



اوتورستى تىكنولوگى مارا
UNIVERSITI
TEKNOLOGI
MARA

FACULTY OF BUSINESS AND MANAGEMENT

BACHELOR'S IN OFFICE SYSTEMS MANAGEMENT (HONS.)

INTENRSHIP (MGT 666)



PRefChem

INDUSTRIAL TRAINING REPORT

PENGERANG REFINING COMPANY SDN BHD AND PENGERANG PETROCHEMICAL
COMPANY SDN BHD (PRefChem)

Prepared by:

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(13th AUGUST 2024 – 24th JANUARY 2025)

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Tajuk Laporan	Industrial Training Report	Nama Syarikat	Pengeluar Kertajaya Company & Pengeluar Petrochemical Sdn Bhd (PREFCHEM)

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Yang Benar

Nama Pegawai : AHMAD HUMAIDI.
Jawatan : SECTION HEAD.
No. Tel. :
No. Faks :

Cop jabatan/organisasi:



EXECUTIVE SUMMARY

Working as an intern at Pengerang Refining Company Sdn. Bhd. and Pengerang Petrochemical Company Sdn. Bhd. (known collectively as PRefChem) has been an eye-opening experience for me in the oil and gas industry. I was able to take what I learned in university and apply it in the real world as well as learn from experienced professionals through this opportunity.

I have observed that the oil and gas industry can be very fast and busy with the help of digital tools during my internship. Excel was very useful in calculations and in replacing the previous manual methods of work and this made the work fast and efficient. I also found out how useful it is to use Microsoft Power BI in data analysis, report writing and idea presentation.

Despite the challenges, they were moments of learning and improvement for me. As a result, I was able to manage the difficulties that I faced positively and with determination to enhance my skills and confidence. From my experience, I suggest that academic institutions should review their syllabus to ensure that it is relevant to the current industry's needs. Incorporating such practical skills as Excel and Power BI would be great preparation for the future graduates for today's business environment.

In conclusion, my internship has been a very eye-opening experience, gaining practical and applied knowledge that is more valuable than what I gained in university. I have been able to gain a clearer picture of how businesses operate in the real-life environment through an understanding of the industry's digital changes and by solving challenges.

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

I would like to sincerely thank Mr. Ahmad Humaizi, my supervisor, for his constant support, guidance, and mentorship during my internship. His knowledge and encouragement played a key role in helping me understand the industry better. I also want to express my gratitude to the Material team, including Mr. Amani, Mr. Ismail, Mr. Khairul, Mr. Khafiyyan, Mr. Asrani, Mr. Hafiz, Mrs. Rahayu, and Mrs. Maizatul.

Also Cost and Contract team, Miss Afiqah Nadzirah, Mrs. Hasmawati, Mrs Alyaa Fatihah, Mrs. Fatin Nabilah, Mr. Roslim and Mr. Zaidi for the amazing experience and opportunities. Their generosity in sharing their knowledge and creating a collaborative work environment. With their help, I was able to fully engage in my internship and give my best effort.

I am also thankful to the entire Maintenance Management System & Assurance & Cost Contract Department (MMSACC), especially Mr. Hj Khabir, the head of MMSACC, and Mr. Hj Essam, the General Manager of Maintenance, for giving me the chance to contribute, learn, and improve my skills in a real-world setting.

Special thanks to the Maintenance System team and the Quality Control team for their cooperation and support during my time at the company. Their dedication made my internship experience run smoothly.

I am also grateful to my colleagues for their help, fresh perspectives, and guidance, all of which enriched my learning journey. Finally, I want to deeply thank my family for their continuous encouragement and understanding throughout this experience. Their support has been my strength. All these individuals and teams played a key role in making my internship a truly memorable experience.

CHAPTER 1: STUDENT PROFILE



SITI NUR AQILAH BINTI JAMHARI

OBJECTIVE

Dedicated Office System Management graduate with some hands-on experience in material management and administrative support Seeking an opportunity to apply skills and gain further experience in a dynamic workplace.

EXPERIENCE

Intern | Pengerang Refining Company Sdn Bhd and Pengerang Petrochemical Company Sdn Bhd (PRefChem) | Pengerang, Johor August 2024 – January 2025

- Assist in maintaining material records: Help update and organize material data in databases and systems like SAP or Excel.
- Help monitor inventory levels and ensure materials are readily available for production or operational needs.
- Assist in the process of material requisition, order placement, and coordinating deliveries with vendors or suppliers.
- Assist in compiling reports related to materials usage, procurement activities, and inventory status in Power BI dashboard report.
- Work closely with experienced team members to understand material management processes, best practices, and the use of relevant tools and software.

Canteen staff | Sk Kangkar Pulai | Johor Bahru, Johor July 2021 – Oct 2022

- Assisted in preparing a variety of food items, ensuring compliance with health and safety standards, and maintaining cleanliness.
- Attended to students and staff, handling inquiries, and resolving complaints to ensure a positive dining experience.

Cashier | RMax Mart | Johor Bahru, Johor Sept 2018 – April 2019

- Processed cash, credit, and debit transactions accurately and efficiently.
- Provided friendly customer assistance, answered inquiries, and helped locate products.

EDUCATION

UiTM Bandaraya Melaka | Bachelor of Office System Management Oct 2022 – Jan 2025

- GPA: 3.61

UiTM Alor Gajah Melaka | Diploma of Office Management May 2017 – Jan 2020

- CGPA: 3.76

ACCOMPLISHMENTS AND AWARDS

- Gold MIIEX 2024 – UiTM Bandaraya Melaka May 2024
- SAP Volleyball Women – UiTM Bandaraya Melaka June 2023
- Organized event (Little Botanical 3R) SMK Alai – UiTM Bandaraya Melaka April 2023
- Organized event (Basic Beginner) SMK Padang Temu –
UiTM Bandaraya Melaka July 2022
- Dean List, achieved a CGPA of 3.7 – UiTM Alor Gajah June 2022
- Silver V-MIEX 2021 – UiTM Alor Gajah March 2021
- Best Parade in Kesatria Kokurikulum – UiTM Alor Gajah April 2019

SKILLS AND QUALIFICATIONS

Ms Office: Word, Excel, PowerPoint, PowerBI, SAP | **Language:** Bahasa Malaysia, English |

Soft Skills: Teamwork, Problem Solving, Creative, Punctual and Attentive.

REFERENCES

Pn. Zatul Himmah binti Abd Karim

Lecturer of UiTM Bandaraya Melaka

CHAPTER 2: COMPANY'S PROFILE

2.1 Company Background: PRefChem

2.1.1 History of the PRefChem



Figure 2.1.1 (a) The logo of the PRefChem

Pengerang Refining Company Sdn. Bhd. and Pengerang Petrochemical Company Sdn. Bhd. (PRefChem) is a public listed company involved in oil and gas production with refining and petrochemicals as its main products. PRefChem is situated in the strategic Pengerang Integrated Petroleum Complex (PIPC) in Johor, East Malaysia. PRefChem is a joint venture between two of the world's biggest energy companies: Petroliaam Nasional Berhad (PETRONAS), one of the largest energy companies in the world and Saudi Aramco, the world's number one petroleum producer. This is the initial partnership that brings together extensive refining, petrochemical production, and export to international markets experience, and PRefChem is a strong contender in the region. The company's major activity is the refining of crude oil into a variety of petroleum products and production of petrochemical products used in automotive, agricultural and manufacturing industries. PRefChem facilities are state-of-the-art to enhance production, safety and environmental friendliness. The Pengerang refineries and petrochemical complexes are designed to cater for the increasing demand for energy in the international market while at the same time observing the highest levels of environmental stewardship.



Figure 2.1.1 (b): The completion plant of PRefChem

Through the implementation of PRefChem's policy on innovation, operational excellence and sustainable practices, it has established itself as the leader of the industry. This way, PRefChem improves value through technological advancement and strategic partnerships and thus plays a significant role in the global energy supply chain and contributes to the economic growth and energy security of Malaysia.

The construction of the PRefChem complex began in the early 2010s, and construction began in 2014. To this end, the joint venture was established to integrate refining and petrochemical operations into one facility to produce several high value products. In 2019 PRefChem began operation with the completion of its state-of-the-art refinery and petrochemical plants. It also entails innovative technology for refining crude oil, and manufacturing petrochemicals such as ethylene, propylene and other by products that are used in various industries.

Since its establishment, PRefChem has been one of the significant players in the oil and gas industry in Malaysia and has added value to the economy as well as ensuring energy security of the country. With the expertise of both PETRONAS and Saudi Aramco, PRefChem has established itself as a leading organization in the refining and petrochemicals globally. PRefChem has also made it a point to invest in technology and innovation to

enhance operationality, environmental sustainability and competitiveness in the international market. Today, PRefChem is one of the biggest contributors to the energy sector in Malaysia and has grown to be a symbol of excellence in refining, petrochemical production, and technological innovations. This paper outlines how the partnership between PETRONAS and Saudi Aramco to establish PRefChem has helped to enhance the global standing of Malaysia in the energy and petrochemical sectors.

2.1.3 Location of the company



Figure 2.1.3 The location of PRefChem in Google Maps

Registered Address

Suite 17.B & 17.4,
Level 17, Vista Tower,
The Intermark,
348, Jalan Tun Razak,
50400 Kuala Lumpur, Malaysia

Plant Address

The HIVE Management Office Kompleks Bersepadu
Pengerang (Pengerang Integrated Complex)
81600 Pengerang,
Johor, Malaysia

2.1.4 Operation Hour

The specific operation hours of PRefChem are usually in line with industry standards, that is, 24 hours a day, 7 days a week, given that refining and petrochemical operations are continuous processes. But office hours for administrative are Monday to Friday, 8:00a.m. to 5:00 p.p.m.

2.2 PRefChem briefly, Vision and Mission



Figure 2.2 Launch Ceremony of PRefChem

2.2.1 PRefChem At a Glance

Pengerang Refining Company Sdn. Bhd. and Pengerang Petrochemical Company Sdn. Bhd., also referred to as PRefChem, are a strategic partnership of two of the world's largest national oil companies: Petroliaam Nasional Berhad (PETRONAS) from Malaysia and Saudi Aramco from Saudi Arabia. This collaboration combines their resources, technology, knowledge and marketing of refinery and petrochemical operations in the Pengerang Integrated Complex (PIC) in Johor, Malaysia. The refinery facility is planned to process 300,000 barrels of crude oil each day and produce several value-added petroleum products such as jet fuel, motor gasoline, and diesel all meeting Euro 5 emissions standards. It also provides feedstock to the petrochemical plant that has an annual nameplate production capacity of 3.4 million metric tonnes.

2.2.3 VISION

A leading world class integrated refinery and petrochemicals producer creating sustainable value and enriching lives.

2.2.4 MISSION

The mission is to deliver competitive products in a safe, dependable, and sustainable manner, to create value for all our stakeholders.

2.3 ORGANIZATION MANAGEMENT OF PREFCHEM

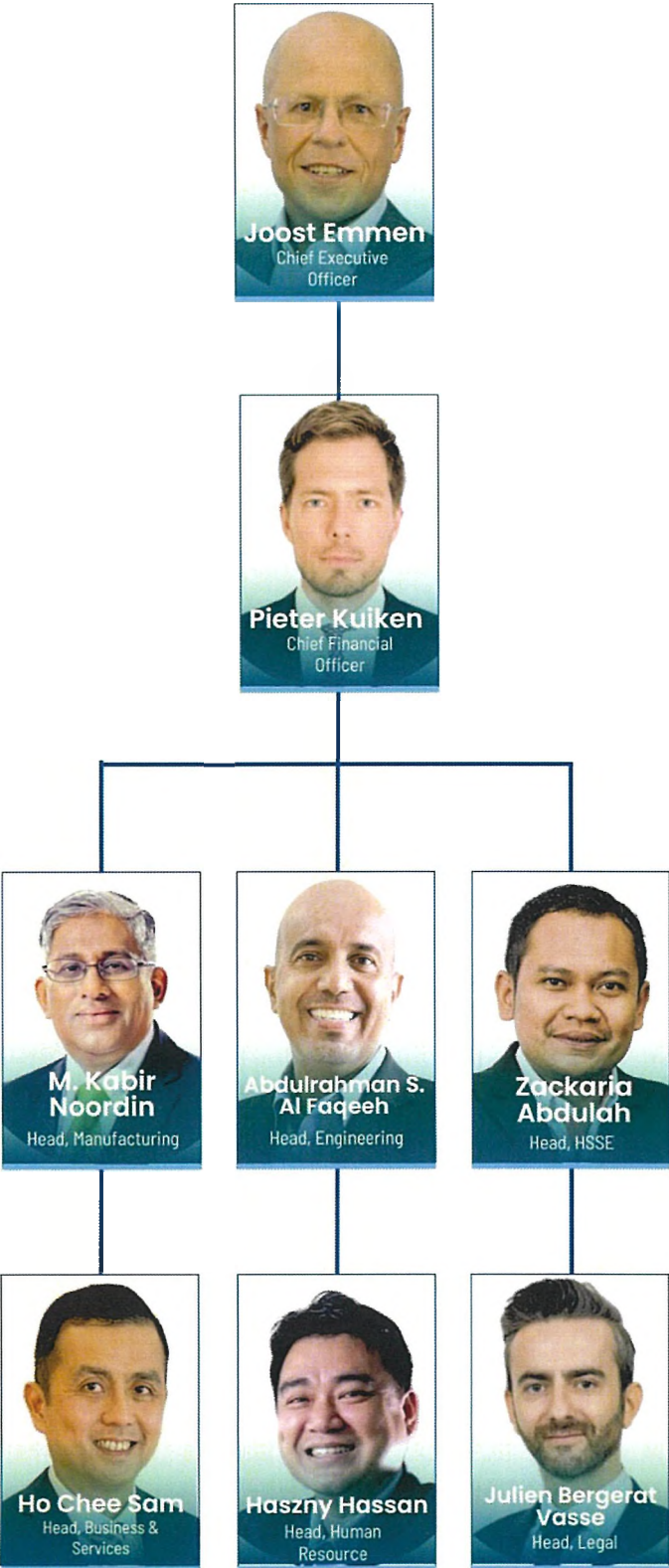


Figure 2.3 Management Organization PRefChem

2.3.1 DEPARTMENT MAINTENANCE MANAGEMENT SYSTEM & ASSURANCE COST
CONTRACT (MMSACC) PROFILE

2.3.2 Organizational Chart of Department

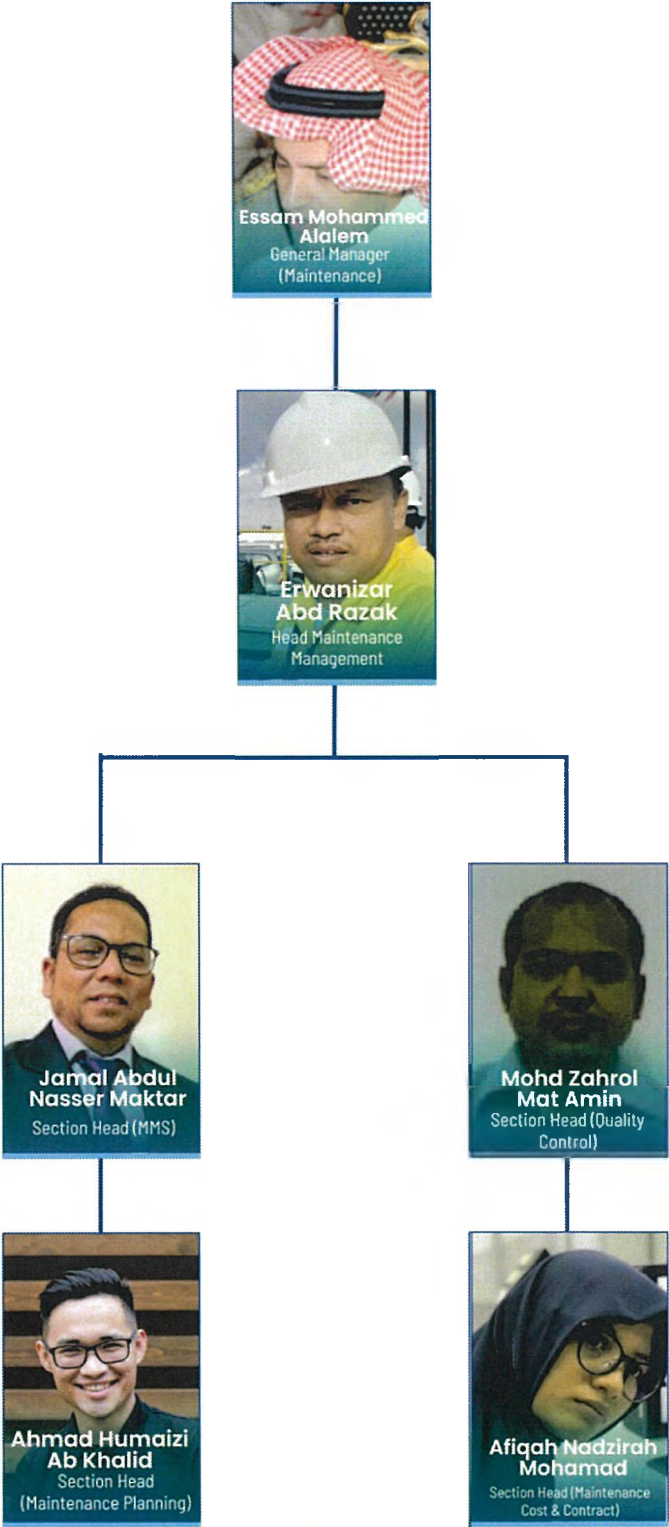


Figure 2.3.2 Maintenance Department Organization

2.3.3 Maintenance Management System & Assurance & Cost Contract (MMSACC)



Figure 2.3.3 Team of MMSACC Staff

At PRefChem, the Maintenance Management System & Assurance & Cost Contract (MMSACC) is an essential tool in the management of the company's large petrochemical facilities. This system is intended to improve the maintenance process and bring it into conformity with the contract and improve the utilization of resources to minimize downtime and maximize performance. Within this framework, there are various roles and responsibilities defined to sustain an acceptable level of operational integrity and performance.

The main position in MMSACC is the Maintenance Assurance Manager who controls the central maintenance management team. This manager is responsible for the actual implementation and direction of work management processes to ensure that they are properly aligned with the contracts and with the planning strategies. The main responsibilities are supervising the Maintenance Management System (MMS) which is used to document and monitor the performance of maintenance activities, control of change and achieve conformity with the established maintenance plans. The manager also facilitates the synchronization of different work plans which include maintenance, production, and capital projects to improve visibility and performance of the operations.

Moreover, the PRefChem maintenance managers are required to identify and define performance metrics and dashboards to track KPIs. They play a crucial role in the contract negotiation and supplier performance evaluation to ensure that external contractors are aware of the work management processes and the expected deliverables. This approach enables the organization to enhance its maintenance performance while keeping costs under control.

2.3.4 Roles and Responsibilities OF MMSACC

- ✓ **Planning & Scheduling**
Strategize and plan the utilization of plant Maintenance Planning & Scheduling to facilitate routine maintenance, turnaround & shutdown activities.
- ✓ **Equipment Maintenance & Repair**
Provide leadership in development of integrated Equipment maintenance strategy & drive implementation of repair work to sustain asset optimization and effective maintenance.
- ✓ **Maintenance Contractor Management**
Strategize, establish, and manage Maintenance contracts and resources for timely implementation.

Control contract performance in ensuring efficiency and productivity.
- ✓ **Budget & Cost Management**
Direct and control departmental and project Budget & cost through consistent review of resources and expenditure to ensure alignment to business plan.
- ✓ **Workshop Management**
Plans, managing and controlling mechanical/workshop and civil support activities in ensuring maintenance and inspection are executed in accordance with acceptable quality & engineering standards.
- ✓ **HSSE Compliance**
Direct and control HSE programs and safe work practices to ensure HSE compliance by the workforce and contractors.
- ✓ **Spare Part Strategy**
Develop and drive Materials & Spare Part Strategy in ensuring smooth maintenance and operation.
- ✓ **Technical Support**
Enforce implementation of good governance and industry best practices through daily maintenance technical support to ensure conformance and compliance.
- ✓ **Equipment Rejuvenation & Revamp**
Direct and guided Equipment modification and enhancement for continuous plant improvement.

2.4 Utilities

PRefChem service provides tenants with a range of utilities, services & facilities.



Figure 2.4 Utilities of PRefChem

State-of-the-art refinery and petrochemical complex PRefChem is the leading provider of a wide range of utilities and services, which were developed specifically to meet the operational requirements of its tenants in the Pengerang Integrated Complex (PIC), Johor, Malaysia. The facility is ready to supply raw water that is used in many industrial processes and is necessary for the continuation of operations.

PRefChem also provides fuel gas and natural gas, which are required for energy formation and for heating purposes across the entire complex. These gases are very important in keeping the energy balance of the processes with minimum possible adverse effect on the environment. The ability to provide multiple steam levels such as electricity steam, medium pressure (MP) steam and low pressure (LP) steam adds to the operational efficiency by helping in heating and processing functions that are vital for refining and chemical production.

Water is an important resource in industrial applications and PRefChem meets this need through the provision of various treated water products. This includes drinking water for human consumption and other sanitary uses, denim water for textile applications, feed water that has been boiled for steam generation and cooling water that is used in temperature control of various systems. All the treated water is analyzed to the highest standards to ensure that it is safe and fit for use as required by industry regulations.

However, PRefChem does not stop at water and air; the organization also understands the significance of gases in the chemical industry and supplies both oxygen and nitrogen. Oxygen is essential in combustion processes to enhance efficiency and performance while nitrogen has its use in different processes such as inverting processes to prevent certain reactions from occurring.

For various uses within the plant, PRefChem also supplies several types of air: plant air for general use, process air for use in specific chemical reactions, and instrumental air for driving various control instruments within the facility. This complete air supply system guarantees that all the operational aspects are adequately covered.

In general, the utility services provided by PRefChem highlight the company's efforts in creating a stable and effective operating environment for its clients. Thus, PRefChem contributes to the improvement of industrial productivity and sustainability as a provider of high-quality industrial utilities.

2.5 Facilities and Services



Figure 2.5 Facilities and Services of PRefChem

Pengerang Refining and Petrochemical (PRefChem) is a facility that provides a wide range of utilities, services and facilities to its tenants to meet their various needs. One of the main services is effluent treatment, which is very important in the control of wastewater discharge into the environment. This service not only protects the environment but also helps to make the operation of the facility more sustainable.

The Pengerang Deepwater Terminal is a notable installation, which is constructed for the receipt and discharge of crude oil and petrochemical products. With its location and design, it facilitates easy loading and unloading, thus acting as a key node on the maritime value chain. This is supported by the solid products jetty service that enables the transportation of solid bulk materials so that the tenants can operate without being hampered by logistics.

Onsite accommodation is also provided by PRefChem to support workforce requirements, which means that employees can live on the premises relative to their place of work. This factor not only improves the morale of the employees but also improves the performance of the organization. In addition, the facility has a good fire water system that is important in meeting the safety requirements and increases the readiness in case of fire or other related incidents.

For companies in need of space to operate, PRefChem offers office space lease in buildings that create a good environment for work. In addition, there are separate warehouses and workshops for storage and repair, which are suitable for the management of goods and tools. It also has efficient Product Interconnecting Services to ensure that the transfer of materials is done easily between different units in the facility. This interconnectedness is crucial in the optimization of production processes and the minimizing of downtime.

Also, the availability of laboratory services means that tenants have access to quality control and testing facilities which are necessary to meet the ambitious standards in product quality. Finally, there is the caustic distribution system, which is part of the facility's PRefChem operations that provides crucial chemicals for different industrial uses. This system helps with the safe and proper handling of caustic materials to further enhance the operational efficiency.

CHAPTER 3: TRAINING REFLECTION

3.1 Duration and Department Assigned

Training Period: 13 August 2024 until 24 January 2025

Department: Maintenance Management System & Assurance & Cost Contract

- Material Management Section
- Cost Contract Management Section.

3.1.1 Overview of the Training Experience

My training experience over the past six months in the Maintenance Management System and Assurance & Cost Contract within the Material Management Section has been incredibly enriching. This period allowed me to delve deeply into the intricacies of maintenance management, understand cost contracts, and gain insights into material management processes.

3.1.2 Benefits Gained

During my training, I received several benefits that significantly contributed to my overall experience:

- Allowance: Financial support that helped cover daily expenses, allowed for.
- Annual Leave: Six days of annual leave was great to have, and I was able to use it for a much-needed break and personal time.
- Office Space: Having a dedicated workspace made for a productive environment for learning and collaboration.
- Company Laptop: Having access to a company laptop meant that I had the tools I needed to do my work efficiently.
- Transportation: Transportation support made commuting easier and more convenient.
- Accommodation: Having provided accommodation made for comfort and stability during the training period.

- **Connection with Future Employers:** The networking opportunities helped me to connect with potential employers and increase my chances of career growth.
- **Learning from Industry Top Performers:** Inspecting the work with experienced professionals provided me with invaluable insights and knowledge.

3.1.3 Skills Gained

3.1.3.1 Technical Skills

I also obtained the following technical skills during my training:

- **SAP Proficiency:**
 - I have had first-hand experience of using SAP P64 HANA in procurement tracking and therefore in a position to effectively manage supply chain processes.
- Utilized **CSRF** (Change Request Form)
 - To request necessary work forms, to simplify the administrative tasks.
- **Power BI** Expertise:
 - I have been able to use Microsoft Power BI to construct data visualizations and analyses to support work progress reporting.
- **Master Data** Management:
 - Learned how to maintain and list material data to ensure that inventory management is accurate and consistent.
- **Excel** Proficiency:
 - Enhanced my MS Excel capabilities, especially on the use of functions which are useful in data analysis, and which are important in most decision-making processes.

3.1.3.2 Soft Skills

In addition to technical skills, I made significant strides in my soft skills:

- **Communication Skills:**
 - Enhanced my communication abilities, which helped me effectively convey ideas and collaborate with team members to achieve desired targets.
- **Time Management:**
 - Developed efficient time management skills that enabled me to meet deadlines and adhere to project timelines, ensuring productivity throughout the training period.

3.2 Training Activities

3.2.1 Material Management Section (13th August 2024 – 13th October 2024)

The head of this section is Mr Ahmad Humaizi bin Ab Khalid. He assisted three engineers, which is Mr. Khairul Azuan, Mr. Bidyut Saha, Mr. Nassirudin and five material coordinator, Mr. Amani Taqwa, Mr. Khafiyyan, Mr. Ismail, Mr. Ashrani and Mr. Hafiz. Also assist by Mrs. Rahayu for TE and RFX matter. Material management is a crucial function within organizations, particularly in manufacturing and supply chain operations.

Material management section handles procuring, inventory, organizing, and quality control of materials in an organization. Some of their responsibilities include sourcing and maintaining supplier relationships, preserving stock levels to avoid shortages, arranging transportation and warehousing, and maintaining quality standards for materials managers also aid production planning by ensuring that material availability meets production timeline requirements while successfully managing costs and budgets. They train teams, work cross-functionally, and create systems to maximize the throughput of the material, and all of this helps with productivity effectiveness of the supply chain.

3.2.1 Task in Material Management Section:

3.2.1 (a) Material Data Management

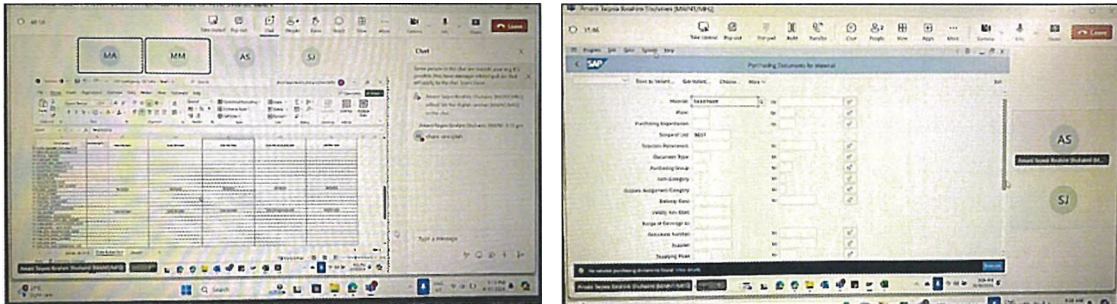


Figure 3.2.1 (a) Excel and SAP of material data

In my position, I am actively involved in maintaining correct and orderly material documentation. Material data is also updated and managed on a regular basis in various databases and systems including SAP, Master Data, Excel and so on. It is very important to keep all the information up-to-date and accurate to enable our processes to function without a glitch. This, in turn, helps our team make the right decisions at the right time and, thus, improve our efficiency.

I also participate in GARAF Project of warehouse material helping my subordinates by entering and analyzing data. This includes the collection and validation of various types of material data such as the material number, description, specification, and quantity. I am very particular about this because as much as possible, I want to avoid any mistakes that might cause problems in the future. By paying close attention to this information, I prevent mistakes that could interrupt our workflow.

I have also got a chance to learn more about the materials that are used in our processes while performing my work. The knowledge of the details of material consumption is very useful to be able to benefit for the benefit of our operations. This knowledge assists me in making the right decisions in respect to procurement, inventory management and production scheduling.

3.2.1 (b) Procurement Assistance

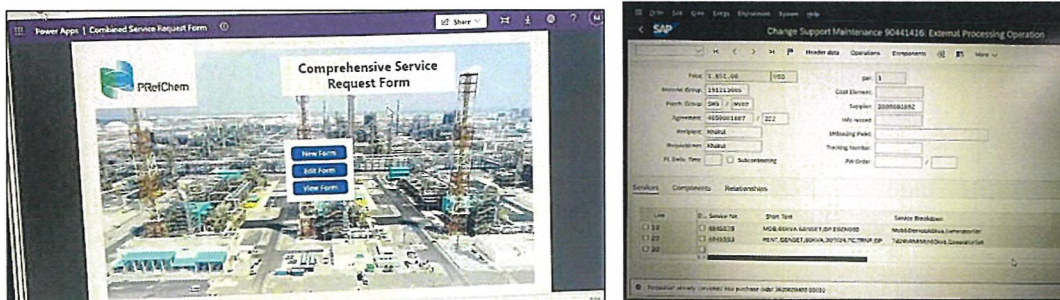


Figure 3.2.1 (b) CSRf and SAP work order system

In my current position I participate in the procurement activities like requesting materials, placing orders and scheduling delivery from vendors and suppliers. During these procurement activities, I produce work process forms and work orders in the SAP system and CSRf form. This process can be quite complex, especially if I have not yet learned how to navigate the SAP system effectively and what steps are required to create a purchase order, so that nothing is left unused.

In addition, I am also involved in supplier communication by tracking and following up on purchase orders, deliveries, and any discrepancies that may happen with the suppliers. To make sure that materials are available on time, I use Outlook for communication and inform all the parties involved of the status of orders. To increase the precision – I have developed an Excel tracking system which helped me to document all the information about our procurement activities with a high level of detail.

Also, I oversee advising the cost management section to get the Certificate of Compliance (COC) documents approved which is necessary to proceed with the procurement processes. By managing these various tasks effectively, I contribute to a streamlined workflow that supports our overall operational efficiency.

3.2.1 (c) Documentation and Reporting

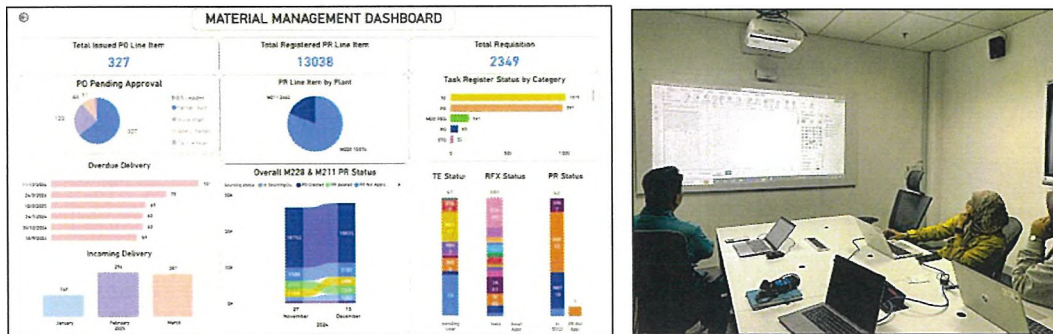


Figure 3.2.1 (c) Material Power BI dashboard and Meeting for Power BI creation

In my position, I do a significant amount of work in producing clear and concise reports that offer important information about the use of materials, the purchasing processes, and the state of the inventory. I help in the collection of this data and the presentation of the same in easily understandable Power BI dashboard reports. This process involves collecting information from different sources, making analyses and presentations of the data in a more appealing form. To develop these large-scale reports, I can assist in identifying patterns and making decisions that can increase the effectiveness of our operations and management of resources. I was able to figure out how to arrange the Power BI dashboard with the help of the staff in the MMSACC department.

Besides report writing, I ensure that all material transactions are documented properly to the necessary level. This entails ensuring that purchase orders, delivery notes and invoices are properly signed and received. I know the value of documentation since it is not only a convenient tool in the course of work but also a proof in case of an audit or any other form of compliance verification. In this case I ensure that all the documents are in order and easily accessible to facilitate a smooth flow of work in the procurement processes.

3.2.2 Cost and Contract Management Section (14th October 2024 – 24th January 2025)

The head of this section is Miss Afiqah Nadzirah. She was assisted by three contract engineers, who are Mr. Roslim Omar, Mrs. Hasmawati, Mrs. Alyaa Fatiha and two cost engineers, Mr. Zaidi Ismail and Mrs. Fatin Nabilah. Miss Shida has graciously offered her assistance in addressing the clerical matters at hand.

Organizations need effective cost and contract management to manage risk and optimize resources. Contract managers, another commonly used title is contract engineers manage all phases of contracts from drafting and negotiating terms to ensuring compliance and managing risks to comprehensive training. They also source suppliers, secure favorable terms, and monitor supplier performance.

The Cost Engineer handles financial matters by taking responsibility for budgets, invoices, payments, and financial analysis related to an understanding of the impact of the contracts. In conclusion, the role of each person/entity is crucial, and we shall work across these roles to effectively manage cost and contracts as per organizational objectives.

3.2.2 Task in Cost and Contract Management Section:

3.2.2 (a) Update Contract Status

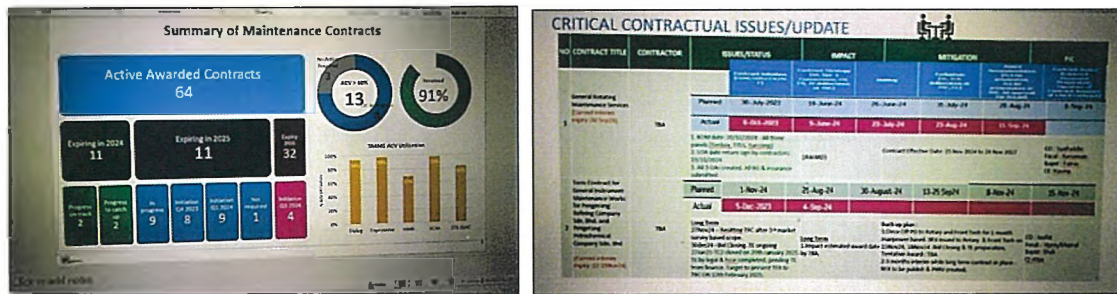


Figure 3.2.2 (a) Package slide of Maintenance Contract Status

In the course of my work, I help Mrs. Hasmawati to update the status of maintenance contracts. First, I review the slides that present the current state of each contract in detail. From analyzing these slides, I can tell the flow status, and the latest developments on each contract. It is important to understand the flow of contract management to be able to effectively manage these contracts. This means identifying how each contract moves through the different phases of the cycle, from development to implementation and finally to completion. It can be quite complex to understand each stage as it is full of requirements and timeframes, even though all this information is new to me.

To make sure that I have the latest information, I will have to confirm the details with the user and the buyer of the contract. This is important as it allows me to get feedback from the people who are involved in the process. Through the interaction with these stakeholders, any doubts that I may have will be cleared up and the status of the contracts will be established. Although the process of navigating through this challenge is quite daunting considering that I have little or no experience in contract management, I have been able to make some progress rather quickly. I have been able to identify the flow of each contract and how the various components of the contract are related to the overall contract management process.

3.2.2 (b) Data Entry of COC

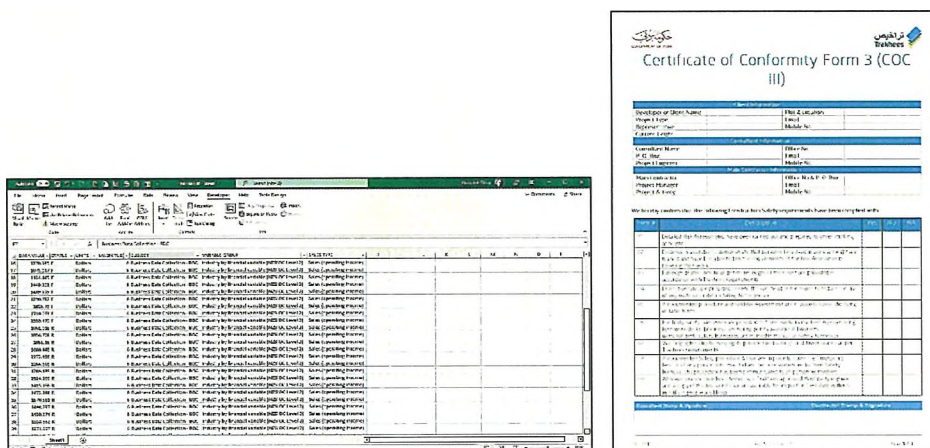


Figure 3.2.2 (b) The excel sheet for data entry COC and COC checklist

In my current job, I support Mr. Zaidi Ismail in recording the data captured from the Certificates of Compliance (COC). The tasks require a lot of accuracy, documenting both the approved and disallowed COCs, which Mr. Zaidi presents to me. This process is central to a comprehensive history and upholding compliance stipulations. I play a role in entering all possible data points into an Excel document. For one COC, I would complete a range of columns, including the status of the affidavit as "verified" or "rejected." In case a COC is verified, I provide a detailed description of the reasons for the disqualification.

The comprehensive data entry will not only aid in following up on the affidavit's state but also streamline future audits and compliance revisions. To this end, I have successfully entered data for about 200 COC papers. The experiences have significantly impacted on my understanding of what constitutes the minimum COCs requirements. Mainly, the hands-on expertise I have gained has equipped me with real-world knowledge about what happens in compliance documentation departments.

request to communicating with potential bidders plays a critical role in getting complete data. Understanding the data is crucial for decision-making because the information needed for this project is based on these steps.

CHAPTER 4: SWOT Analysis Of (PRefChem)

<p style="text-align: center;">STRENGTH</p> <ul style="list-style-type: none"> • Strategic Alliances. PRefChem is a joint-operation collaboration between PETRONAS and Saudi Aramco, utilizing use modern technology and experience. • Strategic Location. PRefChem is based in Johor, Malaysia and gives the company the competitive advantage of operating in the Pengerang Integrated Complex which improves sales access and logistical operation for regional and global markets. 	<p style="text-align: center;">WEAKNESS</p> <ul style="list-style-type: none"> • High Operational Costs The production of petrochemical products is energy-intensive, meaning profit margins can be affected if post-pandemic energy and resource prices continue to rise. • Excessive Workload & Number of Staff Members <ul style="list-style-type: none"> - One executive is assigned per subsidiary for all monthly analysis, including ad hoc assignments. - Due to excess workload and tight deadlines, there is a nimby with work-life balance.
<p style="text-align: center;">OPPORTUNITY</p> <ul style="list-style-type: none"> • Expansion of the Pengerang Integrated Complex (PIC) The Pengerang Integrated Complex (PIC), which remains in its phases of development, will be a strong opportunity to develop the operational capacity of PRefChem and increase its market presence. • Technological Advancements PRefChem can leverage emerging technologies to enhance operating efficiency in refining and petrochemical activities also efficiency and reduce costs. 	<p style="text-align: center;">THREAT</p> <ul style="list-style-type: none"> • Overdue payment <ul style="list-style-type: none"> - Certain tenants are withholding payments for services rendered by PRefchem pending agreements. - This has resulted in liquidity challenges for the company. • High Risk Sector Due to the nature of work performed by the oil and gas industry, they are at high risk.

CHAPTER 5: DISCUSSION AND RECOMMENDATION

5.1 Strength

5.1.1 (a) Strategic Alliance



Figure 5.1.1 (a) Press Conference of PETRONAS and Saudi Aramco

The strategic collaboration of PETRONAS and Saudi Aramco through the PRefChem joint venture is instrumental in streamlining collaborative operational efficiencies and marketing endeavors. This partnership proves significant within the Pengerang Integrated Complex (PIC) framework in Malaysia.

According to the PETRONAS official website, PRefChem functions as an equal venture, actualizing joint access to resources, risks, and expertise. This operational model is pivotal in providing a conducive collaborative framework, where the two entities can harness strength areas (Chemanalyst,2023). With Saudi Aramco boasting vast crude oil supplies globally and PETRONAS commanding extensive local market familiarity and utilities provision, the synergy significantly augments efficiency, driving down costs related to supply chain and procurement.

While faced with disruptions like technical glitches and routine maintenance halts, PRefChem wields the capability to respond quickly and efficiently to such challenges, as witnessed in the timely Butadiene plant restart after maintenance protocols. This is a clear indicator of their commitment to sustaining production levels and satisfying customer demands (PETRONAS,2023).

To extend and sustain these benefits, PRefChem should embrace a trajectory of continuous innovation. It should invest in research and development endeavors to improve existing processes or launch new products. This venture could involve exploring sustainable ideologies and advanced materials that conform to the global paradigm shift towards environmental respect while maintaining a competitive edge (PETRONAS,2023).

5.1.1 (b) Strategic Location



Figure 5.1.1 (b) The location plant of PRefChem

PRefChem's location in Johor, Malaysia, within the Pengerang Integrated Complex (PIC) provides notable operational and market advantages. The site allows for easy access to regional and international markets besides asserting the company's strategic presence in the oil and gas sector. It sits at a convenient distance from crucial shipping lanes connecting Asia and the Middle East, especially near Singapore, streamlining the movement of crude oil and its by-products. Moreover, PIPC's contains a deep-water harbor accommodating large ships such as Very Large Crude Carriers (VLCCs) and Ultra Large Crude Carriers (ULCCs) to aid substantial import and export activities, ensuring smooth operations (MIDA,2020).

These position PRefChem favorably, enabling it to go about its business amid eco-friendly surroundings. As a result, meeting regulatory standards for sustainable practices is more manageable, facilitating environmentally sensitive activities. The strategic location of RefChem also significantly impacts its business through sustainability initiatives. The placement of the complex outside key oil and gas shipping lanes liberates it from strict regulatory requirements concerning ships' emissions (MIDA, 2020).

Enabled by a suitable business atmosphere, PRefChem prospers, expanding its activities in the oil and gas sector. Besides this, its location at the south of the Johor port allows for the convenient reception of internationally produced biofuel, primarily from Argentina and Indonesia. Therefore, PRefChem's strategic location is essential in supporting its sustainability initiatives. To anticipate and overcome obstacles to achieving its objectives following the strategic location, PRefChem can implement new rules and guidelines for better performance in foreign markets, including the PIPC region. It will be imperative to instill a culture based on

shared values and guide employees' purposes throughout the organization.

PRefChem's location within the PIPC presents notable advantages for its business. The place facilitates staff and asset movement, operationalizes distribution, and creates a seamless flow of raw materials in and finished products out of the site. It also indicates the improvement and enhancement of the sustainability of the facility. A more significant sustainable transport system, a reduction of greenhouse gases, and the protection of natural resources can be achieved (Pepermans et al., 2019). Infrastructural development is also increasingly relevant in this context. The process should support sustainable development principles which are based on the integration of economic growth, and ecological protection.

5.1.2 Weaknesses

5.1.2.(a) High Operational Costs

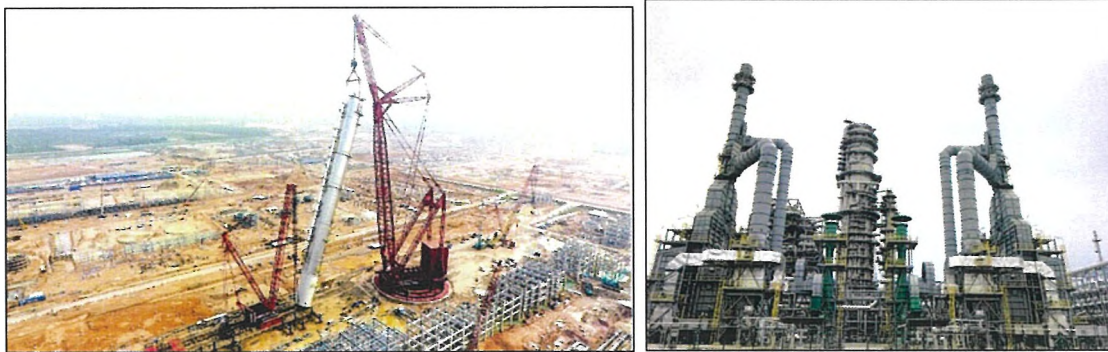


Figure 5.1.2 (a) The first construction of plant

PRefChem is confronted with rising operational costs due to increasing energy prices and the corresponding resource costs. This problem is exacerbated by the highly energy-intensive nature of petrochemical production and its effect on profit margins and firm performance.

As energy inputs are critical for PRefChem operations, particularly for refining and petrochemical processes, this thesis explored how these energy inputs translate into reduced GHG emissions. Operational expenses are directly influenced by price fluctuations in electricity and fuel prices, with global energy prices fluctuating. For example, reports this year suggest that companies like PRefChem can no longer afford to manufacture petrochemical products due to a squeeze in production margins as feed stock costs have increased. (Bantillo,2022)

PRefChem is of interest here as the ICIS article discusses how rising feedstock costs have squeezed production margins in the petrochemical sector. It argues that this may drive companies from maintaining competitive pricing by lifting their vendors' operational costs first. To reduce operational costs, PRefChem may consider Investing in Renewable Energy. Saudi Aramco's Annual Report points out its investment in cleaner fuel technology and renewable energy sources. This matches PRefChem's suggestion to look for alternative energy sources to stabilize costs and attenuate dependence on fossil fuels.

5.1.2.(b) Excessive Workload & Number of Staff Members



Figure 5.1.2 (b) Staff of PRefChem and illustration picture of excessive workload

The weakness of excessive workload and the number of staff members attached to functions at PRefChem may affect or adversely affect the organization's performance and employee well-being. This situation is characterized by one executive being responsible for all monthly analyses for each subsidiary, along with tight deadlines and no work-life balance, leading to detrimental effects on both individual employees and the organization.

A report by O.C. Tanner indicates that 50% of oil and gas workers find their work exhausting, with 39% feeling emotionally frustrated. The report highlights that a poor balance between work and personal life increases the likelihood of burnout, emphasizing the need for organizations to prioritize employee well-being to prevent high turnover and maintain productivity.

The International Journal of Current Innovation Studies examines how a lack of work-life balance, exacerbated by excessive workloads, leads to higher turnover rates. This study emphasizes that employees who want less management work will leave, leading to higher recruitment costs and team continuity disruption.

The Deloitte Insights report points out how companies in the chemical industry must analyze the number of personnel required to maintain work crowds. Consequently, this reassessment may find a middle ground that allows more equal distribution of responsibilities and reduces each individual burden, helping to increase productivity and employee satisfaction.

5.1.3 Opportunity

5.1.3 (a) Expansion of the Pengerang Integrated Complex (PIC)

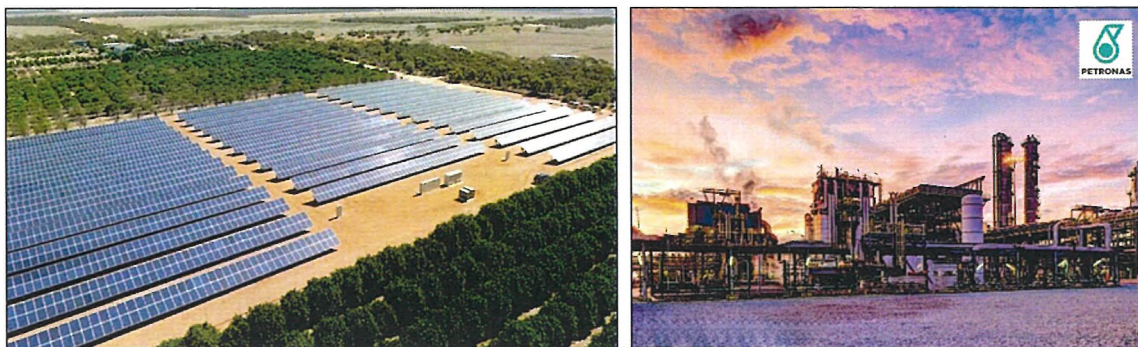


Figure 5.1.3 (a) 40-Megawatt Solar Energy and state of the art chemical recycling plant

The Pengerang Integrated Complex (PIC) multi-billion project offers significant opportunities for PRefChem to increase its operational and market capacity. PRefChem can harness this growth to diversify its product offerings and improve sustainability using the RM60 billion in additional investments that the Johor state government predicts in the third phase of the PIC projects, such as solar farms and bio-refineries (MalayMail, 2023).

In recent announcements, PETRONAS confirmed an RM7.5 billion investment in the PIC, including a 40-megawatt solar energy project and a state-of-the-art plastics chemical recycling plant. To align with global sustainability trends, the initiatives defined by PRefChem are consistent with the company's commitment to enhance its environmental footprint while expanding its operational potential (The Star 2024).

Apart from compounding sustainability practices, PRefChem further established itself in the company's good books by introducing various renewable energy projects, such as solar farms. Such an attraction can also attract environmentally conscious consumers and investors, solidifying the company's market position.

PRefChem should actively participate in feasibility studies for upcoming PIC projects to ensure consistency with market needs and technological improvement. Early engagement can secure good terms and establish PRefChem as a leader in these new initiatives.

5.1.3 (b) Technological Advancements



Figure 5.1.3 (b) State-of-the-art Lummus Technology and High-Efficiency trays in distillation columns

PRefChem can promise operational efficiency and cost reduction by integrating refined and petrochemical technologies with advanced technologies. Through investments in digitalisation, automation, and innovative manufacturing techniques, PRefChem can improve the productivity and safety of its facilities.

According to Petronas's website, PRefChem has already started integrating advanced technologies into its operations. For instance, the refinery uses state-of-the-art Lummus technology and utilises high-efficiency trays in its distillation columns to maximise process efficiency. This shows that by adopting new technologies both for operational performance and for reducing emissions, the company is fulfilling the global goals of sustainability.

PRefChem finds that advanced technologies can significantly improve their operational efficiency. Process automation can streamline processes, minimise operator error, and maximise resource use, resulting in lower production costs and higher output.

The WAM Saudi report shows how the petrochemical industry is using AI and IoT technologies to enhance operational efficiency, improve safety, and implement predictive maintenance. It explains the need for PRefChem to engage with industry partners and monitor emerging technology trends to maintain competitiveness.

5.1.4 Threat

5.1.4 (a) Overdue Payments



SUBTOTAL	£425.00
VAT TOTAL	£74.38
Total	£499.38
Balance Due	£499.38

Figure 5.1.4 (a) Illustration of Overdue Payments

However, a large share of Prefchem's financial health may be at risk if tenants don't pay on time. Liquidity issues of the company have resulted from the reluctance of some tenants to fulfil their payment obligations, in most cases due to pending agreements. This is part of a broad trend in other sectors, notably textiles and construction, where the situation has deteriorated over the past few months. In the raw data of the Coface Asia Corporate Payment Survey 2024, 60% of companies reported payment delays, up from 57% in 2022, and particularly in the textile industry, a notable percentage of companies exhibited ultra-long payment delays (ULSE).

The PYMTS article says payment delivery can disrupt production schedules and service delivery. If a company finds it difficult to pay employees or purchase inventory due to cash flow problems and fails to deliver goods or services on time, it will face customer dissatisfaction and the risk of losing business. The operational disruptions caused by overdue payments can also divert resources from core activities, impacting overall productivity and growth potential.

To effectively mitigate the threat of overdue payments at Prefchem, Improved Relationships strategy can be implemented. According to the Zillow article, building strong relationships with tenants is crucial. Clear communication regarding payment terms and expectations can help foster a cooperative environment. Regular follow-ups and open lines of communication can encourage timely payments and address concerns proactively.

5.1.4 (b) High Risk Sector



Figure 5.1.4 (b) 27 October 2022 explosion and fire occurred at pipeline of PRefChem

The oil and gas industry are inherently classified as a high-risk sector due to various operational, environmental, and geopolitical factors. Below is an elaboration on the threats posed by this industry, their impact on businesses, and strategic recommendations for mitigation.

According to the EnergyDigital article, the nature of oil and gas extraction involves significant operational risks, including blowouts, spills, and equipment failures. These incidents can lead to catastrophic consequences, including loss of life, environmental damage, and substantial financial liabilities.

On October 27, 2022, PRefChem temporarily halted its polymer production lines at the Pengerang Integrated Complex due to an explosion and fire that occurred at a pipeline connected to the Petronas oil refinery in Johor. The company confirmed this shutdown on October 28, stating that it was a standard procedure for inspections following such incidents. Fortunately, there was no reported damage to critical polymer production equipment, including the cracker and reactor

According to the Shell annual report, companies may face increased costs due to compliance requirements, investments in safety measures, and potential liabilities from incidents. This can lead to cash flow issues or inadequate liquidity.

To handle the risks in the oil and gas sector, the company would need to have a Strong Safety Protocol. Good safety standards and workforce training programs must be implemented to reduce injury occurrences and operational awry. At all organizational levels, we should prioritize a culture of safety.

CONCLUSION

In conclusion, my internship with PRefChem has been highly valued and enriching. During my time with the Material Team, I had a chance to use my academic knowledge in practical, real-world scenarios about material management and inventory control in an industry such as oil and gas. Working with skilled professionals, I learned first-hand what it means to manage data effectively, monitor inventory, or support procurement processes.

Besides deepening my technical skills, getting technical experience also taught me how essential teamwork, mindfulness, and effective communication are to operationalizing processes. The internship was a good time during which I learned and overcame challenges, significantly contributing to my personal and professional growth.

One key result of my internship was becoming proficient in standard software. After that, I became confident in using Microsoft Excel, Microsoft Power BI, SAP, and CSRF software. Since these are essential tasks for any accounting or service-based business, these tools are needed: account centers, procurement, billing, data analysis, service requests, and even creating presentations.

Finally, I'd like to thank everyone who helped and supported me in this experience. Growth and success during the internship had as much to do with their mentorship and encouragement as with me.

This internship has given me a clear understanding of what an oil and gas career will entail and with skills that complement my skill set gained from the university. I am glad to have the opportunity to be part of PRefChem's operations and see the chance to put that knowledge to use in my future endeavors.

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APPENDICES

ACTIVITY JOINED:

- 1) Weekly Meeting Material Management



3) Warehouse Monthly Audit



4) Appreciation Dinner of MMSACC

