

اسم المشروع

Design & Develop 33kV Grid Substation to Feed Metro Station#02 in Riyadh City

رقم المجموعة 6

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1. Strategy

1.1. Mission:

To providing integrated and comprehensive electrical support at the highest international levels.

1.2. Vision:

To be the preferred KSA leader in electrical services.

To fund the future expansions effectively for being partner of Saudi Electricity Company.

1.3. Smart Model

INITIAL GOAL	The main goal of the project is to achieve the business case of the project and deliver a successful product
S SPECIFIC	The project team will achieve the company's goal to become a leader in implementing projects for SEC with high voltage department by delivering a 33kV grid substation to feed metro station#02 in Riyadh City within specific time, cost, &scope as per project's requirement.
M MEASURABLE	The progress is successfully met when the milestones of the project have been delivered within same specified time of delivery 30-Oct-2021, cost as set 35million SAR, and the scope as required for 33kV Grid Substation.
A ACHIEVABLE	This project will success because the team has the long experience in delivering mega projects. Also, they are PMP certified with a great knowledge, as well as the effort they can provide within project life cycle.
R RELEVANT	This project's goal is the success key for the company to open a business channel with SEC Company with high voltage department in building substations.
T TIME-BOUND	The deadline of the project is 30-Oct-2021, which is affordable and can be done.
SMART GOAL	This project aims to open a business channel with SEC Company with high voltage department in building substations and purpose to align with the company vision and strategy for next 5 years in expanding business variation and with sustainable customers like SEC. With such qualified team, this will be a great achievement.

Table 1. Smart Model

1.4. Indicators Template

This project aims to open a business channel with SEC Company with high voltage department in building substations. The purpose to align with the company vision and strategy for next 5 years in expanding business variation and with sustainable customers like SEC. The second goal is to have an income with private sectors rather than depending on governmental sectors.						Status
						On Track
Leading Indicators Description						Accountable
Earn more projects from High Voltage Department in SEC						Saudi Electricity Company
Leading Indicator Measures			Quarterly Targets (measured across four quarters to reach annual target goal)			
Stretch Goal (quantifiable best case):	120% ahead in project progress	Q1	Q2	Q3	Q4	
Target Goal (quantifiable realistic case):	105% ahead in project progress	90%	75%	80%	85%	
No.	Supporting Leading Indicators	Owner		Supporting Measures		
#.1	Satisfaction of the client for progress	Project Manager		87%		On track
#.2	Involvement of stakeholders	Project Manager		Good standing		On track
#.3	Profit margin to the project	Project Manager		- 6%		Behind
#.4	Progress of the project per month	Project Manager		4% ahead		On track
#.5	Number of materials purchased	Logistics		All materials delivered		On track

Figure 1. Leading Indicators Template

Lagging Indicators Template

This project aims to open a business channel with SEC Company with high voltage department in building substations. The purpose to align with the company vision and strategy for next 5 years in expanding business variation and with sustainable customers like SEC. The second goal is to have an income with private sectors rather than depending on governmental sectors.						Status
						On Track
Lagging Indicators Description						Accountable
Increase in the company gross income by 30%						Saudi Electricity Company
Lagging Indicator Measures			Quarterly Targets (measured across four quarters to reach annual target goal)			
Stretch Goal (quantifiable best case):	70 million SAR	Q1	Q2	Q3	Q4	
Target Goal (quantifiable realistic case):	40 million SAR	5 million	8 million	15 million	12 million	
No.	Supporting Lagging Indicators	Owner		Supporting Measures		
#.1	Value of profit 12 million	Project Manager		0.3 million		On track
#.2	Number of turnover of employees during the project	Human Resources Manager		None		On track
#.3	Number of violations from Amanah	Site Manager		6		Behind
#.4	Total amount of savings from suppliers	Purchasing Department		200,000		At Risk
#.5	Lessons learned during project	Project Team		good		On track

Figure 2. Lagging Indicators Template

1.5. Project Charter

PURPOSE OF THE DOCUMENT:

The Project Charter will serve as an *internal* document that captures high level planning information (scope, deliverables, assumptions, etc.) about the Project.

The Project Manager creates the Project Charter in the Initiation Phase of the Project, in consultation with the Business Manager. Its purpose is to recognize the existence of the project and to begin the planning process required to accomplish the Project goals. It is not intended to be shared with the customer as a formal contract or legal document.

The Project Charter is an input to the Definition Phase of the Project where much of the information contained herein forms the basis for detailed project planning.

Version 0.1

September 25, 2021

PROJECT CHARTER

Project Name: Design & Develop 33kV Grid Substation to feed Metro Station#02 in Riyadh City	Project Number: KI-SEC-2021-01
Date: 01-May-2021	Revision Number: Rev.01
Sponsor: E&Q Engineering Consultation Company	Project Manager: Sultan Alshammari

1. PROJECT GOALS

This project aims to open a business channel with SEC Company with high voltage department in building substations.

The purpose to align with the company vision and strategy for next 5 years in expanding business variation and with sustainable customers like SEC.

The second goal is to have an income with private sectors rather than depending on governmental sectors.

2. DELIVERABLES

Deliver a 33/13.8kV grid substation with following sub-deliverables:

- 3-phase transformers with capabilities of 45MVA for each.
- Connect 2 underground cables feeding from station#8071 in Malqa Neighborhood.
- Connect 2X13.8kV U/G feeders to feed Metro station#02.
- Provide 10 protection panels for (3 transformers, 2-inner U/G cables, 2-outer U/C, Substation building).
- Build GIS Room to connect all breakers and disconnectors with SF6 insulation part.
- Provide FM200 Fire extinguisher system.
- Test and commission all electrical parts.

3. SCOPE DEFINITION

The scope of work for equipment shall cover engineering design, manufacture, testing before handing-over the substation to SEC or otherwise as required, delivery of site, of all equipment as specified in the preceding policies and procedures.

The substation shall have primary and backup feeding lines to feed metro station with capability not less than 30MVA for each line.

The Company shall design and construct the transformers foundations with oil collection pit, oil trap and fire damper consisting of crushed stones laying on a galvanized steel grating.

The substation has a SCADA (Supervisory, Control & Data Acquisition) system that is controlled from the Regional Control Centers.

The Control Centers all run GE's Alstom 4.6 which is the software used for monitoring & Controlling of all the incorporated substations.

The Communication protocols currently supported by PCU 400 Systems, for data telegram exchange with Remote Terminal Units (RTUs).

4. PROJECT MILESTONES		
Item	Major Events / Milestones	Dates
1.	Develop Project Schedule	15-May-2021
2.	Submit Initial Project Design	22-May-2021
3.	<i>Submit Final Design for Approval</i>	12-Jun-2021
4.	Submit Vendors List for Approval	12-Jun-2021
5.	Submit for Materials Acceptance	22-Jun-2021
6.	Apply for Permits to start Excavation works	29-Jun-2021
7.	<i>Start Excavations and Civil works line-1</i>	01-Jul-2021
8.	<i>Start Excavations and Civil works line-2</i>	15-Jul-2021
9.	<i>Start Excavations and Civil works feeder-1</i>	15-Jul-2021
10.	<i>Start Excavations and Civil works feeder-2</i>	15-Jul-2021
11.	Start Building Substation	01-Aug-2021
12.	Submit Lines-1&2 and Feeders-1&2 for Inspection	20-Aug-2021

Item	Major Events / Milestones	Dates
13.	<i>Install 3-phase Transformers & Protection Panels</i>	25-Aug-2021
14.	<i>Test & Commission Lines & Feeders</i>	01-Sep-2022
15.	<i>Test & Commission Protection Schemes</i>	01-Sep-2022
16.	<i>Implement FAT for Final System</i>	15-Sep-2022
17.	<i>Energize the substation & connect to system</i>	30-Sep-2022
18.	<i>Submit Final Documents & As-Built Drawings</i>	15-Oct-2022
19.	<i>Close the Project</i>	30-Oct-2022
5. ASSUMPTIONS, CONSTRAINTS & DEPENDENCIES		
• Customer variation requests • Change in load forecast • Delay delivery of materials outside of KSA • Delay in approval of design and documentations • Permits delay for excavation and civil works • Change in routes • Project manager resignations, or another major team member • Loss of funds and liquidity • Failure of test or FAT at commissioning stage • Lack of spare parts • Objection at excavation stage with water pipes		

6. RELATED DOCUMENTS

- Saudi Grid Code – ECRA, 2019
- 56-SDMS-04
- 51-SDMS-01
- 31-SDMS-01
- 11-SDMS-03
- IEC- 61330
- IEC- 60529
- IEC- 60530

7. PROJECT STAKEHOLDERS

Function	Name	Role
Internal	Saudi Electricity Company	End User & Owner of Project
Internal	E&Q Engineering Consultation Company	PMO Office
Internal	Sultan Alshammari	Project Manager
Internal	Project Team	Project Team
External	Municipality of Riyadh	Permits Owner
External	Ministry of Energy	Procedures Organizer
External	Society	Operational

8. PROJECT AUTHORIZATION		
Approved by: Projects Director	Business Manager: Adel Waleed	Date: 25-Sep-2021
Approved by: CEO	Project Manager: Sultan Alshammari	Date: 25-Sep-2021

2. Governance, structure and process

2.6 Organizational structure

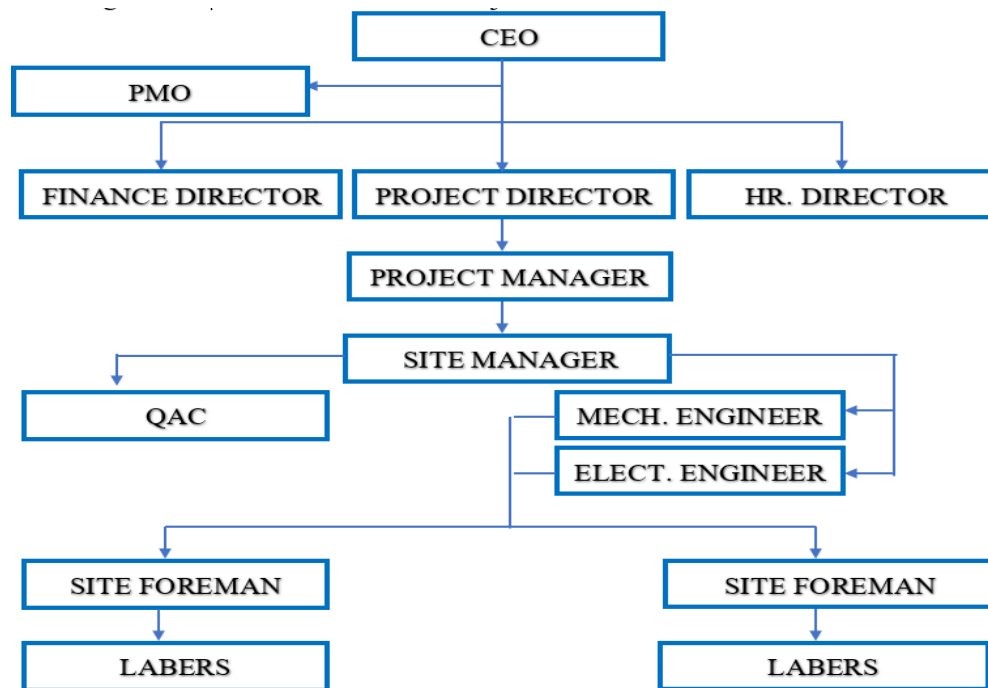


Figure 3. Organizational structure

2.7 Practical and scientific bases

The project team is divided into a smaller group with specific tasks, for example, there is an HR team and another that specializes in quality assurance etc. Each of these divisions has its own manager, and this person is responsible for reporting to the people above them in the organization according to the hierarchy.

2.8 PMO Model (supportive PMO)

The project scope of work is defined by the SEC according to their policies and procedures of the company, and for the presence of a portfolio manager and a project manager, the PMO is limited to supporting project managers with policies, procedures, methodologies, models and lessons learned from previous projects.

3. Compliance, standards and regulations

3.9 Compliance model

Compliance can be defined in two ways; based on the organization's work breakdown structure and assets. The assets contain all the activities of the organization that affect a project. Therefore, it includes the rules, regulations, standards of the organization that affect the project. For appropriate adherence of a project, there must be a methodology on best measures from PMI. The compliance model consists of a compliance council that guarantees the inclusion of all the essential activities of the project. The next is the compliance risk which helps in risk analysis of the organizations that may impact other areas of the project. The third one is a compliance audit, which analyzes the internal or external and documents the probable risks to the project. Its main aim is to eliminate conflict of interest cases. The last one is the compliance responsibility which ensures that all the members and the stakeholders comply with their responsibilities.

Prescription		Compliance check			
		Correctness	justification	consistency	completeness
1	Preparation of the charter model	Done	Done	Done	Complete
2	Setting the project goals	Done			Complete
3	Implementation of the project	Done	Done		
4	Work commencement				
5	Rules and regulation setting	Done	Done	Done	

Table 2. Compliance check model

3.10 Project checklist model

Initiating Procedure

#	Task	Due Date	Status
1.1	Develop project charter	Refer to project schedule	Done
1.2	Define project milestones	Refer to project schedule	Done

Table 3. Initiating procedure

Planning Procedure

#	Task	Due Date	Status
2.1	Develop a project management plan	Refer to project schedule	In process
2.2	Develop a scope management plan	Refer to project schedule	In process
2.3	Scoping	Refer to project schedule	In process
2.4	Prepare WBS	Refer to project schedule	In process
2.5	Management Plan Schedule	Refer to project schedule	In process
2.6	Define Activities	Refer to project schedule	In process
2.7	Sequence of Activities	Refer to project schedule	In process
2.8	Determine the Duration of the Activities	Refer to project schedule	In process
2.9	Development Schedule Planning	Refer to project schedule	In process
2.10	Cost Management Planning	Refer to project schedule	In process
2.11	Costing Planning	Refer to project schedule	In process
2.12	Budgeting Planning	Refer to project schedule	In process
2.13	Quality Management Planning	Refer to project schedule	In process
2.14	Resource Management Planning	Refer to project schedule	In process
2.15	Resource Leveling and Smoothing	Refer to project schedule	In process
2.16	Communication management planning	Refer to project schedule	In process
2.17	Risk Management Planning	Refer to project schedule	In process
2.18	Hazard Identification	Refer to project schedule	In process
2.19	Risk Response Plan	Refer to project schedule	In process
2.20	Purchasing Management Planning	Refer to project schedule	In process

Table 4. Planning procedure

Executing Procedure

#	Task	Due Date	Status
3.1	Directing and Managing Project Work	Refer to project schedule	In process
3.2	Project Knowledge Management	Refer to project schedule	In process
3.3	Quality Management	Refer to project schedule	In process
3.4	Team Development	Refer to project schedule	In process
3.5	Project Team Management	Refer to project schedule	In process
3.6	Communication Management	Refer to project schedule	In process
3.7	Applying Responses to Risks	Refer to project schedule	In process
3.8	Managing the Participation of those Involved in the Project	Refer to project schedule	In process

Table 5. Executing procedure

Monitoring and Controlling Procedure

#	Task	Due Date	Status
4.1	Monitor and control project work	Refer to project schedule	In process
4.2	Domain Verification	Refer to project schedule	In process
4.3	Schedule control	Refer to project schedule	In process
4.4	Cost control	Refer to project schedule	In process
4.5	Resource control	Refer to project schedule	In process
4.6	Follow up on communication	Refer to project schedule	In process
4.7	Purchasing control	Refer to project schedule	In process
4.8	Follow up on the participation of those involved in the project	Refer to project schedule	In process

Table 6. Monitoring and Controlling Procedure

Closing Procedure

#	Task	Due Date	Status
5.1	Project Documents Updates	Refer to project schedule	In process
5.2	Final Product & Result Transition	Refer to project schedule	In process
5.3	Organizational Process Assets Updates	Refer to project schedule	In process

Table 7. Closing procedure

4. Power And Interest

4.11 Power interest - To develop a stakeholder register and for the group for them (competency 8)

Stakeholder registration helps identify the people who will be affected, the impacts of the stakeholders on the project, their involvement, and their capacity of participation. For this project, the list of the stakeholders includes; Saudi Electricity Company, Municipality of Riyadh, and Ministry of energy

These are the main stakeholders for the project, and they have various interests and power in the project. The number of stakeholders is essential in the identification of every stakeholder's interest in the project. It also helps to identify the effects of the project on the stakeholders.

Group name	Internal / External	Role	Contact information
Saudi Electricity Co.	Internal	End User & Owner of Project	Sa.ec@sec.sa
E&Q Engineering Consultation Company	Internal	PMO Office	e.q@engcons.sa
Sultan Alshammari	Internal	Project Manager	s.a@pt.sa
Project Team	Internal	Project Team	p.t@pt.sa
Municipality of Riyadh	External	Permits Owner	mc.ryd@mr.sa
Ministry of energy	External	Procedures Organizer	m.e@me.sa
Society	External	Operational	soc@pt.sa

Table 8. Stakeholder register

Group member	Role
1	Coming up with proper channels of communication
2	Identification of effective means of individual communication
3	Coming up with communication framework

Table 9. Stakeholders group

4.12 Stakeholder analysis

Name	Role	Power	Aware	Interested	supportive
Saudi Electricity Company	End User & Owner of Project	High	Yes	Yes	Supportive
E&Q Engineering Consultation Company	PMO Office	Low	Yes	Yes	Supportive
Sultan Alshammari	Project Manager	High	Yes	Yes	Supportive
Project Team	Project Team	Low	Yes	Yes	Neutral
Municipality of Riyadh	Permits Owner	High	Somehow	No	Neutral
Ministry of Energy	Procedures Organizer	High	No	No	Neutral
Society	Operational	Low	No	No	Resistant

Table 10. Stakeholder analysis

4.13. Logical Diagrams

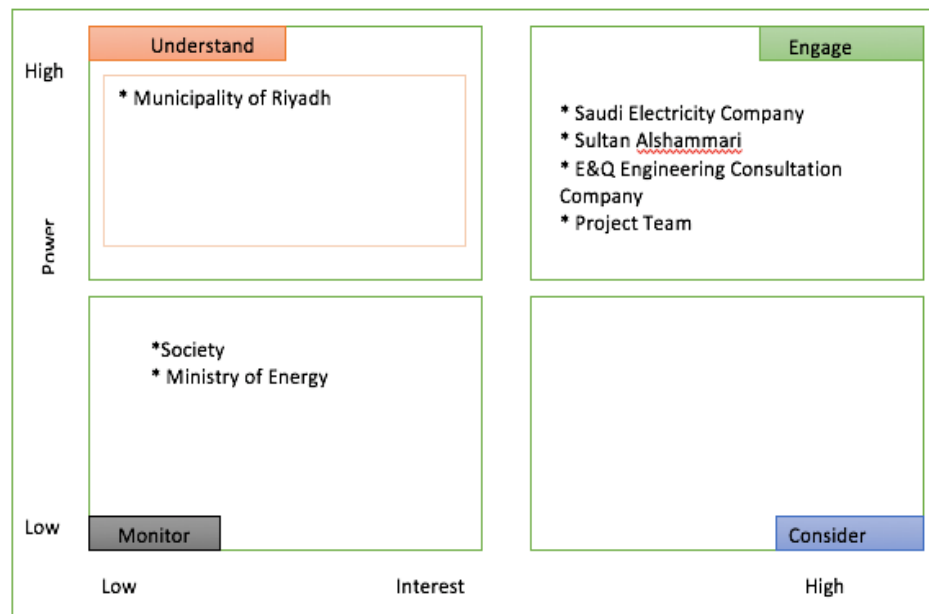


Figure 4. Logical Diagrams

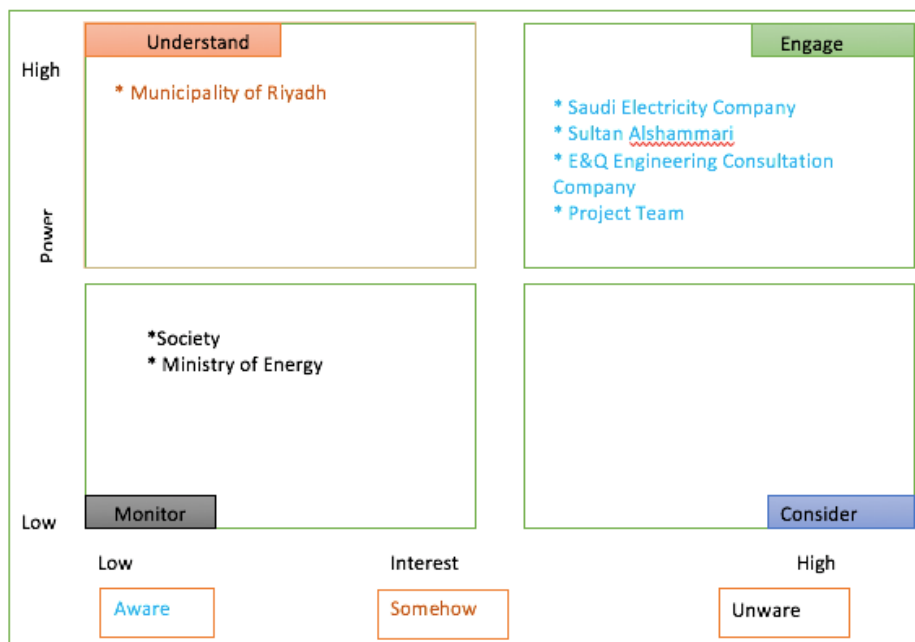


Figure 5. power-interest matrix

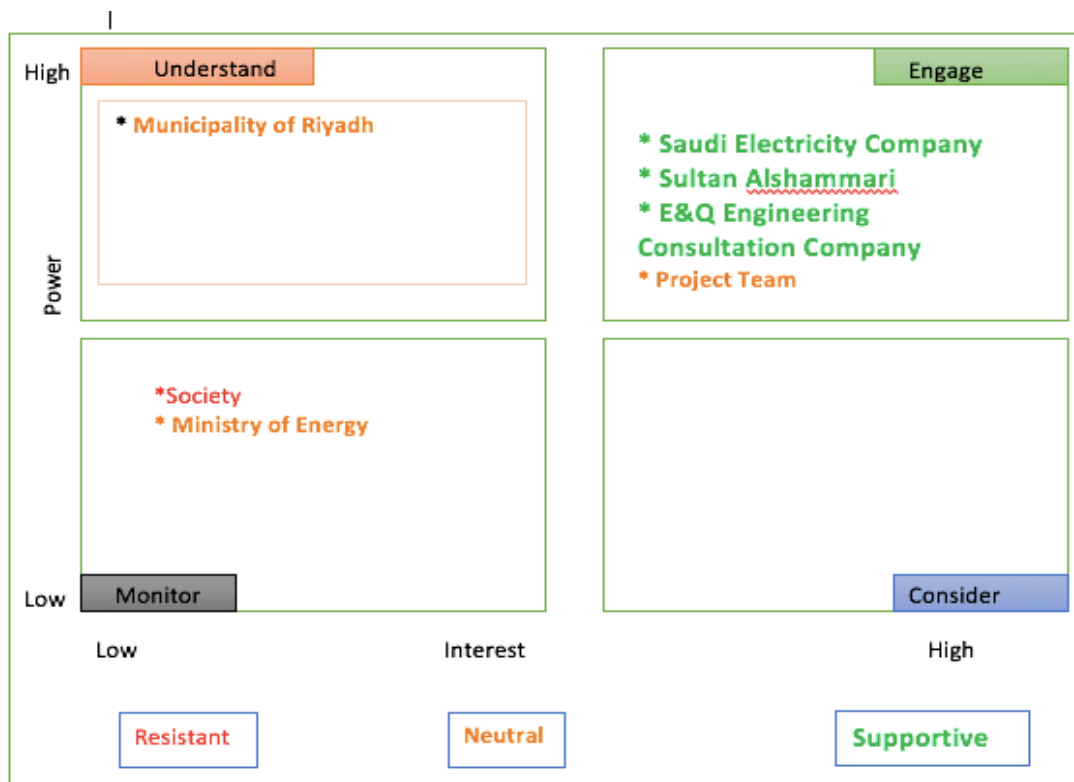


Figure 6. awareness characteristics

Stakeholder Name	Contact Person	Category	Impact	Influence	What is important to the stakeholder?	How could the stakeholder contribute to the project?	How could the stakeholder block the project?	Strategy for engaging the stakeholder
Saudi electricity company	Motaz Hadi motaz.hadi@gmail.com	Internal	High	High	-Design and develop 33kV grid substation to feed metro station#02 in Riyadh city.	-Project follow-up and modifications.	-Termination of the project. -New technology.	- Regular feedback meetings. -Approvals. - Inspections.

E & Q engineering and consultation company	Hamad Al shuhaim hsuhaim@gmail.com	Internal	High	High	-Meeting the client expectations and requirements as per standards.	-Directs the work to be executed based on the strategic and tactical plans. -Study specifications.	-Exceeding the project's budget. -Overdue deliveries.	-Monitoring and reporting progress.
Project Manager	Sultan Alshammari Sult.744@gmail.com	Internal	High	High	-Responsible for the delivery of the project to time, cost and scope.	-responsible for identifying stakeholder. -manage all project -influence development of appropriate strategies.	-Lack of collaboration. -Poor prioritization.	-Conduct regular meetings.
Project Team	Abdulghani Mohamed a.omayrah@gmail.com	internal	High	High	-They will work together in order to efficiently and effectively complete the project.	-They will deliver the project.	-Lack of communication.	-Conduct regular meetings and feedback report.
Stakeholder Name	Contact Person	Category	Impact	Influence	What is important to the stakeholder?	How could the stakeholder contribute to the project?	How could the stakeholder block the project?	Strategy for engaging the stakeholder
Municipality of Riyadh	Nada Mohamed najlaalshaya@icloud.com	External	High	Low	-The work starts and finishes within: 1-As time as per permits. 2-Return the area as it is like streets	-Gives permission to start work in the site.	-Delay in sending approval to start working in the site.	-Applying request through the online Application.

					after civil works.			
Ministry of energy	Othman Alhawsawi Othman0084@gmail.com	External	Low	Low	Managing rules and regulations	-Regulating the rules for SEC to be used on yearly updates.	-Sudden change in standards.	-Inform only.
Community	Asmaa Mohamed Amame891@gmail.com	External	Low	Low	-Finish the project.	-Use the metro as transport when the project done.	-Complains about constructions.	-Inform people that there is a construction area.

Table 11. Stakeholder Analysis Matrix

5. Culture and Values

5.14 Organization Culture:

In our company, we developed it to be a distinctive and unique company that simply leads a positive culture to institutional excellence. It is one of the pillars of success that helped the group members within the company to achieve a leading position in the Middle East. Our culture has undoubtedly played a key role in developing the strength of our brand. Our work team, our interest in our customers, and our social responsibility are the most important assets in building and maintaining the company's culture. In every country we enter for work, we carry with us the latest technology, the finest advanced services, our distinguished services, to accomplish our missions to the fullest. A good fee is part of a good start in a year. If the right culture is put in place and inspired employees who notice their profiles or links, then our company will have a positive impact on our employees and customers alike.

5.15 Culture improvement suggestions:

1- Efficiency and performance improvement

- Improving the thermal efficiency of power plants using fossil fuels.

2- reliability

- Investing in the development and improvement of the electrical system.
- Reducing power outages by more than 60%.
- Flexible and efficient load management to meet the peak load

3- smart technology

- Focus on providing digital services to clients.
- 100% use of smart meters by 2025
- Intelligent network infrastructure with self-reaction to events

6. Self-reflection and self- management

6.16 Personal Behaviors

The stakeholders of the project are many internal and external, each of them has different behaviors that may affect the project, such as:

- conflict of interest.
- personal agendas.
- impose opinion.

6.17 Study behaviors

Conflict of interest is and personal agendas is one of the types of corruption that may affect the project, where decisions are taken with a personal interest that concerns him personally or one of his relatives or close friends because of his knowledge of the project information or his job in the project. The project manager must take all measures to prevent any conflict of interests that may arise in any A stage of the project

by ensuring that the project conforms to the PMO specifications and standard, project charter and budget.

The imposition of opinion is a negative behavior that results in mistakes that can be avoided in the event of listening to the experiences and experiences of others because of the belief that they are always right, and that their opinions are correct, especially if they are based on personal experiences and convictions.

To solve these behaviors, each of the stakeholders must mention its goals, objectives and experiences in order to know what is agreed upon and then what they disagree on. After knowing the different behaviors, solutions must be proposed, which results in possibilities that can be negotiated between stakeholders to achieve results that satisfy all parties.

6.18 SWOT model

S STRENGTH	W WEAKNESS	O OPPORTUNITY	T THREAT
1- LOWER COST (LOCAL MATERIAL) 2- LESS TECHNOLOGY REQUIRED 3- EXPERIENCE	1- EMPLOYEE ATTRITION 2- HIGH MAINTENANCE COST 3- CASH FLOW	1- PROJECT AIMS TO OPEN A BUSINESS CHANNEL WITH SEC COMPANY WITH HIGH VOLTAGE DEPARTMENT IN BUILDING SUBSTATIONS. 2- PRIVET SECTORS INCOME RETHAHER THAN DEPENDING ON GOVERMENTAL SECTORS	<i>1- Loss of funds and liquidity.</i> <i>2- Failure of test or FAT at commissioning stage.</i>

Figure 7. SWOT model

7. Personal integrity and reliability

7.19 Behaviors contradict the moral integrity

- Misusing company time
- Abusive behavior
- Employee theft

7.20 Analyze the financial, social, and technical influence

- Too many workplaces are filled with managers and supervisors who use their position and power to mistreat or disrespect others. Unfortunately, unless the situation you're in involves race, gender or ethnic origin, there is often no legal protection against abusive behavior in the workplace.
- According to a recent study by Jack L. Hayes International, one out of every 40 employees in 2012 was caught stealing from their employer. Employee fraud is also on the uptick, whether its check tampering, not recording sales in order to skim, or manipulating expense reimbursements. This project is having negative percentage in purchasing materials which could alert the team to look into reasons.
- So far, no financial issues on the project.

8. Personal communication

8.21 Register of Stakeholder

Stakeholder Name	Person Name
Saudi electricity company	Motaz Hadi
E & Q engineering and consultation company	Hamad Al shuhaim
Project manager	Sultan Alshammari
Project Team	Abdulghani Mohamed
Municipality of Riyadh	Nada Mohamed
Ministry of energy	Othman Alhawsawi
Community	Asmaa Mohamed

Table 12. Stakeholder Name

8.22 Personal communication:

Personal Communications include private letters, memos, emails, personal interviews, telephone conversations, and similar resources. As the personal communication may not provide recoverable data, the personal communication may be cited in-text only.

Effective communication:

communication between two or more persons with the purpose of delivering, receiving, and understanding the message successfully. It is the process of information sharing between team members in a way that keeps in mind what you want to say, what you actually say, and what your audience interprets.

9. Relationships and engagement

9.23 Shapes, Models, Channels of the personal communication

Information	Type of Model	Sender	Receiver	Method of communication
Inform people that there is a construction area	Linear	Saudi electricity company	Community	SMS
Regulating the rules for SEC to be used on yearly updates.	Linear	Ministry of energy	Saudi electricity company	Email
Monitoring and reporting progress	Transactional	Sultan Alshammari	E & Q engineering and consultation company	-Meeting -Emails
Checking the status of the project	Transactional	Sultan Alshammari	Project Team	-meeting -Emails -Phone
Site approval	Interactional	Saudi electricity company	Municipality of Riyadh	-online application of the municipality -Email -Phone

Table 13. Method of communication

Transactional Model

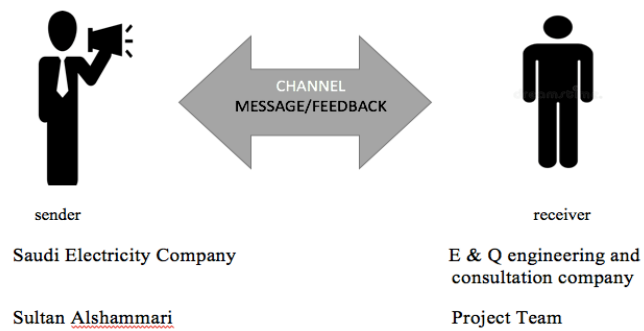


Figure 8. Transaction model

Interactional Model

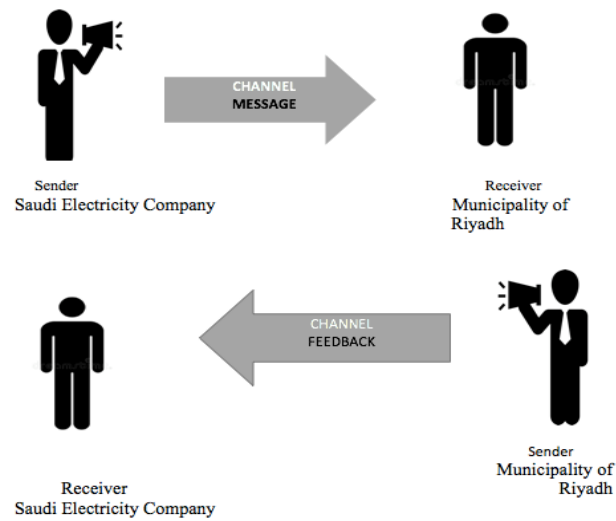


Figure 9. Interaction model

Linear Model

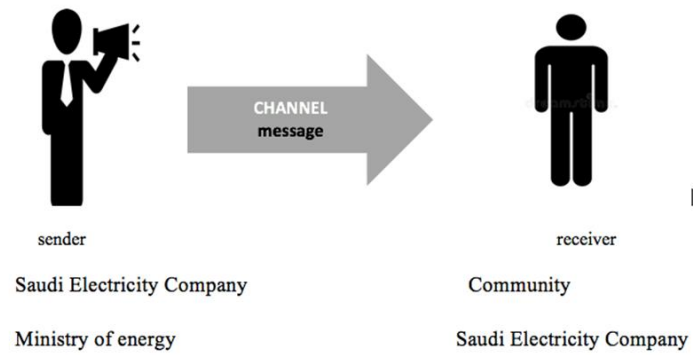


Figure 10. Linear model

9.24 Communication Matrix

Communication	Audience	Goals	Schedule	Format	Responsibility
Kick-off Meeting	All project Stakeholders	Introduce the project to stakeholders, Manage requirements and set expectation	One time	Meeting, project charter document	PMO
Project status report	All internal Stakeholder	Communicate current progress, issues & risk	Weekly	Report	Project Manager
External stakeholder	Project Manager & Project Stakeholders	Get Approvals	As needed	Meeting, Email	Project Manager
Milestone and deliverable updates	All project Stakeholders	Review status, Present deliverable, gather feedback, decide next step	At the Project Milestones	Meeting, review deliverables	PMO
Lessons learned	Project Team	Review success and failures to capture improvement for future projects	At project end	Meeting that produces a lesson learned document	Project Manager

Table 14. Communication Matrix

9.25 Wrong scenarios of communication

Passive Aggressive Communication

Passive-aggressive communication is poor behavior that has a direct negative effect on how people feel about themselves and others in the workplace. Passive-aggressive behavior or communication is a complicated issue. The bad things being done or said are often subtle and may not be seen as overly aggressive, offensive, or confrontational. However, the person on the receiving end of the communication repeatedly gets neglected or treated poorly and to the point that the relationship is damaged.

Intimidation in the Workplace

Intimidation practices are a form of negative communication that quickly makes a toxic and often fear-filled work environment. A boss who always bullies his employees into getting things done is likely to experience high turnover rates. Intimidation can also occur between co-workers competing for the same promotion. This unnerving type of behavior is often in the form of direct verbal language or physically threatening actions. An example of intimidation is loud speech.

The Blame Game

Another example of poor communication is closely linked to ethics and responsibility. Failure to handle a mistake or accept responsibility for missed deadlines showing a lack of responsibility. Yet, blaming others is counterproductive and does not work towards a solution for the common good. Learning to accept responsibility and move forward is one positive solution. However, those who continue to blame others for their mistakes will damage working relationships and may find themselves ostracized.

9.26 Stakeholder Assessment Matrix

Stakeholder Name	Contact Person	Category	Impact	Influence	What is important to the stakeholder?	How could the stakeholder contribute to the project?	How could the stakeholder block the project?	Strategy for engaging the stakeholder
Saudi electricity company	Motaz Hadi motaz.hadi@gmail.com	Internal	High	High	-Design and develop 33kV grid substation to feed metro station#02 in Riyadh city.	-Project follow-up and modifications.	-Termination of the project. -New technology.	- Regular feedback meetings. -Approvals. - Inspections.
E & Q engineering and consultation company	Hamad Al shuhaim hsuhaim@gmail.com	Internal	High	High	-Meeting the client expectations and requirements as per standards.	-Directs the work to be executed based on the strategic and tactical plans. -Study specifications.	-Exceeding the project's budget. -Overdue deliveries.	-Monitoring and reporting progress.
Project Manager	Sultan Alshammari Sult.744@gmail.com	Internal	High	High	-Responsible for the delivery of the project to time, cost and scope.	-responsible for identifying stakeholder. -manage all project -influence development of appropriate strategies.	-Lack of collaboration. -Poor prioritization.	-Conduct regular meetings.
Project Team	Abdulghani Mohamed a.omayrah@gmail.com	internal	High	High	-They will work together in order to efficiently and effectively complete the project.	-They will deliver the project.	-Lack of communication.	-Conduct regular meetings and feedback report.

Stakeholder Name	Contact Person	Category	Impact	Influence	What is important to the stakeholder?	How could the stakeholder contribute to the project?	How could the stakeholder block the project?	Strategy for engaging the stakeholder
Municipality of Riyadh	Nada Mohamed najlaalshaya@icloud.com	External	High	Low	-The work starts and finishes within: 1-As time as per permits. 2-Return the area as it is like streets after civil works.	-Gives permission to start work in the site.	-Delay in sending approval to start working in the site.	-Applying request through the online Application.
Ministry of energy	Othman Alhawsawi Othman0084@gmail.com	External	Low	Low	Managing rules and regulations	-Regulating the rules for SEC to be used on yearly updates.	-Sudden change in standards.	-Inform only.
Community	Asmaa Mohamed Amame891@gmail.com	External	Low	Low	-Finish the project.	-Use the metro as transport when the project done.	-Complains about constructions.	-Inform people that there is a construction area.

Table 15. Impact & influence

10. Leadership

10.27 Defining the preferred leadership model for project leadership:

Project leadership is the art and science of steering a team towards the successful delivery of a project and it ensures that together, the team accomplishes more than they could as individuals because project leadership brings people together to achieve a common goal. Democratic leadership is a type of leadership style in which members of the group take a more participative role in the decision-making process.

10.28 Reasons for choosing this model:

Researchers have found that this leadership style is usually one of the most effective to higher productivity, better contributions from group members, and increased group morale. Employees meet to discuss and resolve issues by giving everyone some opportunity to contribute to decisions, it is best employed in cases where the department or business is looking to implement operational changes or when a leader or manager is attempting to resolve problems individually or within the group.

10.29 Suggestions for stimulus methods that are appropriate to the nature of the project: (5 suggestions)

- Empowering our members to make smart decisions, as the process of participation can help them to become more practiced in decision-making.
- Encouraging the team to take on shared responsibilities is a great way to achieve this, as the democratic leader should not be the one who bears all the responsibility. Rather, its role is to allocate responsibility and maximize the participation of others in an effort to achieve established goals.
- Helping people feel valued when their opinions are solicited and encouraging friendships, good relationships and trust throughout the organization.
- Creating consulting environment when the focus is to deeply explore processes and possibilities to fix problems and promoting new ideas that meet changing customer requirements.
- Coexisting with the surrounding changes and developments, the leader and his team should not be closed in the field of work, as these changes may be a reason

for excellence and creativity within the work environment, improve it, and create a different in the process of work.

11. Teamwork

11.30 RACI matrix

RACI identifies tasks and deliverables against roles on the project. It is an abbreviation of Responsible, Accountable, Consulted, and Informed. Keeping track of the RACI model acts as a reference to ensure responsibility, accountability, consultation, and information on the activities and deliverables. It can be done through the project life cycle. It has a number of advantages, such as effective communication, a clear outline of expectations, and avoiding work overload.

There are various steps involved in the designing of RACI charts; coming up with the project roles, coming up with the tasks or deliverables of the project, assigning RACI to every role and task, checking and correcting any assumption made, involve the stakeholders, and ensuring that it is useful.

	Saudi electricity company - SEC	Municipality of Riyadh	Ministry of energy
Initiate the project	R	A	C
Give permission to work on space	C	R	A
Regulating the rules for SEC to be used on projects	I	C	R

Table 16. RACI matrix

12. Conflict and crisis

12.31 Identify the conflict and crisis

Based on experience, un-clarity of scope of work is one of major issues that took +40% of conflicts because of that we promote to develop clear scope, try to explain it on different ways and styles, having kick of meeting and keep involving related stakeholder to move on with proper scope of work.

The Meaning and Nature of Conflict and Crisis Management:

The concept of conflict and crisis has been identified in management literature by several scholars and managers in practice as one of the endemic phenomena which every organization is bound to experience and respond to at any stage of its life circle as a result of its constant interaction and interdependence with the environment. However, the processes of formation of conflict and crisis differ significantly. While conflict may arise from personality differences and goal incompatibility, crisis occur as a result of both natural and human action. In the same vein, Sapriel (2003) alludes that crisis occur mainly as a result of managerial errors arising from leadership and decision-making approaches of decision makers. Based on the forgoing discussion, the following paragraph discusses the dynamics of the concepts individually for clarity purposes.

Conflicts:

- Position that conflicts within organizations usually emanate as a result of incompatible goals or disagreements among individuals and groups (Sims, 2002).

- Is a situation that surfaces the moment one party perceives that another party has adversely affected, or is about to gravely affect something that the first party desires (Robbins, 2005).
- Assert that conflict is a behavior projected to obstruct the achievement of some other person's plans (Mullins and Christy, 2013).
- It is usually achieved through diversity of opinions that help teams to identify new ways of solving problems and handling issues (Lepsinger, 2018).
- When functional conflict occurs within a group or team, it is considered to be creativity, innovation, and team building driven; which means that the emergence of functional conflict within teams and groups bring about healthy and constructive criticisms, suggestions and competition needed to improve one another's skills which in the long run leads to better group productivity and performance (Wobodo, 2019).

12.32 Three expected scenarios

- **Stakeholder Expectations**

One of the key tasks of a project manager is to be able to manage stakeholder expectations. Stakeholders are defined as any individuals or groups or organizations whose interest on the project may be positively or negatively impacted as a result of the outcome of the project execution. As we all know different stakeholders have different expectations, and they are hard to be managed because they tend to wander from time to time as a result of project execution.

- **Unrealistic datelines**

Very often projects are given an imposed dateline by the customer. Based on that the project manager have to commit to dateline. This shows the experience and ability of

project provider to deliver it without any delay. Especially once project provider delivered a similar or nearby projects.

- **Customer Satisfaction**

‘The customer is always right!’ As a project manager we are often caught in this dilemma. Are the customers always right even if they are wrong? As a good project manager, always remember that our company exists because of the customers. And even if we are driven to the dead end by the customers, our professionalism and integrity should NOT betray us. Our ultimate goal is to achieve customer satisfaction, though this is very subjective in nature. Always be cautious not to fall into the trap of “GOLD PLATING” under any circumstances. The win-win or winning strategy is to be considered to emphasize our partnership and dedication. Attracting talent.

12.33 Managing successful business is required a skill to manage the conflict.

Mr. Jack Ma the richest man in China, founder of Alibaba said that smart people can't work together, stupidity can. So, our role is to make sure that smart people can work together. Also, by trusting smart people in your company, you give yourself a chance of doing well and easier the vision you believe.

	Approaches	To be used when	Common result
1	Confronting is also described as problem solving, integrating, collaborating or win-win style. It involves the conflicting parties meeting face-to-face and collaborating to reach an agreement that satisfies the concerns of both parties. This style involves open and direct communication	-Both parties need to win. -You want to decrease cost. -You want create a common power base. -Skills are complementary. -Time is sufficient. -Trust is present. -Learning is the ultimate goal.	Integrative. Win-Win

	which should lead the way to solving the problem.		
2	Compromising is also described as a "give and take" style. Conflicting parties' bargain to reach a mutually acceptable solution. Both parties give up something in order to reach a decision and leave with some degree of satisfaction.	-Both parties need to win. -You are in a deadlock. -Time is not sufficient. -You want to maintain the relationship among the involved parties. -You will get nothing if you do not compromise. -Stakes are moderate.	Moderate lose-moderate lose.
3	Smoothing is also referred to as accommodating or obliging style. In this approach, the areas of agreement are emphasized and the areas of disagreement are downplayed. Conflicts are not always resolved in the smoothing mode. A party may sacrifice its own concerns or goals in order to satisfy the concerns or goals of the other party.	-You want to create obligation for a trade-off at a later time. -Stakes are low. -Liability is limited. -Any solution is adequate. -You want to be harmonious and create good will. -You would lose anyway. -You want to gain time.	Yield-lose.
	Approaches	To be used when	Common result
4	Forcing is also known as competing, controlling, or dominating style. Forcing occurs when one party goes all out to win its position while ignoring the needs and concerns of the other party. As the intensity of a conflict increases, the tendency for a forced conflict is more likely. This results	-A "do or die" situation is present. -Stakes are high. -Important principles are at stake. -Relationship among parties is not important.	Win-lose

	in a win-lose situation where one party wins at the expense of the other party.	-A quick decision must be made	
5	Avoiding is also described as withdrawal style. This approach is viewed as postponing an issue for later or withdrawing from the situation altogether. It is regarded as a temporary solution because the problem and conflict continue to reoccur over and over again.	-You can not win. -Stakes are low. -Stakes are high, but you are not prepared. -You want to gain time. -You want to maintain neutrality or reputation. -You think problem will go away. -You win by delaying.	Lose-leave

Table 17. Conflict solutions

12.34 Un-clarity of scope of work or Service requester is not providing proper scope of work:

This happens because of lack of experience or missing historical data. The resolution of it by providing checklist of minimum requirements, try to explain scope of work on different ways and styles and trained the scope writer for right approach to provide comprehensive scope.

Location of Service:

Most of projects located far away from residential areas and this one of major conflict during attracting talent employees. The resolution of this issue by giving extra financial benefits and build houses behind the project. In addition, to provide bus transportation as option for those willing to be near from their families.

13.Resourcefulness

13.35 Human Resource Management

Project Name:

Design & Develop 33kV Grid Substation to feed Metro Station#02 in Riyadh City

Date:

01-Jan-2021 To 30-Jun-2022

Sponsor:

E&Q Engineering Consultation Company

Project Manager:

Sultan Alshammari

Employee list		
EMPLOYEE	POSITION	TASK
AHMED, K	CEO	Planning, Organizing, Staffing, Directing, Coordinating and Budgeting the project
SARA, Z	FINANCE DIRECROR	Reviewing financial reports, auditing accounts and financial expectations of the project by implementing strategies and presenting them to the CEO
KHALID, M	PROJECT DIRECTOR	Responsible for the successful conclusion of the projects. oversee project managers, who coordinate teams to ensure that work is completed on time and within budget, provide leadership to strategically manage risk, monitor finances and ensure each phase of work is started or completed on time.
KHALAF, S	HR. DIRECTOR	Directing employees, supervising personnel affairs and carrying out the administrative work of the project
SULTAN, SH	PROJECT MANAGER	Responsible to manage project on safety, schedule, budget, client relations, customer satisfaction, costs, and quality compliance at multi-site locations across all phases of the project. Ensure that the project are delivered on time, within the scope, and within budget. Define project scope and objectives, involving customer and ensuring technical feasibility

SAAD, R	SITE MANAGER	Responsible for managing project activities, schedule execution and all operations within site boundaries, including material management and distribution of engineers and labor for implementation
ABDULLAH, A	QAC	Inspection and testing of raw materials Recording and evaluation of quality data Certification and results of products conforming to standards and specifications and certifying them.
EMPLOYEE	POSITION	TASK
Saud, b	MECHNICAL ENGINEER	Follow-up the mechanical work from the beginning of the implementation of the project from the building the substation to end and ensure that all necessary tests are done before delivery Follow-up the FM200 firefighting system and ensure that the system is install as per the specifications
HASSAN, T	ELECTRICAL ENGINEER	Provide all necessary to implement the electrical work including installation of transformers and protection panel testing lines and feeders after installation, energized the substation & connect to the system
TURKI, S	SITE FOREMAN	Organizing and supervising the construction work starting from excavation and civil work up to commissioning the substation, organizing the tools and workers and any related material on the site and ensure the health and safety of all workers in the site
HOSSAM, H	SITE FOREMAN	Organizing and supervising the construction work starting from excavation and civil work up to commissioning the substation, organizing the tools and workers and any related material on the site and ensure the health and safety of all workers in the site
ALI	LABORER	Excavations and Civil works line-1, line-2, feeder-1 and feeder-2. Building Substation and installation of the transformer, panel, lines and feeders and following all the scope of work and instruction from the site foreman
MOTAZ	LABORER	Excavations and Civil works line-1, line-2 , feeder-1 and feeder-2 . Building Substation and installation of the transformer, panel, lines and

		feeders and following all the scope of work and instruction from the site foreman
YAZAN	LABORER	Excavations and Civil works line-1, line-2, feeder-1 and feeder-2. Building Substation and installation of the transformer, panel, lines and feeders and following all the scope of work and instruction from the site foreman
EMPLOYEE	POSITION	TASK
HISHAM	LABORER	Excavations and Civil works line-1, line-2, feeder-1 and feeder-2. Building Substation and installation of the transformer, panel, lines and feeders and following all the scope of work and instruction from the site foreman
AHMED	LABORER	Excavations and Civil works line-1, line-2, feeder-1 and feeder-2. Building Substation and installation of the transformer, panel, lines and feeders and following all the scope of work and instruction from the site foreman
SALEM	LABORER	Excavations and Civil works line-1, line-2, feeder-1 and feeder-2. Building Substation and installation of the transformer, panel, lines and feeders and following all the scope of work and instruction from the site foreman
WALEED	LABORER	Excavations and Civil works line-1, line-2, feeder-1 and feeder-2. Building Substation and installation of the transformer, panel, lines and feeders and following all the scope of work and instruction from the site foreman
ABDULAZIZ	LABORER	Excavations and Civil works line-1, line-2, feeder-1 and feeder-2. Building Substation and installation of the transformer, panel, lines and feeders and following all the scope of work and instruction from the site foreman

Table 18. Employee list

13.36 Project Schedule

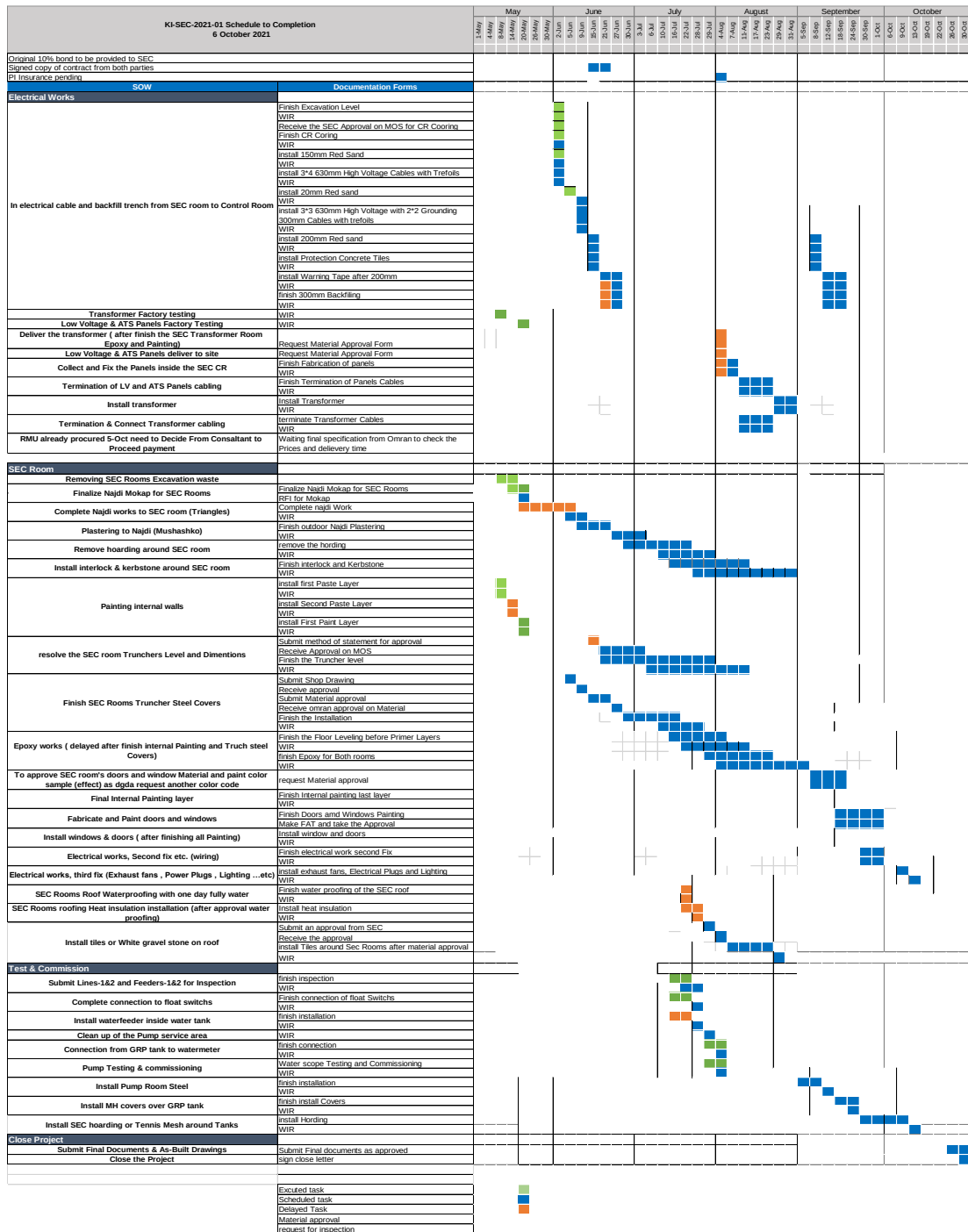


Figure 11. Project Schedule

Crashing

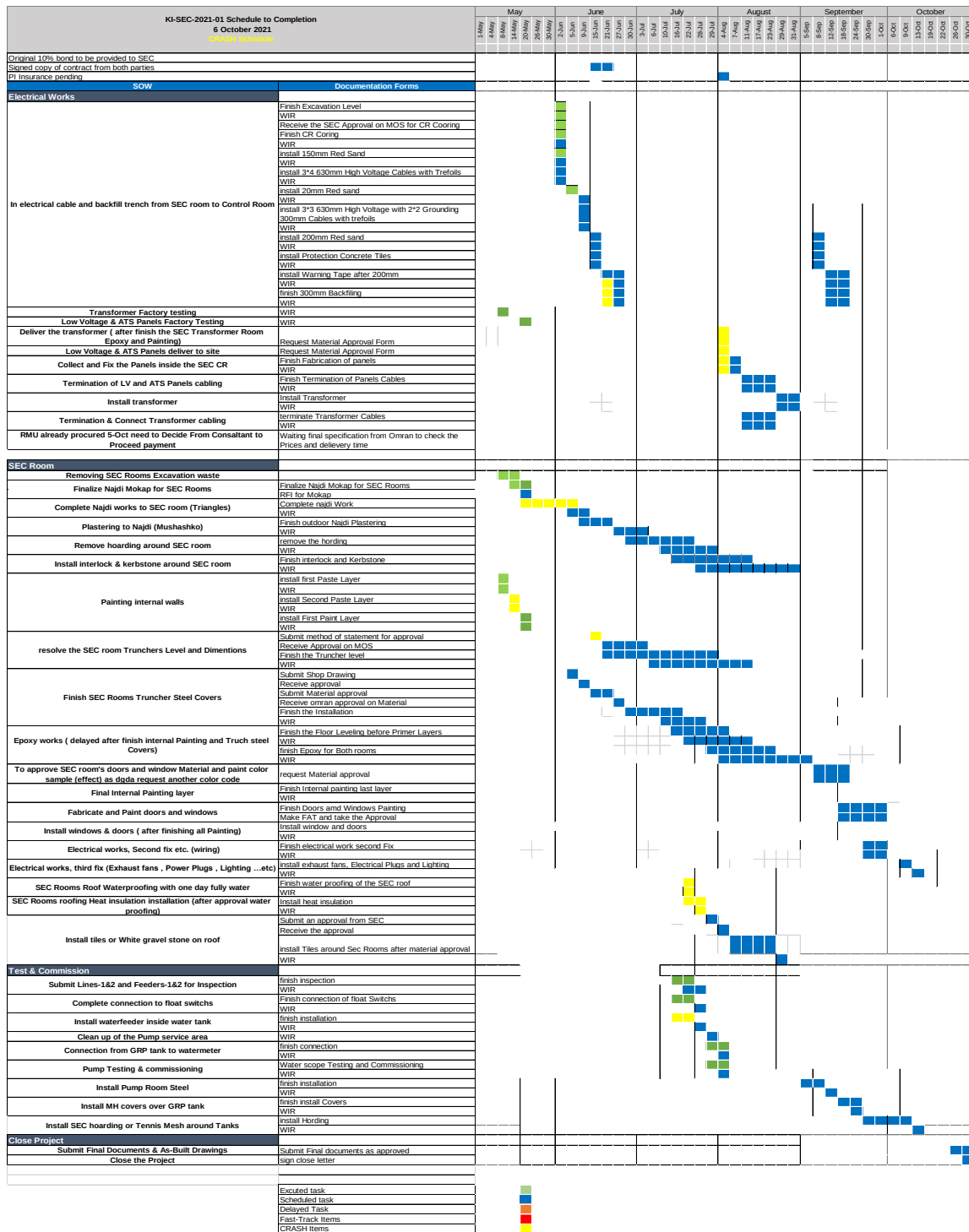


Figure 12. Crashing Table

Fast-Track

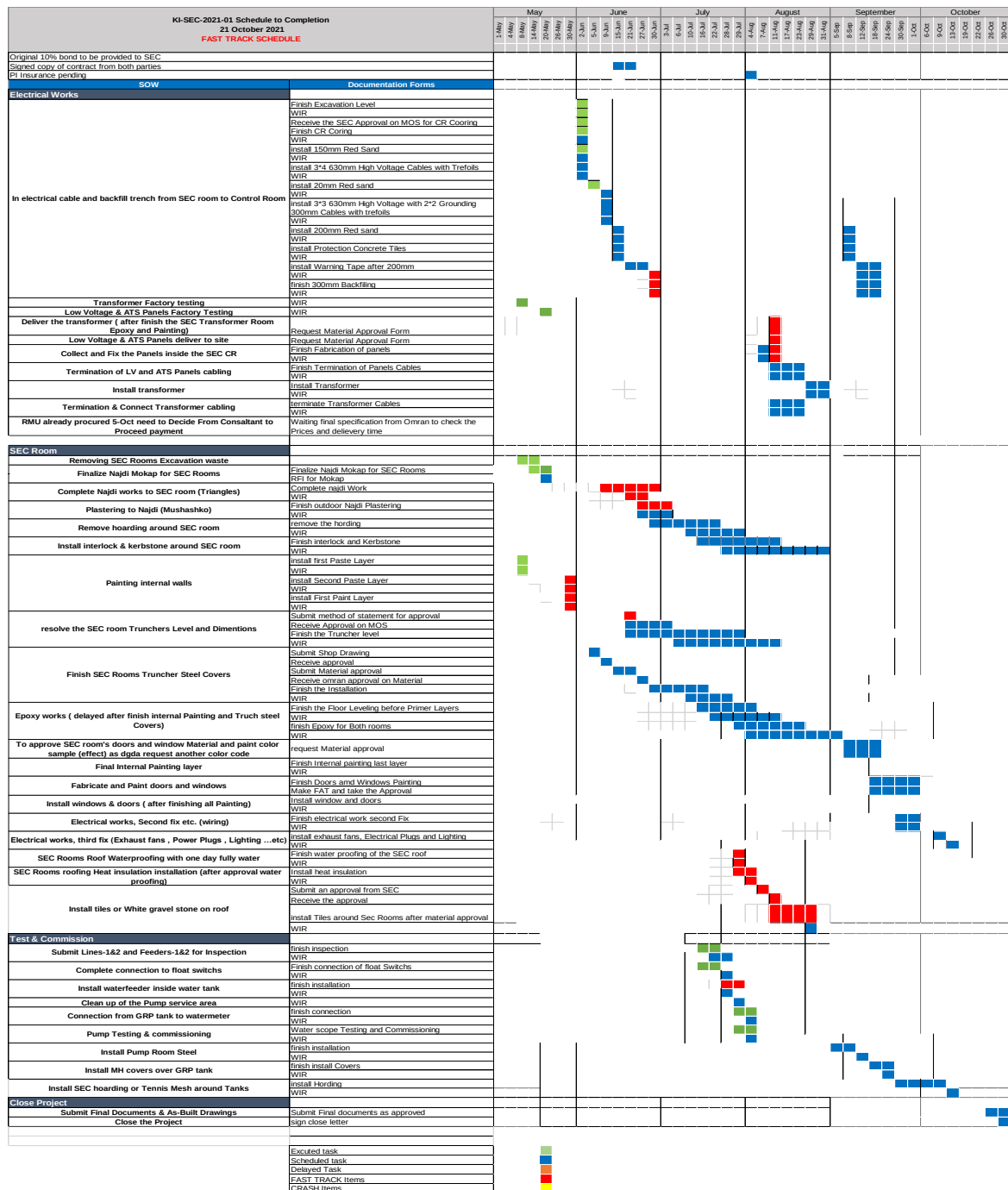


Figure 13. Fast track

Fast Track	Crash
Activities are performed in parallel	Sequence of activities is not changed
No additional resources are employed	Additional resources are employed
Works with all activities in the schedule diagram	Works only for activities on the critical path
Works only if the activities can be overlapped	It does not matter if activities overlap or not
May result in rework and increased risk	May result in increased risk
Costs mostly remain the same if executed properly	Costs mostly increase as there is use of additional resources

Table 19. Crashing vs. Fast track

14.Negotiations

14.37 Negotiation process.

Negotiation in Projects: To develop general rules for the negotiation process.

Negotiation is a conversation between involved parties to reach a consensus on conflicting ideas. The important skill applied during the process is the persuasion skill which results in a win-win solution. Other skills essential for the success of the process are communication, assertiveness, sociology, among others (England, 2010).

General rules for negotiation

Some rules govern the negotiation process to ensure that it is successful. The first one is positive to build confidence and credibility in the negotiators' minds. The second rule is being patient by understanding the other person using a better approach in

dealing with defensive partners. The third rule is collecting information from clients about their interests, history, and their schedule to address their challenges.

Other negotiations rules include:

- Power: power convinces others to follow our decisions. Power comes from understanding of the main interest and coming up with a persuasive skill to get them achieved.
- Right option: the rule involves the inclusion of a third party especially when the two parties cannot agree. The third party will determine who is right and finally give verdict.
- Avoidance option: when the other party seems not to agree and there is no chance of the other party yielding to the terms, the best rule to use is the avoidance option my letting the other party have their way.
- Interest option: the rule involves assessing both interests and negotiating based on the interest. Each member to present their interest and then base the negotiation on them.

To prepare two negotiation plans

- Assessing the situation: It involves analyzing the situation and the circumstances surrounding the negotiation process. This includes assessing the attitude of the team workers to understand their status. Besides, it involves assessing the needs of the team members to avoid conflicts.
- Time: Time is an essential component in planning for a negotiation process. Finding a good time to negotiate provides a conducive environment for all the stakeholders to reach a solution.

To identify triple constraints of the project

- Time: Time is essential to ensure that all the projects' activities are achieved according to the stipulated time. It is also important to outline all the project tasks and allocate the time required to complete them. It can be achieved by the use of a work breakdown structure.
- Scope: The scope is all the requirements that are required in the completion of a project. The scope helps in the prioritization of tasks for the proper allocation of resources. This constraint helps in the overall management of the project to avoid being overwhelmed.
- Cost: It is the financial commitment of the project, and it relies on various factors. The first and initial cost is the labor cost. The other cost includes fixed and variable costs, which must be calculated to determine the required amount. Other processes include cost estimates, cost budgeting, and cost control.

To set up a list of the project success factors

- Meeting with key stakeholders and discussing their views on success and discuss their responses.
- Assigning the stakeholders to various sections of the project
- Inquiring about their definition for success and what the stakeholders associate success with.
- Negotiate their responses in detail
- Identify one particular area of interest
- Integrate the responses and ensure they are achieved

In sum, negotiation is the communication between two parties, and it involves disagreeing and agreeing to reach a consensus. Besides, the process involves various rules that should be followed for the process to be effective.

14.38 Negotiations scenarios

Negotiation 1:

SUBCONTRACTOR NAME: HITACHI Company

SUBCONTACTOR VALUE: (72,000 SAR)

SUBCONTACTOR TYPE: Gas-Insulated Switchgear (GIS)

PROJECT NAME: Design & Develop 33kV Gris Substation to feed Metro based in Riyadh

NEGOTIATOR: E&Q Engineering Consultation Company

DATE: 10th of October 2021

SUMMARY OF THE PROCESS:

Purpose:

The purpose of this is to document the fairness and reasonableness of a proposed award to HITACHI Company, for providing the supplies that required to complete part of our project.

Background:

Switchgear is a combination of fuses, switches, and circuit breakers in an electric power system. The main function of switchgear is to protect, isolate and control electrical devices. The connection of this can be done directly to the consistency of the power supply. Gas-insulated high-voltage switchgear (GIS) is a solid metal encapsulated device that includes different high-voltage components like disconnections as well as circuit-breakers. These devices can be operated very securely in restricted areas like limited spaces. For instance, it is used in the extension of city buildings, on offshore platforms, on roofs, and indifferent plants like industrial as well as hydropower.

Evaluation Process & Results:

Our company convened an evaluation committee in order to make a best value determination of all valid proposals received. As an important part of the project to utilize the gas-insulated switchgear, we have received couple of bids from different energy companies around KSA. The firms are listed below:

	Firm	Proposed Total Price
1	FALC Company	30,000 SAR
2	HITACHI Company	75,000 SAR
3	ABB Company	78,000 SAR
4	SEIMENS ENERGY	80,000 SAR

Table 20. Negotiation 1a

- FALC COMPANY: bid on all items requested. The total price was the first lowest of all bidders. Bid prices, however were unreasonably low. Given experience in purchasing similar items, we don't feel that the prices quoted would allow for the purchase of the quality required. Based on these unreasonably low costs FALC Company was disqualified from consideration.
- HITACHI COMPANY: bid on all items requested. The total price was the second lowest price of all bidders. Bid prices were within a relative range for this procurement.
- ABB COMPANY: bid on all items requested. The total price was the third price of all bidders. Bid prices were high but still within a relative range for this procurement.
- SEIMENS ENERGY: bid on all items requested. The total price was the highest price of all bidders. Bid prices were within a relative range for this procurement.

Award recommendation:

Upon review of all quotations, the bid evaluation team noted that HITACHI Company has the lowest reasonable price, but in order to ensure we are securing the best value we requested BAFO (Best and Final Offer) quotation. This request was made to all bidders. The BAFO request was sent to all bidders listed on Oct 01st, 2021 with deadline of 5 PM on Oct 3rd, 2021. This short deadline was considered reasonable to negotiate the prices given.

The following ranking were determined after comprehensive review of all BAFO bids:

	Firm	Final Total Price
2	HITACHI Company	72,000 SAR
3	ABB Company	75,000 SAR
4	SEIMENS ENERGY	78,000 SAR

Table 21. Negotiation 1b

Based on the lowest reasonable cost provided, the evaluation team recommended HITACHI Company and the proposed price of the winning offer is fair and reasonable. Recommendation:

Based upon the discussion in this negotiation, the proposed purchase order to HITACHI COMPANY is recommended and the price quoted is considered fair and reasonable. The team has verified that this company has past experience implementing this type of work, as evidence by past contacts of greater or equal value.

Negotiation 2:

SUBCONTRACTOR NAME: TTCO Company

SUBCONTACTOR VALUE: (900,000 SAR)

SUBCONTACTOR TYPE: Providing workers for the extension of electric and welding cables

TYPE OF CONTRACT: Yearly contract (20 workers)

PROJECT NAME: Design & Develop 33kV Gris Substation to feed Metro based in Riyadh

NEGOTIATOR: E&Q Engineering Consultation Company

DATE: 10 of June 2021.

SUMMARY OF THE PROCESS:

Purpose:

The purpose of this is to document the fairness and reasonableness of a proposed award to TTCO Company, for providing 20 workers for the extension of electric and welding cables for (1) year contract.

Background:

It is a type of welding that is carried out by means of the heat generated by the electric arc between the electrode and the welded part. This kind of work needs an number of experienced workers and we have received different proposals in order to choose the suitable company for 1 year contract.

Evaluation Process & Results:

Our company convened an evaluation committee in order to make a best value determination of all valid proposals received. As an important part of the project is to complete our tasks before the deadlines an experience company would be helpful in providing the experienced workers. we have received couple of bids from different human resources companies around KSA. The firms are listed below:

	Firm	Proposed Total Yearly Price	# of Workers
1	AJEER Company	990,000 SAR	20
2	ALMAJD Company	950,000 SAR	15
3	TTCO	890,000 SAR	18
4	MOEN Company	920,000 SAR	20

Table 22. Negotiation 2a

- TTCO: The total price was the first lowest of all bidders. However, the amount of provided workers is not matching the requirement of the request and the project goals in finalizing the tasks on time.
- MOEN Company: The totals price was the second lowest price of all bidders. Bid prices were within a relative range for this procurement.
- ALMAJD COMPANY: The totals price was the third price of all bidders. Bid prices were high with a unacceptable amount provided of workers as its very low.
- AJEER Company: The totals price was the highest price of all bidders. Bid prices were within a relative range for this procurement.

Award recommendation:

Upon review of all quotations, we have started negotiating the reasonable prices/number of workers that are provided and the suitable one for our project budget ad gave a deadline time to receive the new proposals by end of the day of 09 June 2021, as we gave them one day to re-submit the proposals accordingly. the bid evaluation team noted that TTCO Company has the lowest reasonable price/Suitable number of workers, new bids are:

	Firm	Final Total Price	# of Workers
2	TTCO	900,000 SAR	20
3	MOEN Company	910,000 SAR	20
4	ALMAJD Company	940,000 SAR	20

Table 23. Negotiation 2b

Based on the lowest reasonable cost provided, the evaluation team recommended TTCO Company and the proposed price of the winning offer is fair and reasonable.

Recommendation:

Based upon the discussion in this negotiation, the proposed purchase order to TTCO is recommended and the price quoted is considered fair and reasonable. The team has verified that this company has past experience offering this type of work, as evidence by past contracts of greater or equal value.

- **Recommendations:**

It is recommended that the project team shall follow the main strategy of the project and reflect the main goal into achievement. All the models and data are based on experience of the team and resources that fed this project and the final result with required input. Also, based upon the discussion in the negotiations, it is recommended that prices matter but not as main business case of this project. As profit is gained in winning the reputation of the company in the new field. The team has verified that this company has past experience offering this type of work, as evidence by past contracts of greater or equal value.

- **Summary:**

This project aims to open a business channel with SEC Company with high voltage department in building substations.

The purpose to align with the company vision and strategy for next 5 years in expanding business variation and with sustainable customers like SEC.

The second goal is to have an income with private sectors rather than depending on governmental sectors.

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- <https://www.bizjournals.com/philadelphia/blog/guest-comment/2015/01/most-common-unethical-behaviors-in-the.html>

- **Attachments**

- Task 1 (4) Leading & Lagging Indicators - Diagram
- Task 13 (16) Crash – pdf file
- Task 13 (16) Fast-Track – pdf file
- Task 13 (16) Main Schedule – pdf file