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# Ontario Delegation – Elomatic meeting

Helsinki 31.10.2025

Jarno Peltonen

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# About us

Elomatic is an international consulting and engineering company that provides top-level expert services, products and turnkey solutions to marine, shipbuilding, machinery, energy, process and pharmaceutical industries. We are focused on continuous improvement and sustainable development, and we are committed to design solutions that increase the wellbeing of people and the environment. Established in 1970, Elomatic employs around 1,200 professionals, and has customers in more than 80 countries across the globe.

## Our areas of expertise

**Marine**

**Industry**

**Pharma**

Turn over in 2024
**123,5 million €**

Number of employees
**~1200**

Countries with offices
**21**

In private
**Finnish ownership**

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# Our subsidiaries

NAYA
LIFE SCIENCES

CADMATIC

ELRON
MEMBER OF ELOMATIC

ablemans
LIFECYCLE SERVICES
LCS

NOMINE
CONSULT

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# Industry's expertise

- Power-to-X
- Biomaterial processing
- Food, feed & fertilizers
- Safety & security

| Energy solutions | Plant & process | Chemical engineering | Product development | Machinery & equipment | Technical analysis | Technical & business consulting |
|---|---|---|---|---|---|---|
| 70+ Plant, construction & HVAC designers | 40+ Process designers | 80+ EIAT designers | 20+ Project managers | 80+ Mechanical designers | 50+ FEM & CFD analysts | 20+ Technical & business consults |

# Key competencies in the biomaterial industry

- We provide high-qualified expert solutions for the whole project life-cycle for pulp & paper, bioproducts and biochemicals industries

- With deep process and technology knowledge we provide customized support for our clients internationally

- Our customers are in the following fields:
  - Pulp & paper
  - Side stream utilization
  - Novel lignocellulosic bioproducts
  - Cellulose based textiles
  - Industry decarbonisation

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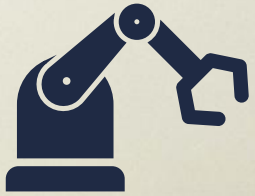
# Our customers



Technology suppliers

Existing Production units

Green field investors

Start-up companies

# Biomaterial processing

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**SOURCE**

Waste streams
Industrial side streams
Virgin streams

**PROCESSING METHODS, TECHNOLOGIES AND END PRODUCTS**

Biological processing
- Gases
- Other substances

Mechanical processing
- Fiber
- Other substances

Thermal processing
- Coal
- Liquids
- Gases

Chemical processing
- Lignin
- Cellulose
- Hemicellulose

**INDUSTRY**

Energy
Fertilizer

Building
Packaging
Textile
Composite

Energy
Chemical
Battery

Food
Pharma
Cosmetics
Chemical
Textile
Packaging

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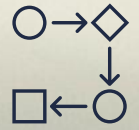
# Biomaterial processing services

## Project development & execution

- Concept design and consulting
- Pre-feasibility and feasibility studies
- Pre-engineering
- Detail engineering
- Project execution

## Mill improvements

- Mill debottlenecking
- Mill reviews and audits
- Quality management
- Simulation as a service
- Scaling up



## Business development

- Conversion studies
- Investment opportunities
- New business opportunities
- Market & competitive environment

## Mergers & Acquisitions

- Second opinions
- Technical due diligence
- All M&A advisory services available jointly with Elron

# Elomatic scale-up concept

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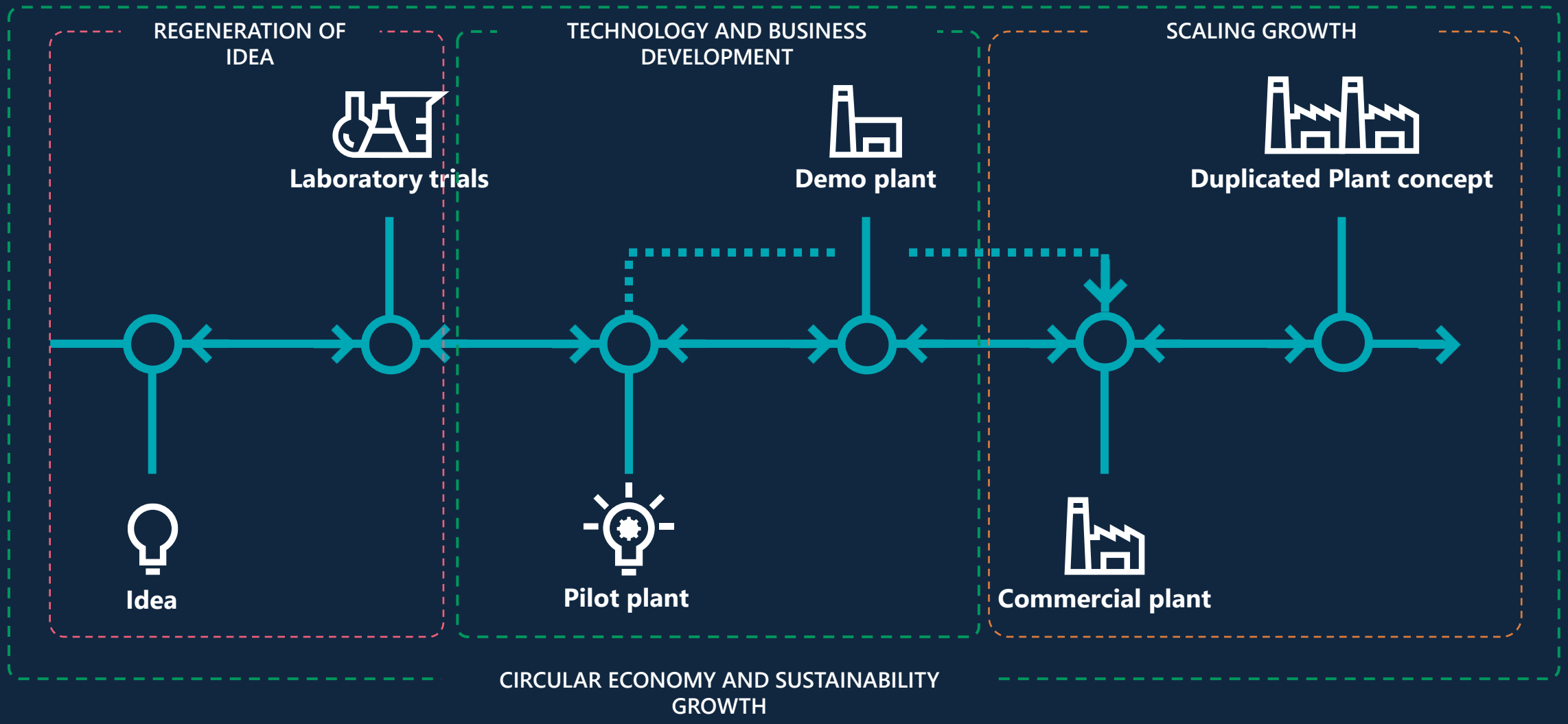

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# Selected references

# Metsä Spring

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> In such a pioneering project, solid design expertise and the ability to provide sparring help are emphasized. Metsä Group's fiber expertise is top-class worldwide, and Elomatic's first-rate production line expertise complements it. "

**Veli-Pekka Kyllönen, Project Director, Metsä Group**

Metsä Spring and Elomatic signed the agreement for the pre-engineering of the first commercial Muoto plant on April 29, 2024.

Elomatic's service package includes the design and development of the project's production line, internal logistics of the finished products, and packaging – covering process, layout, electricity, instrumentation, automation, HVAC, steel structures, as well as safety and environmental issues. In addition, Elomatic is responsible for the schedule and cost estimate (CAPEX) of the factory investment.

# Aisti Corporation Oy

“

The partnership with Elomatic gave us the confidence that we had the best possible people at our disposal to take care of the development of the production process and the state-of-the-art machinery and equipment.

**Antti Fredrikson, Founder and Chairman of the Board at Aisti**

Aisti is a Finnish company that manufactures natural fiber-based acoustic tiles for the construction industry. The company uses Foam Forming technology in manufacturing, which allows Aisti® Teno acoustic tiles to be produced ecologically from wood fibers.

Elomatic has been collaborating with Aisti since 2023, starting with conceptual design and now providing EPCM services.

**The role of Elomatic in the first phase**

- Conceptual design of the acoustic tile post-processing equipment line
- Machinery design
- Plant location search and comparison of electrical connections
- Requesting and comparing equipment quotations
- Cost estimation for the entire plant

In late 2024, Elomatic became **the EPCM partner** of Aisti. The assignment includes **engineering, procurement, and construction management services** for the factory investment project. The factory will be built in Kitee, Finland.

# Fold project

“With Elomatic’s help we were able to develop the original pilot equipment further. According to detailed patent and literature reviews, the machine is highly unique.”

**Jarmo Kouko, Research Team Leader, VTT**

## Mechanical engineering of pilot machine and production line

At the core of the Fold consortium was the vision to create a completely new portfolio of industrially foldable products, inspired by the ancient Japanese art of paper folding origami. The products were designed to increase the export volume and enable the opening of new business opportunities for Finnish companies.

## The role of Elomatic in the Fold project

- Conceptual design for a production line
- Mechanical engineering of the actual folding machine together with VTT
- Cost estimations for the production line

# Infinited Fiber Company

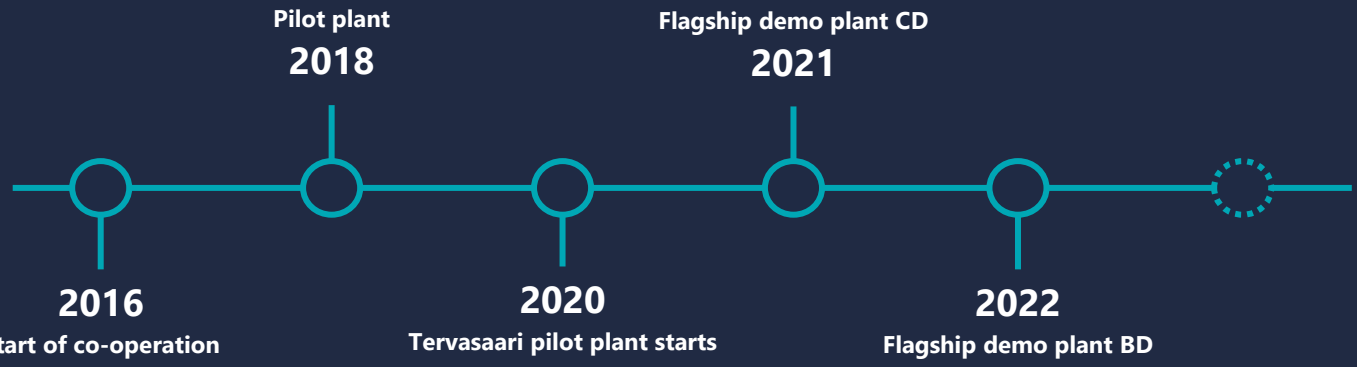
“

It has made a big difference that Elomatic wants to be actively involved in creating something new. It is needed to support sustainable development and solve global challenges. Carbamming is a key part of our process. If we didn’t have a world-class partner in it, we wouldn't be able to create value for our own customers.

**Petri Alava, CEO and co-founder, Infinited Fiber Company**

**New fiber from textile waste – Elomatic helps important mission**

Infinited Fiber Companys innovation enables the utilization of cotton-containing end-of-life textiles and other cellulose-containing waste streams as new, cotton-like textile fibers. The company has pilot factories in Espoo and Valkeakoski and is planning to build a flagship factory in Veitsiluoto to meet the strong demand for Infinna™ from international clothing brands.



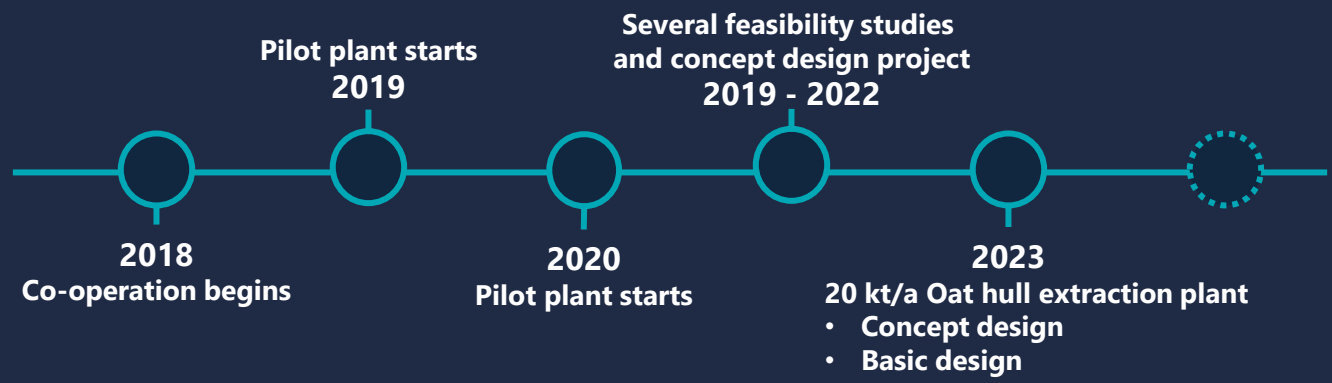
# Bioforsense – CH Bioforce

**Elomatic scope included:**

- Project management
- Civil engineering
- HVAC
- Process, plant and piping design
- Equipment design
- EIA
- Site services

CH Bioforce's Bioforsense technology can utilize almost any kind of biomass as feedstock: wood such as birch, pine, and spruce, and non-wood such as straw or bagasse.

Process end products are biomaterials – dissolving cellulose, polymeric hemicellulose and sulphur-free lignin, which can be us multiple industries, for example food ingredient, chemical, textiles, and packaging applications.



# Energy saving surveys of Metsä Board mills

**Energy Analyses:**

- Simpele, 2024
- Äänekoski, 2023
- Kyrö, 2023
- Tako, 2022
- Etc.

Consulting Project

**Results:**

- Energy efficiency investments
- Energy efficient process running methods
- Possibilities to utilize excess heat from production processes
- Material efficiency measures
- Maintenance measures

**Over 50 recommendations,**
**Saving potential > 1,5 milj./a**

# Stora Enso – Advanced process controls

Reference

We benefit greatly from having found a good partner. We can trust that we will continue to receive the expertise we need from Elomatic.

**Sampo Luukkainen**
**Project Manager Mill Digitalization, Stora Enso Heinola Fluting**

## Cooperation continues as Elomatic brings more ways to gain efficiency and savings

### Customer's problem

At Stora Enso Heinola mill, assistance was needed primarily for operators running the process, but also for engineers responsible for automation and production development.

### Our solution & capabilities

Development of the wood debarking process by utilizing new technologies and AI. Elomatic developed advanced process controls (APC), which utilizes image recognition data.

**2024 – Top-level control of debarking process**
**2023 – Top-level control system & simulator**

### Results

The first version of the top-level system for advanced control methods such as model-based and fuzzy control, developed with open-source technologies.

# Stora Enso – Mill reporting automation

Reference

> Elomatic had understanding of software we wanted and experience of factory reporting and visualization. They managed to take more comprehensive role than traditional IT-company and helped in mass-balance implementation.

**Sampo Luukkainen**
**Project Manager Mill Digitalization, Stora Enso Heinola Fluting**

## Automatically calculated KPIs brought true user-friendliness

### Customer's problem

The information was scattered across different complex systems, and it was challenging to understand where the numbers were coming from or what they meant. Stora Enso needed help with the situations which require a quick response as well as coping with daily reporting requirements.

### Our solution & capabilities

2022 – Measurement signal diagnostics
2021 – KPI calculations and automated reporting – part I & II
2016-2019 – Energy efficiency co-operation

### Results

Understanding the current production state is easier and faster with automated KPIs. The personnel can notice sudden deviations in addition to understanding long-term developments.

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# Recycling installation of UBC materials Stora Enso Ostroleka

Elomatic's scope of services covered a large range of detail engineering services in close co-operation with the owner, authorities and insurance company.

**Detail engineering for a new Used Beverage Carton recycling plant on an existing site**

- Building design with all general construction installations
- Piping installation for connection with the existing system
- Balance calculations and PED documentation
- HVAC project for a new hall with an air deodorization system
- Sprinkler installation for the production and storage hall with arrangements with insurance company
- Fire scenario and fire alarm design
- Power supply for new transformers and MCC room for a new system
- Instrumentation and control design
- CCTV system design
- Design of a new pipebridge and load analysis for existing pipebridges

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# Stora Enso, Sunila Lignin Granulation

A lignin granulation project was implemented at Stora Enso's Sunila mill in 2019-2023. Initially, Elomatic conducted preliminary studies on atex issues and technologies. This was followed by a preliminary design, followed by an implementation design.

The value of the project was about 14M€ and the production was about 50 kt of ultra-dry lignin. The project involved converting a dusty and explosive lignin powder into a larger granule with low dust content, thus substantially reducing the risk of explosion.

Disciplines:

- Project management
- Process Design
- Plant and piping design
- Utility SIA design
- Utility procurement
- Production process procurement assistance
- Delivery supervision
- Installation supervision

# Vantaan Energia - CCU

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“Elomatic has helped us develop a potential concept for carbon dioxide utilization. Collaboration with Elomatic’s expert team went smoothly from start to finish. Elomatic conducted the research very thoroughly, completed it on schedule, and delivered the results as expected.”

**Angela Juslin, Development Engineer, Vantaan Energia**

## Consulting in carbon capture utilization

Elomatic and Vantaan Energia explored the possibilities of carbon capture and utilization for the production of formic acid.

The project involved a conceptual study of four different possibilities for producing formic acid. The methods for formic acid production were based on various combinations of two carbon capture systems and two different formic acid production methods.

# Contact

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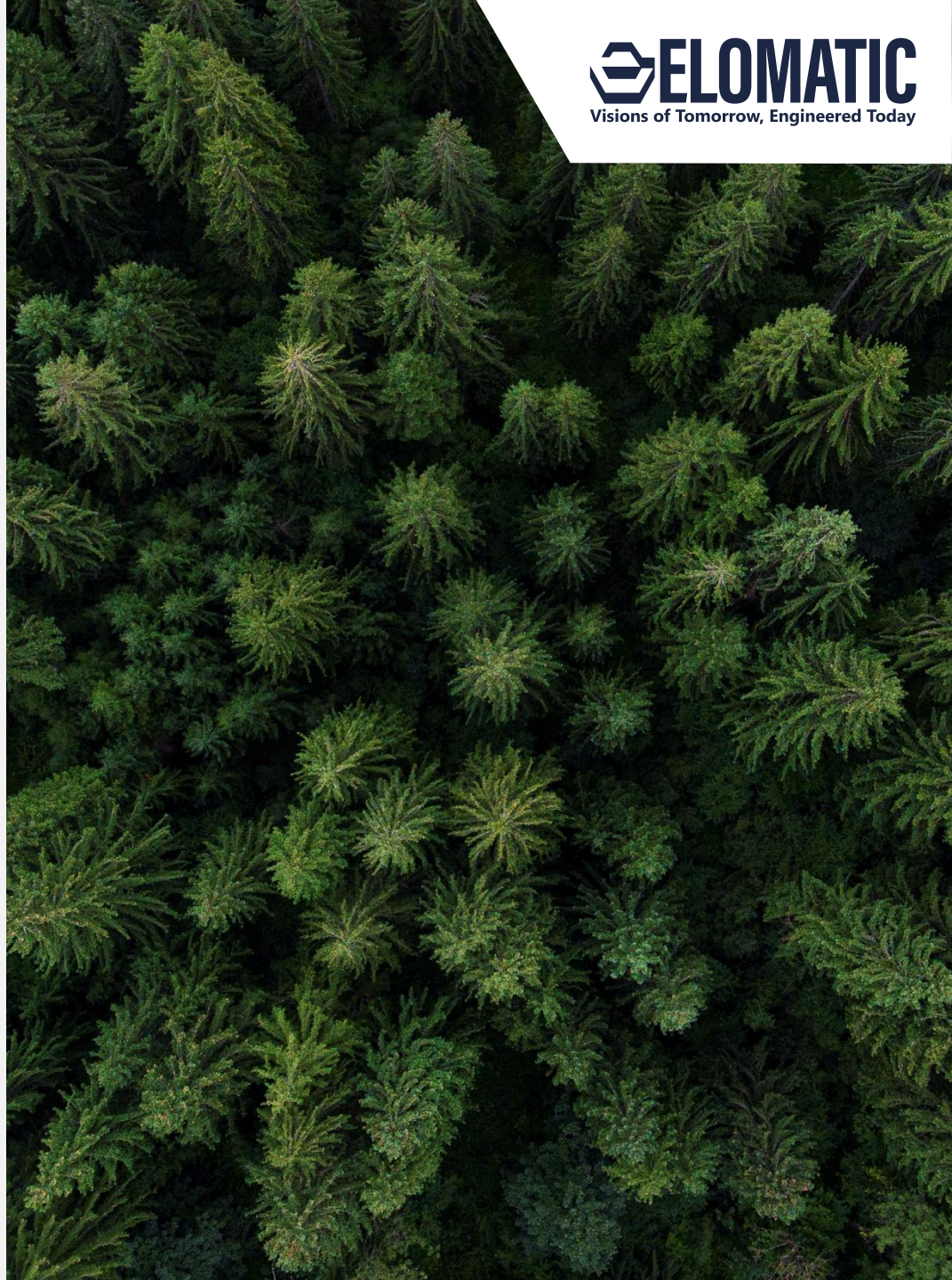

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