



**4. Bioraffinerietag**  
**DBFZ, Leipzig**  
**12. September 2023**

GEFÖRDERT VOM



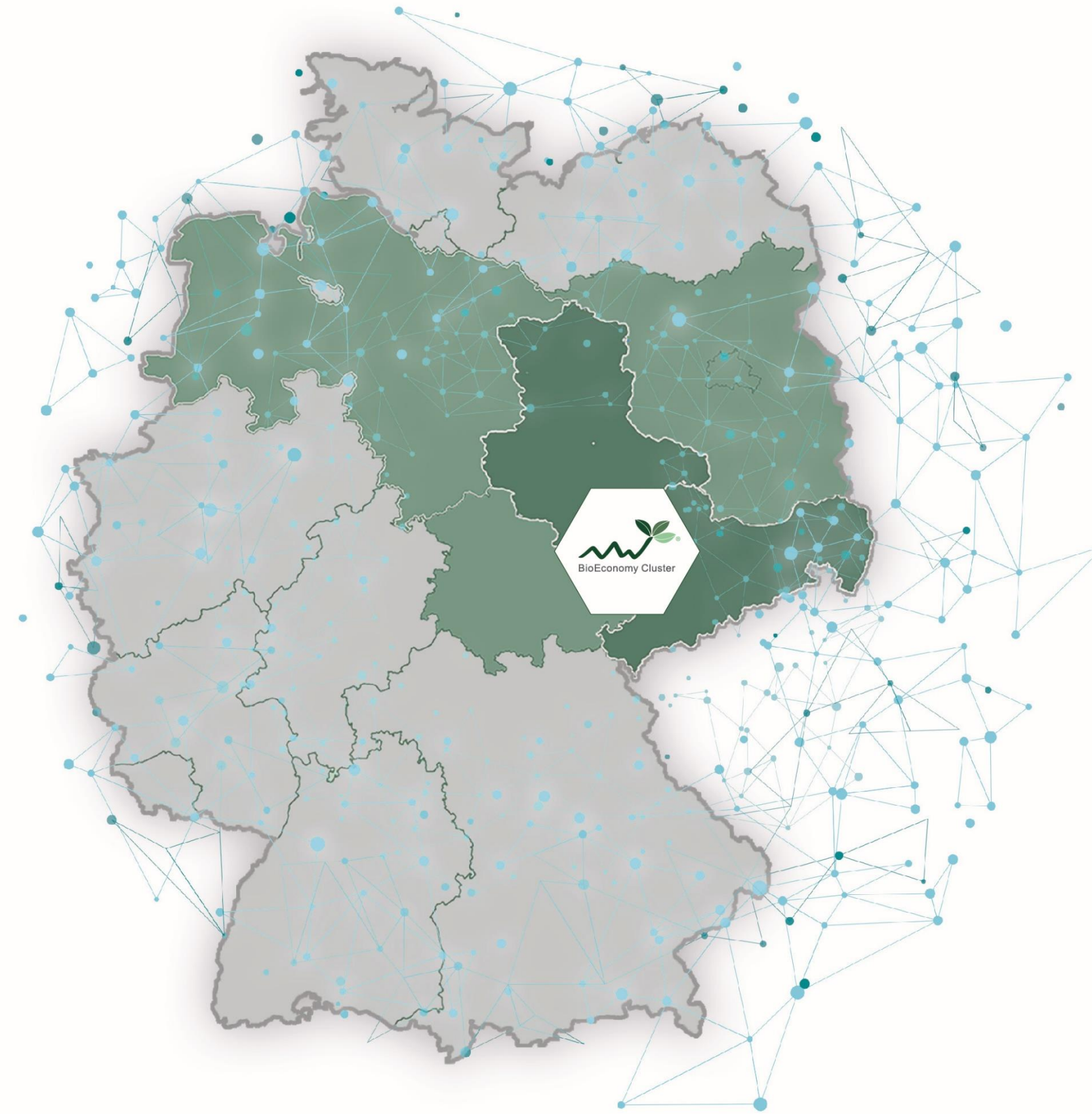
Bundesministerium  
für Bildung  
und Forschung



**SACHSEN-ANHALT**

Ministerium für Wirtschaft,  
Wissenschaft und Digitalisierung

## Aktuelle Clusterstruktur



KMU	Groß- unternehmen	Hochschulen/ Forschungs- einrichtungen	Netzwerke/ assoz. Partner	Gesamt
16	7	10	10	43

# Vision & Mission

## VISION:

Partner of the Industry working in the BioEconomy

- Industry representation in politics
- Nucleus of Initiatives

## MISSION:

Connecting, Professionalizing, Realizing new local and international Value Chains

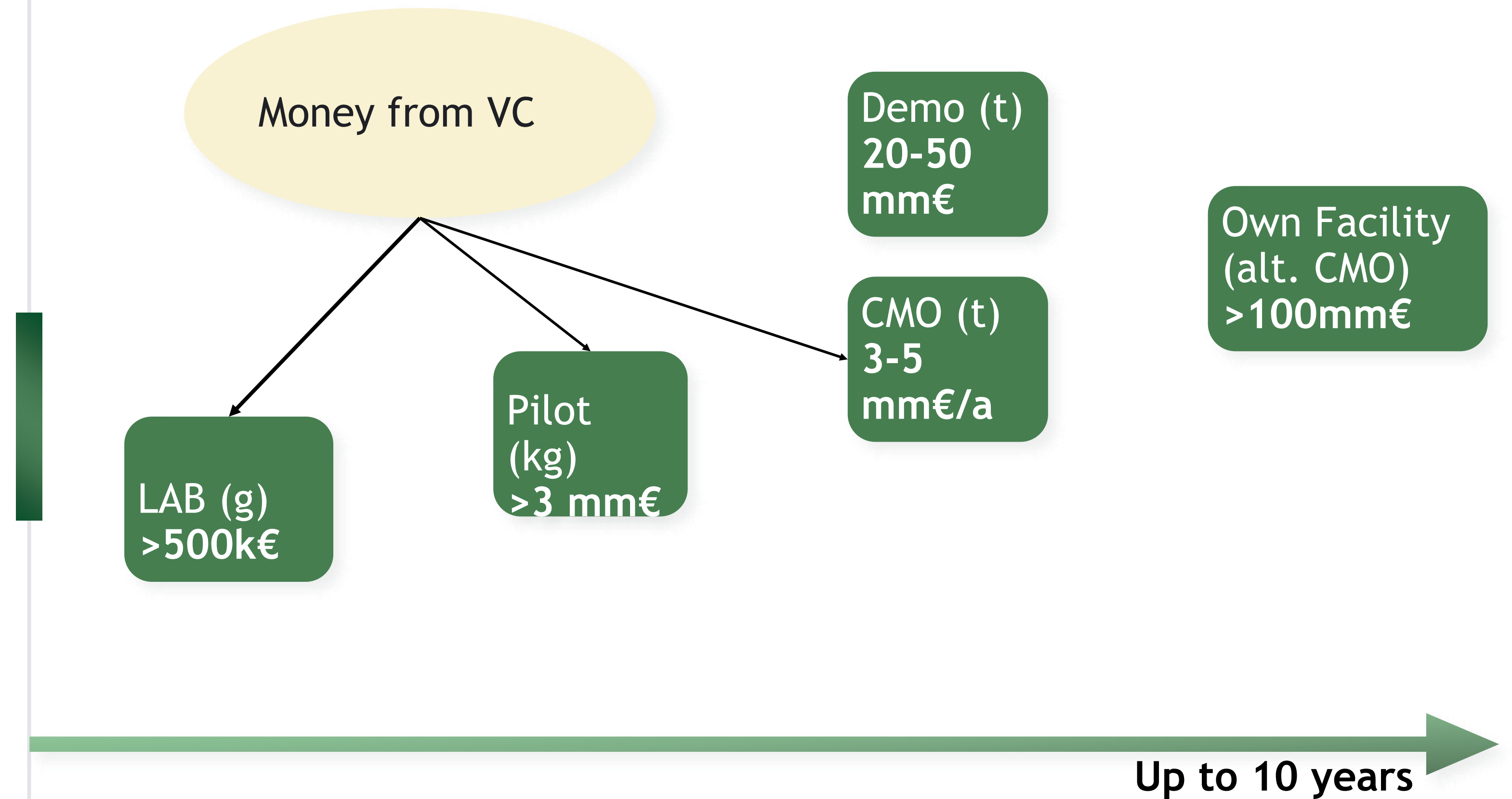
# Support through the strong network

## Topic today:

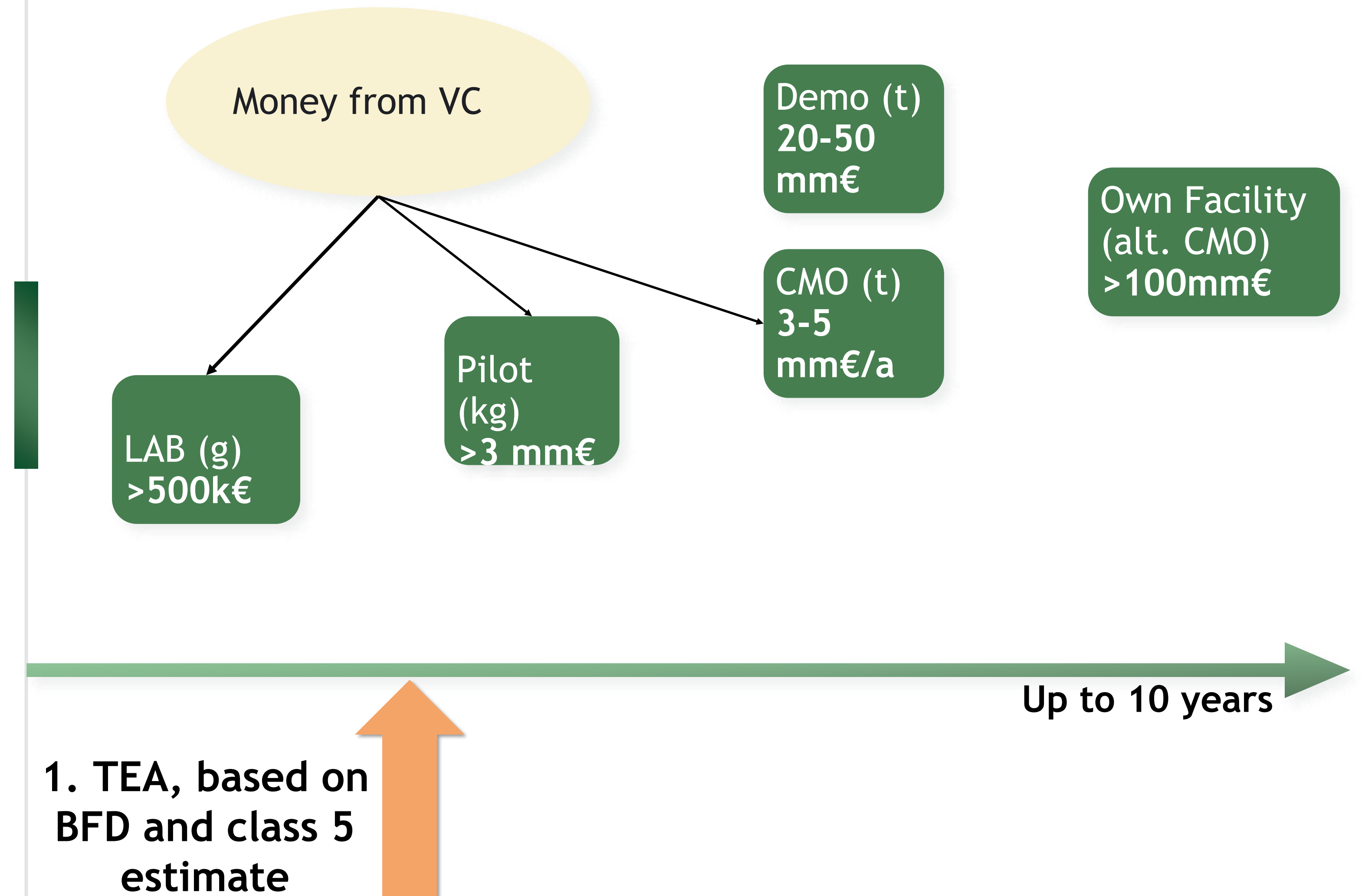
Techno- ökonomische Analysen zur  
Abschätzung der Wirtschaftlichkeit neuer  
Verfahren

Techno. Economic Analysis to evaluate the  
Feasibility of new Processes

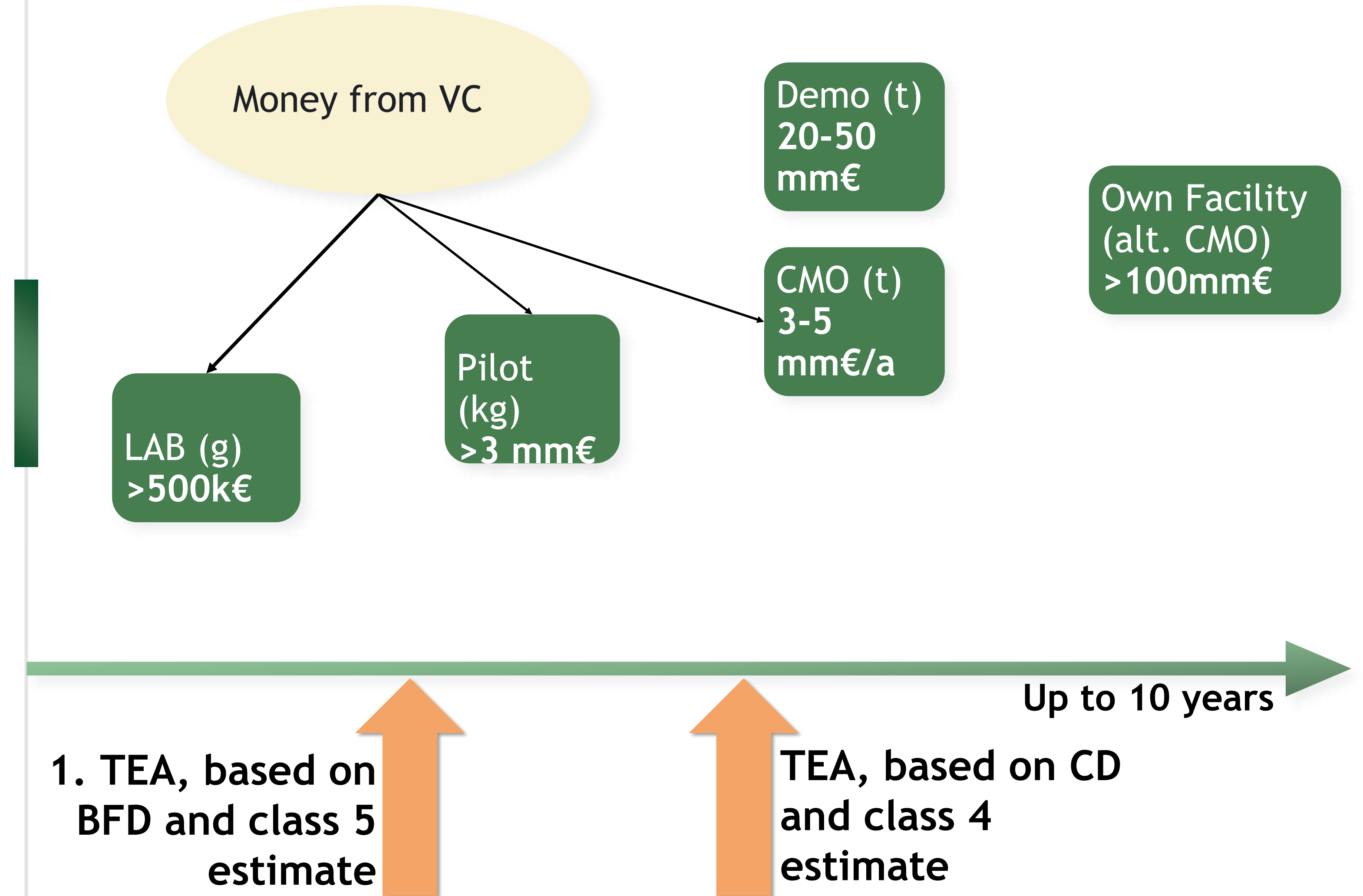
# What is the best time for the TEA?



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# Content of the TEA

1. Flow diagram of the process: BFD
2. Definition of market and size of planned Capacity
3. CAPEX calculation Facility (Fixed Cost)
4. OPEX Calculation Facility (variable Cost)
5. COGS Calculation (baseline)
6. Impact of DSP Variations (if required)
7. ROI, break-even considering C(D)MO

=> Time: 2 to 4 weeks

=> Cost of TEA: 5.000 to 12.000€



# Output of the TEA

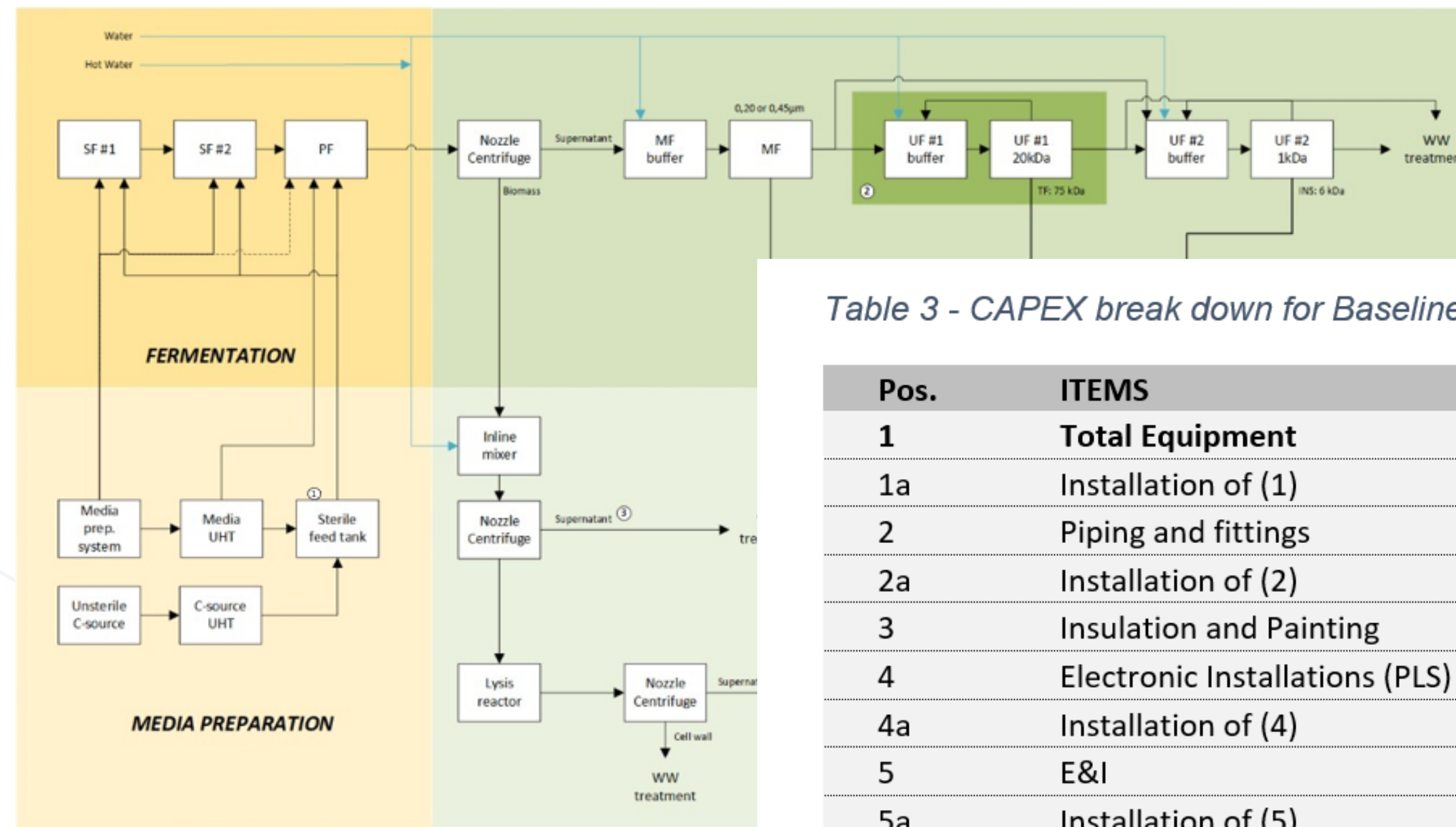


Table 1 – Baseline COGS breakdown

Production capacity - Proteins, kg/y	
Production capacity - Lysate, kg/y	
CAPEX, M-USD	
COGS – Proteins*, USD/kg	
Number of batches per year	
Specific variable cost, USD/kg	
Raw materials [\$/kg]	
Utilities [\$/kg]	
Packaging [\$/kg]	
Water and wastewater [\$/kg]	
By-product disposal [\$/kg]	
Specific fixed cost, USD/kg	
Personnel [\$/kg]	
Depreciation [\$/kg]	
Maintenance [\$/kg]	
Others [\$/kg]	
Land [\$/kg]	

Table 3 - CAPEX break down for Baseline

Pos.	ITEMS		
<b>1</b>	<b>Total Equipment</b>		
1a	Installation of (1)		
<b>2</b>	<b>Piping and fittings</b>		
2a	Installation of (2)		
<b>3</b>	<b>Insulation and Painting</b>		
<b>4</b>	<b>Electronic Installations (PLS)</b>		
4a	Installation of (4)		
<b>5</b>	<b>E&amp;I</b>	0,45	
5a	Installation of (5)	0,09	<b>TIION</b>
<b>6</b>	<b>Building, Steel Structure</b>	0,50	
6a	Construction Side Work and Foundations	0,13	aterials; 6%
<b>7</b>	<b>HVAC, Security</b>	0,07	nergy; 6%
<b>8</b>	<b>Direct Plant Costs</b>		
9	Engineering C&B&D	0,17	Depreciation; 30%
10	Contingencies	0,20	
<b>11</b>	<b>CAPEX Plant</b>		

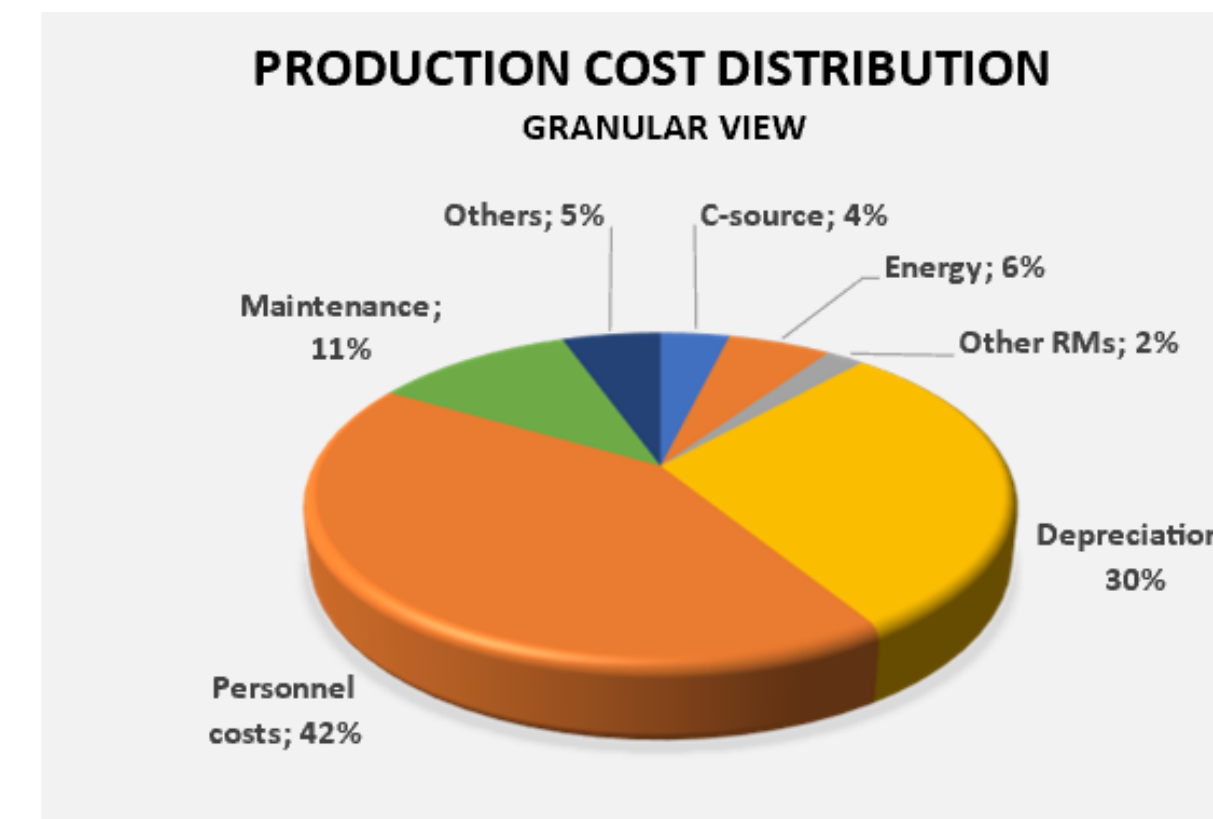


Figure 3 - Cost composition for baseline process conditions

## Why is the TEA necessary

1. To understand the COGs and RoI in early stage
2. To stop an unfeasible Process early or change accordingly to make it feasible
3. Understand the sensitivity of the process (Energy, Raw Materials)
4. Supporting the Start-Up raising money at the VCs

## Who could do?

- Consulting Companies with a strong understanding of Scale-Up and Engineering:
  - Next Rung Technologies <https://nextrungtechnology.com/>
  - BioConsulting GmbH <https://bio.consulting/>
- Scaler (by Synonym) <https://scaler.bio/>