

Feasibility Study for **COAL TAR PITCH STORAGE AND MELTING FACILITY,**

Khalifa Economic Zones Abu Dhabi (KEZAD),
Abu Dhabi, United Arab Emirates



Project Overview

Coal Tar Pitch Storage and Melting Facility,

Khalifa Economic Zones Abu Dhabi (KEZAD), Abu Dhabi, United Arab Emirates



Project Objective

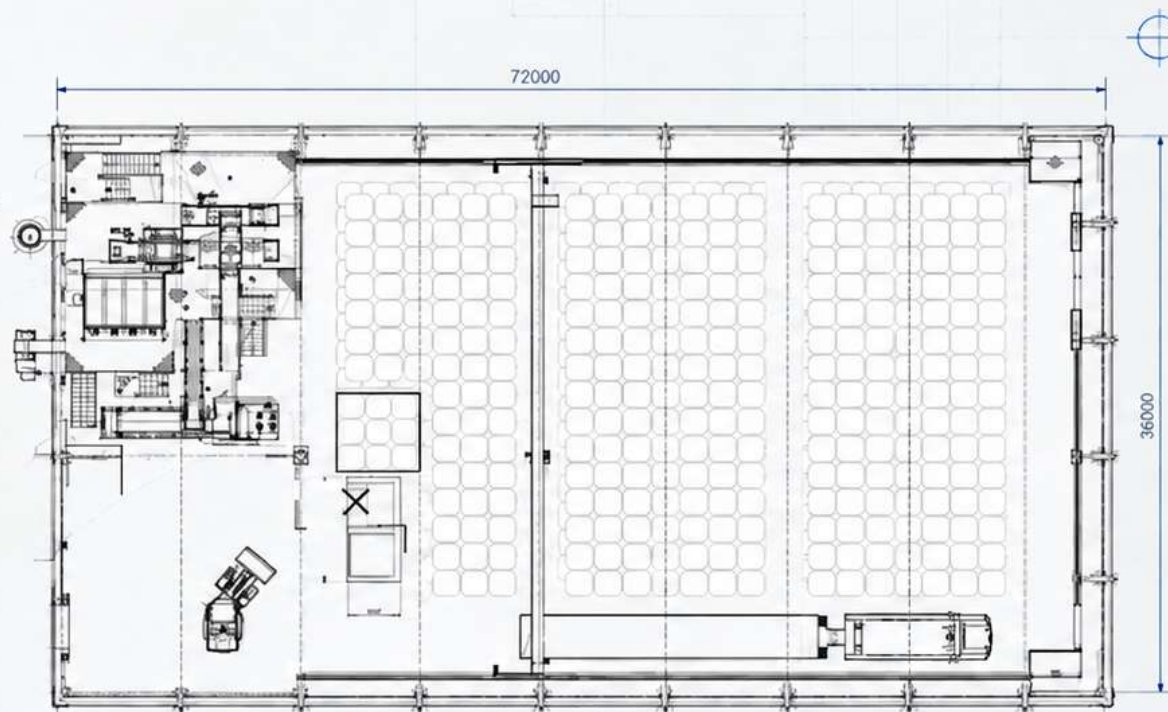
To develop, own and operate a coal tar pitch storage and melting facility in KEZAD, Abu Dhabi, providing a secure, reliable and cost-efficient supply of liquid pitch to the Consumer Coal Tar Pitch Aluminium Grade for anode production in the UAE.

The facility will receive imported solid coal tar pitch, store it in a dedicated warehouse and convert it into high-quality liquid pitch through a fully enclosed, environmentally compliant melting process, ensuring continuous operation and future capacity for expansion.



Key Benefits

- ✓ Secure supply of liquid pitch to Coal Tar Pitch Aluminium Grade
- ✓ Reduced dependence on imported liquid pitch
- ✓ Improved supply chain reliability and cost efficiency
- ✓ Stable product quality and temperature-controlled delivery
- ✓ Increased operational reliability for anode production
- ✓ Reduced logistics and storage risks
- ✓ Environmentally compliant operation with advanced emission control systems
- ✓ Scalable capacity for future expansion



Project Highlights

Location	Khalifa Economic Zone Abu Dhabi (KEZAD), Abu Dhabi, UAE
End User	Consumer Coal Tar Pitch Aluminium Grade production in the UAE
Feedstock	Solid coal tar pitch (imported)
Product	Liquid coal tar pitch
Nominal Capacity	50,000 ton per year
Key Process Units	• Solid pitch storage (enclosed warehouse) • Pitch melting and liquid storage system • Heating system (thermal oil) • Product loading and dispatch facilities • Emission control and environmental systems

Contents of the Feasibility Study

Coal Tar Pitch Storage and Melting Facility

Khalifa Economic Zones Abu Dhabi (KEZAD), Abu Dhabi, United Arab Emirates

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The Feasibility Study contains **more than 180 pages** excluding appendices, supporting information and reference materials.

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Feasibility Study Scope and Level of Detail

Coal Tar Pitch Storage and Melting Facility

Khalifa Economic Zones Abu Dhabi (KEZAD), Abu Dhabi, United Arab Emirates

1	Executive Summary What is built, where, capacity, product, feedstock, selected technology, CAPEX/OPEX, schedule, risks and feasibility conclusion.	14	Civil, Structural and Buildings Buildings, foundations concept, roads, paving, drainage, bunds and preliminary structural basis.
2	Project Background and Objectives Project purpose, sponsor/company, assumptions, customer and study boundaries.	15	Fire Protection and Process Safety Fire water, detection, gas detection, extinguishing, ESD, hazardous area classification and key process hazards.
3	Design Basis Capacity, operating hours, climate, site conditions, design life and key design criteria.	16	Environmental Requirements Air, wastewater, noise, waste, stormwater, soil/groundwater and hazardous materials.
4	Applicable Codes, Standards and Regulations UAE, Abu Dhabi, KEZAD, Civil Defence, DoE and IEC/API/ASME/NFPA/ISO hierarchy.	17	Personnel Workforce exposure, pitch fumes, PAHs, dust, hot surfaces, noise, PPE, ventilation and escape routes.
5	Site and Infrastructure Plot, access, roads, elevations, preliminary geology/groundwater, neighboring facilities, battery limits and tie-ins.	18	Permitting and Approvals Required NOCs, licences and permits from KEZAD, EAD, Civil Defence, utilities and other authorities.
6	Raw Materials and Product Specification Solid pitch properties, liquid pitch requirements, consumption, quality, storage and incoming control.	19	Construction and Execution Strategy EPC/package philosophy, sequence, temporary facilities and commissioning/start-up approach.
7	Process Technology Technology description, alternatives, selected concept, process flow, material balance, key temperatures and pressures.	20	Project Schedule Engineering, permits, procurement, construction, commissioning and operational start-up roadmap.
8	Plant Capacity and Operating Philosophy Annual/hourly rates, operating days/hours, turndown, availability, sparing and start-up/shutdown philosophy.	21	CAPEX Estimate Equipment, construction, utilities, infrastructure, engineering, contingency and estimate basis/accuracy.
9	Main Process Equipment Melter, tanks, pumps, thermal-oil heater, RTO, filters, conveyors, crusher, preliminary sizing and quantities.	22	OPEX Estimate Feedstock, gas, power, manpower, maintenance, waste disposal, consumables, water and other operating costs.
10	Utilities and Offsites Power, gas, water, air, nitrogen, thermal oil, fire water, drainage and utility consumption.	23	Economic / Financial Evaluation Revenue, EBITDA/cash flow, NPV, IRR, payback and sensitivities, if included in study scope.
11	Storage, Handling and Logistics Solid pitch receiving, storage, conveying, molten pitch storage, tanker loading, truck traffic and storage autonomy.	24	Risk Assessment Technical, permitting, feedstock, product quality, schedule, utilities, CAPEX and environmental risks with mitigation.
12	Plot Plan and Plant Layout Preliminary arrangement, hazardous areas, access, fire roads, spacing and maintenance philosophy.	25	Conclusions and Recommendations Feasibility verdict, preferred option, open points and actions for the Basic Design phase.
13	Electrical, Instrumentation and Control Load estimate, transformers/MCCs, emergency power, PLC/DCS, UPS, instruments and Ex equipment.		



The feasibility study defines **25 core workstreams** covering technical, commercial, permitting, cost, schedule and risk aspects.



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Indicative Project Roadmap

Coal Tar Pitch Storage and Melting Facility

Khalifa Economic Zones Abu Dhabi (KEZAD), Abu Dhabi, United Arab Emirates

SAFE
RELIABLE
SUSTAINABLE
OPERATION

ENGINEERING
TODAY
A CLEANER
TOMORROW

1

Feasibility Study & Project Definition



2–3 months

- Concept selection and study basis
- CAPEX / OPEX and project economics
- Key risks, permits and execution strategy

2

Basic Engineering Tender & Contractor Selection



2–3 months

- Tender package preparation
- Bid process and technical evaluation
- Award of Basic Engineering contractor

3

Basic Engineering & Permitting



4–6 months

- Process design, layout and utilities
- Equipment definition and design basis
- Permitting support and long-lead strategy

4

Detailed Engineering, Procurement & Construction



12–16 months

- Detailed design and procurement
- Civil, structural and building works
- Mechanical, piping, E&I installation

5

Commissioning, Start-Up & Ramp-Up



3–4 months

- Pre-commissioning and commissioning
- Training, performance testing and handover
- Transition to stable operation



Indicative total duration after completion of the feasibility study:
approximately 24–32 months, depending on permitting, contractor strategy and long-lead equipment delivery.

PT Carbon Process Engineering may continue to support the Client as Owner's Engineer during tendering, Basic Engineering and project implementation.

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Best regards!

PT Carbon Process Engineering

Our team develops feasibility studies and engineering solutions across a wide range of industrial sectors and project types.



Industries We Support

- Processing and manufacturing industries
- Chemical industry
- Agro and agro-processing sector
- Industrial products and consumer goods
- Cement industry
- Graphite and artificial graphite manufacturing



Project Types

- Greenfield projects
- Brownfield projects
- Capacity expansion and production upgrades
- Plant modernization and adaptation
- Relocation of production between sites or countries



Typical Advisory Scope

- Feasibility studies and project definition
- Technology selection and optimization
- Site selection and location screening
- Technology scouting and technology transfer
- Process improvement and implementation support



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