

Horizon Europe Launch Event

İrem SAPMAZ – YEŞİLOVA HOLDİNG R&D CENTRE

- My Story in Horizon 2020-

İstanbul, 22 March 2022



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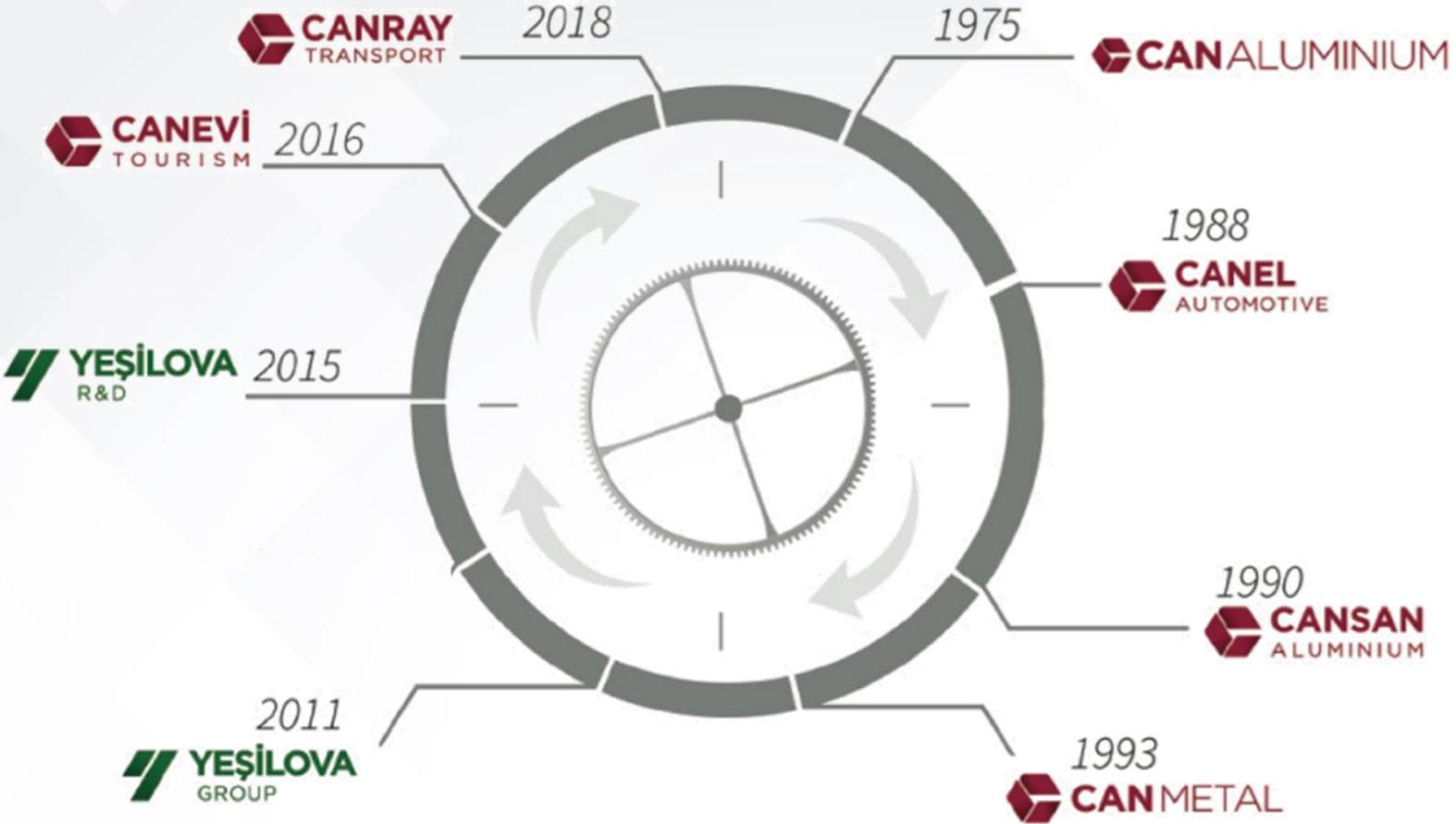


Who we are?

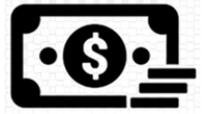
Yesilova Group Introduction



This project is co-financed by the
European Union and the Republic of Turkey
Bu proje Avrupa Birliği ve Türkiye Cumhuriyeti tarafından
finanse edilmektedir



Turnover
140 m€



Export Ratio
%55



Employees
1400+



YEŞİLOVA

Alu-Technic

CUSTOMERS

Automotive, Rail Industry,
Machine Industry.

PRODUCTS

Engine mounts, gearbox
housing, mirror brackets, roof
rack supports, etc. Cast parts
up to 6 kg.

PROCESSES

Aluminium high pressure die
casting company with 10
injection presses.

CUSTOMERS

Automotive, Construction, Solar
Systems, Rail Industry, Machine
Industry.

PRODUCTS

Profiles with dimensions up to
280mm diameter or 380mm
width.

PROCESSES

Profiles with dimensions up to
280mm diameter or 380mm
width.



CANMETAL



CANSAN ALUMINIUM

YEŞİLOVA

Alu-Motion

CUSTOMERS

OEMS (Passenger Cars,
Light/Medium and Heavy
Commercial Vehicles)

PRODUCTS

Crash Management Systems,
FUP/RUP, Subframes,
Cross-Car Beams,
EV Battery Carriers, Window-
Door Frames,
Sunroofs and Roof Rails

PROCESSES

Stretch Bending
Robotic CMT Welding

CUSTOMERS

Rail Industry

PRODUCTS

Ceiling Modules,
Roof Archs,
Luggage Racks,
Noise Dampers

PROCESSES

Bonding techniques,
Mechanical assembly



CANELAUTOMOTIVE



CANRAYTRANSPORT





According to the results of the R&D
Centers Performance Index,

2nd place in Turkey – Category-A

-  R&D Center title since 2015
-  20 researcher/experts
-  **40+ patent** applications and patents
-  **20+ publications** since 2018
-  **6 in total ongoing national and international funded projects**
 -  2 ongoing H2020 projects (LEVIS & ALBATROSS)
 -  1 EUREKA project (LightBEE)
-  Capable material laboratory



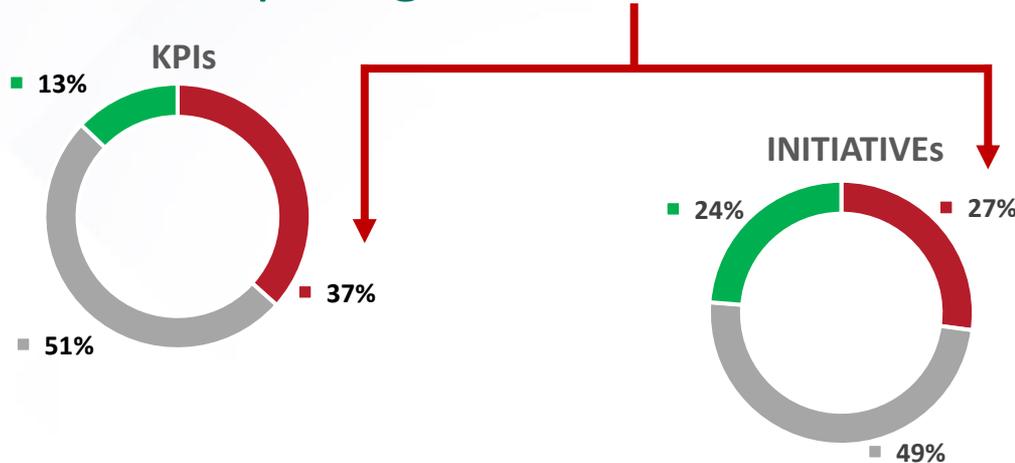
YEŞİLOVA SUSTAINABILITY AWARENESS

PURPOSE:

“A sustainable world with happy employees”

STRATEGY-2:

“Preparing a sustainable future”



Short Term

2022

Medium Term

2023

2024

2025

Sustainability Working Groups

Sustainability Committee | Energy Working | Creating Data Sets | Social Compl. documents | Specific Projects

CO₂ | CO₂

Calc. Software Selection | Calculation

Calculation

Separation at source | Calculation

Ethics and Code of Conduct Doc. And Training | WEPs Participation | GC Participation | Yesilova Kindergarten

“A sustainable world with happy employees.”

Brief Information about ALBATROSS Project



YEŞİLOVA
Project Coordinator



ALBATROSS PROJECT TEAM



Mr. Barış Kömürcü
Integration Engineer



Ms. Eda Demir
Design Engineer



Ms. İrem Sapmaz
Technical Project Engineer



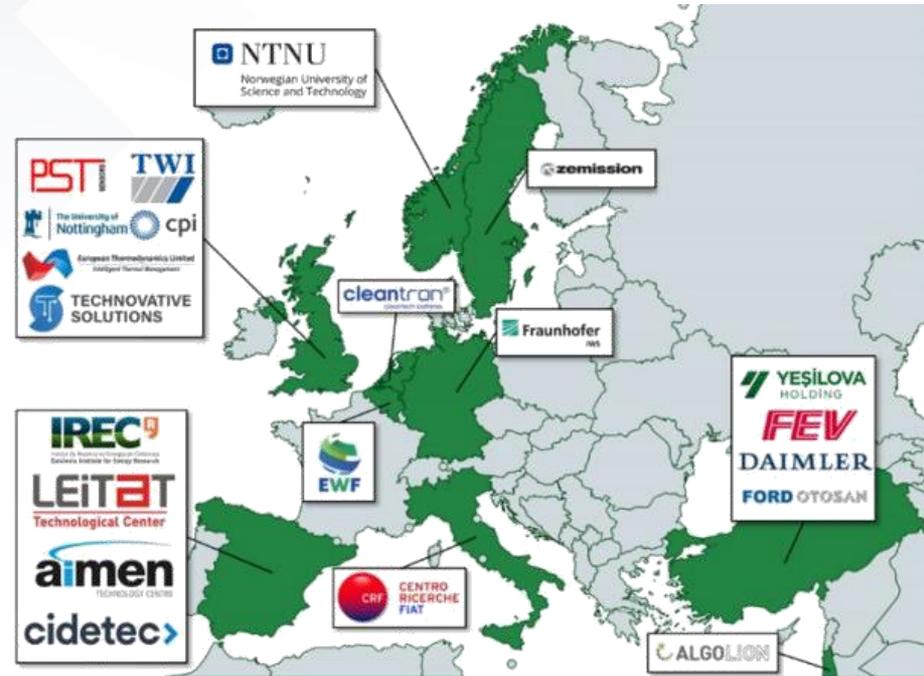
Ms. Merve Öztürk
Administrative Project Engineer



Mr. Onur Sınak
Project Responsible

Advanced Light-weight **BATteRy** systems Optimized for fast charging, Safety, and Second-life applications.

- **H2020-LC-BAT-2020**
- **01.01.21 – 31.12.2024**
- **Max. Grant: ~10 M. €**
- **21 Partners from 10 Countries**
- **Developments focused on:**
 - *Battery module and packaging,*
 - *Battery management system,*
 - *Thermal management and sensing,*
 - *Material and process development,*
 - *Dismantling, second life usage, reuse, recycle,*
 - *Life cycle analysis and sustainability*
- The Project website:
<https://albatross-h2020.eu/>
- LinkedIn Page:
<https://www.linkedin.com/showcase/h2020-albatross-project/>





Project Needs

-  Stay competitive with competitors;
-  **Meet climate targets** and **improve standards of living**
-  The general hesitations of buyers need to be addressed
-  Primarily **range and cost**



Solutions

-  Reducing **battery pack cost**
-  **Reducing emissions over the full lifetime**
-  Meeting global legislative requirements
-  Increasing value for **second-life applications**

Developments

-  *Battery module and packaging*
-  *Battery management system*
-  *Thermal management and sensing*
-  *Material and process development*
-  *Dismantling, second life usage, reuse, recycle*
-  *Life cycle analysis and sustainability*

Objectives

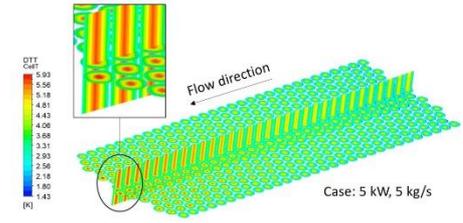
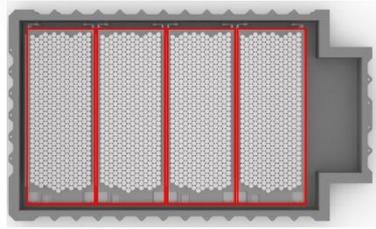
-  *Weight reduction **by 20%***
-  *Recharging time, **25% shorter***
-  *Useful battery life enhancement*
-  *Life Cycle Analysis – LCA improvement **by 20%***
-  *Sensorisation and thermal management knowledge*
-  *Operational battery pack*



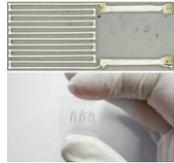
- Many studies are conducted and compared to select **the best cell option for BMW i3 battery case**.
 - **Cylindrical cells** were the best option to achieve project's goals, which must outperform the original one.
 - Cell characterization studies are continuing for modelings.

• We currently have **3 different module concepts**. These concepts are going to be compared and decided according to;

- *Energy density,*
- *Thermal performance,*
- *Assembly,*
- *Connection,*
- *Sensing*



• Simulation based studies on thermal concepts are ongoing. The target is to have minimum dT possible, with an **energy efficient solution**



• Heating and sensing is to be done with printed sensors

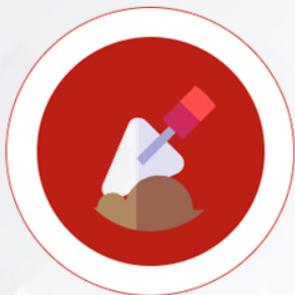


• **Mechanical design concepts** are substantially **dependent on above mentioned studies**

Further Works Horizon Europe



MISSIONS



Soil Health and Food



Healthy Oceans, Seas,
Coastal and Inland
Waters



Adaptation to
Climate Change
Including Societal
Transformation



Cancer Mission



Carbon-Free and
Smart Cities Mission

Ongoing Project
Application!
HORIZON-CL4-2022-
RESILIENCE 01-11:
Advanced lightweight
materials for energy
efficient structures
(RIA)

Ongoing Project
Application!
HORIZON-CL4-2022-
RESILIENCE 01-12:
Functional multi-
material components
and structures (RIA)



THANKS!

Contact Info:

İrem Sapmaz : irem.sapmaz@yesilova.com.tr

Merve Öztürk : merve.ozturk@yesilova.com.tr

Onur Sinak : onur.sinak@yesilova.com.tr