N-AND'S ENVIRONMENTAL SUSTAINABILITY JOURNEY

Towards a circular product development process, one step at a time.

THE BEGINNING

N-and Group is a young engineering company with a green heart.

Since its inception in 2015, N-and team have designed and developed advanced touch screen and software solutions.

Many of them are intended for technological upgrade of products already present on the market.
In this way, outdated devices have seen their lifespan and attractiveness extended over time, and businesses have generated new value streams from end-of-life products.

TOUCHSCREEN CHASSIS AND FRAMES

During this journey we have strengthened our commitment towards environmental preservation by integrating circular economy processes and sustainable business model.

It is our ongoing responsibility to reduce N-and Group's ecological and environmental operational footprint in line with the European Grean Deal strategies.

2015 2020

2015
Use of steel and ferrous metals for frames and chassis

Welding process in components manufacturing

2017
Stewardship of circular product development processes in the business model

2018
Replacement of ferrous metals by anodized recycled aluminium

2019
Adoption of extrusion process instead of welding

2020
Transition to non-anodized recycled aluminium

*Touchscreen frames and chassis only

THE PRESENT

1. ADOPTION OF A CIRCULAR PRODUCT DESIGN PROCESS

Sustainability starts at the early stages of any product's development process.

In product design, N-and Group adopt a cross-functional collaboration approach and implements a clear definition of sourcing requirements.

This includes the identification of greener manufacturing processes and waste management options.

To lower our environmental impact, we have put efforts in selecting eco-friendly materials, designed out non-strictly necessary manufacturing processes and engineered products to facilitate and improve the recycling rate at the end of their life.

RECYCLED ALUMINIUM

Define and source raw material are key processes in both new product development and circular economy cycles.

We have compared options, evaluated environmental impacts and chosen the most sustainable alternatives available for the manufacturing of our components, while ensuring high standards of quality, durability and performance.

As a result, we have transitioned from the ferrous metals to recycled aluminium.

We have chosen recycled aluminium over ferrous metals for touchscreen frames and chassis

Recycled aluminium is one of the best choices when it comes to combine environmental conservation and high performance.

Also known as "The Green metal", it plays a key role in ecology as it can be recycled and reused without losing its original properties. According to The Aluminium Association, 75% of all aluminium produced since industrial output in the late 19th century is still in use today. Recycling aluminium saves 95% of the energy required to produce it from raw materials.
On the physical, chemical and mechanical end, aluminium has an exceptionally broad range of abilities: it is soft, lightweight, fire-proof and heat-resistant, easy to work into new shapes and able to conduct electricity.

Aluminium is particularly suitable for technology products as touchscreens. It is easy to handle during manufacturing process and it performs optimally even in outdoor places.

ACHIEVEMENTS

95%
energy savings compared to primary aluminium production

97%
CO_2 emission savings compared to primary aluminium production

5253.84 Kg
of metal designed out on new products

22535.44 Kg
of mild steel converted to recycled aluminium

88%
increased aluminium content VS. plastic

Removal of painting and anodization on **87.3%** of parts

3. GREENER PRODUCTION PROCESS

Together with greener row materials sourcing, we have evaluated alternative manufacturing processes with low environmental impacts.

Our products used to be welded, painted or anodyzed.

Welding raised concerns about recycling opportunities and disposal, as it precludes fast and easy disassembly.

Painting and anodizing processes generate hazardous water waste and air pollution.

For these reasons, we decided to discontinue welding, metal painting and anodizing in favour of extrusion process and non-anodized recycled aluminium.

WHAT WE LEFT BEHIND

Environmental impacts linked to the old manufacturing processes reduced by the introduction of extrusion of non-anodyzed recycled aluminium

ANODYZING

- Chromic and sulfuric-acid chemical baths
- Wastewater discharge
- Chronic-acid fumes
- Hazardous waste, including diluted wasted such as rinse water and concentrated wastes from cleaner tanks

METAL PAINT

- Manufacture of Titanium Dioxide (TiO_2) with high embodied energy (54 - 76 MJ/kg and generating CO_2, N_2O, SO_2, NO_x and CH_4 emissions
- Volatile organic compounds present in solvents participating in the production of ozone
- Waste streams including spent acids and metal sulfates

MOVING FORWARD

For N-and Group sustainability is a journey, not a destination.

Through the development of new manufacturing technologies, more sustainable raw materials and the increasing sensibility towards environnemental concerns, we continue to evolve our ways to design and industrialise new products.

Next goal is to work closely with our suppliers to reduce further our value stream environmental footprint. Our continuous improvement and certification programs ensure the supply-chain shares N-and Group's values and goals to protect the environment.