see General Terms and Conditions, section 3.6.2)	Number of international flights	Number of national flights
1. Expert 1 / Team lead:	49	32	81	No	8	0
2. Pool 1: 'Technical & Engineering' with minimum 3, maximum 5	434	60	494	No	11	0

international experts						
3. Pool 2: 'Economic, procurement and regulatory experts with minimum 3, maximum 4 international experts	259	60	319	No	11	0
Backstopping	Not applicable	Not applicable	Not applicable			

5.2 National administrative staff

– Not applicable –

5.3 Travel expenses

5.3.1 Travel – sustainability considerations

GIZ would like to reduce greenhouse gas emissions (CO_2 emissions) caused by travel. When preparing your tender, please incorporate options for reducing emissions, for example by selecting the lowest-emission booking class (economy) or using means of transport, airlines and flight routes that are more CO_2-efficient. For short distances, travel by train (second class) or e-mobility are the preferred options.

CO_2 emissions caused by air travel must be offset. GIZ specifies a budget for this, through which the carbon offsets can be settled against evidence.

There are many different providers in the market for emissions certificates, and they have different climate impact ambitions. The Development and Climate Alliance has published a list of standards (only in German available). GIZ recommends using the standards specified there.

5.3.2 Travel expense requirements

Total travel expense budget: EUR 94,900

Budget for CO2 offsets for flights: EUR 2,100

An unalterable budget for CO2 offsets for settlement against evidence is specified.

As the number and duration of the business trips is not yet clear, the above-mentioned unalterable travel expense budget for all trips in Germany and abroad for all experts is specified in the price schedule. The budget contains the following travel expenses:

- Per-diem allowances and accommodation allowances
- Flights and other transport costs
- Ancillary travel expenses (visa, etc.)

The costs are reimbursed as a lump sum (per-diem allowances up to the maximum amounts permissible under tax law for each country) as set out in the country table in the circular from the German Federal Ministry of Finance on the reimbursement of travel expenses (see https://www.bundesfinanzministerium.de), or on presentation of evidence (airfares and other main transport costs).

Notes on the settlement of accommodation allowances outside Germany:

- Accommodation allowances up to the maximum amounts permissible under tax law as per the BMF circular on travel expense reimbursement for the country of travel will be reimbursed in the **amount evidenced**.
- Accommodation allowances outside Germany that unavoidably exceed the maximum amount permissible under tax law as stipulated in the BMF circular on travel expense reimbursement (e.g. due to security requirements) **can only be settled against evidence on presentation of a written individual justification**.

All travel activities must be agreed in advance with the project manager. Travel expenses must be kept as low as possible.

5.4 Materials and equipment

– Not applicable –

5.5 Operating costs in the country of assignment

– Not applicable –

5.6 Workshops, education and training

The contractor runs the following workshops and trainings:

- 1 Workshop in Country 1
- 1 Workshop in Country 2
- 1 Workshop in Country 3
- 1 Workshop in Germany

Workshop budget: EUR 20.000

The fixed, unalterable budget above is earmarked for workshops and entered in the price schedule. We expect that most of the trainings and workshops with partners will be conducted at their premises or GIZ offices and most costs will be covered by the partner and/or GIZ.

The workshop budget is intended for limited cases where the partner is unable to organize the full logistics for a workshop or training, or parts of it. In such cases, the budget may cover part of the following costs related to the planning and implementation of one workshop (Reimbursement against evidence):

- Room/ Venue hire
- Technical systems
- Translation/interpreting services
- CateringWorkshop materials
- Travel expenses for partner experts (subsistence, accommodation, travel costs)
- Other costs relating to the workshops

The budget does not include the fees and travel expenses for the contractor's experts incurred in connection with the planning and running of the workshops. These are covered by the corresponding number of expert days and travel expenses (see sections 5.1 and 5.3 above).

5.7 Local contributions

– Not applicable –

5.8 Other costs

– Not applicable –

5.9 Flexible remuneration item

Budget for flexible remuneration: EUR 98,150

The fixed, unalterable budget above is earmarked in the price schedule for flexible remuneration. Flexible remuneration is intended to facilitate the flexible management of the contract by the commission manager at GIZ. The contractor can make use of the funds in accordance with section 3.6.5.7 of the General Terms and Conditions.

6. Requirements on the format of the tender

The structure of the tender must correspond with the structure of the ToRs. It must be legible (for example Arial, font size 11 or larger) and clearly formulated. The technical tender must be written in English.

The technical-methodological concept of the tender (section 3 of the ToRs) must not exceed 30 pages (not including the cover page, list of abbreviations, table of contents, brief introduction

and CV for the backstopper). Additional annexes not requested will not be assessed. External content (e.g. links to websites) will also be disregarded.

The CVs of the staff proposed in accordance with section 4 of the ToRs must be in the EU format and not more than four pages in length. More pages will not be considered.

The CVs must clearly and unequivocally show what position the proposed person held, which tasks they performed and how long they worked during which period in the specified references. **The references contained in the CVs must therefore include the following information:**

- Name of the company/organisation/reference project in which the expert worked
- Position held and task(s) performed by the expert in the company/organisation/reference project
- Work outcomes or products produced by the expert, or expert's contribution to the completion of these outcomes and projects (if relevant)
- Duration of the expert's assignment in the company/organisation/reference project per calendar year in full-time expert days, weeks or months (for example: 2019: 2 months, 2020: 10 months, 2021: 1 month)
- Leadership experience/management: clear information on the reference projects or fixed positions within the company/organisation in which the requirements specified in section 4 were fulfilled (for example, period, number of persons for whom the expert had disciplinary responsibility, project budget) (if relevant)
- International professional experience/professional experience in the country of assignment: clear information on the reference projects or fixed positions in the company/organisation in which the requirements specified in section 4 were fulfilled (for example, actual duration of assignment on the ground in full-time expert days, weeks or months) (if relevant)

In order to facilitate the assessment, we request that you number the references sequentially and provide only references that are clearly related to the object of this tender.

7. Options or follow-on contract

7.1 Option to expand the service content/extend the contract term pursuant to section 132 (2) no. 1 German Act against Restraints of Competition (GWB)

GIZ can exercise the following options if it wishes to expand the tendered services. This is described in detail below.

Nature and scope:

While retaining the overall character of the contract, there is a possibility of GIZ continuing to obtain the services specified in section 2 of these Terms of Reference and/or of expanding the contract to include further services of the same kind. The overall contract term must not exceed three times the original contract term, and the overall contract value must not exceed twice the original contract value.

Precondition:

GIZ's commissioning party extends and/or provides additional funding for the current project or commissions a follow-on project or an agreement is concluded to provide cofinancing for the measure.

7.2 Option to procure materials and equipment pursuant to section 132 (2) no. 1 German Act against Restraints of Competition (GWB)

- Not applicable -

7.3 Follow-on contract pursuant to Section 14 (4) no. 9 German Ordinance on the Award of Public Contracts (VgV)

Pursuant to Section 14 (4) no. 9 VgV, GIZ reserves the right to award a follow-on contract to the contractor in order to procure similar services.

Scope of possible services:

The term of the follow-on contract must not exceed twice that of the original contract, and the value of the follow-on contract must not exceed twice that of the original contract.

Condition: The above option is subject to GIZ receiving a commission from the commissioning party or the conclusion of an agreement for cofinancing of the measure. Any follow-on contract must be awarded within three years of the award date of the original contract.

A follow-on contract under 7.3 can be considered only as an alternative to the option in 7.1.