



# Real Time Information tools in Startup of Puma II

Gabriel Lemes | Luis Duque | Rayne Pereira

**AVEVA**

# Agenda



## 01 Klabin

- Who we are
- Sustainability
- Puma Mill Overview

## 03 Cases

- KPI Process
- Pile Contamination
- Pulp Traceability
- Chemicals Control

## 02 PI System

- Systems modules and capabilities

## 04 Next Steps

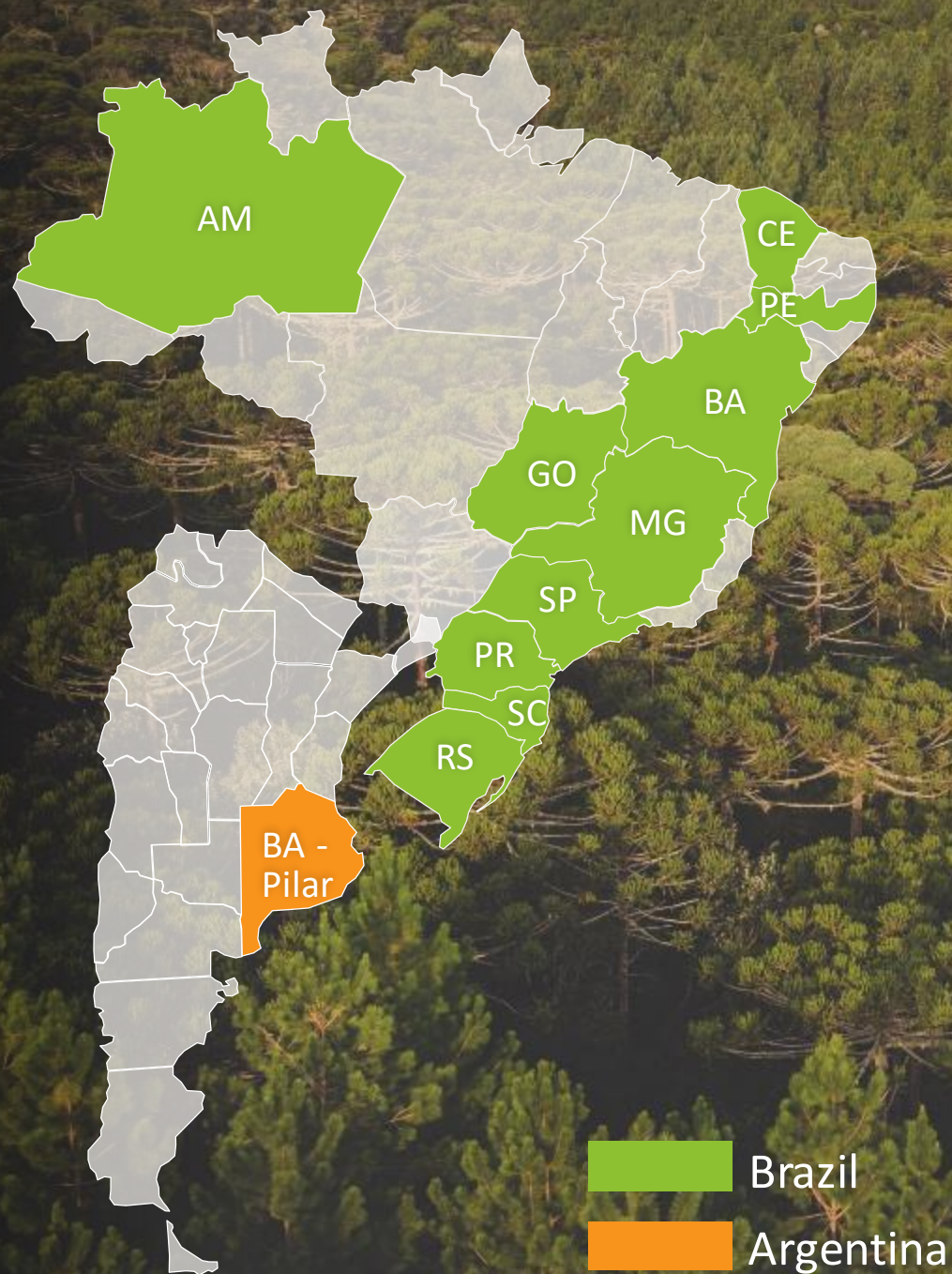
- Our goals for next years

01

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# Klabin Pulp & Paper

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# Who we are



## Brazilian company with over 120 Years of history

Leader in Brazil in the manufacture of coated board, corrugated boxes and industrial bags. Also offers the market the best solution in short and long fiber/fluff pulps.

Klabin is the only Brazilian manufacturing company selected to comprise the World portfolio of the Dow Jones Sustainability Index (DJSI)



**23 plants**

22 in Brazil and 1 in Argentina  
+25th direct and indirect employees



**8 comercial offices**

in Brazil + North America and Europe



**1.2** million tons of packaging per year

**1.6** million tons of pulp per year

**2.6** million tons of paper per year

**AVEVA**



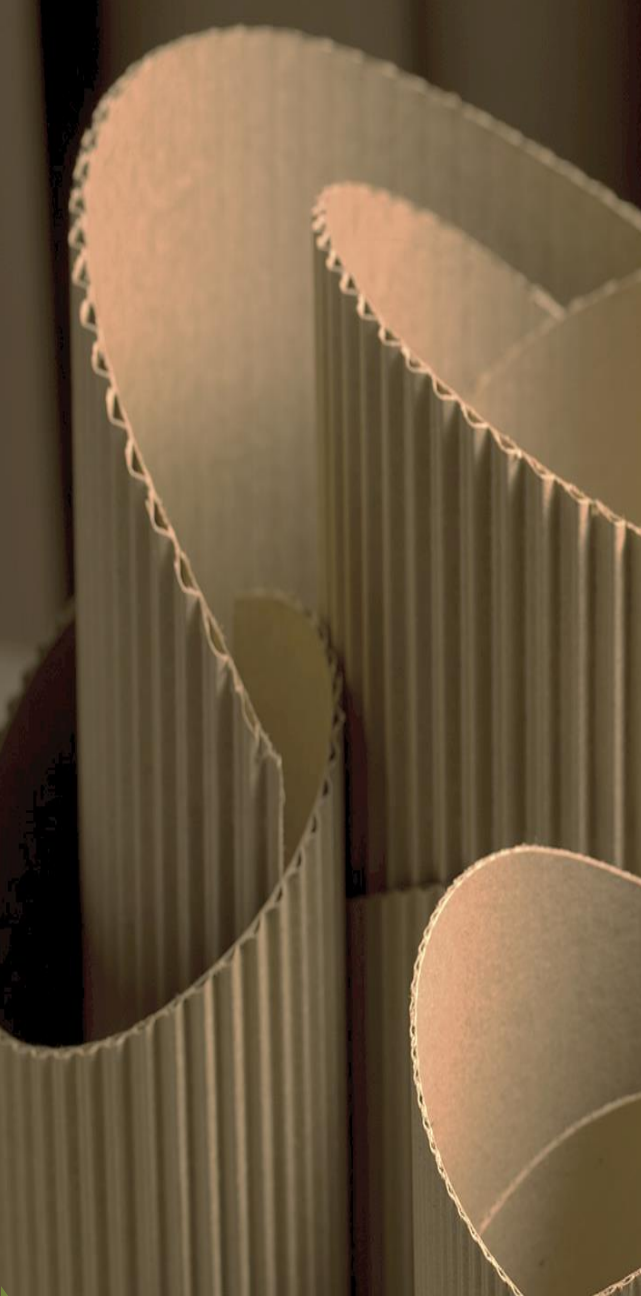
Forestry



Pulp



Papers



Packaging

# Sustainability



Klabin had its **targets for reducing greenhouse gas (GHG) emissions** approved by the Science Based Targets initiative (SBTi)



Reduction of more than **64%** of emissions in Klabin's operations and purchased energy



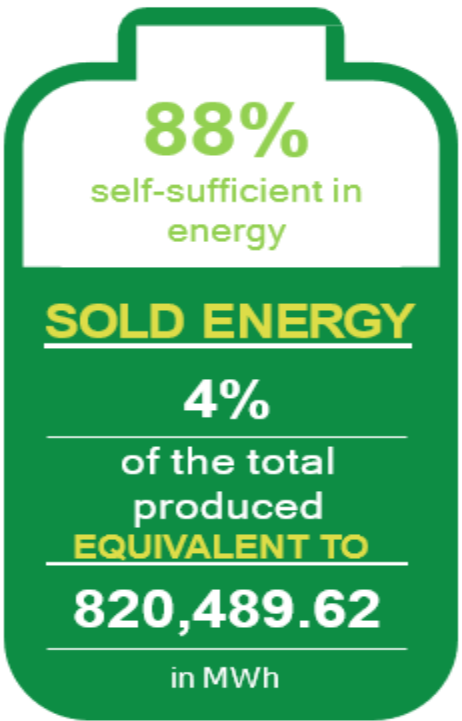
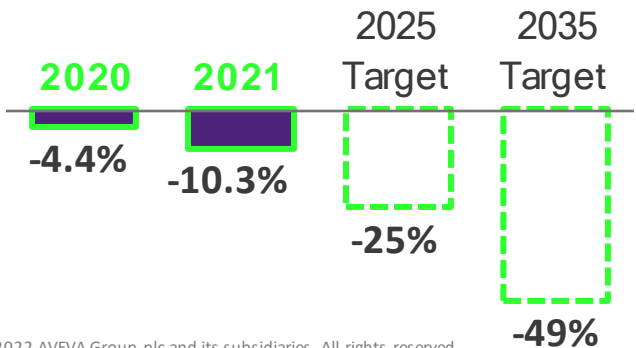
## GHG EMISSIONS

Goals approved in 2021 by the SBTi



## EMISSIONS REDUCTION

(in %)



## WASTE MANAGEMENT

Minimum of **97.5%** **reusage/recycling** of solid waste

# Biodiversity

## Conservation and Growth

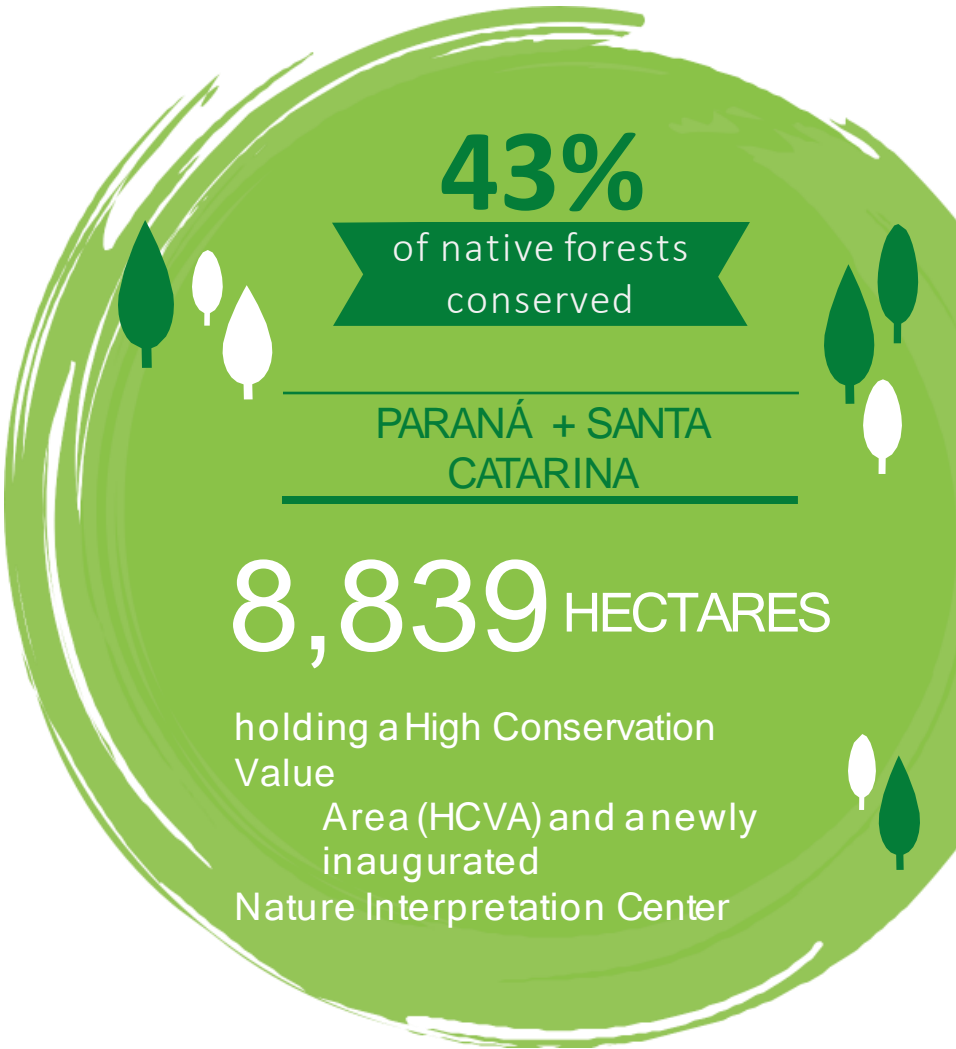


FAUNA  
**851** SPECIES  
Identified<sup>1</sup>

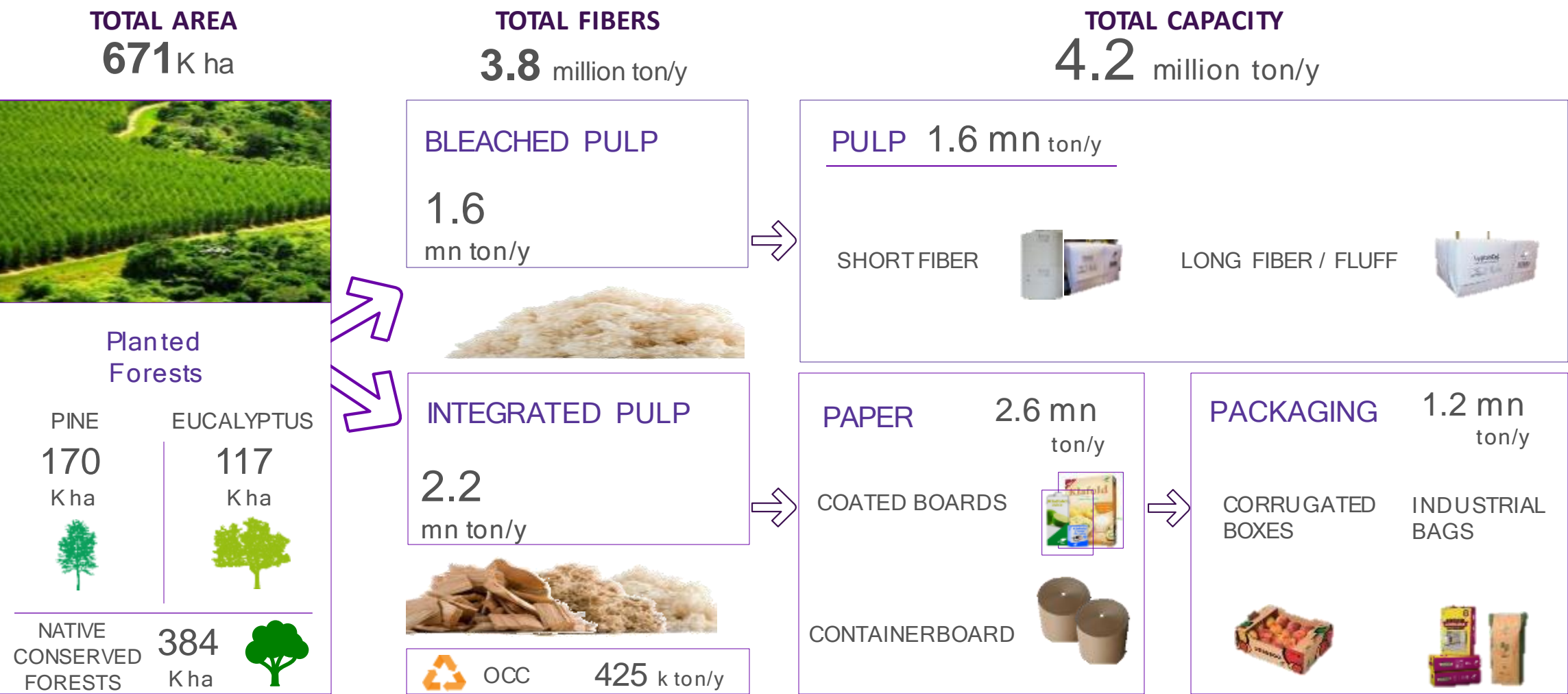


FLORA  
**1,920** SPECIES  
Identified<sup>1</sup>

Puma, pygmy brocket and howler monkey are some of the endangered species, protected in areas owned by Klabin



# Integrated, Diversified and Flexible Business Model



# Puma I Project

One of the most modern Pulp mill in the world.

Started in 2016.



**BRL 8.5 billion**  
in investments



**1,63 million ton/y**  
Pulp Produced in 2021



# Puma II Project

It is the largest investment in Klabin's history, which include the construction of two innovative paper machines. The project will make Klabin the **world's first company** to produce the Eukaliner paper, whose patent it already owns.



**BRL 12.9 billion**  
in investments



**920.000 ton/y**

MP27 (450,000 tons per year)

MP28 (470,000 tons per year)

\*MP28 Startup: May/23

# 100% Eukaliner®

Innovative, tested and  
approved worldwide

FAMILY:



First Kraftliner made  
100% from  
eucalyptus fiber



GSM  
Reduction > 10%



Superior surface  
and print quality



Sustainable



Robust structure



Better performance  
on corrugators.  
Steam and energy  
reduction.



 **eukaliner®**

Innovation Packaging PPI  
Awards, Fastmarkets RISI



**Tested  
and approved**

Innovative, tested and  
approved worldwide

**AVEVA**

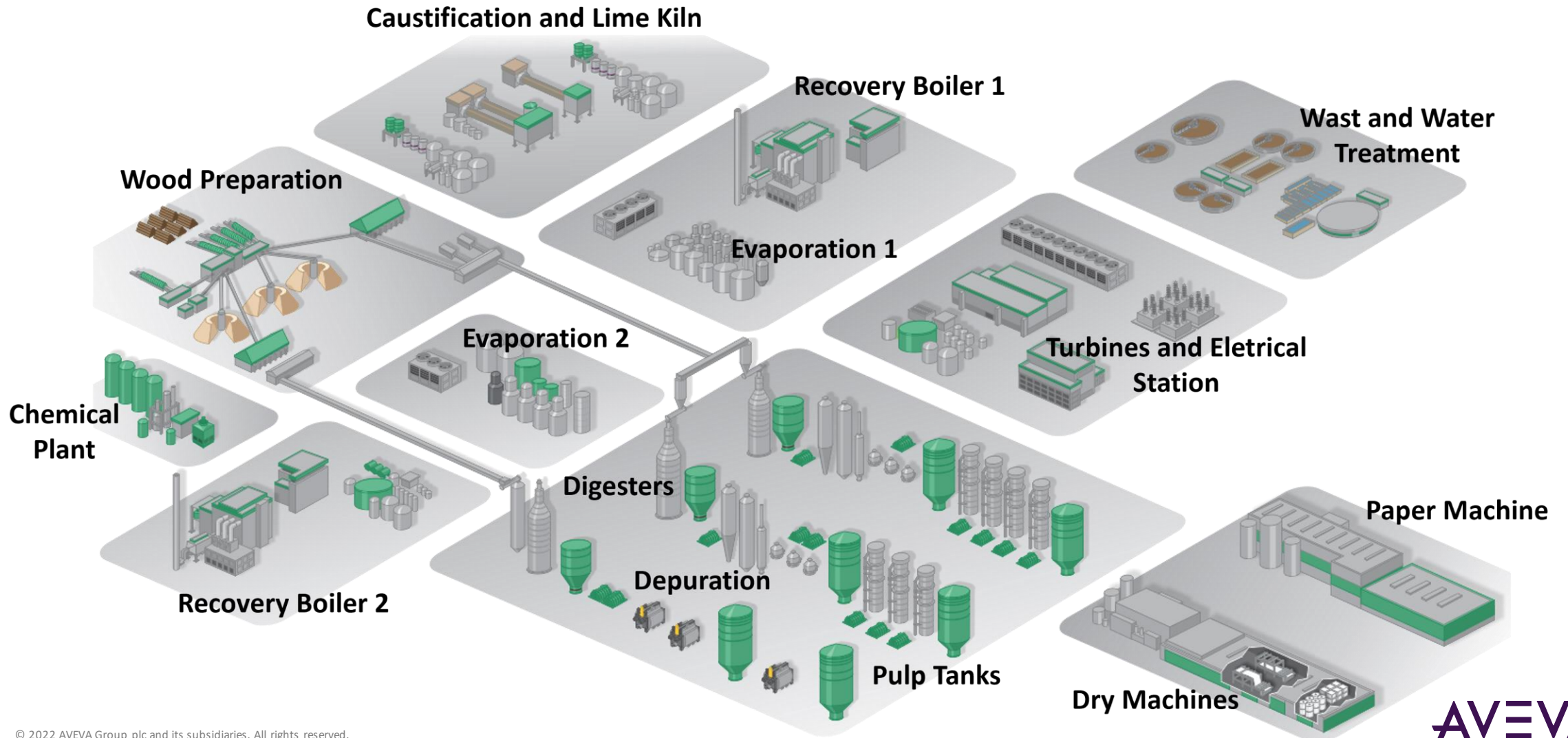
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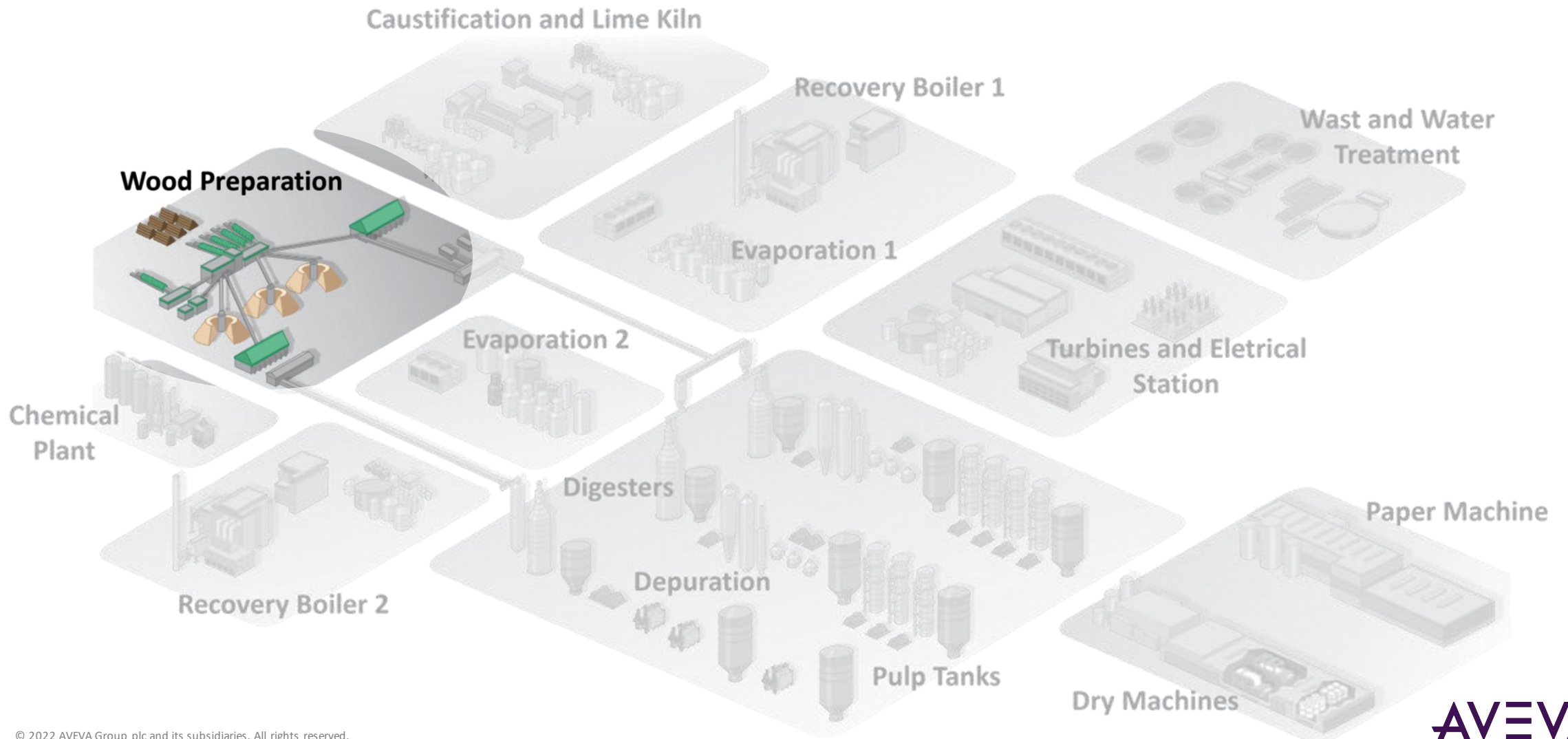
# PI System

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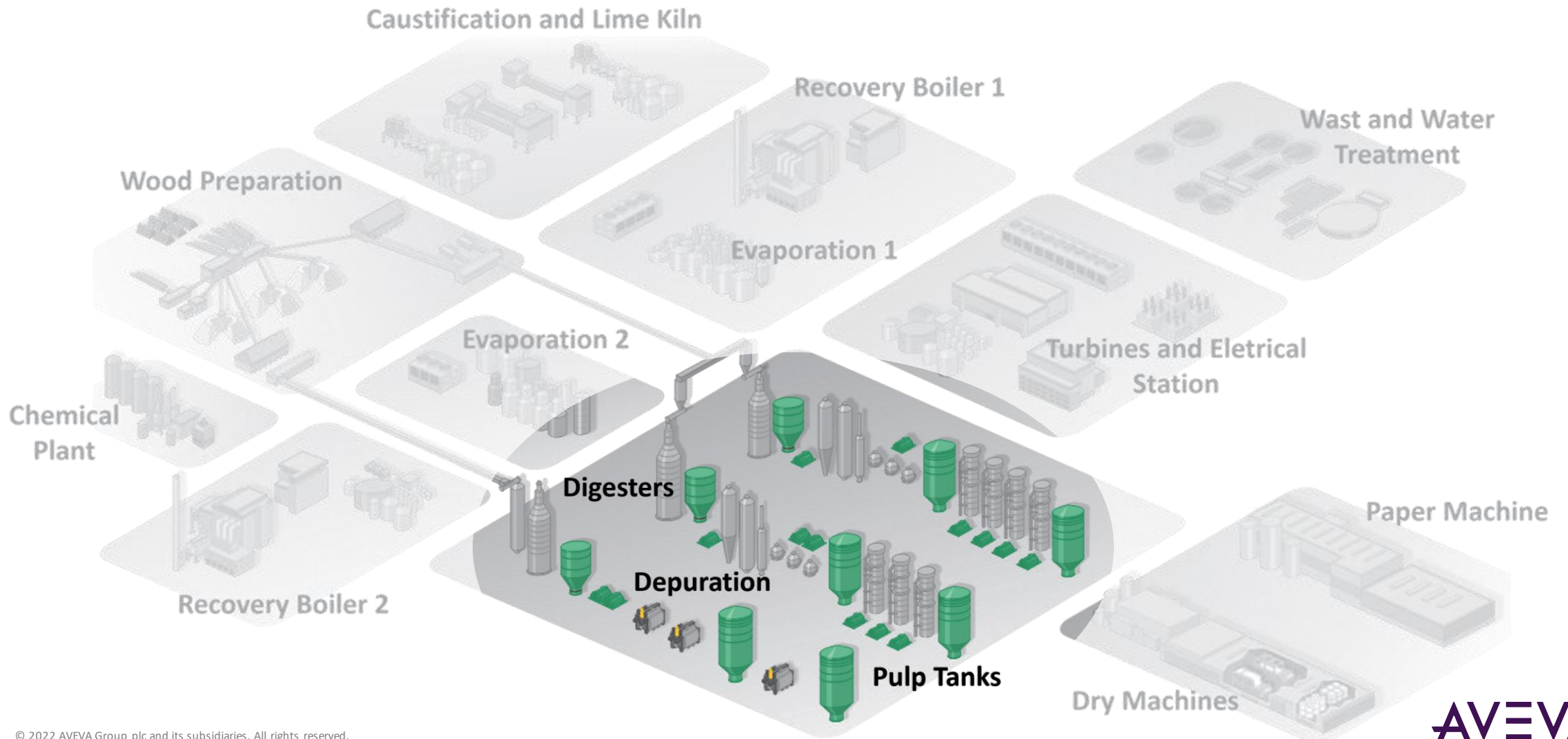
# PI System – Klabin Puma Process



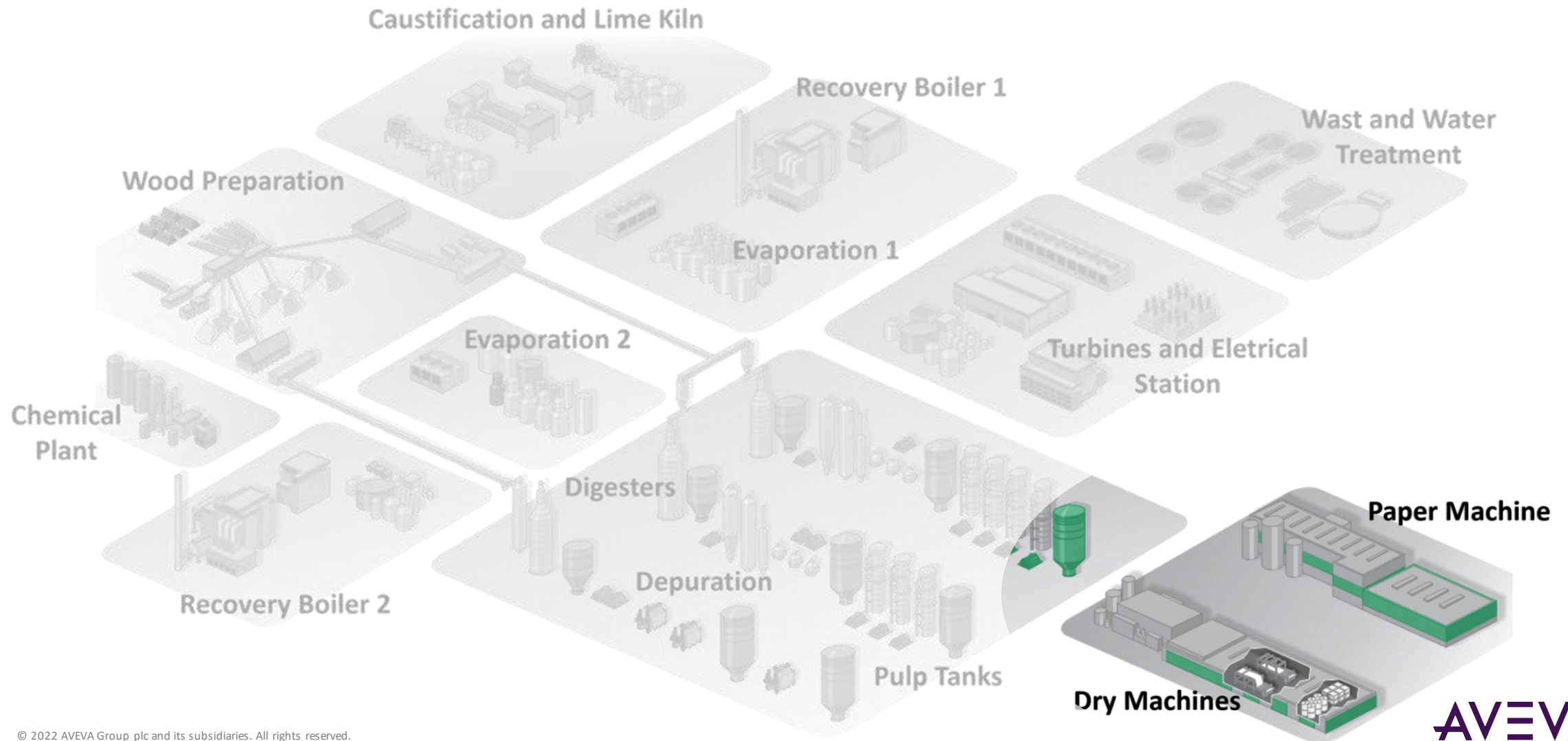
# PI System – Klabin Puma Process



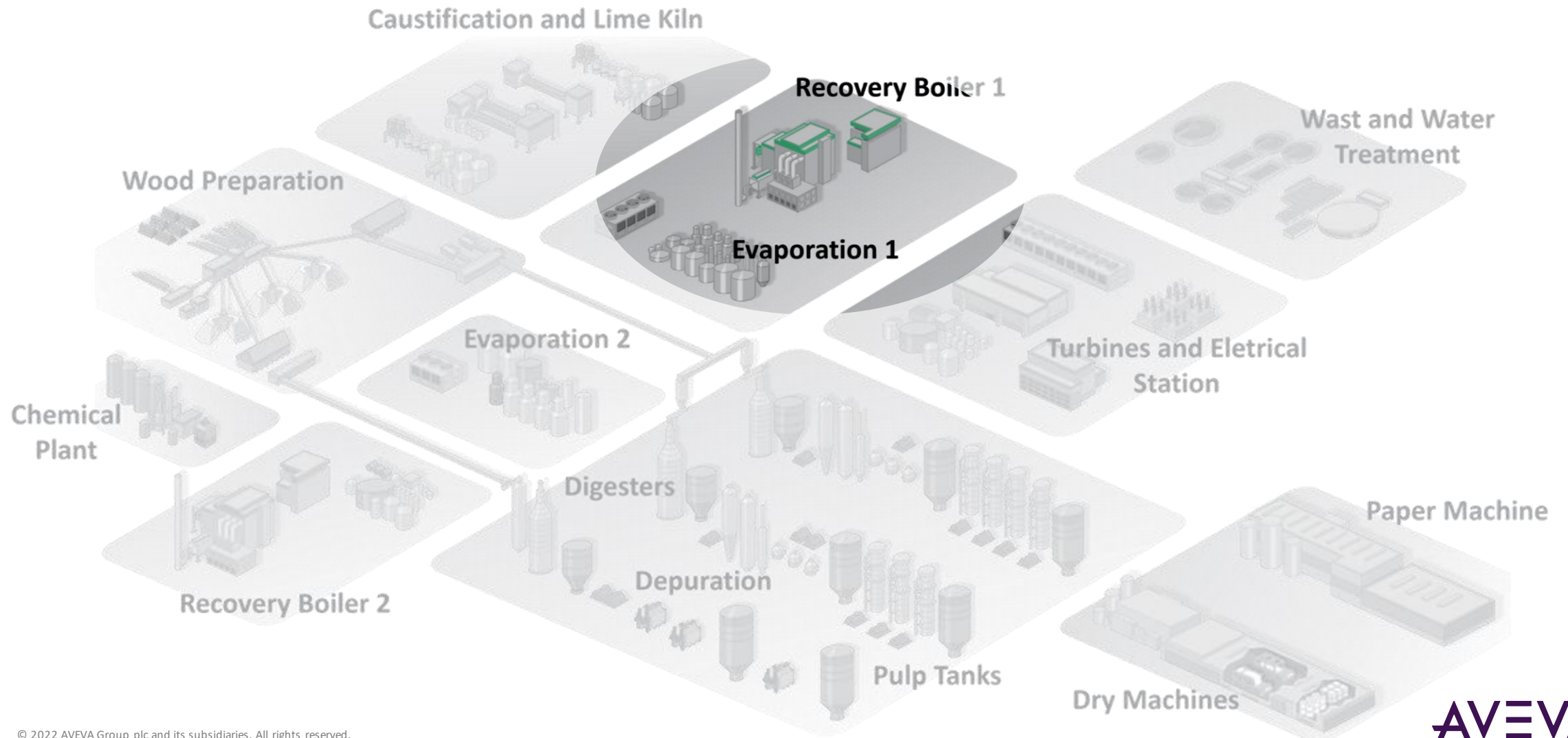
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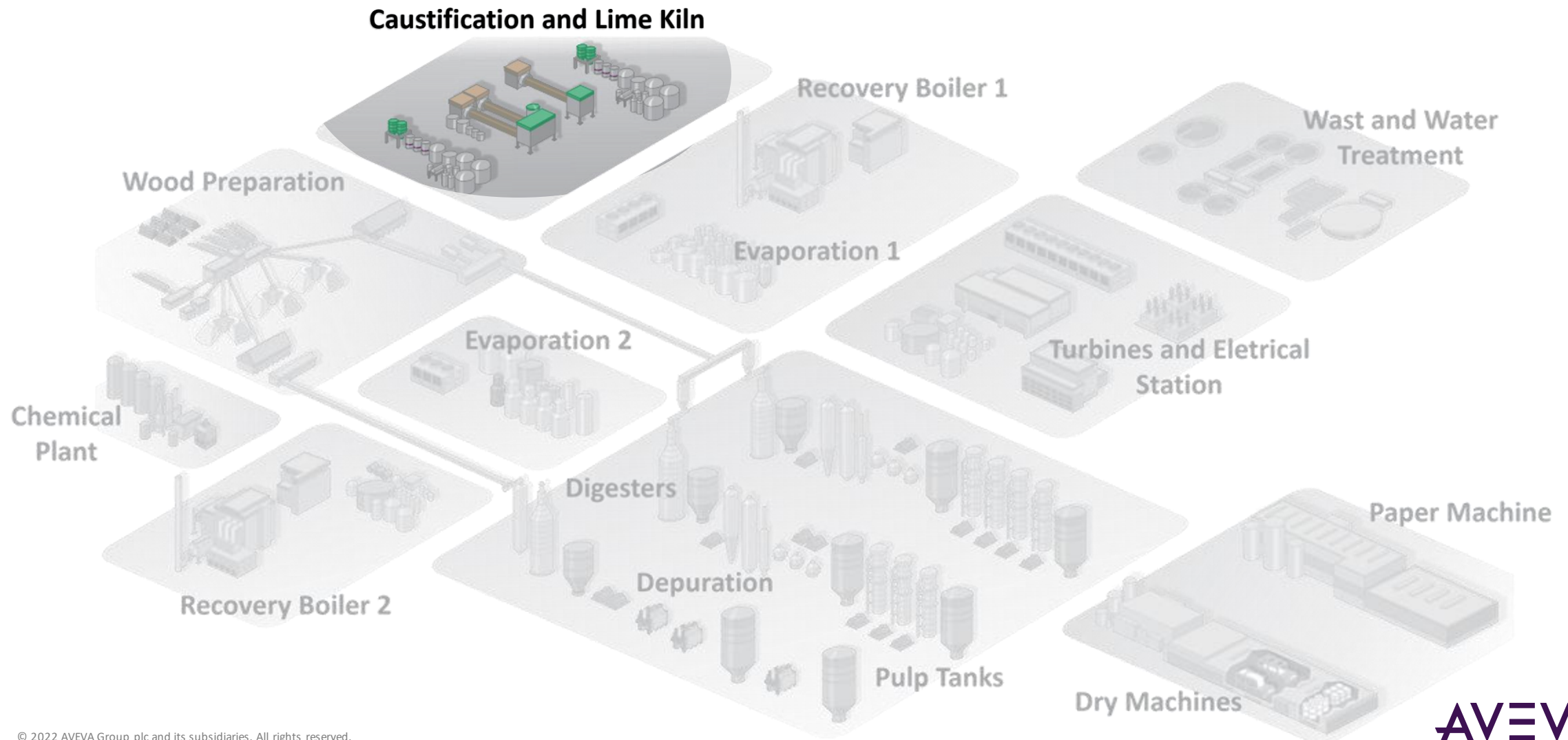
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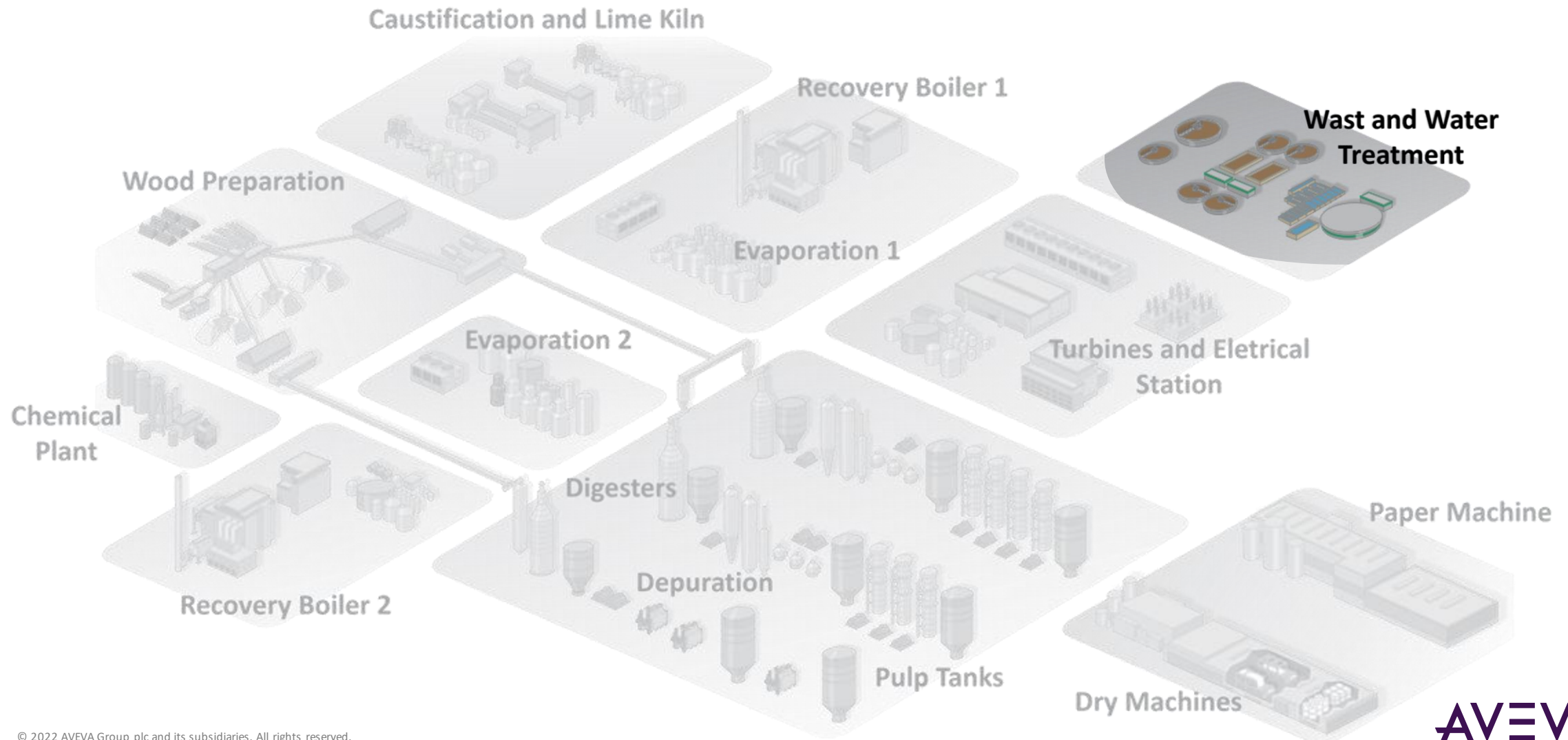
# PI System – Klabin Puma Process



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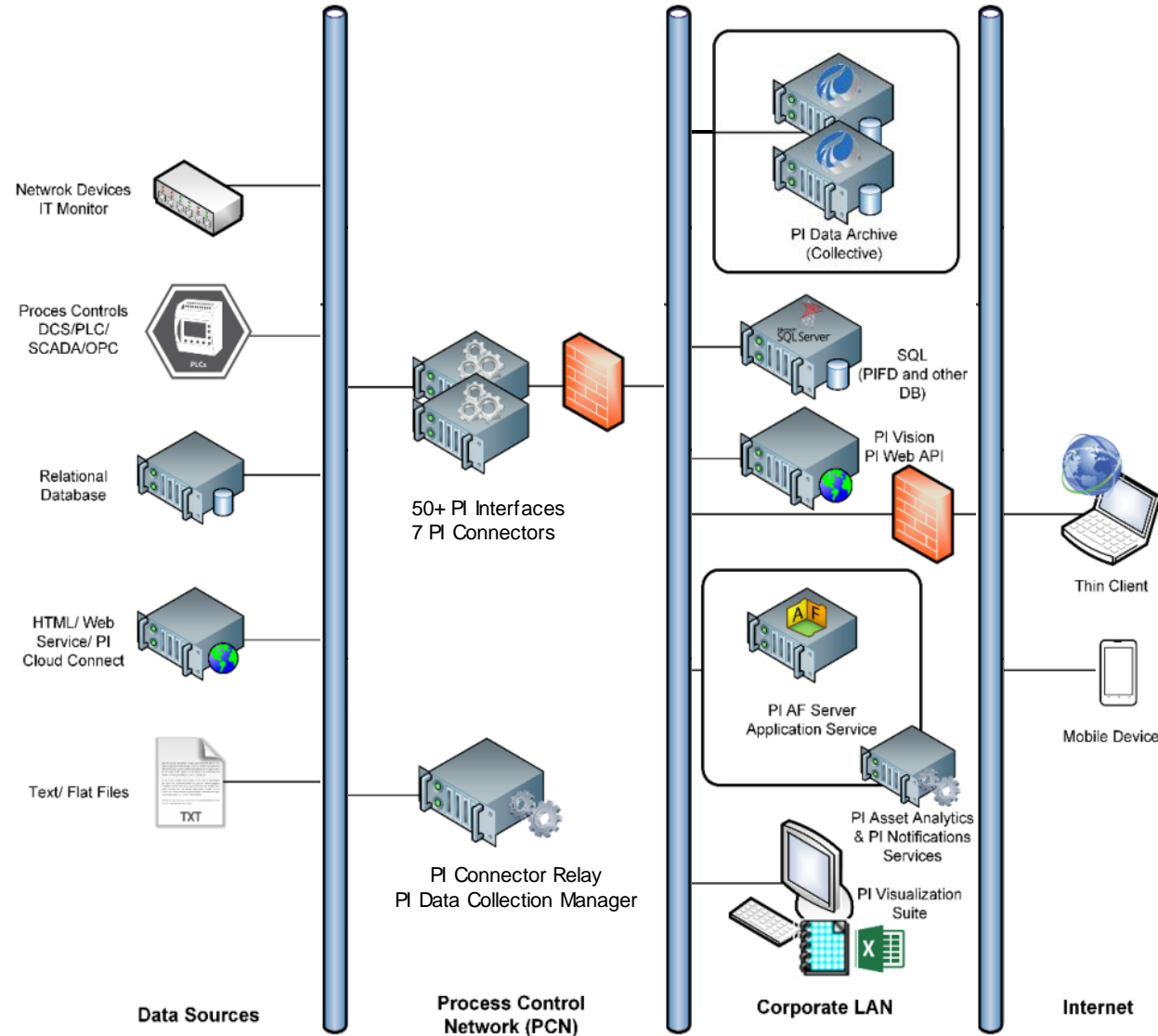
# PI System – Klabin Puma Process



# PI System - Connections



# PI System – Architecture



# PI System - Features



Tag Pattern

AF structure by templates

Pesquisa básicaPesquisa avançadaPesquisa de alias

PI Server:

ORTSRV006-VM

Máscara de tag:

34100\*

Descrição:

Tipo de ponto:

\*

Classe de ponto:

\*

Favoritos

Servidor:Tag:Descrição:

ORTSRVP...34100PM27-05EU001.POSBACK LAYER P

ORTSRVP...34100PM27-05EU001.PVBACK LAYER P

ORTSRVP...34100PM27-05EU001.SPBACK LAYER P

ORTSRVP...34100PM27-05EU001.STABACK LAYER P

ORTSRVP...34100PM27-06EU001.POSTOP LAYER S

ORTSRVP...34100PM27-06EU001.PVTOP LAYER S

ORTSRVP...34100PM27-06EU001.SPTOP LAYER S

ORTSRVP...34100PM27-06EU001.STATOP LAYER S

ORTSRVP...34100PM27-07EU001.POSBACK LAYER 9

ORTSRVP...34100PM27-07EU001.PVBACK LAYER 9

ORTSRVP...34100PM27-07EU001.SPBACK LAYER 9

ORTSRVP...34100PM27-07EU001.STABACK LAYER 9

ORTSRVP...34100PM27-08EU001.MD TOP LAYER JE

ORTSRVP...34100PM27-08EU001.POS TOP LAYER JE

Pronto

FileSearchViewGoToolsHelp

DatabaseQuery DateBackCheck InRefreshNew ElementNew Attribute

Search Elements

Elements

Ortiguera

Ferramentas e Aplicações

Gerência de Controle Técnico

Gerência de Fibras

Gerência de Manutenção

Gerência de Produção

MP27

Área de acabamento

Calandra

Circuito de Aproximação Cobertura e Base

Circuito de refugo e quebras

Embalagem de bobinas

Energia

Enroladeira

Equipamentos auxiliares

Formação

Gerl

União de Bobinas

Preparo de Massa

Process Systems

Produção

Químicos Parte Úmida

Rebobinadeira

Recuperação de Fibras e Água Branca

Reserva

Sistema de Pressão

Sistema de Secagem

Sistema Pré-secagem

Sistema de Água de Chuveiros

Sistema de Água de Resfriamento

Sistema de Água Fresca

Sistema de Vácuo

Sistema de Vapor e Condensado

Sistema DWA

Sistema DNA - SOCD

Size

Ventilação de Conforto

Secagem, Enfiamento e Embalagem de Celulose

Gerência de Recuperação e Utilidades

Manutenção

PI Cloud Connect

Tablets SQL

Tanque de Licor Branco

Variáveis

Analises

GeneralChild ElementsAttributesPortsAnalysesNotification RulesVersion

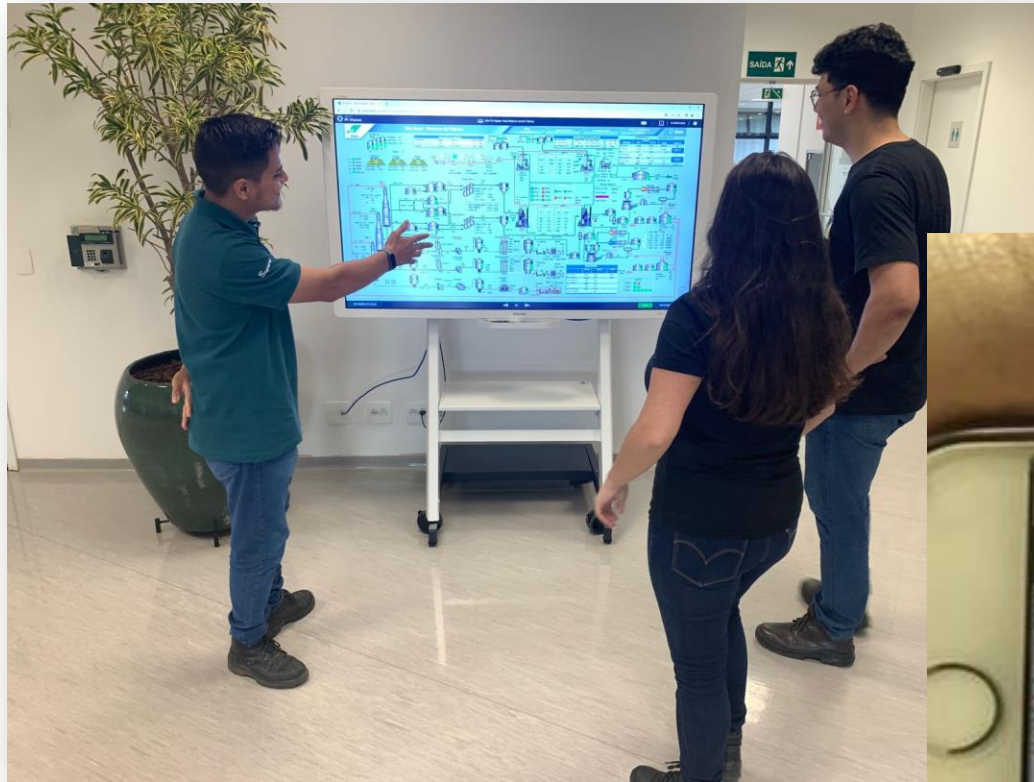
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# PI System - Features



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# Cases

KPI Process

Pile Contamination

Pulp Traceability

Chemical Controls

**AVEVA**

# Case 1 – KPI Process



## Challenge

Improve the process stability  
in a pulp and paper mill  
ensuring the product quality  
while maximizing production

# Case 1 – KPI Process



## Challenge

Improve the process stability in a pulp and paper mill ensuring the product quality while maximizing production

## Solution

The solution found was use PI AF to create KPIs and OPIs and PI Web API and PI OLEDB in conjunction with web technologies to improve a clean visualization of them. All the business intelligence was structured in PI AF and PI OLEDB / PI Web API is used as a connector between the front end and PI AF data.

# Case 1 – KPI Process



Challenge

Solution

**KPI**

**Key Performance Indicator**

Measures and evaluates whether the performance is effectively responding to the objectives of the process.

Each KPI measures a specific variable that collaborates to achieve this goal.

**OPI**

**Operational Performance Indicator**

Measures vital metrics to achieve the goal of the process.

Support KPIs.

# Case 1 – KPI Process

## Challenge

## Solution

### Monitoring

$\bar{X}KPI's / \bar{X}OPI's - LSE / LIE$

(8 hours/Last day, last 2 days and last week)

### KPI %

$KPIAttendance_n = (LIE > \Sigma KPITime > LSE / \Sigma KPITime)$

Monthly accumulation

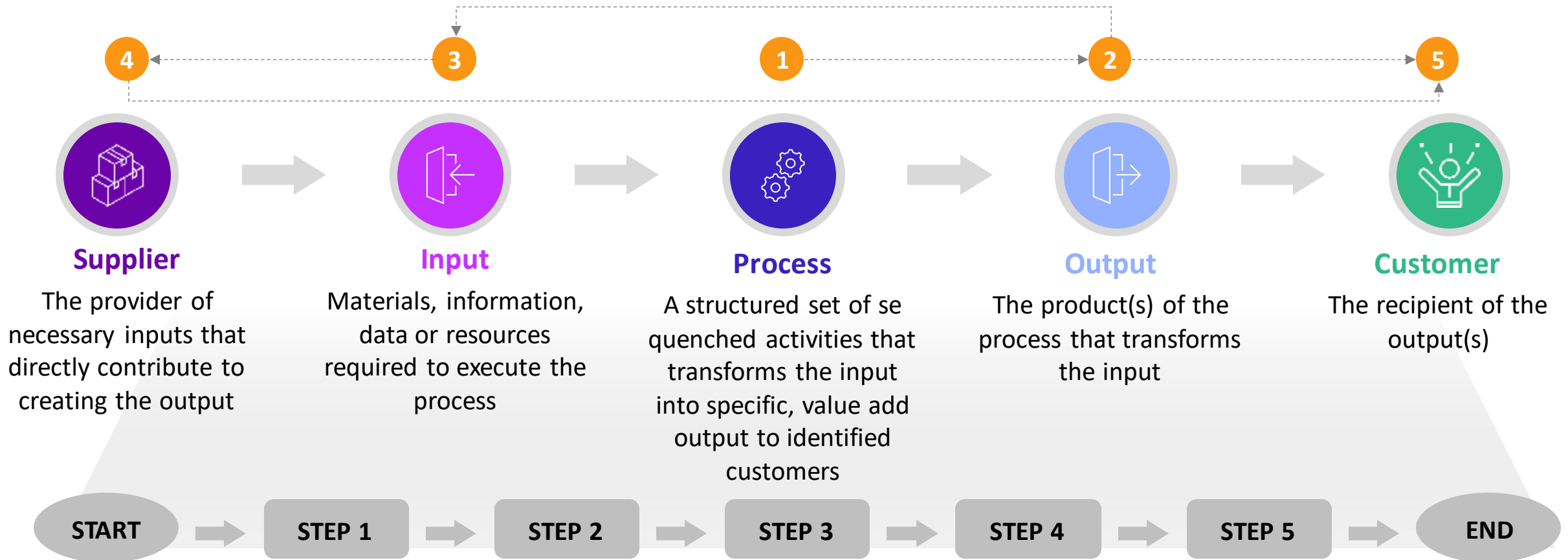
### Area %

$AreaAttendance_n = (\Sigma KPIAttendance_1 + \dots + \Sigma KPIAttendance_n)$

### Process %

$ProcessAttendance_n = (\Sigma AreaAttendance_1 + \dots + \Sigma AreaAttendance_n)$

# Case 1 – KPI Process



# Case 1 – KPI Process



## Challenge

## Solution

**Elements**

- Elements
  - Klabin
    - Processo
      - 01 - PMAD
      - 02 - PMAD II
      - 03 - Secagem
      - 04 - Fibras
      - 05 - Fibras Kraft
      - 06 - Utilidades
      - 07 - Utilidades II
      - 08 - Recuperação
      - 09 - Recuperação II
      - 10 - APC
      - 10 - Meio Ambiente
      - 10 - Plantas Químicas
      - 11 - Fábrica
      - 12 - MP27
      - 13 - PI
- Element Searches
  - Element Search Results 1

**Processo**

General Child Elements Attributes Ports Analyses Notification Rules Version

Name: 02 - OPI - Soma Indicador Percentual

Description:

Categories: OPI\_Processo\_Soma

Analysis Type: ☐ Expression ☒ Rollup ☐ E

Rollup attributes from:  
☒ Child elements of Processo ☐ This element - Processo

To select attributes set criteria below

Attribute Name: OPI - Percentual Mensal

Attribute Level: Root Level

Attribute Category:

Element Category:

Element Template: KPI - Indicadores Área

Select the function(s) to write to an attribute

Function Output(s) Value At Eval Value At Last

☒ Sum OPI - Soma Perc

☐ Average

☐ Minimum

☐ Maximum

☐ Count

Sample Child Element: 01 - PMAD Group By: None

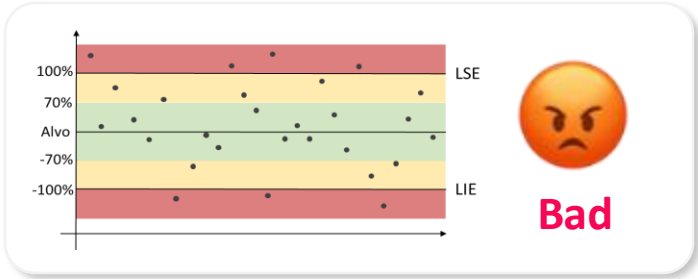
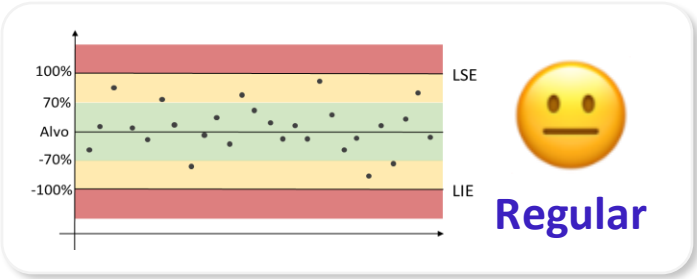
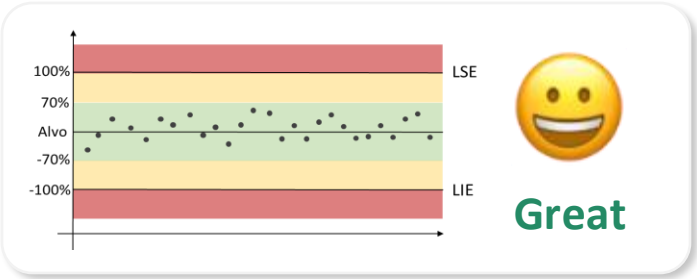
Name	Parent Element
✓ OPI - Percentual Mensal	01 - PMAD
EKL Base	01 - PMAD
EKL Cobertura	01 - PMAD
EKW Base	01 - PMAD
EKW Cobertura	01 - PMAD
Elemento	01 - PMAD
Fator de Ponderação	01 - PMAD
OPI - Fator de Ponderação	01 - PMAD
OPI - Soma Percentual Mensal	01 - PMAD
Percentual Dia Anterior	01 - PMAD
Percentual Mensal	01 - PMAD
Percentual Semanal	01 - PMAD
Referência	01 - PMAD
Soma Percentual Dia Anterior	01 - PMAD

# Case 1 – KPI Process



Indicadores de Processo											
Dados gerais - Período de: 04/03/2020		Ver indicadores mensais	<input type="checkbox"/> Fechar agrupamento <input type="checkbox"/> Filtrar desvios <input type="checkbox"/> Filtrar alertas <input checked="" type="checkbox"/> Exibir KPIs <input type="checkbox"/> Exibir OPIs								
Sub-área	Indicador	Ultimas 8 horas	Dia anterior	Ultimos 2 dias	Ultima semana	ppk ...	ppk ...	ppk ...	ppk ...	LIE	LSE
MC26	MC26 - umidade (PineFluff) - %	8.43	7.97	7.81	7.45	0.8	0.68	0.92	1.22	5.00	9.50

Process variability control



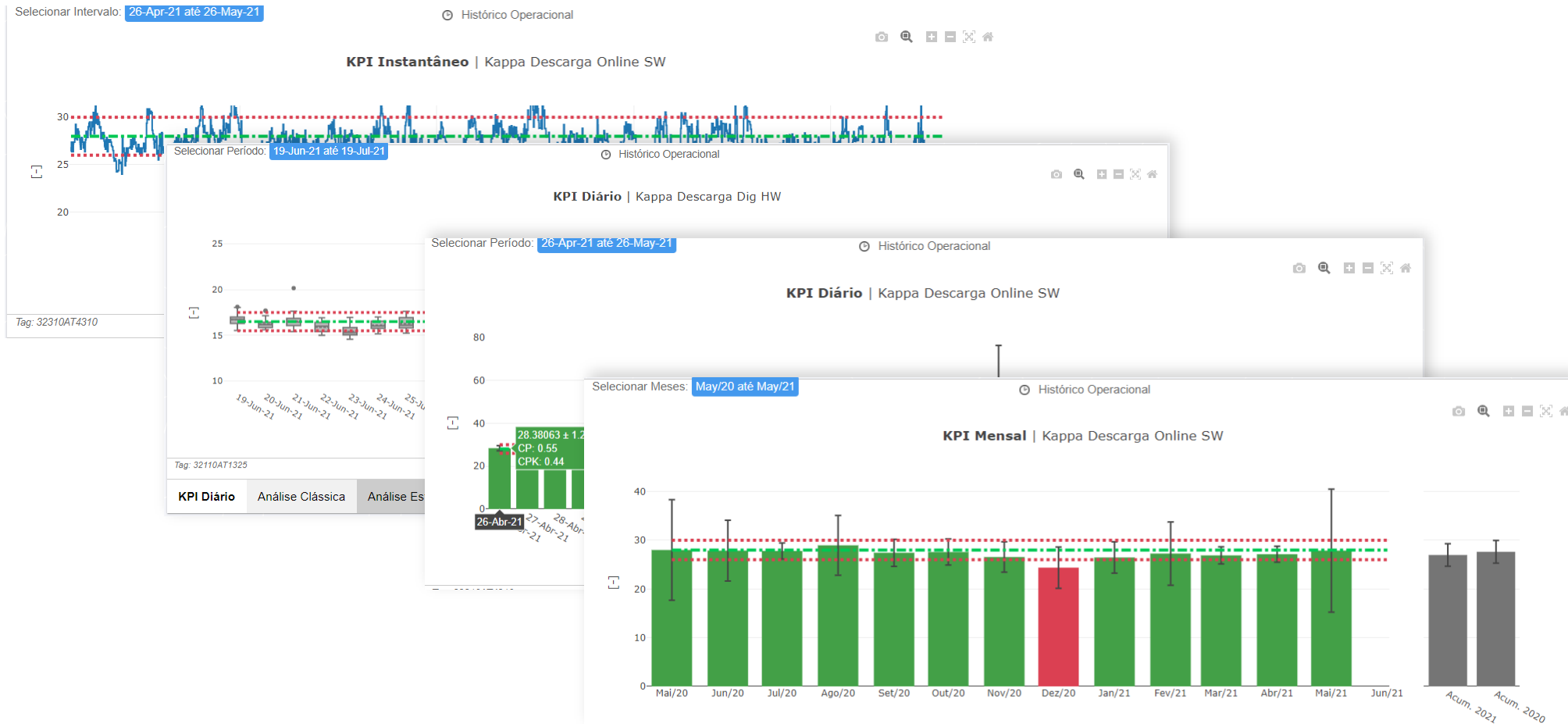
# Case 1 – KPI Process



## Challenge

## Solution

## Benefits



# Case 1 – KPI Process



Challenge

Solution

Benefits

KPI OPI



# Case 1 – KPI Process



## Challenge

Improve the process stability in a pulp and paper mill ensuring the product quality while maximizing production

## Solution

The solution found was use PI AF to create KPIs and OPIs and PI Web API and PI OLEDB in conjunction with web technologies to improve a clean visualization of them. All the business intelligence was structured in PI AF and PI OLEDB / PI Web API is used as a connector between the front end and PI AF data.

## Benefits

Process improvement including the increase of process stability in 9%

Reduced Data Analysis time and the time used to calculate the KPIs

Integration and delivery of 500 KPIs accessed anywhere – control room, mobile, web portal

The spreadsheets were replaced (KPIs into AF and data visualization in web portal) without the need for training to operate the system

## Case 2 – Pile Contamination



### Challenge

Inefficiency in receiving information about the wood quality directly impacting the process stability.

Need of communicate the PI System with SAP data of the wood charged into the fiberline process to identify contamination in wood piles and reduce the time required to interlock the process in case of abnormality.

### Solution

Communication between the PI and SAP system, uploading information about the quality of the wood to PI tags, in order to allow the traceability of the wood that entered the production process

Send the information wrote into PI tags about the wood that entered the cooking process quickly to DCS in order to avoid pulp quality problems

Help the DCS control the process and interlock the next steps when there are a contamination of wood

## Case 2 – Pile Contamination



Challenge

Solution

Data entrance

Loaded  
information

ETL

Data writing  
into tags

DCS writing



Wood storage and  
transport

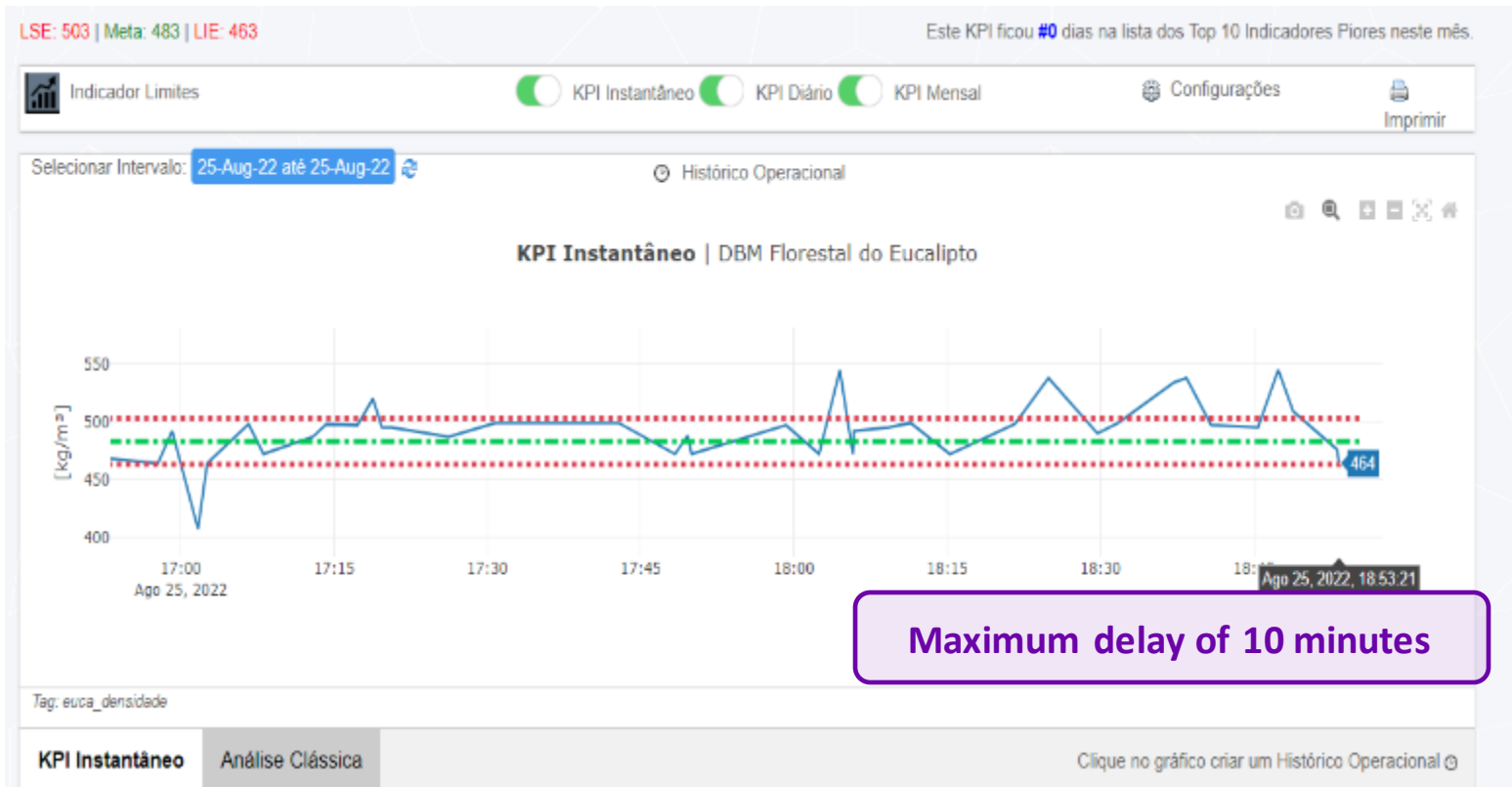


# Case 2 – Pile Contamination

## Challenge

## Solution

## Benefits



Real time information about the wood quality.

Time reduction from 3h to 10 minutes on DCS.

Made possible to avoid the contamination in the wood chips piles, which allowed an enhanced in the pulp quality.

Facilitated calculation of wood consumption with the PI System turning into a reliable KPI

# Case 3 – Pulp Traceability



## Challenge

Improve traceability in pulp and paper operations with PI AF considering a web scenario with process simulation

Salvamento Automático KLA - Rastreabilidade Eucalipto.xlsm Última modificação: 15 de julho

Pesquisar (Alt+G) Luis Otavio Simoes Duque

Arquivo Página Inicial Inserir Layout da Página Fórmulas Dados Revisão Exibir Desenvolvedor Suplementos Ajuda PI DataLink PI Builder

Recortar Copiar Pincel de Formatação Área de Transferência

Fonte Alinhamento

Formatação Condicional Formatar como Tabela

Porcentagem... Virgula 2 Normal Bom

Inserir Excluir Formatar

AutoSoma Preencher Limpar

Comentários Compartilhamento

Classificar e Filtrar Localizar e Selecionar

Confidencialidade

SOMA X

= (AB27/((AT27/24\*0,9)/(BK27/100\*BR27/1000)))/24

4184,575195

Usado na Média 00:10

Hora de Entrada e Saída								Taxa de Saída								
Grande Área	Índice	Área	Lab	Valor Lab	Tag Online	Valor Online	Valor Manual	Desc.	Origem	Valor	Unidade	Tag Online	Valor Online	Média	Para Cálculo da Média	Valor Manual
Pátio	1	Descadores e Picadores	-	-	-	-	-	M	A	-	-	-	-	-	-	15
	2	Pinha	-	-	-	-	-	O	A	574,80	t/h	31210WT4575A	530,73	574,80	12/10/22 2:58	15
	3	Correias	-	-	-	-	-	-	-	-	-	-	-	-	12/10/22 3:03	-
Linha de Fibras	4	Silo de Cavacos	-	-	-	-	-	O	O	3858,11	tse/d	32110U1156_PROD	3858,11	3840,55	12/10/22 3:20	3500
	5	Digestor	-	-	-	-	-	O	O	3499,44	tse/d	32110U1156_PROD	3499,44	3490,72	12/10/22 7:50	3500
	6	Blow Tanque	-	32120C12017_PV	10,31	10	-	O	A	3011,84	tse/d	32120U12028	2998,59	3011,84	12/10/22 7:50	3500
	7	Reator O2	-	32120C12017_PV	10,42	11	-	O	A	3122,95	tse/d	32120U12028	3198,55	3122,95	12/10/22 10:12	3500
	8	Tanque de Descarga da Destil.	-	32120C12405_PV	4,66	11	-	O	A	3402,40	tse/d	32120U12028	3407,24	3402,40	12/10/22 11:44	3500
	9	Depuração	-	-	-	6	-	O	A	4129,12	tse/d	32120F12473_PROD	4184,58	4129,12	12/10/22 11:47	3500
	10	Tanque Polpa Pré Branq.	-	32210C13117A_PV	11,82	6	-	O	A	3482,80	tse/d	32210F13283_PROD	3444,81	3482,80	12/10/22 11:47	3500
	11	Torre DA	-	-	-	9,5	-	O	A	3598,45	tse/d	32210F13283_PROD	3581,83	3598,45	12/10/22 14:21	3500
	12	Torre EP	-	-	-	10	-	O	A	3596,95	tse/d	32210F13283_PROD	3664,51	3596,95	12/10/22 15:45	3500
	13		-	-	-	-	-	-	-	-	-	-	-	-	-	-

Referências Rastre Fardos Ref RefMadeira RefGrafi Digestor

## Case 3 – Pulp Traceability



### Challenge

Improve traceability in the pulp and paper operations with PI AF considering a web scenario with the process simulation

### Solution

The PI AF tool calculates the residence time of each stage of the process and using a web development tool together the PI AF SDK, allows us to visualize the final results online

## Case 3 – Pulp Traceability



Challenge

Solution

Chose the date  
and the stage of  
the process to  
have a reference

The application  
request to the PI  
AF the retention  
time and add to  
the chosen date

The user can see  
the conquer, hold  
and exit time that  
the pulp stayed in  
the process

The products are  
showed according  
to the end of the  
process and a  
graph's view will  
be available

# Case 3 – Pulp Traceability



## Challenge

## Solution

The screenshot displays the PI System Explorer interface for the '06 - Blow Tanque' element. The left sidebar shows a hierarchical tree of elements, including 'KLABIN DASHBOARDS', 'RASTREABILIDADE', 'EUCA', 'KRAFT', 'PINUS', and 'TELAS PI VISION'. The main workspace shows the '06 - Blow Tanque' element selected, with tabs for 'General', 'Child Elements', 'Attributes', 'Ports', 'Analyses', 'Notification Rules', and 'Version'. The 'Analyses' tab is active, showing a table of analyses:

Name	Backfilling
01 - Cálculo Tempo Retenção	✓
02 - Cálculo Tempo Retenção Manual	✓

The right-hand configuration panel for the '01 - Cálculo Tempo Retenção' analysis shows the following details:

- Name: Cálculo Tempo Retenção
- Description: (empty)
- Categories: (empty)
- Analysis Type: ☒ Expression, ☐ Rollup, ☐ Event Frame Generation, ☐ SQC

The 'Add a new variable' section shows a table with the following content:

Name	Expression	Output Attribute
TempoRetencao	$\left( \text{'Volume'} * \left( \frac{\text{'Consistência Interna'}}{100} \right) / \left( 0.9 * \frac{\text{'Taxa de Saída'}}{24} \right) \right) * 60 * 60$	Tempo de Retenção PI

The bottom of the interface shows the 'Scheduling' section with 'Event-Triggered' and 'Periodic' options. The 'Periodic' option is selected, and the 'Period' is set to '00h 01m 00s'. The 'Advanced...' button is visible. The status bar at the bottom indicates 'Connected to the PI Analysis Service'.

# Case 3 – Pulp Traceability



Challenge

Solution

KLABIN DASHBOARDS

EUCA

KRAFT

PINUS

RASTREABILIDADE POLPA - EUCA

ENTRADA MANUAL

TEMPO RETENÇÃO

RELATÓRIO

GRÁFICO

16/10/2022 10:00:00

Estágio de Referência  
Digestor

Modo  
Rastreabilidade

BUSCAR

PDF

PÁTIO DE MADEIRAS

LINHA DE FIBRAS

SECAGEM

LOTES

Lotes

Lote	Hora Produção	Produto	Alvura	Viscosidade	pH	Teor Seco	Sujidade	Borracha	Plástico
2552J1613	10/16/2022 11:50:40 PM	Prime Extra	89.99	800	6.3	89.68	1.05	0	0
2542J1633	10/16/2022 11:27:58 PM	Prime Extra	89.99	800	6.3	89.82	0.76	0	0
2522J1619	10/17/2022 12:08:00 AM	Prime Extra	89.99	800	6.3	89.69	0.69	0	0
2542J1634	10/17/2022 12:10:52 AM	Prime Extra	89.96	800	6.3	89.75	0.67	0	0
2532J1622	10/16/2022 11:49:01 PM	Prime Extra	89.98	800	6.3	89.88	0.74	0	0
Saída Secagem		17/10/2022 00:34:55							
2552J1614	10/17/2022 1:22:38 AM	Prime Extra	90.09	807.75	6.3	89.76	0.7	0	0
2542J1701	10/17/2022 12:54:48 AM	Prime Extra	90.09	800	6.3	89.76	0.6	0	0
2532J1623	10/17/2022 12:52:08 AM	Prime Extra	90.03	800	6.3	89.82	0.62	0	0
2542J1702	10/17/2022 1:37:59 AM	Prime Extra	90.12	827.9	6.3	89.71	0.96	0	0
2522J1701	10/17/2022 1:18:24 AM	Prime Extra	90.11	806.2	6.3	89.71	0.68	0	0

Hold Ti

# Case 3 – Pulp Traceability



Challenge

Solution

KLABIN DASHBOARDS

EUCA

KRAFT

PINUS

🏠

RASTREABILIDADE POLPA - EUCA

✏️ ENTRADA MANUAL

🕒 TEMPO RETENÇÃO

📄 RELATÓRIO

📊 GRÁFICO

16/10/2022 16:00:00 📅

Estágio de Referência  
Digestor

Modo  
Rastreabilidade

BUSCAR

📄 PDF

⬆️ Fechar Tudo

▼ Pátio de Madeiras

Nome	Hora Entrada	Tempo Retenção	Hora Saída	Volume	Consistência	Produção
Descascadores e Picadores	14/10/2022 22:51:31	00:10:00	14/10/2022 23:01:31	-	0	-
Pilha de Cavacos	14/10/2022 23:01:31	1.12:35:56	16/10/2022 11:37:27	-	0	-
Correias Transportadoras	16/10/2022 11:37:27	00:05:00	16/10/2022 11:42:27	-	0	-

▼ Cozimento

Nome	Hora Entrada	Tempo Retenção	Hora Saída	Volume	Consistência	Produção
Silo de Cavacos	16/10/2022 11:42:27	00:16:12	16/10/2022 11:58:39	15829.9	0	-
Digestor	16/10/2022 11:58:39	04:01:21	16/10/2022 16:00:00	-	0	-

▼ Lavagem e Deslignificação

Nome	Hora Entrada	Tempo Retenção	Hora Saída	Volume	Consistência	Produção
Blow Tanque	16/10/2022 16:00:00	02:28:17	16/10/2022 18:28:17	492.2897	10	0.009295943
Reator O2	16/10/2022 18:28:17	01:17:34	16/10/2022 19:45:51	1734	11	0.009295943

## Case 3 – Pulp Traceability



### Challenge

Improve traceability in the pulp and paper operations with PI AF considering a web scenario with the process simulation

### Solution

The PI AF tool calculates the residence time of each stage of the process and using a web development tool together the PI AF SDK, allows us to visualize the final results online

### Benefits

Make easier for the process engineers to understand better the reasons for any issues in production in an easier and more responsive way

Operation and analysis time was reduced by 80%

100% accessible for any devices with internet connection (laptops, smartphones, tablets and so on)

## Case 4 – Chemical Controls



### Challenge

Offer a summary of the chemical's consumption in the production of paper and the dosage control of the chemicals by a previous defined goal

### Solution

Develop a structure on PI AF to allow the view of all data on a PI Vision Display

Case 4 – Chemical Controls



Challenge

Solution




## EKL110

### AMIDO SUPERF.

 **37 %**

em relação ao último mês

### AMIDO SPRAY

 **95 %**

em relação ao último mês

### COLA

 **39 %**

em relação ao último mês

### PAC

 **30 %**

em relação ao último mês

### HERC. PC3955

 **7 %**


em relação ao último mês

### PERF. PC820

 **100 %**


em relação ao último mês

### PERF. PB1259

 **26 %**

em relação ao último mês

### ANTI ESPUM.

 **1 %**

em relação ao último mês

Químico	Programa	Ins
ÁCIDO SULFÚRICO	Controle de pH	0,79
AFRANIL HTC - ANTIESPUMANTE	Espumas	0,15
AMIDEX 3001 - AMIDO SPRAY	Amido	-0,08
AMIDO CATIONICO	Amido	0,00
BICARBONATO DE SÓDIO - BARRILHA	Controle de pH	0,00
CARBONATO DE CALCIO	Filler	0,02
COLA	Colagem	2,67
DETAC 7445	Controle de Contaminantes	0,12
DYNABRIGHT FX - ALVEJANTE	Corantes	
DYNACOLOR HC L - CORANTE	Corantes	
DYNACOLOR HC R - MATIZANTE	Corantes	
FLUIDEX SS28 - AMIDO SUPERFICIAL	Amido	26,34
HERCOBOND 2810 - IMPRESS	Controle de Demanda	2,96
HERCOBOND PC3955 - AGENTE DE DRENAGEM	Retenção e Drenagem	1,52
KYMENE - PAC	Aditivos	2,53
NALCO 62513 - ÁCIDO	Condicionamento de Feltros	0,44
NALCO 63231 - ALCALINO	Condicionamento de Feltros	0,31
PAC	Controle de Demanda	2,06
PERFORM PB1259	Controle de Contaminantes	0,34
PERFORM PC820 - AGENTE RETENÇÃO	Retenção e Drenagem	0,00
PERFORM PC3955	Retenção e Drenagem	0,00

## Consumo de Químicos

PUMA Visão Geral

MP27 Gerencial

MP27 Geral

		Global [Kg/t]					Bas	
Químico	Programa	Inst	Meta	Dia	Mês	Ano	Inst	Dia
ÁCIDO SULFÚRICO	Controle de pH	0,79	3,00	1,01	1,01	410,01	0,93	1,3
AFRANIL HTC - ANTIESPUMANTE	Espumas	0,15	0,30	0,16	0,16	0,29	0,12	0,1
AMIDEX 3001 - AMIDO SPRAY	Amido	-0,08	7,00	0,16	0,16	2,76	0,00	
AMIDO CATIÔNICO	Amido	0,00	0,00	0,00	0,00	1,92	0,00	0,0
BICARBONATO DE SÓDIO - BARRILHA	Controle de pH	0,00	0,00	0,00	0,00	0,89	0,01	0,0
CARBONATO DE CALCIO	Filler	0,02	0,00	0,45	0,45	25,14	0,00	
COLA	Colagem	2,67	3,50	2,75	2,75	6,60	0,80	0,8
DETAC 7445	Controle de Contaminantes	0,12	0,50	0,14	0,14	0,23	0,12	0,1
DYNABRIGHT FX - ALVEJANTE	Corantes						0,00	
DYNACOLOR HC L - CORANTE	Corantes						0,00	
DYNACOLOR HC R - MATIZANTE	Corantes						0,00	
FLUIDEX SS28 - AMIDO SUPERFICIAL	Amido	26,34	25,00	23,00	23,00	16,63	38,87	38,
HERCOBOND 2810 - IMPRESS	Controle de Demanda	2,96	2,00	3,05	3,05	1,61	0,00	
HERCOBOND PC3955 - AGENTE DE DRENAGEM	Retenção e Drenagem	1,52	1,50	1,53	1,53	1,01	1,29	1,3
KYMENE - PAC	Aditivos	2,53	1,00	2,53	2,53	4,70	1,11	1,1

## Case 4 – Chemical Controls



### Challenge

Offer a summary of the chemical's consumption in the production of paper and the dosage control of the chemicals by a previous defined goal

### Solution

Develop a structure on PI AF to allow the view of all data on a PI Vision Display

### Benefits

Improve the chemical usage by achieving all the consumption goals in all basis (daily, monthly and yearly)

---

# Next Steps



# Where we are looking



**WoodChips Traceability**  
Develop a custom report to help process engineers and operator to understand the composition about the woodchips pile

2023

2023

## Setup Machine Paper

Help process engineers and operator to find the **golden batch** production of a paper machine with a custom report

2023

## Klabin Analytics Tools

Use the PI data to improve and anticipate process deviations and maintenance failure

# Team Work



**Gabriel Lemes**

Project Manager

- Klabin
- gabriel.lemes@klabin.com.br



**Luis Duque**

IT Analyst

- ihm stefanini
- luis.duque@ihm.com.br



**Jupiter Lopes**

Project Engineer

- Klabin
- jupiter.lopes@klabin.com.br



**Rayne Pereira**

Data Engineer

- Klabin
- rayne.pereira@klabin.com.br



# Questions?

Please wait for the microphone.  
State your name and company.



# Please remember to...


Navigate to this session in the mobile app to complete the survey.



# Thank you!

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 [@avevagroup](https://twitter.com/avevagroup)

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