Improvement of Turnaround Maintenance Project Execution Through Long-Term Specific Contracting Strategy (A Case Study: Gas Processing Plant in Indonesia)

Khusnah Arthamin Nikmatul, Gatot Yudoko, and Aries F. Firman

ABSTRACT

Turnaround is crucial in maintaining reliability and ensuring the safety of the production operation facility in Central Processing Plant "CPP Senoro of JOB Tomori, as well as in minimizing downtime and Loss of Production Opportunity (LPO), which impact the performance and commitment of the Company to all stakeholders. For this reason, an improvement in total time utilization in the third Turnaround in 2024 is a significant concern. The researchers conducted qualitative research through interviews with several key personnel in the organization as respondents to comprehend the overall complexities of the TAR Project, which often occurred while carrying out the execution, because they might lead to failure to optimize the utilization of the total time (shutdown). Researchers also evaluate how the preferred contract strategy can be an alternative solution to minimize those constraints. This research aims to provide alternative solutions and recommendations to Company to optimize the total time (shutdown) utilization through a specific long-term contract strategy. The research considers specific long-term "incumbent" contracts as an alternative solution and the most suitable contract strategy to execute the third turnaround project in 2024.

Keywords: contracting strategy, oil and gas Turnaround, TAR, TAR project management implementation, turnaround.

I. INTRODUCTION

Turnaround or shutdown maintenance is one of the maintenance management strategies common in Oil and Gas Processing plants to improve the availability and reliability of the plant. During the plant production process, repairs and management of change (MoC) activities are often carried out, which can happen when the plant is online. In addition, some activities cannot be carried out in online conditions, such as periodic inspection or repair of specific major units of equipment, which cannot be taken out of operation unless the entire processing shutdown, so it is necessary to carry out integrated scheduling for all maintenance or repair activities while the processing plant is offline. This integration schedule of repair, upgrade and maintenance activities during the shutdown period is known as the Turnaround Maintenance (TAR) Project.

This research is to evaluate the TAR project execution plan in The Central Processing Plant (CPP) Senoro of JOB Pertamina – Medco E&P Tomori Sulawesi (JOB Tomori) or “Company”. JOB Tomori, one of Indonesia's most significant gas producers, is strongly committed to maintaining production performance and ensuring gas supply availability in a sustainable manner to all stakeholders. The main objectives to carry out regular TAR projects every three years are included, namely, to maintain the asset integrity of the CPP Senoro and to minimize downtime.

The equipment and system critical to maintaining the asset integrity of the facility are inspected, tested, and repaired as necessary to ensure that they are in good performance, safe and reliable to operate. TAR projects are scheduled in advance to minimize downtime by ensuring all necessary resources, materials, and equipment are available before a shutdown begins, thereby reducing the time required for maintenance activities and allowing the facility to be back online as quickly as possible.

The company believes that the TAR project is essential to asset integrity management. Therefore, regularly carrying out the TAR project will maintain the reliability and safety of production facilities and equipment while minimizing downtime and maximizing production efficiency. Given the importance of the TAR project for the ongoing operations of the CPP Senoro, proper preparation and well execution are necessary so that the TAR project can run well by the agreed time frame, scope of work and budget.

II. BUSINESS ISSUE

To meet all stakeholders’ expectations, Company pays more attention to the incoming third TAR Project preparation for execution planning. Company carries out TAR projects periodically every three years. Currently, Company will prepare the execution planning for the 3rd TAR project in 2024, which stakeholders have scheduled and agreed upon in
October 2024. Learning from the previous TAR execution, Company highlighted the need for improvement in engaging the contractor at the earliest stage of TAR Project Preparation; hence the constraints during execution can be avoided.

This research aims to provide alternative solutions and recommendations to optimize the total time utilization of the 3rd Turnaround execution through a long-term specific contracting strategy. The research considers incumbent long-term contracts of Construction, Fabrication, and Installation Services (CFI) as an alternative solution and the most suitable contract strategy to execute the Turnaround. Several research questions need to address in providing further solutions and recommendations:

1) What are the most frequent constraints/challenges encountered during Turnaround execution which might lead to failure in meeting its targets of optimizing the scope of work to be carried out for further improvements?
2) How can the pros/cons of using incumbents be evaluated concerning the contract strategy?

III. THEORETICAL FOUNDATION

Turnaround or shutdown maintenance is one of the maintenance management strategies where all equipment maintenance which requires shutdown is integrated into a specific period—the implementation of Turnaround or maintenance activities that require the shutdown of production facilities.

A. Maintenance Management

Maintenance is an essential function in a processing plant facility. It is an effort to use production facilities or equipment to guarantee production continuity and to create reliable and safe operating conditions. In addition, production facilities/equipment are not damaged or outage as long as they are used within the planned period.

Maintenance Management is carried out effectively and efficiently, starting from the planning, implementation, reporting, and evaluation stages by optimizing the workforce, materials management, documentation, performance appraisal, and benchmarking per good maintenance management practices.

According to PTK 041 SKK Migas, maintenance general guideline of oil and natural gas production facilities, maintenance management is carried out effectively and efficiently starting from the stage of planning, implementing, reporting, and evaluating by optimizing personnel work, material management, documentation, performance appraisal, comparative review and Continuous Improvement through the implementation of appropriate knowledge management maintenance with the principles of good maintenance management practices, and upholding Health, Safety, Security and Environment (HSSE) applicable to the upstream oil and gas business activities.

The mechanism for submission of maintenance activity plans must obtain approval from SKK MIGAS, a Special Task Force for Upstream Oil and Gas Business Activities. The Company must submit the proposed maintenance plan through an official letter to SKK Migas.

B. Turnaround Maintenance “TAR Project”

Lenahan (1999) defines a turnaround maintenance project as "a planned and scheduled activity that involves stopping a unit process for a specified period to perform maintenance, inspection, and repair activities.” Lenahan emphasizes that the turnaround maintenance project is an essential component of the overall maintenance strategy and requires a comprehensive approach that includes planning, schedule resource, resource allocation, and risk management.

Knowing that Turnaround activities have a significant business impact in terms of work safety, potential loss of production opportunity and plant reliability of CPP Senoro. The turnaround activities must be in a comprehensive manner from preparation to implementation to achieve the following objectives:

1) Carry out TA activities safely, securely and on time to sustain production in meeting stakeholders’ expectations.
2) Achieve the reliability and integrity of the plant after the Turnaround.
3) Carry out Turnaround work per established standards, rules, and regulations applied in industry and country.

According to Lenahan in the book Turn Around, shutdown, outage management, Effective Planning and step execution of planned maintenance operation, Turnaround is usually considered to be an engineering event of relatively short duration, but it is only one segment of a cyclical process with four phases – initiation, preparation, execution and termination – each of which has its own specific set of critical issues and activities. It is rightly referred to as a cycle because the initiation phase of the next Turnaround should follow on from the termination phase of the current one.

C. Project Management Implementation

Tom Lenahan explains that turnaround projects are indeed projects because they meet the criteria of a project. It states that a project is a single undertaking with a definite beginning and end, designed to achieve specific goals or objectives and requiring a set of resources and a plan to achieve those objectives. Lenahan explains that turnaround projects are unique endeavours with definite beginning and end points, designed to achieve specific goals or objectives and require a set of resources, efforts and plans to achieve that objective. He points out that turnaround projects require a dedicated project management team to oversee and manage the project. Similar project management processes and techniques are used in other industries and applied to turnaround projects. Thus, according to Lenahan, turnaround projects are projects because they have a defined scope, schedule, budget, and goal setting and require a set of resources and plans to achieve the objective, just like any other project. Lenahan also stresses the importance of effective planning, project management and safety consideration in ensuring the success of the TAR Project.

As identified above, project management applies to TAR management. However, operational differences set them
apart from other EPC projects (Obiajunwa, 2010); one of the primary differences is measuring times. The project measures time in days, weeks and months, but Turnaround measures time in hours or shifts (Lenahan, 1999; Levitts, 2004; Ertl, 2005). Consequently, TAR Project requires a specialized project management methodology to succeed (Ertl, 2005).

D. TAR Contracting Strategy

The contracting process is a planning and implementation process that is used to facilitate contracting strategy development, contractor/supplier selection, and contract management at any stage of the project (BP MPCP Project guideline).

Lenahan (1999), Duffuaa and Daya (2004), and Levitt (2004) identified five different types of contracts awarded. The types of contracts are defined separately below, but a complex project such as a turnaround will consist of a combination of any (or all) of the options shown below:

1) Single contractor-managed contract;
2) Management fee and reimbursed labour cost;
3) Fixed–price packages;
4) Call-off contracts (on schedule rates);
5) Day-work rates.

With the above in mind, it would require careful and more attention to creating a contracting strategy for the contractor package for TAR. The main factors influencing the selection of contractors are the work scope and how it’s packaged, the turnaround organization, the type of contract awarded and the availability of contractors (Lenahan, 1999).

Fig. 2. Contracting Process.

Aligned with the researcher’s consideration to evaluate how the specific long-term “incumbent” contract can be an alternative solution of contracting strategy to execute the TAR Project, Obiajunwa (2010) also mentioned the literature IAEA (2002, 2006) and Lowell (2022) suggested a good practice to set up long-term contracts with partnership agreement including the contractor taking full ownership for specified shutdown tasks with contracting services companies-contracting specialist.

IV. METHODOLOGY

The researcher used A qualitative method to gather data and analyze through related documents and interviews to gain information from all Project key personnel and involved stakeholders to comprehend the complexities of TAR Project execution in CPP Senoro of Company by knowing the most common constraint encountered that might lead to failure in optimizing total time utilization, and also to evaluate how the preferred contract strategy can be an alternative solution to minimize the constraint so that the optimization of total time utilization can be achieved.

The research design with the qualitative method starts by collecting primary data and secondary data. The primary data are based on interviews which were held from three clusters. The clusters consist of the first cluster from the plant organization of the internal Company as an executor, the second cluster from the non-plant organization of the internal Company as a customer and support, and the third cluster from the external Company as support from the third party.

The technique that is used to collect data for this research is primary data and secondary data. The purpose of using those data is to ensure the accuracy of the data itself. The data collection steps include setting the boundaries for the study, collecting information through semi-structured or unstructured observations and interviews, documents, and visual materials, and establishing the protocol for recording information (Creswell, 2014).

The data collection step is interviewing the four groups of respondents with the question list provided by the author and, second, collecting information related to the TAR project in journals and related books. The purpose of selecting four groups of stakeholders who are involved and have an interest as well as expectations of the success of turnaround execution is to explore the data related to turnaround project experiences and their points of view. Each respondent group might have different intentions and objectives regarding the turnaround activities process.

Fig 4. Methodology of research.

V. RESULTS

Based on coding and interpretation of interview results, there are Major findings of 13 codes which result from the lean coding process by a shortlist of frequently mentioned (contributed by min 7 respondents) and total repetition at minimum ten times during the interview session. The mind mapping then re-constructs to create a new structure, which shows two categories of 13 sub-categories; the summary of the major finding is as per Table I.
TABLE I: MAJOR FINDINGS BASED ON INTERVIEW RESULT

<table>
<thead>
<tr>
<th>No</th>
<th>Category</th>
<th>Sub-category</th>
<th>Optimum total time utilization</th>
<th>Related to RQ</th>
<th>Respondent</th>
<th>Countr.</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Planning</td>
<td>Effective project schedule management</td>
<td>Common Constran/Key success factor</td>
<td>(4) (5) (10) (1) (3) 1 1 (2)</td>
<td>8</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Planning</td>
<td>Effective scope/activities prioritization</td>
<td>Common Constran/Key success factor</td>
<td>1 1 (5) (2) (5) (4) (3) 1 1</td>
<td>8</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Resources Management</td>
<td>Effective &amp; efficient utilization of labour, material and equipment</td>
<td>Common constrain/Key success factor</td>
<td>(2) 1 (5) 1 1 1 1 (2) (4)</td>
<td>7</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Procurement</td>
<td>The most common constraints encountered in the TAR</td>
<td>Alternative solution</td>
<td>1 1 (2) (7) (4) (4) (2) (2) 1 7</td>
<td>19</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Procurement</td>
<td>Incumbent/existing contracts utilization - pros</td>
<td>Incumbent/existing contracts utilization - pros</td>
<td>(5) (3) (4) (7) (4) (3) 1 (2)</td>
<td>7</td>
<td>19</td>
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<tr>
<td>6</td>
<td>Procurement</td>
<td>Incumbent/existing contracts utilization - pros</td>
<td>Incumbent/existing contracts utilization - pros</td>
<td>1 1 1 1 1 1 (2) 1</td>
<td>7</td>
<td>9</td>
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<td>7</td>
<td>Procurement</td>
<td>Incumbent/existing contracts utilization - pros</td>
<td>Incumbent/existing contracts utilization - pros</td>
<td>(3) 1 (4) (4) (4) (1) 1</td>
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<tr>
<td>8</td>
<td>Procurement</td>
<td>Incumbent/existing contracts utilization - cons</td>
<td>Incumbent/existing contracts utilization - cons</td>
<td>1 (3) 1 (3) 1 (3) 1 1 (2)</td>
<td>7</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Procurement</td>
<td>Incumbent/existing contracts utilization - cons &amp; pros</td>
<td>Incumbent/existing contracts utilization - cons &amp; pros</td>
<td>(4) (3) (6) 1 1 1 1</td>
<td>7</td>
<td>17</td>
<td></td>
</tr>
</tbody>
</table>

Based on the discussion of the significant finding in the interview, researcher’s observation and literature review, the following are the significant common constraints encountered during the turnaround in Company that impact less optimized total time utilization and Pro’s Cons evaluation of incumbent long-term contract “CFI” as an alternative contract strategy, to minimize common constraints/challenges, so that the third turnaround project execution can be more optimized in total time utilization.

A. Common Constraints Encountered

From the nine respondents in this research, four constraints or challenges are the most common constraints /challenges that impact less optimized Turnaround execution. They were mentioned many times by the majority, which is more than seven respondents during the interview session. Those four constraints are summarized as the following descriptions:

1. Effective project schedule planning refers to the challenge of obtaining an optimum total time utilization of Turnaround execution.
2. Scope Management planning refers to challenges in defining an effective Scope Prioritization.
3. Good resource management refers to challenges to effectively allocating and utilizing resources (labour/manpower, material, and equipment).
4. Timely Contract readiness refers to challenges having material and services (including other resources) in place timely to carry out the TAR work scope.

Lenahan (2009) outlines that effective planning is essential for a successful turnaround, including developing a detailed scope of work, identifying required resources, establishing a realistic schedule, and ensuring effective communication among all stakeholders. The researcher also wants to convey that the common constraints encountered in the TAR Company Project are interrelated or influenced by one another. Overall, a TAR project’s lack of effective planning can positively impact the quality of (unrealistic) schedule, efficient resource allocation management, ineffective scoping management, or incomplete scoping coverage.

To mitigate the impact, they are critical to allocating sufficient time and effort in comprehensive planning, including preparing detailed schedules and clearly defining and managing an effective project scope or work scope that has real priority to be implemented, accurately assessing resource requirements, and selecting the contracting as well as the procurement strategy which must be in accordance with the scope of work or the TAR project need.

B. Alternative Solution & Recommendation – Utilizing Incumbent Contract as the Most Suitable Long Term Contract Strategy

Company has a long-term contract called Construction, Fabrication, and Installation Services "CFI", with a three-year contract since December 2022. The contract's scope includes supporting services for operations, maintenance, construction work, supply of materials, equipment, tools, personnel, and other services related to design, fabrication, installation, testing, and pre-commissioning/commissioning. The contract is on a call basis and is the main executor for all routine programs related to operations and maintenance, fabrication and construction. The services include but are not limited to providing materials, tools, equipment and manpower.

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Most respondents have proposed this contract as an alternative solution to the long-term contract strategy to execute the 3rd TAR Project in 2024. However, evaluating the Pros and Cons is needed to formulate the forward actions plan and strategy as the recommendations to COMPANY. The Pros and Cons are summarized and shown in Table II.

The availability and readiness of the CFI contract since the beginning of the planning/preparation phase enable the contractor to start making better project management planning as required. CFI contractors can engage early with local stakeholders to minimize any social issue (local manpower hiring, transportation and local resources optimization requirement).

### Table II: The PROs & CONS Based on Interview Result

| Incumbent Long-Term Contracts (Construction, Fabrication & Installation Services Contract) |
|---|---|
| **Pro’s** | **Cons’** |
| Early contractor engagement & Involvement | Contractor's commitment issue in completing TAR with the performance set by the Company. |
| Contractor Familiarity & Relevant Experiences | Contractor Performance - (Qualification, Competency & Capability) does not match with TAR work scope in 2024. |
| The flexibility of the contract (Scope & Duration) | |
| Timely contract (Goods & services) readiness | |

#### 1) The PROs

Familiarization with the Facilities and Systems of the plant, which has systems, infrastructure, layout, and geographic location, will have a good start in understanding the ins and outs of the location, including access points, utility connections, and potential obstacles, both technical and non-technical, such as social risks that require proper mitigation and prompt handling. It will enable them to develop more accurate and effective project plans and realistic schedules, anticipate technical and non-technical challenges, and propose effective solutions.

The services of the contract include but are not limited to providing materials, tools, equipment, and manpower, so in terms of scope of work, contracts are more flexible with long-term contract periods, and the type of CFI contract can accommodate changes or additional scope of work required by TAR project through an amendment contract mechanism.

The earlier the information regarding the scope of the frozen work is given to the contractor, the better the contractor can initiate resource planning in accordance with the Company's contract/procurement strategy. So that this can make the contractor able to deliver services and material needs more on time.

#### 2) The CONs

First, the Contractor's Commitment issue in completing TAR with the performance set by the Company. As explained above, CFI is the main contractor to execute routine programs related to operations, repair, modification, maintenance, fabrication, Etc., in Company; this will cause a conflict between the work program target and the TAR project, as HA has stated in the interview. Conflict resource utilization between the completion of routine work and the TAR project will occur if there is no KPI performance implementation with clear financial consequence impact on the contract order. To mitigate this, resources and project management organizations are dedicated to implementing TAR in CFI contracts, which is highly needed so that routine operational work can continue without causing a conflict between resource allocation and utilization. Dedicated Project Management and specific resources for the TAR project should be clearly stated in the Work Order agreement issued by Company to the CFI contractor.

Second, Contractor Performance issues related to their qualification, competency and capability do not match with the TAR work scope or task list in 2024. In order to mitigate any contractor performance issue, Company should consider doing the following:

1. Conduct a comprehensive review of the CFI contract to ensure that the CFI contract clearly defines the scope of work that is similar to or matches with TAR work scope, deliverables, timelines, quality standards and performance expectations, including provisions for performance monitoring, correction for non-good performance, and termination clauses if necessary.
2. Task lists requiring special qualifications and competencies will be included in the scope of other contractors, and long lead materials require specific or specialised services that CFI contractors do not cover.
3. The decision of how the TAR Project will approach the market in the procurement of Goods (material, equipment) and services (e.g., engineering, construction, construction management, Etc.) shall be described in the Project contracting/Procurement strategy document, which is part of the Project execution plan.
4. Performance Incentives and Penalties: Consider incorporating performance incentives and penalties into the contract.

#### C. TAR Project Organization Model

Adding to the above Cons – Mitigations, Company must arrange the TAR Project organization design/structure; the selected project organization model should accommodate the implementation of contracting/procurement strategy for arranging the resources needed to carry out the work scope. As Lenahan (1999), Duffuaa and Daya (2004) elaborated by Obijanwui (2010) in his journal, Organizational structure for implementing the TAR project is very important where the most suitable people with adequate skill should be selected with great care to forge the strongest possible organization for controlling the project. The shape and size of the TAR project organization will be determined by addressing the following questions.

1. Who will manage the Turnaround?
2. Who will carry out the work?
3. What will be the relationship between the two?

Company can adopt the Project organization combination design/model as follows:

1. Selecting Project TAR Manager from the Company
2. Employment a CFI contract to execute the general tasks or significant portions of the work scope of Turnaround, with the role and responsibility as follows:
   a. As the main contractor, they are responsible for the major work packages portion as instructed by
Company TAR Project Management Team – TAR Company PMT.

b. and also, to manage all Company's supply material that Company has handed over and ensure resource availability and readiness (Goods and services provided by all parties, i.e., their subcontractors or company supply material).

3) It is hiring other contractors for any specialized, specific services requiring warranty/licensor (equipment, tools, materials) not included in the CFI contract. The number of other contractors depends on the number of specialized materials and specific services needed that are identified and documented in the TAR project contracting /procurement strategy based on the TAR Works scope. The more significant the number of other contractors and vendors, the higher the interface risk potential could be.

TAR Project Organization model according to the design of the combination above.

As mentioned above, the number of other contractors depends on the number of specialized materials and specific services identified and documented in the TAR project contracting /procurement strategy based on the TAR Works scope. The more significant the number of other contractors and vendors, the higher the interface risk potential could be. In a turnaround project, it is inevitable to hire several contractors to carry out several different work packages because the task list or scope requires specific types of work, tools, equipment, or services requiring specialization. Piantanida et al. (2014) outline that the multiple work packages option implies that the Company can coordinate the execution of several different contracts (contractors), all contributing to the overall scope of work of the project.

The interface risk can be minimized; Piantanida et al. (2014) suggested Company to take actions of the following:

1) Develop and assign a dedicated Interface Management team, a well-established interface management process, and an appropriate toolset.
2) Develop interface management procedures within the contractual agreements signed between the Company and the contractor. The procedure specified the official process followed and the tools to exchange information.
3) Interface risk increases communication complexities, so to mitigate the risk, the TAM PMT should ensure the Project communication plan is in place and agreed upon by the CFI contractor as the main contractor, all other contractors and all related parties. This agreement indicates their acceptance and commitment to the outlined communication strategies and guidelines.

VI. CONCLUSIONS AND RECOMMENDATIONS

The Construction, Fabrication and Installation services contract " CFI " can be an alternative solution and the most suitable contract strategy that can minimize common constraints/challenges encountered during the Turnaround in Company so that the execution of the 3rd Turnaround project execution in CPP Senoro can be more optimized. The followings are the considerations factors:

1) The plant familiarity and experience of the CFI Contractor are favourable factors in selecting a contractor for a TAR project. They will contribute to increasing project understanding, improving safety practices, planning and efficient execution because they already have a better understanding of Senoro CPP facilities, including the local social community and stakeholders to be managed, all of which can achieve a more optimal total time utilization.
2) The availability and readiness of the CFI contract during the TAR project planning phase, engagement, and communication about planning the TAR scope of work as early as possible can be made so that the contractor can start making good plans according to Company's needs.
3) The scope of the work contract is similar to the Turnaround work scope and more flexible with long-term contract periods, and the type of CFI contract can accommodate changes or additional scope of work required by the TAR project through an amendment contract mechanism.
4) The availability and readiness of the CFI Contractor at an early stage of Planning makes the Company can initiate to communicate and discuss with the CFI contractor as early as possible so that this will enable the CFI contractor to start preparing a more effective and efficient resource management plan in terms of time management, quality, and the quantity.

From the overall analysis of this study, the researcher made recommendations based on the respondents' statements, the kinds of literature and the researcher's knowledge and practical experiences. The company should carry out these recommendations to implement long-term CFI (incumbent) contracts for the execution of the 3rd TAR Project in 2024. In order to minimize typical constraints that are often encountered during Turnaround and can increase the optimization of total time utilization. Here are the final recommendations:

1) Conduct a comprehensive review of the CFI contract according to the final works scope of the TAR Project. It ensures the contract scope of work is aligned with the TAR workshop, deliverables, timelines, quality standards and performance expectations. A comprehensive review should be completed before appointing a CFI contractor as the executor of the TAR project.
2) Develop a contract/procurement strategy document to identify requirements for goods and services. This document includes the required materials and services, including the procurement method and strategy. Information from the contract/procurement strategy document.
3) Starting procurement plan of other material and services providers and ensuring to include battery limit of the scope of work to all services contractors and vendors before contract award.

4) Conduct a preliminary meeting with the CFI contractor regarding the Company's plan to appoint the CFI contractor as the main contractor for the 3rd TAR project in 2024.

5) Conduct a Kick-Off meeting with CFI Contractor to provide necessary project Information (Scope of work/work pack, Timeline, draft of organization structure, Role & Responsibilities and communication plan).

6) Carry out the process of amending the CFI contract to accommodate any technical, battery limit of the scope of work, commercial, legal, and performance/KPI aspects following its requirements as the main contractor of the TAR project.

CONFLICT OF INTEREST

The authors declare that they do not have any conflict of interest.

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