

Planning and Execution of a Biorefinery Project, 5 cr

PROJECT ASSIGNMENT
AUTUMN 2023

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Learning objectives

How to
prepare a
Project
Proposal

Deliverables
in Biorefinery
Investment
Project

Cost
estimating,
time
scheduling

Project Team
Work

Background

- Company Hanko Pulp Mill Oy has decided to invest to a new greenfield crude tall oil plant in Hanko
- Investors are non-technical and therefore preferring and EPC project execution model
- Tall oil production will be integrated to an existing chemical pulp mill
- Hanko Pulp Mill Oy is expecting a quotation of services according to the RFQ -letter
- The final proposal is due Nov 16 2023

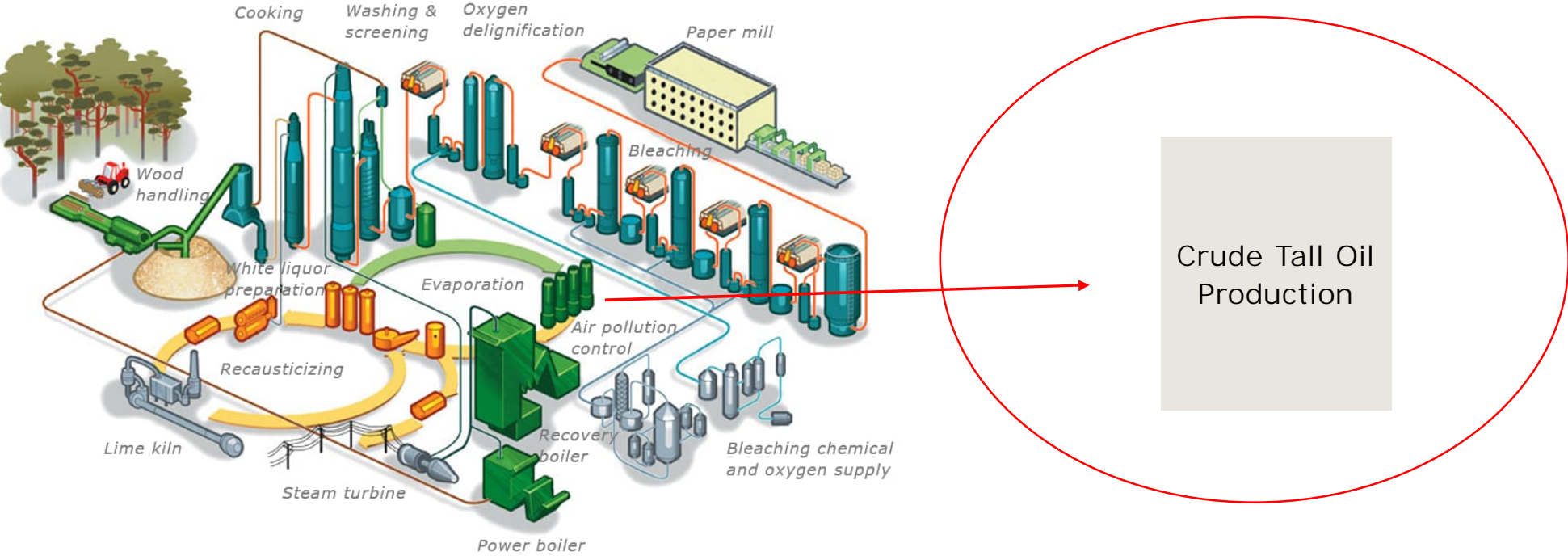


Objectives and key deliverables

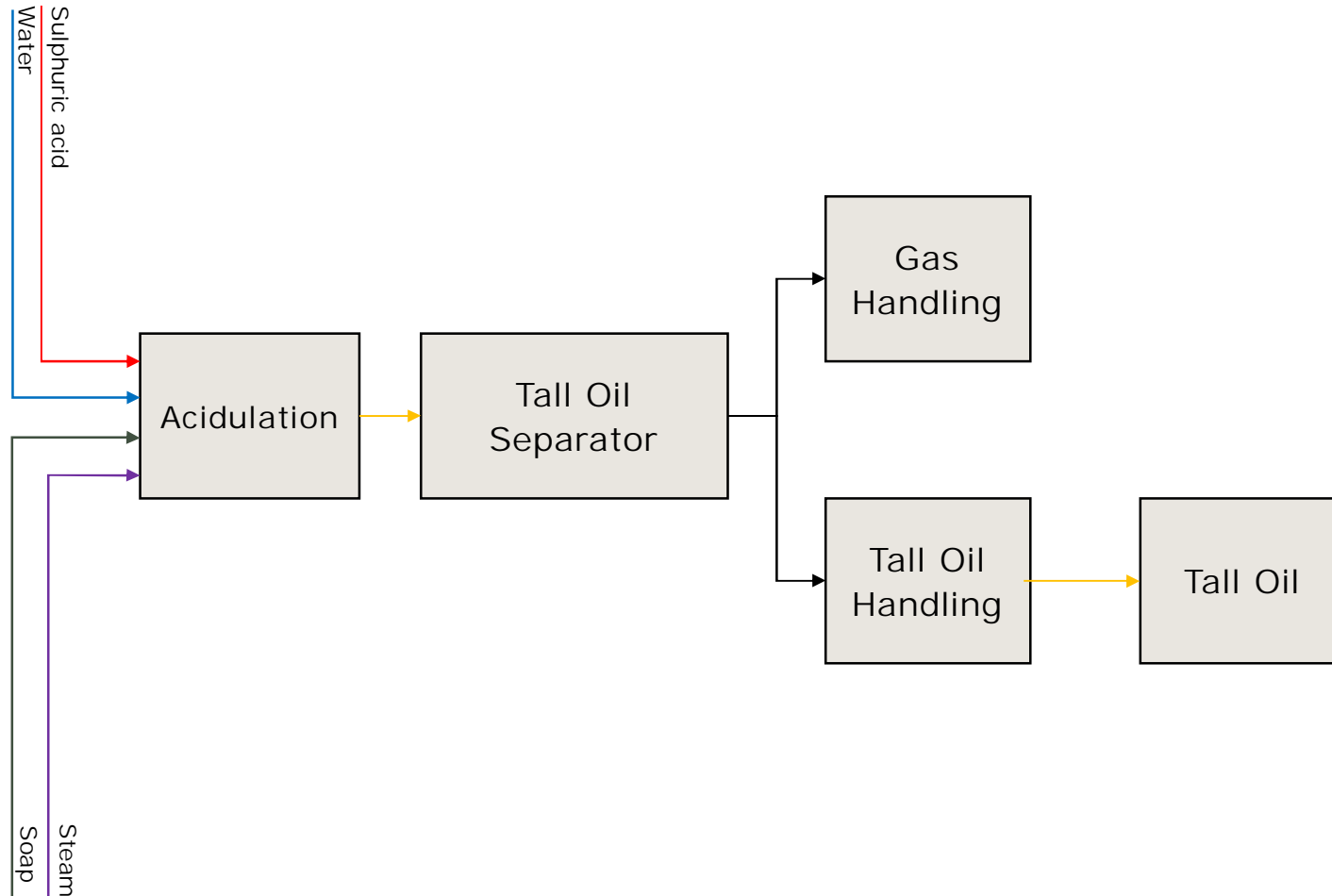
- The main objective is to prepare a complete EPC proposal according to the received request for quotation letter
- Key deliverables are:
 - Technology review with preliminary block diagram and short process description
 - Project execution plan including manning planning, hourly budgeting, mobilisation, construction management plan, engineering management plan etc
 - HSE plan and sustainability evaluation
 - Key time schedules
 - Preliminary layouts
 - Scope of services
 - Pricing



EPC Proposal for Tall Oil Plant



Process steps



Main design data

— Mill capacity	950 000 ADt/a
— Softwood pulp	600 000 ADt/a
— Hardwood pulp	350 000 ADt/a
— Tall Oil Capacity	EPC to determine
— LP-Steam Pressure	3...3,5 bar (g)
— LP-Steam temperature	>140 °C

Assignment

1. You will form 2-3 Project Teams (Company X and Y for example)
2. Each Company will act as a an "EPC Contractor" preparing a turnkey quotation for the Client
3. Assignment is to prepare "EPC Quotation for a crude tall oil production line"
4. Client (AFRY lecturers) will evaluate the Quotations



Assignment Schedule

- Work planning can be started now
- Designated sessions for guidance and mandatory progress reporting are organised during October-November 2023
 - *Workshop #1: October 12, 2023 (@AFRY Otaniemi)*
 - *Subject: How to prepare a good proposal?*
 - *Workshop #2: November 2, 2023 (@AFRY Otaniemi)*
 - *Subject: HSE in proposals, review of time schedules and cost estimates*
 - *Workshop #3: November 9, 2023 (@AFRY Vantaa)*
 - *Preparation for presentations, draft presentations, final questions and answers*
 - Each team reports the progress of Quotation preparation status during the workshops
- Final presentation of the prepared Quotation in the "executive summary presentation" format on November 16, 2023



Where to start?

First tasks for the team

- Proposal organisation, choose Project Manager
- Choose your company's name
- Task and role definitions
- Time schedule for preparing the proposal
- Prepare task list. Who will do what documents
- Agree regular meetings with the team
- Study the material! (i.e. read the RFQ letter =Request for Quotation package)



Teams Formation & Tasks Distribution Principle

- Each team shall execute following task
 - Management
 - Assignment planning and tasks
 - Project organization chart
 - Project Execution Plan
 - Manpower Planning
 - Risks management, document handling, presentation and team leading
 - Putting the quotation together, checking everything is in order
 - Project controls team
 - Cost data & scheduling
 - Life cycle cost analysis
 - Engineering
 - Equipment list, process description and operating values
 - Layouts & line diagrams
 - HSE and sustainability
- Team roles (examples)
 - Project Management
 - Project or Proposal Manager
 - Coordinator/Document Manager/Procurement Manager
 - Risk/Contract Manager
 - Project Controls
 - Time Scheduler
 - Cost Controller
 - Engineering
 - Engineering Manager
 - Health, Safety and Environment Manager

Target outcome

- Target is to have competitive EPC Quotation
 - Client can not make the selection only based on low cost, but that is a major factor, cost estimate should be detailed
 - Focus on preparing cost estimate
 - You also must have credible package of project information
 - Scope, time schedule and cost in balance

- Evaluation of the assignment
 - 40 % Quotation letter and appendices
 - 40 % Presentation
 - 20 % Activity and participation in the workshops

The assignment output should include:

- Executive summary presentation (max 20 min, and 10 min for discussion)
- Delivery of Quotation package (all the appendices listed in the RFQ)

Groups

- Groups of approx. 4-6 persons
- Groups will be random
- Groups to be announced after the first lecture

Hints and Advice

- Carefully review RFQ documentation first!
 - What should we deliver? Prepare a list of deliverables
 - Put yourself in the Client's shoes: what is the Client asking for / expecting us to do?
 - Separate main items from details
 - Don't get stuck in the details!
 - Search for facts, ask for guidance!
- Do not focus too much on the technology solution, make simplifications, the process is given, you can use that as the basis. The main thing is to put together the material and plan the project.
- Remember progress reporting for the workshops
- Utilize the knowledge gained during lectures, but be prepared to search for advice
- Strive for team cohesion, assign leaders to the objectives, not to the team, and co-operate
- You are supposed to put together a "real" EPC Quotation
- Keep it short and to the point!

Groups

Group 1

Rubén Cid Hernández

Filip Engström

Graham Featherstone

Uyen Le

Haoyu Bai

Group 2

Juho Liekkinen

Nolann Lucas

Ronja Papinaho

Sardar Hayat

Noora Pitkänen

Group 3

Nikolaus Twaroch

Ainu Voipio

Merle Wohlberg

Jiahui Yang

Ali Rashid

Questions?

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