



**BIG UST-ILIMSK
NEW KLB MILL**

[Project Overview](#)→ 3

[KLB Mill Products](#) → 8

[Wood Supply and Reforestation](#)→ 11

[KLB Mill Digitalization](#) → 16

[Human Resources. HR Brand](#)→ 20

[Satellite Projects](#) → 25

[Environmental Safety](#) → 27

[KLB Mill: Construction Progress](#) → 32





PROJECT OVERVIEW

BIG UST-ILIMSK

NEW KLB MILL



Project capacity of the KLB Mill
(virgin kraftliner)

600kt



Start-up

2022



New workplaces to ensure
the production operations
at the KLB Mill

850



Investments

**over
\$1 billion**

New KLB Mill will allow JSC Ilim Group



to increase the market products output

by 75%

up to 1.5 mln tons per year in Ust-Ilimsk



to confirm the leadership of the Company in the Russian market and increase the production volume

up to 4.6 mln

tons

per year



to become one of the largest manufacturers of unbleached packaging materials in the world with a total output of

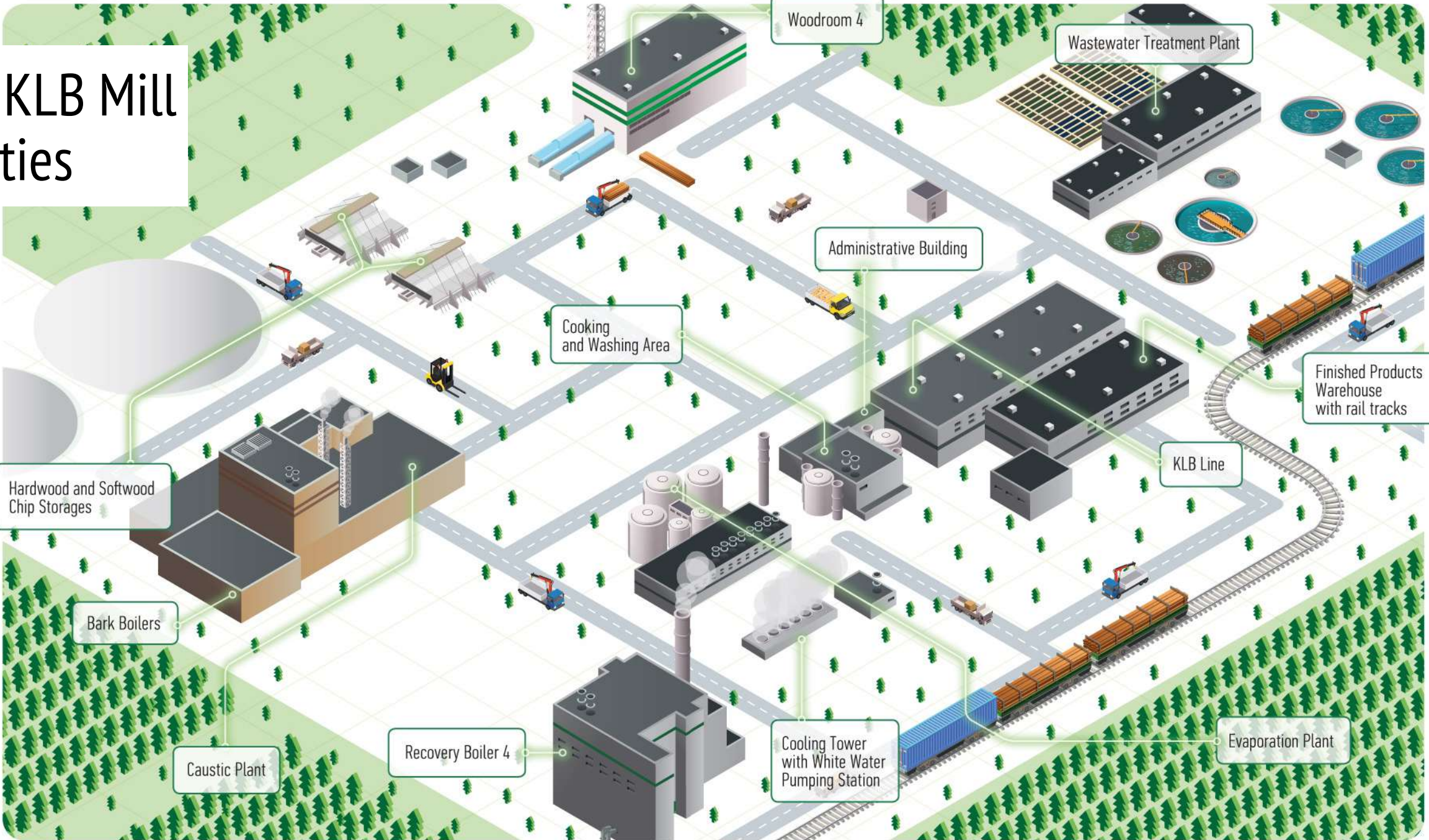
1.5 mln tons

per year



to gain leadership in the growing packaging market in China and other Asian countries

Main KLB Mill Facilities



June 2018

Project launch

April 2020

Launch of Woodyard construction

November 2020

Launch of wastewater treatment facilities construction

July 2021

Launch of KLB machine installation

August 2021

Installation of debarking drum in Woodroom

October 2022

Start-up of EVAP3 with liquor

October 2022

Start-up of KLB Machine with the fiber of the existing production facility



Start of construction at the main site

August 2019



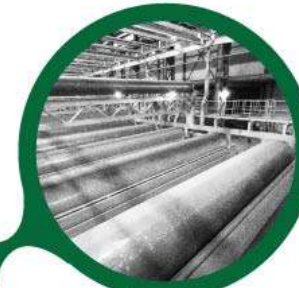
Start of workshop buildings and process equipment installation at the main site

December 2020



Filling of treatment facilities

July 2022



Start-up of Recovery Boiler with liquor

November 2022



Start-up of Digesters

December 2022



KLB MILL PRODUCTS

KLB Mill Products – virgin kraftliner

100% pulp kraftliner
without RCP



Kraftliner consumer properties:

-  applied as linerboard
-  features superior physical and mechanical properties
-  easily recycled
-  with exceptionally attractive design
-  features excellent printing properties
-  suitable for food packaging
-  has all relevant certificates to be used in food industry, including ISEGA international certificate

Kraftliner will be produced with the equipment of **Voith**, a German machine building company

Basis weights range from 80 g/m² to 175 g/m².

Major consumers of new KLB Mill products

Domestic market

Supply of corrugated packaging for foods and FMCG

Russia

New KLB Mill in Ust-Ilimsk
JSC Ilim Group

China

The largest partner of JSC Ilim Group.
By 2025, the Company intends to increase products export to China by 2.4 mln tons

South Korea

Major kraftliner consumers – electronics manufacturers

Other countries of Asia/ Middle East

Supplies of low basis weight kraftliner

Philippines

End-use segment – fruit packaging.
By 2024, Ilim expects to enter a new segment of industrial packaging



WOOD SUPPLY AND REFORESTATION

**50
thousand ha**

Annual reforestation area



Within reforestation initiatives, Ilim performs activities related to planting and seeding, as well as contributes to the natural reforestation



The Company intends to build a state-of-the-art forest nursery in the Irkutsk Oblast with an annual capacity of 7 mln ball-rooted seedlings (pine and spruce) and with further increase of the capacity up to 12 mln

KLB Mill will utilize
softwood and hardwood

2.9 mln m³

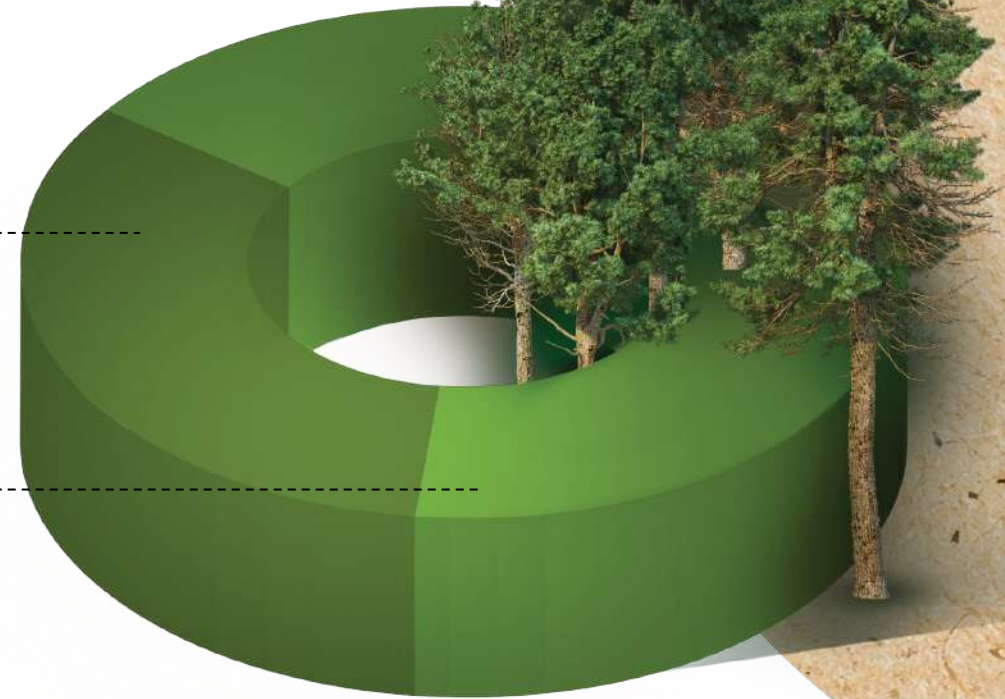
total

1/3

HW

2/3

SW



Ilim utilizes the technology of ball-rooted planting stock cultivation.

High survival rate of seedlings = quality of reforestation

Ilim Group has become the first company in Russia to adopt an intensive forest management and reforestation model.



Harvesting at previously utilized timberleases



Preservation of forests with high conservation value

All Company leased timberlands are certified in accordance with **FSC and PEFC™** standards (7.9 mln ha)*

*FSC (FSC C129100, FSC C129102, FSC C129099)
PEFC™ (NC-PEFC/FM-023735, NC-PEFC/FM-023019, NC-PEFC/FM-023737)



WSO (Wood Supply Optimization)

WSO is a system comprising the functions of geographical information system, business analytics and business planning.

Blocks of analytics and forecasting incorporate 8 interconnected optimization algorithms.

5 Implemented economic user scenarios are consolidated by a unified graphical interface and reporting system.

The system uses data from a Forest unified database, while Data Hub technology provides for the application of the original data associated with the forest and analytical findings in the related analytical systems.

Objectives:



Development of an optimal wood supply model for the production process



Generation of map and list of optimal logging sites



Determination of optimal model deviations from the actual data



Fair prices for 3P pulpwood



Generation of the cost curve



Recommendations on M&A

WSO system displays



Heat map of wood availability and cost

Mill location on the map, distances between the timberlands and the KLB Mill, cost of the wood supplies to the Mill



Detailed information on the logging site

Size and value of the timberland lease agreement, remoteness, delivery costs



Information on the wood supply model

Optimal model of wood supply to the KLB Mill with a breakdown to feedstock sources, cost and species mix



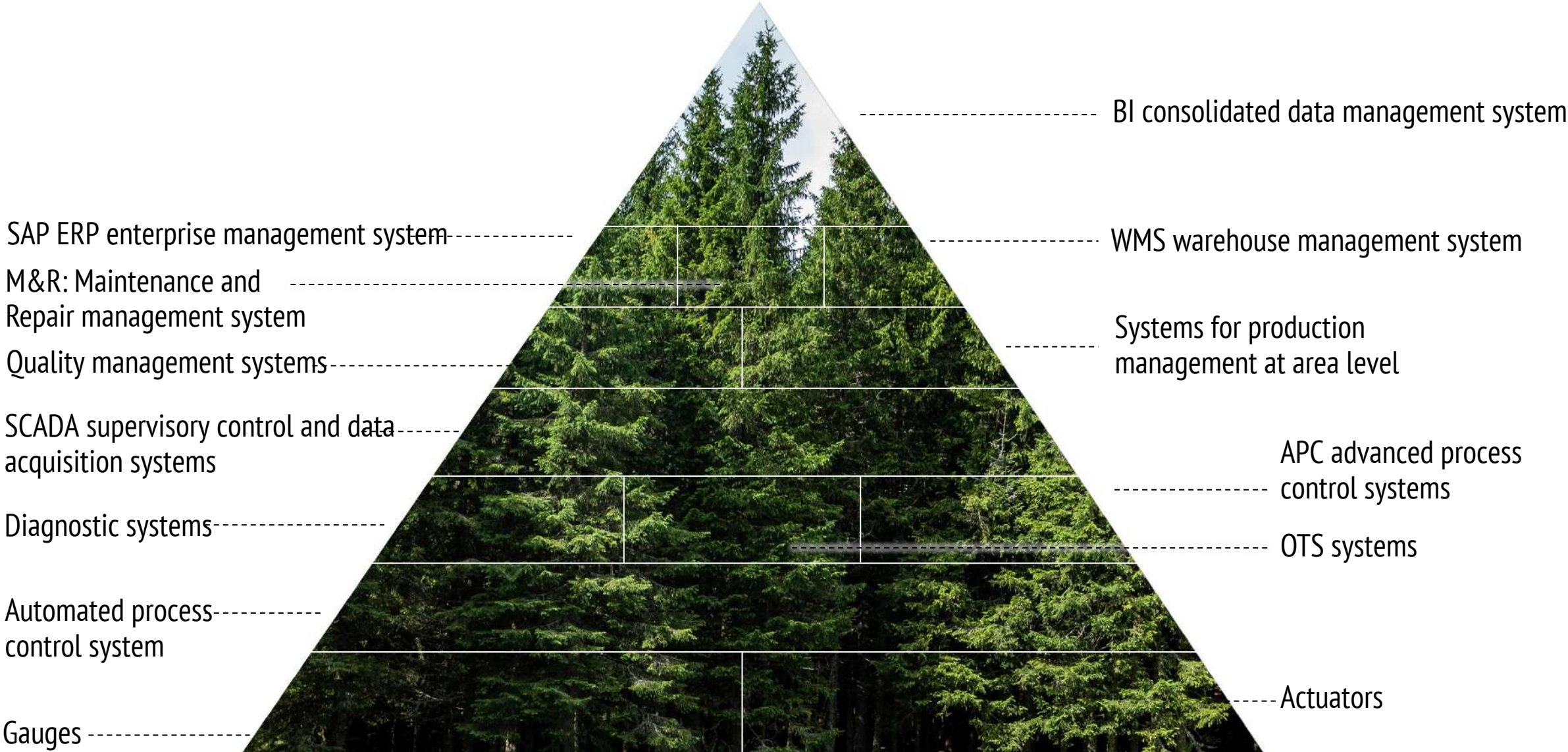
Differences of actual wood supplies from the optimal wood supplies

Comparison of the actual supplies and the program proposed plan

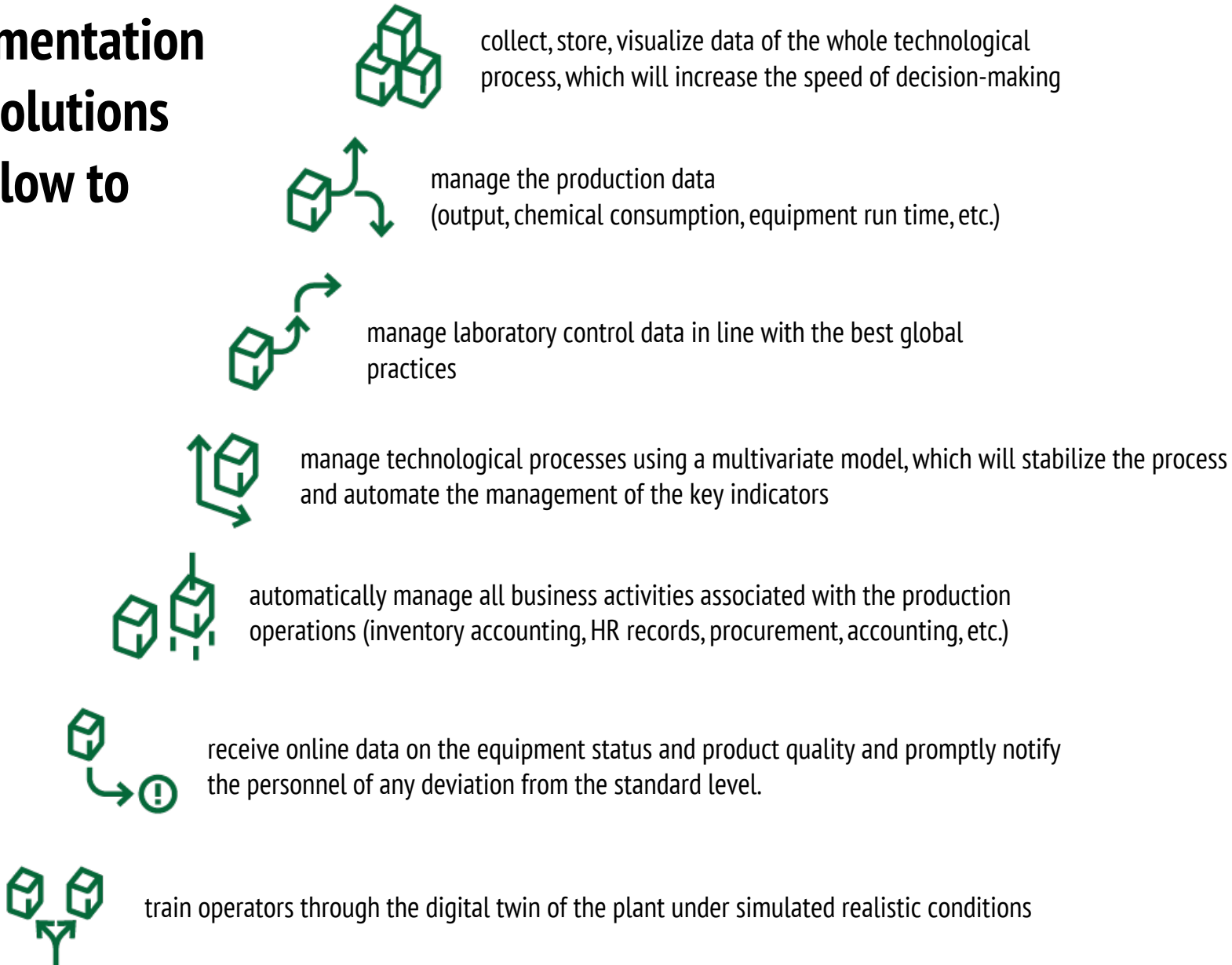


KLB MILL DIGITALIZATION

Cutting edge IT-solutions will be implemented at the KLB Mill



Implementation of IT-solutions will allow to





KLB Mill exclusive digital solutions



Process digital twin

to simulate and optimize the process



Digital twin of an Asset

to cover all stages of the asset life cycle from engineering to decommissioning



Centralized Control room

to enhance the production management efficiency due to the transition from managing production facilities separately to the comprehensive production chain management



PERSONNEL. HR-BRAND

Big Ust-Ilimsk project represents ambitious tasks, challenging projects as well as opportunities for professional development

approximately
850 jobs
created at new KLB Mill

42%
Wood supply



36%
P&P

22%
Logistics

Personnel from various Russian cities and regions will work at new KLB Mill



Relocation package



Travel to Ust-Ilimsk at the expense of the Company (for an employee and his/her family)



Accommodation at the expense of the Company



Relocation allowance



Fringe benefits



Voluntary medical insurance



Skills upgrade and advanced training



Fitness



Health resorts and camps for children

KLB Mill digital training program tailored by Voith, a German machine building Company, will allow the personnel to develop new competencies and acquire experience in P&P industry.

Voith exclusive staff training program will be implemented at the Mill. EduCAT digital training course on:



process



scheduled
and emergency
shutdown



start-up



routine, contingency
and emergency
situations at KLB Mill





DEVELOPMENT OF TRANSPORT INFRASTRUCTURE IN UST-ILIMSK

KLB Mill Satellite Projects



**Development of railway
infrastructure
at Ust-Ilimsk station**
for public use



**Development of the airport
in Ust-Ilimsk:**

- Completed new airport building and resumed regular flights
- Underway: equipment purchase and the airport upgrade to comply with the requirements to accommodate 3-class aircraft
- Operated scheduled flights to Irkutsk and Krasnoyarsk



ENVIRONMENTAL SAFETY

Big Ust-Ilimsk is constructed with a focus on the best available technologies and global practices in environmental safety.



KLB Mill technologies and equipment ensure that pollutants emissions into the atmosphere, waste water discharge and the production waste generation volume are in compliance with the global environmental standards and the best available technologies (BAT).



Dry debarking



Electrostatic precipitators after Lime Kiln, bark Boiler and RB



Blowing and reuse of foul condensate after treatment in the stripping column



Two-step biological treatment of waste waters (MBBR reactor + aeration tank).



Collection of DNCG and CNCG for further incineration in RB



System for automatic monitoring of industrial emissions and wastes



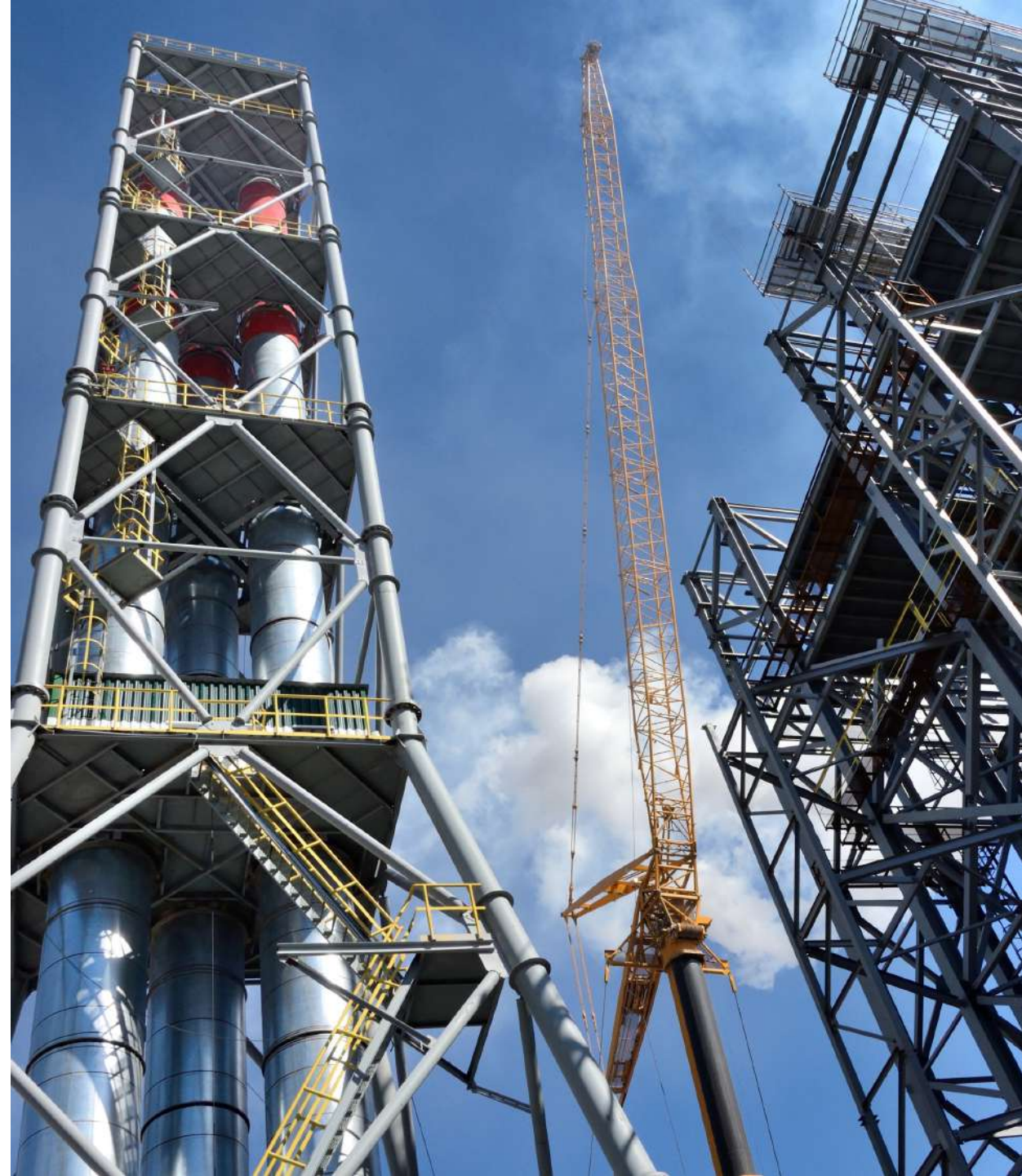
Black liquor dry solids content before incineration – min 75%

KLB Mill largest environmental projects

- Construction of a new recovery boiler (RB)
- Construction of a vacuum evaporation plant (EVAP)
- New wastewater treatment facilities with modern highly efficient technologies for the wastewater treatment
- Upgrade of the Branch operating facilities:
Lime Kiln 3 and Bark Boilers 4 and 5

Effects:

- Significant reduction of sulfur compounds and dust emissions into the atmosphere from the process equipment, as well as chemical losses during the recovery
- Due to dry debarking the wastewater volume after the wood chips preparation at WR-4 will be 90% reduced



New wastewater treatment facilities for KLB Mill

- comprise three main treatment stages: mechanical, biological and physical, and chemical
- ensure low water consumption and water disposal in line with the best global practices

Wastewater flow rate per ton at the Mill in Ust-Ilimsk is in line with the best global practices





KLB MILL: CONSTRUCTION PROGRESS































