

# Lecture 7

# Basics of Procurement

CHEM-E0115 PLANNING AND EXECUTION OF A BIOREFINERY INVESTMENT PROJECT

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# Agenda

## I. Introduction to Procurement

- Procurement Function
- Different Definitions
- Two Types of Procurement

## II. Project Procurement Process

- Procurement Planning
- Supplier Selection
- Contracting
- Contract Management
- Evaluation & Closure

## III. Sustainable Procurement



# I. Introduction to Procurement

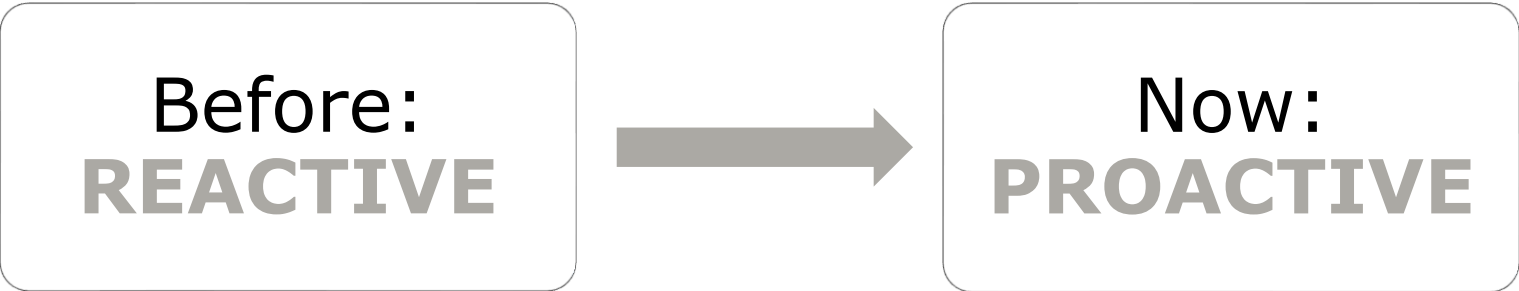
# Introduction to Procurement



The basic objectives of procurement are:

- to purchase equipment, material and/or services, necessary to meet the technical specifications, and
- to ensure that the deliveries are in accordance with the overall schedule and in the most cost-effective manner.

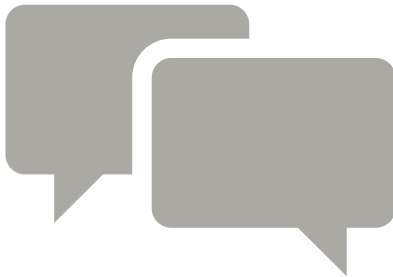
# Procurement Function



Global  
competition



Increased  
outsourcing



Improved  
communication

# Different Definitions

Ordering

Buying

Purchasing

Procurement

Sourcing

Supply Chain  
Management

Value Chain  
Management



*Arjan van Weele (Jan 5, 2014). CollegeTourPurchasing Video 1 What is Purchasing? YouTube: 4:37-8:14*

# Two Types of Procurement

## Organizational

Procurement for sustaining an organization's daily business processes

Strives to achieve lower unit prices and optimize supply chain

Centralized administration: fast quote and order processes

Long-term strategic relationships with suppliers

## Project-based

Procurement for a particular purpose or project

Ensures overall project delivery

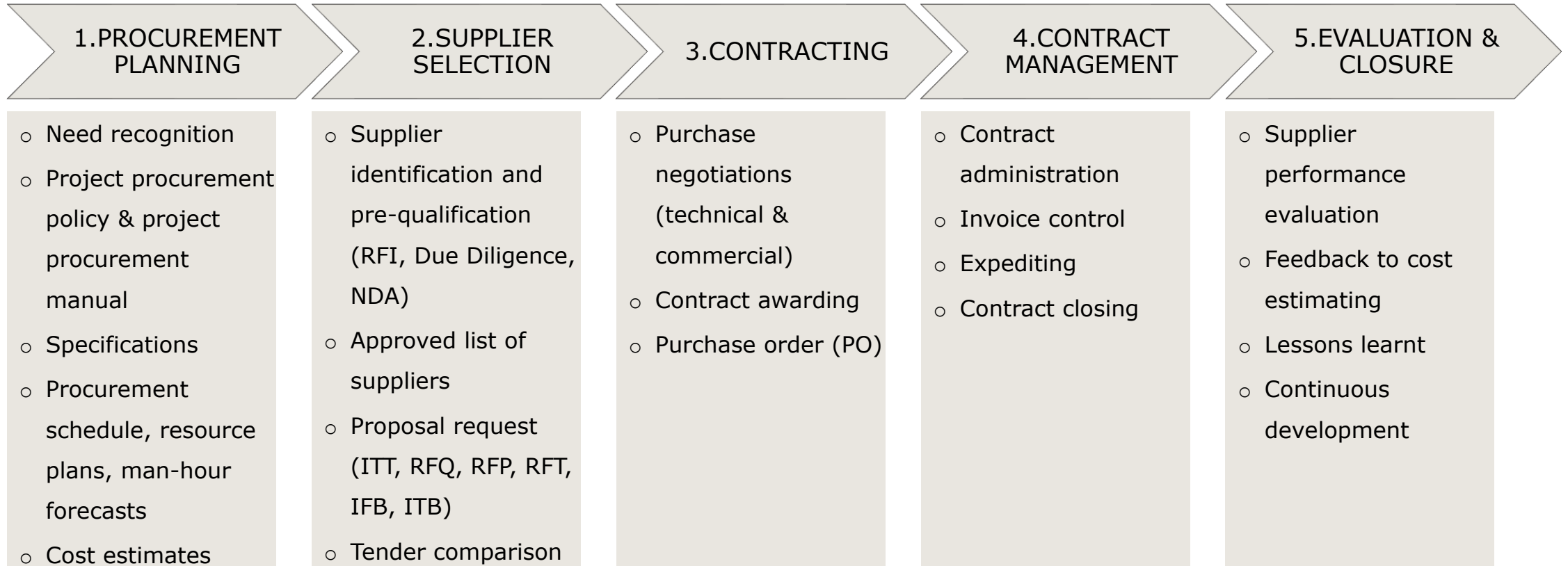
Project procurement function resides with the project team, requires numerous activities in a short period of time

Project-based relationships with suppliers

# II. Project Procurement Process

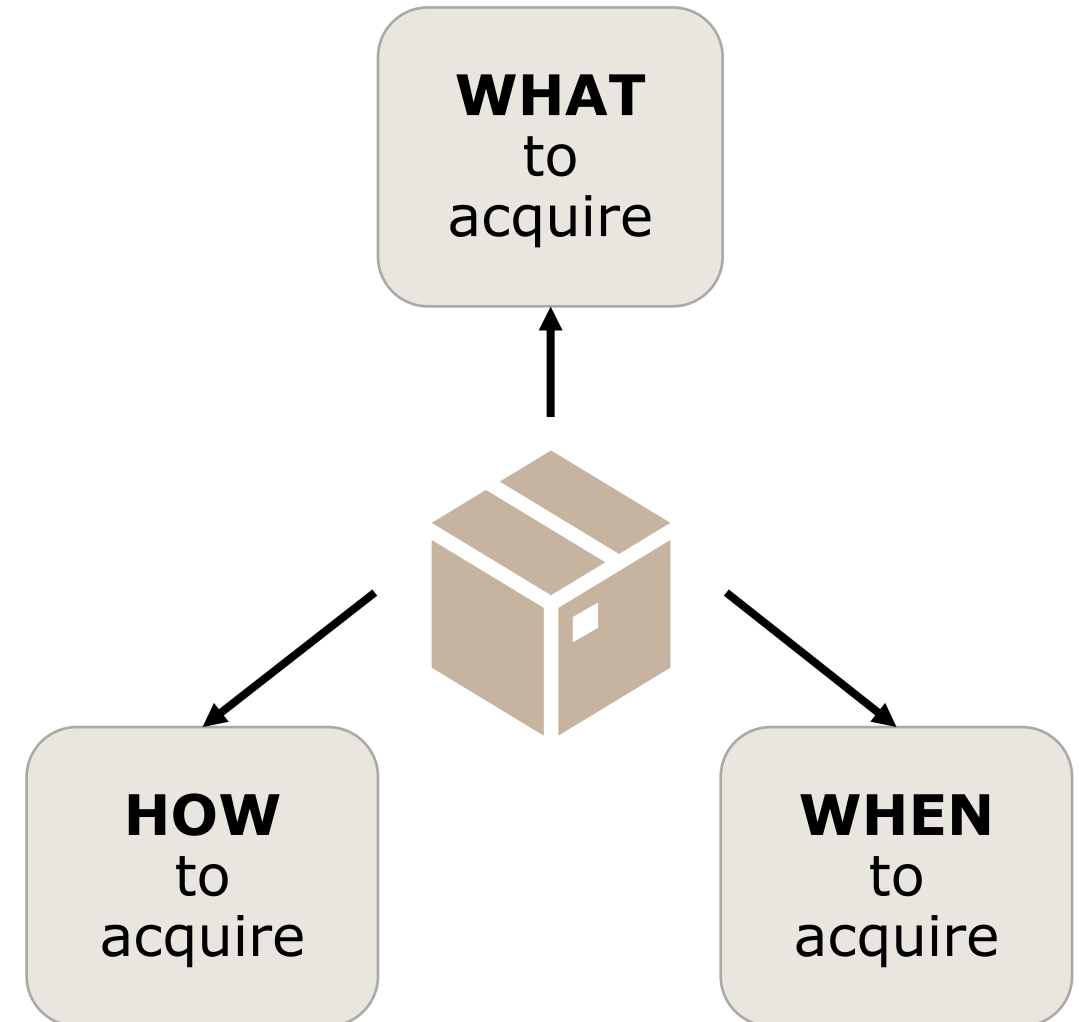


# Typical Project Procurement Process



# 1. Procurement Planning

- Identify a definite need to purchase a product or service; the idea originates outside the procurement department → the procurement department's function is to buy on behalf of the rest of the organization
- Define procurement policy, prepare a procurement manual, procedures, templates
- Clearly define specifications, project requirements, standards
- Identify procurement milestones & prepare a procurement time schedule
- MOB analysis (if applicable)



# Procurement Schedule Examples

Original project procurement schedule:

Package Name	ITT №	Sourcing Responsible	Technical Responsible	Start	Finish
Overhead Cranes	M023	Anna	Jukka		
ITT Preparation				1.8.2022	15.8.2022
Tendering Time				16.8.2022	13.9.2022
Tender Comparison				14.9.2022	5.10.2022
Negotiations				6.10.2022	27.10.2022
Contract Day				27.10.2022	27.10.2022
Site Need Date				30.6.2023	30.6.2023

Follow-up of procurement activities:

ITT №	Package Name	ITT out PLANNED	ITT out ACTUAL	ITT out Δ	Tenders Received PLANNED	Tenders Received ACTUAL	Tenders Received Δ	Tender Comparison PLANNED	Tender Comparison ACTUAL	Tender Comparison Δ	Contract Day PLANNED	Contract Day ACTUAL	Contract Day Δ
M023	Overhead Cranes	16.8.2022	19.8.2022	3	13.9.2022	23.9.2022	10	5.10.2022	19.10.2022	14	27.10.2022	11.11.2022	15

Unresolved technical issues, unclear scope of supply, etc.

High workload of suppliers, holidays, sick leaves, etc.

Delayed offers + incomplete offers with unclear points

Delayed preceding phases + schedule difficulties in arranging negotiations

## 2. Supplier Selection

- Identification of Suppliers
  - Prepare a list of potential suppliers
  - Maintain supplier register (database)
  - Supplier pre-qualification (HSE, Ethics, Capacity/Resources, Financial condition, References, etc.)
- Requesting Offers (RFQ, RFP, RFT, ITT, IFB)
  - Issue requests for bids with all required documentation & track the bidding process
  - Receive and archive offers
- Evaluation of Received Offers
  - Technical and commercial clarifications
  - Technical bid evaluation (TBE)
  - Commercial bid evaluation (CBE)
  - Recommendation to the Client for negotiations



# Example of Price Information in Offers

			CRANES SUPPLIER OY
Tender submission date			23.9.2022
Tender validity until			23.11.2022
Tender currency			EUR
<b>MAIN SCOPE</b>			<b>580,000.00 €</b>
<b>M023 Overhead Cranes:</b>	<b>Units</b>	<b>Unit Price</b>	<b>Total Price</b>
Overhead cranes 5t	5	35,000.00	175,000.00
Overhead cranes 10t	3	60,000.00	180,000.00
Overhead cranes 40t	2	100,000.00	200,000.00
<b>Freight (including packaging):</b>			
DDP, Incoterms 2020			25,000.00
<b>SITE SERVICES</b>			<b>88,000.00 €</b>
<b>Installation:</b>			
Overhead cranes 5t	5	7,000.00	35,000.00
Overhead cranes 10t	3	8,500.00	25,500.00
Overhead cranes 40t	2	10,000.00	20,000.00
<b>Supervision and Start-up, 2 days</b>	including all travel expenses		5,000.00
<b>Training, 1 day</b>	including all travel expenses		2,500.00
<b>SPARE PARTS</b>			<b>75,000.00 €</b>
<b>Spares for 2 years</b>			75,000.00
<b>OPTIONS</b>			
<b>Maintenance Agreement, per year</b>			7,000.00
<b>Other Colour, per crane</b>	basic colour included in the price		750.00
<b>Coating System C5, per crane</b>	C4 included in the price		2,350.00

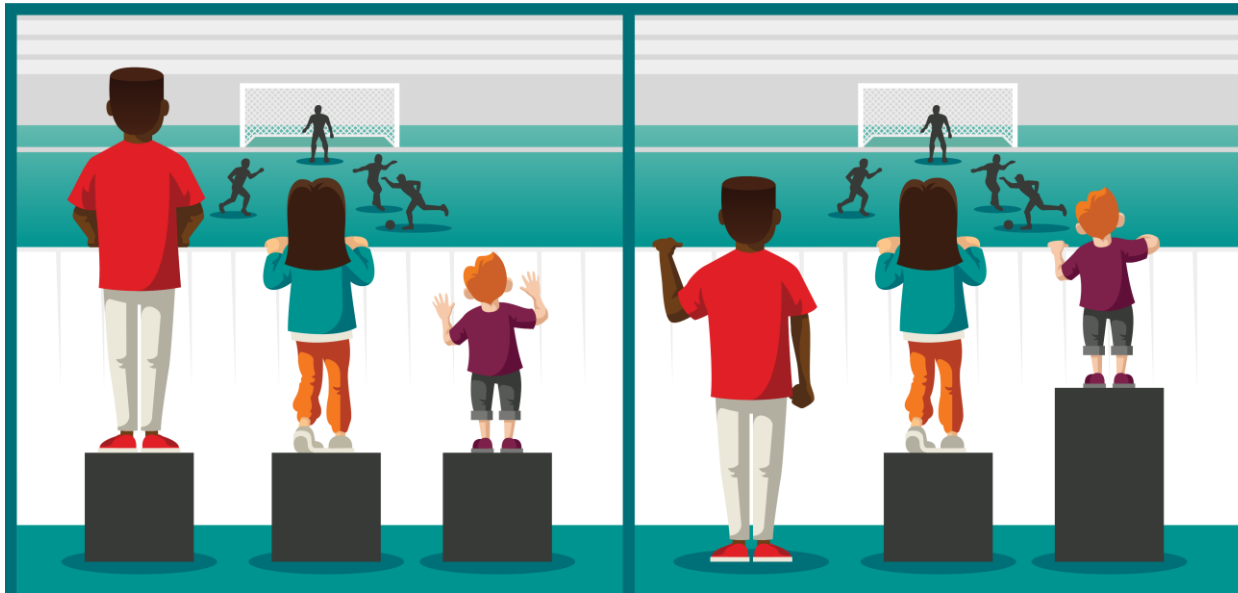
# Examples of Selection Criteria among Industrial Buyers



# Treating Tender Participants Equally or Fairly?

**EQUAL**

**FAIR**



All tender participants must be treated equally and fairly.

However, equal is not always fair.

# 3. Contracting

- Contract Documentation
  - Contracting models: Supply Contract, Installation Contract, Frame Agreements, Engineering Contract, EPC, EPS, etc.
- Negotiations
  - Coordinate participation in negotiations among the engineering and site management, Client and selected suppliers
- Contract Awarding
  - Prepare technical and commercial documentation for contracts , signatures according to the authority matrix
- Purchase Orders (POs)
  - Create purchase requisitions and POs in the Client's ERP system
  - Receive order confirmation
  - Inform all unsuccessful bidders



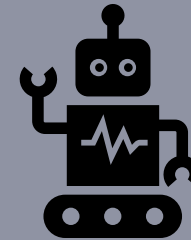


# Contract Content



## Legal-Economic Part

- Legal stipulations
- Prices
- Payment terms
- Bank guarantees
- Liquidated damages
- Delivery schedule



## Technical Part

- Warranties (performance, mechanical, availability)
- Technical specification & datasheets
- Technical standards
- Safety requirements
- Quality assurance inspections, acceptance tests procedures

# Main Points to Remember in Contracting

There is no one-size-fits-all approach in contracting. You have to tailor contracts to suit your needs.

Deliverables should be as clear as possible to avoid misunderstandings and disappointing results.

If it's not part of the contract, it's not part of the deal!

Project team should make sure that procurements meet the project needs.

Ask your legal team to review all contracts to ensure they follow legal requirements & protect you in case of disagreements.

# 4. Contract Management

- Contract Administration
  - Ensure that responsibilities and milestones are being met and the value of the contract is not increasing throughout unmanaged growth of scope
  - Management of change orders
- Invoice Control
  - Checking invoices againsts contract and payment milestones
- Expediting
  - Follow-up of documentation deliveries
  - Monitoring fabrication and inspection activities
- Contract Closing
  - Contract closing meeting and final settlements



# Expediting



## DESK EXPEDITING

- Kick-off & monthly meetings with selected suppliers
- Supplier documentation follow-up
- Progress follow-up & reporting



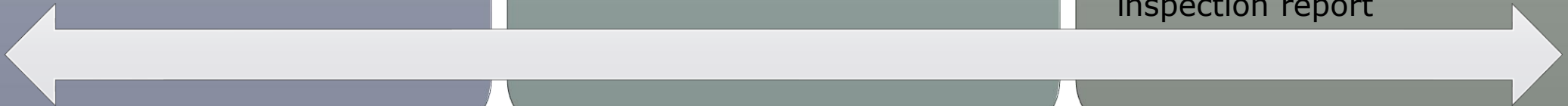
## FIELD EXPEDITING

- Planning expediting visits according to the expediting categories
- Conducting expediting visits → output: expediting reports



## SHIPPING

- Cargo readiness / checking of shipping documents
- Shipping and customs clearance
- Unsatisfactory, Overage, Shortage and Damage (UOSD) inspection report



# Expediting Categories

## ➤ **CATEGORY A:**

- Deliveries are on the critical path (large packages, use of new suppliers or unknown sub-suppliers, etc.)
- Any delay or quality issue will impact the project schedule and/or return on investment (ROI)
- Doubt or lack of experience of the supplier or their sub-supplier

## ➤ **CATEGORY B:**

- No direct impact on the execution of the project, if delivered slightly delayed to site, but where the documentation is essential to proceed with the detailed engineering
- Items on sub-critical path and are getting critical when delayed by 2 weeks
- Items which will have an operational impact because of its role into the process (compressor package, process cooling unit, etc.)

## ➤ **CATEGORY C:**

- Delivery time is well sufficient for manufacturing and shipment, but which can result in significant additional activities if delayed
- Hand valves, standard items, which may be limited as stock items

## ➤ **CATEGORY D:**

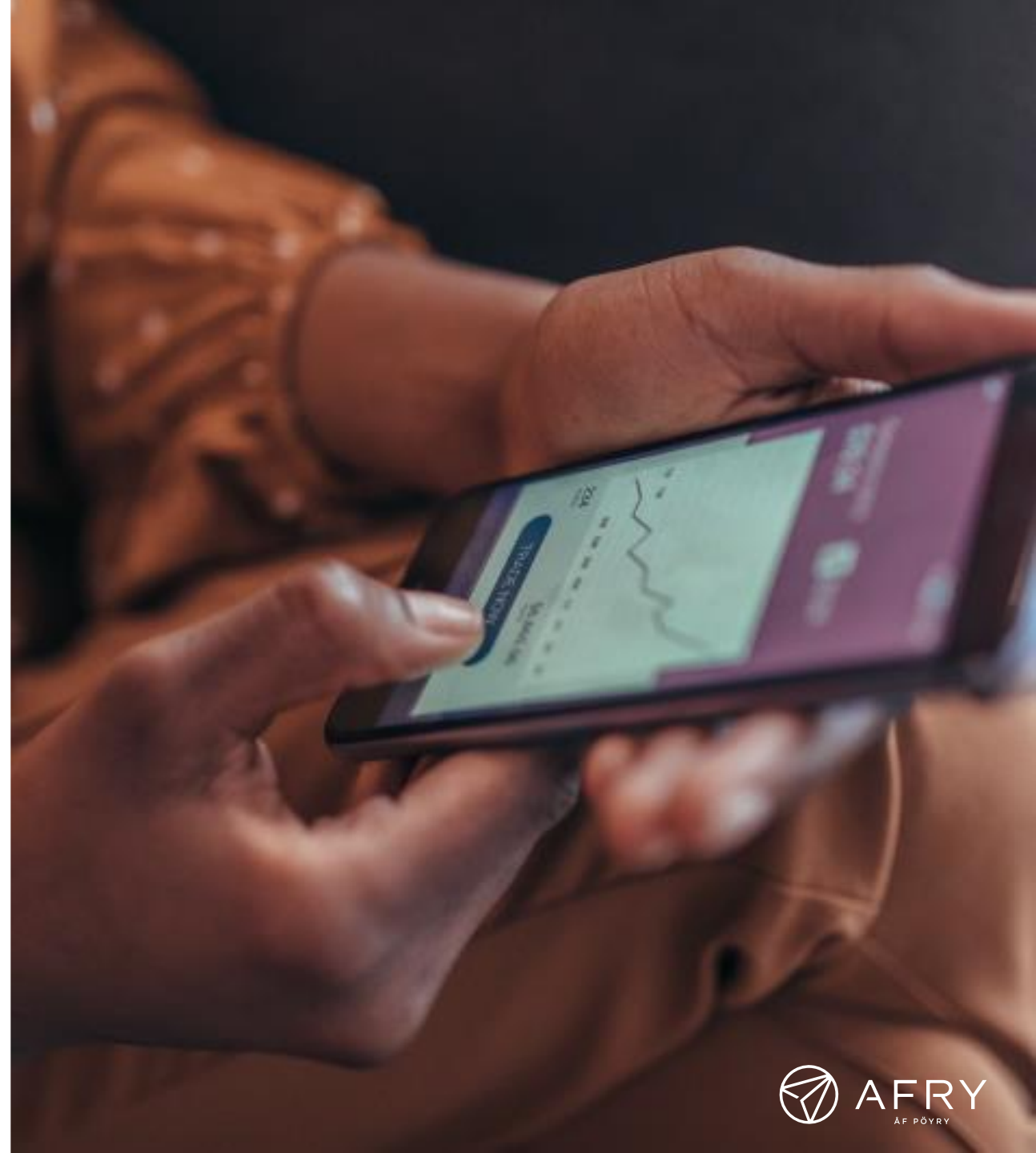
- Not critical items at all and do not require any specific expediting actions
- Bulk material deliveries

# Progress Report Example

Description	Weighted Factor	PROGRESS															
		Sep 2019		Oct 2019		Nov 2019		Dec 2019		Jan 2020		Feb 2020		Mar 2020		Apr 2020	
		Est %	Act %	Est %	Act %	Est %	Act %	Est %	Act %	Est %	Act %	Est %	Act %	Est %	Act %	Est %	Act %
Engineering	30	10 %	8 %	60 %	70 %	80 %		100 %		100 %		100 %		100 %		100 %	
Procurement	25	0 %	0 %	40 %	40 %	90 %		100 %		100 %		100 %		100 %		100 %	
Manufacturing	25	0 %	0 %	30 %	30 %	40 %		70 %		100 %		100 %		100 %		100 %	
Inspection & Testing	10	0 %	0 %	30 %	10 %	30 %		30 %		70 %		100 %		100 %		100 %	
Delivery	10	0 %	0 %	0 %	0 %	0 %		0 %		50 %		100 %		100 %		100 %	
<b>TOTAL</b>	100	3	2	39	40	60	0	76	0	92	0	100	0	100	0	100	0
<b>MAIN EVENTS:</b>	Engineering	<b>Please briefly write here what has been done during the reported month.</b>															
	Purchasing																
	Manufacturing																
	Assembly																
	Inspection & Testing																
	Packing																
	Delivery																
<b>CONCERNS AND MITIGATION PLAN:</b>	Engineering	<b>Please briefly mention challenges you face, if any, &amp; ways you are planning to overcome them.</b>															
	Purchasing																
	Manufacturing																
	Assembly																
	Inspection & Testing																
	Packing																
	Delivery																
	Mitigation Plan																
<b>TARGETS FOR NEXT PERIOD:</b>	Engineering	<b>Please briefly write here your main activities in the next month.</b>															
	Purchasing																
	Manufacturing																
	Assembly																
	Inspection & Testing																
	Packing																
	Delivery																

# 5. Evaluation

- Generally, supplier performance is evaluated with regard to:
  - Quality
  - Delivery time / schedule
  - HSE
- Not all suppliers need to be evaluated in the same way
- Supplier records with past performance serve as a reliable guide for upcoming purchases
- Benefits of a supplier database:
  - Significantly reduces the time and effort required either to source or to renew contracts
  - More choices of competent suppliers & increased responsiveness
  - Increased possibility to get reliable suppliers
  - Enhanced availability of goods



# 5. Closure

- A complete set of indexed contract documentation, including the closed contract, is prepared for inclusion with the final project files.
- The buyer provides the seller with formal written notice that the deliverables have been accepted.
- Lessons learned, what has been experienced and process improvement recommendations should be developed for the project file to improve future procurements.
- No project is complete until all contracts are closed out, invoices are paid, and lessons learned are documented.





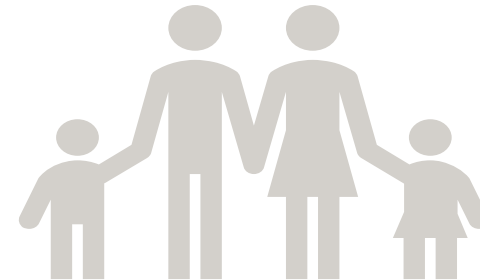
# III. Sustainable Procurement

# Why Sustainable Procurement?

Sustainable Procurement integrates requirements, specifications and criteria in order to meet the needs for goods and services in a manner that secures a good affair with respect to the entire life-cycle. This in turn benefits not only the purchasing organization but also the society at large, while minimizing damage to the environment.

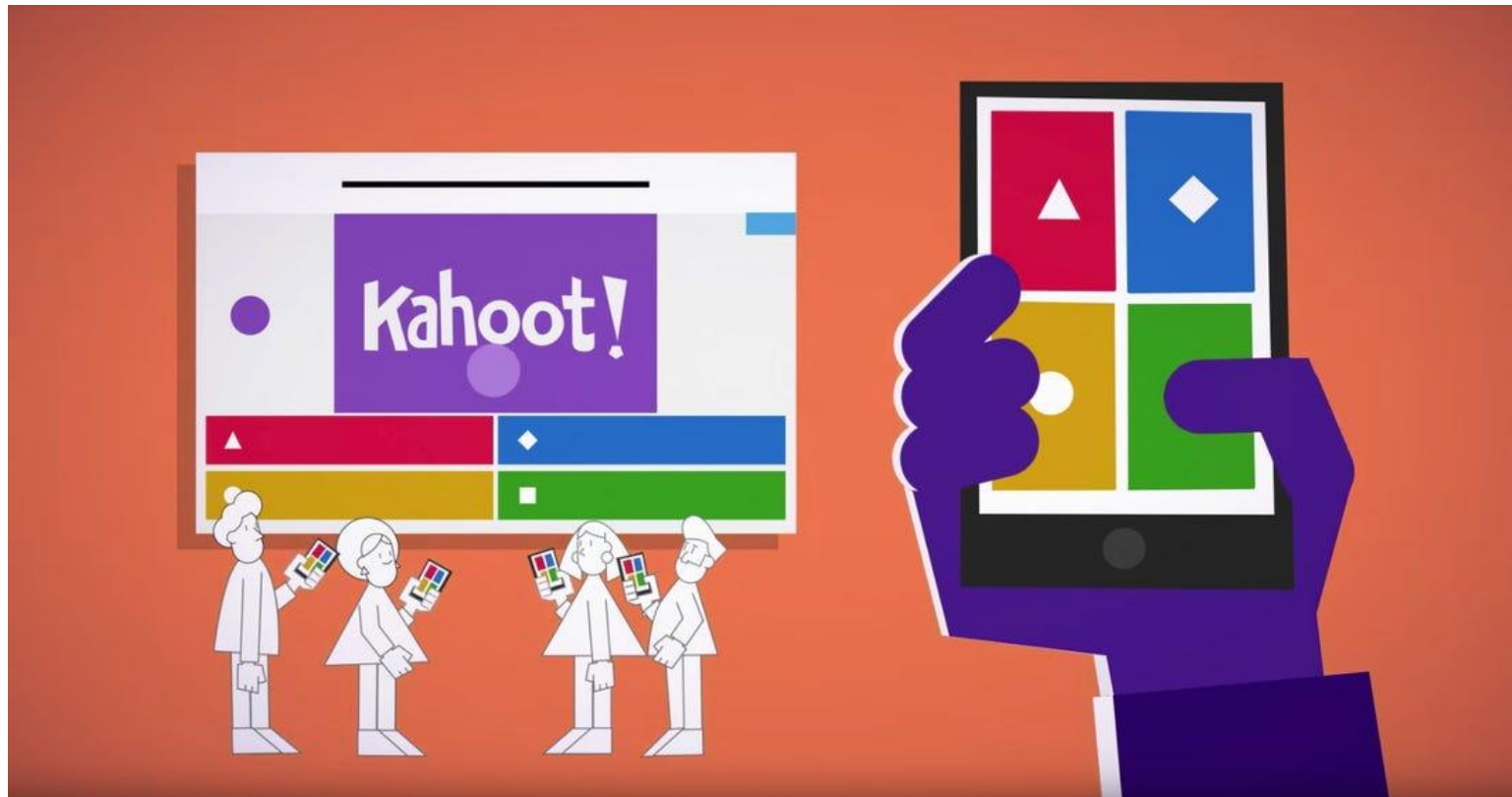


Lowest  
environmental impact



Most positive social  
results

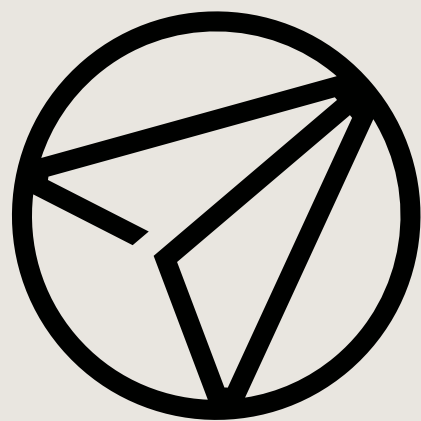
# Let's play Kahoot!



1. Take a mobile phone
2. Go to **Kahoot.it**
3. Insert the game PIN
4. Enter any nickname of your choice

# Questions?

Please contact me by email [anna.kuznetsova@afry.com](mailto:anna.kuznetsova@afry.com)



AFRY

ÅF PÖYRY