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ECARE
European Clean Aviation Regional Ecosystem

Transnational Workshop presentations

Brussels, 28th November 2023

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Agenda of the day

9:30	Registration and welcome
9:55	Welcome by Clean Aviation (Bruno Mastantuono, Head of Governance Unit)
10:05	Introduction of participants
10:20	Presentation of ECARE project
10:40	Work in groups - Brainstorming
11:40	Coffee Break
11:55	Work in groups - ECARE synergies
12:35	Lunch
13:35	Work in groups - Report preparation
14:00	Panel 1 findings
14:50	Panel 2 findings
15:40	Coffee Break
15:55	Panel 3 findings
16:45	Presentation of ECARE digital platform
17:00	Wrap-Up with Clean Aviation (Stanley Tang, ECARE project)
17:15	End of the workshop

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Welcome by Clean Aviation

Bruno Mastantuono

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Introduction of participants

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Slido opening

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Slido results

What are your expectations for ECARE workshop?

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Presentation of ECARE project

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ECARE project presentation

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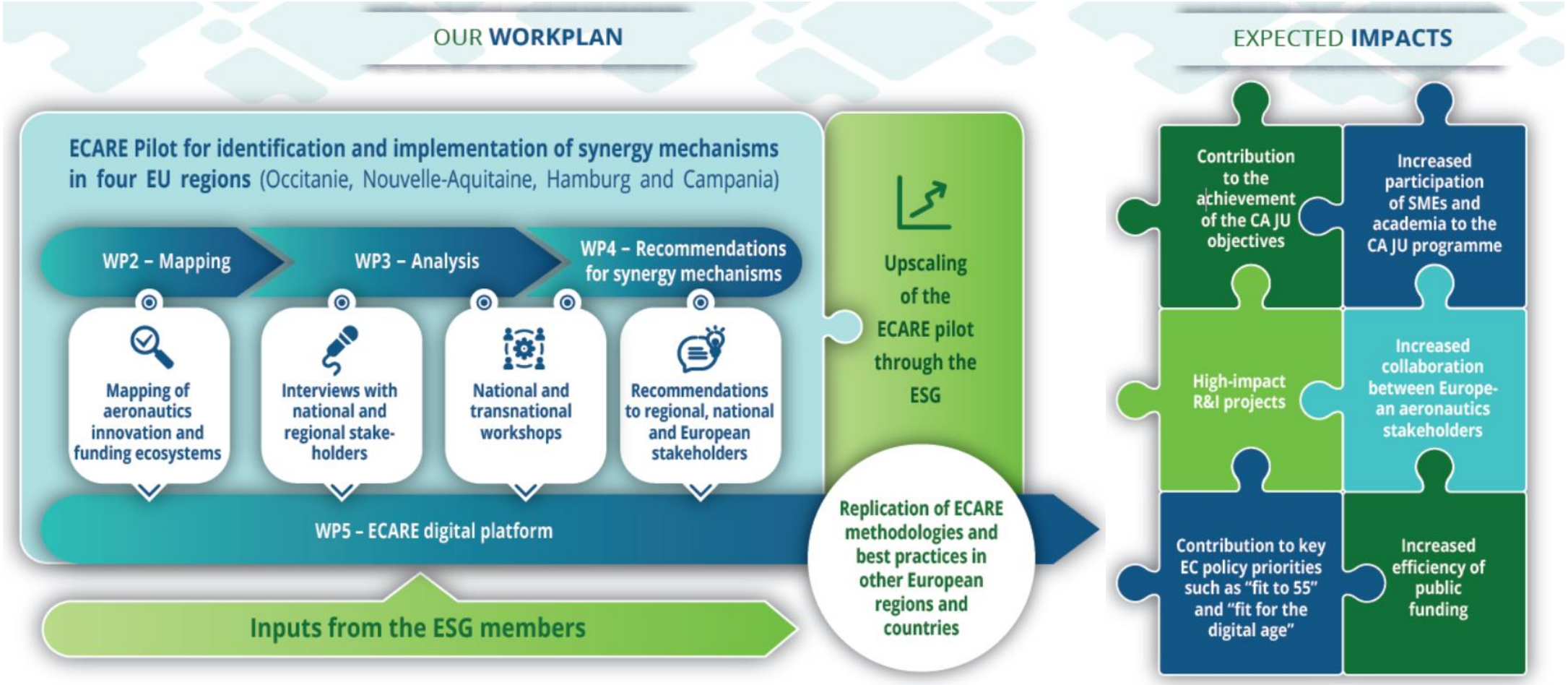
ECARE Project

- ECARE: European Clean Aviation Regional Ecosystem
- Jan 23 – Dec 24 (24 months)
- Consortium:
  - Aerospace Valley (coord - France)
  - Hamburg Aviation (Germany)
  - DAC (Italy)
  - EASN-TIS (Belgium)

Project Main Objectives

The ECARE project will develop and disseminate methodologies to create funding synergy mechanisms applicable to all EU aeronautical regions.



ESG is open to extension

ECARE STAKEHOLDER GROUP (ESG)

WHAT is the goal of the ESG?

1. Ensure replicability of ECARE results to other European aeronautics regions and countries
2. Reach scalability by including as many European regions and countries as possible
3. Support ECARE through consultation at various stages in the project
4. Include different perspectives

WHO can become member?

1. Public Authorities
2. Cluster Organisations
3. Business networks
4. Other relevant organisations and regions

WHY should you join?

1. Opportunity to actively participate in ECARE
2. Gain visibility through presentation on the ECARE digital platform
3. Access to ECARE methodology with the option to replicate results in your region
4. Contacts to funding authorities, regions and clusters with similar interests

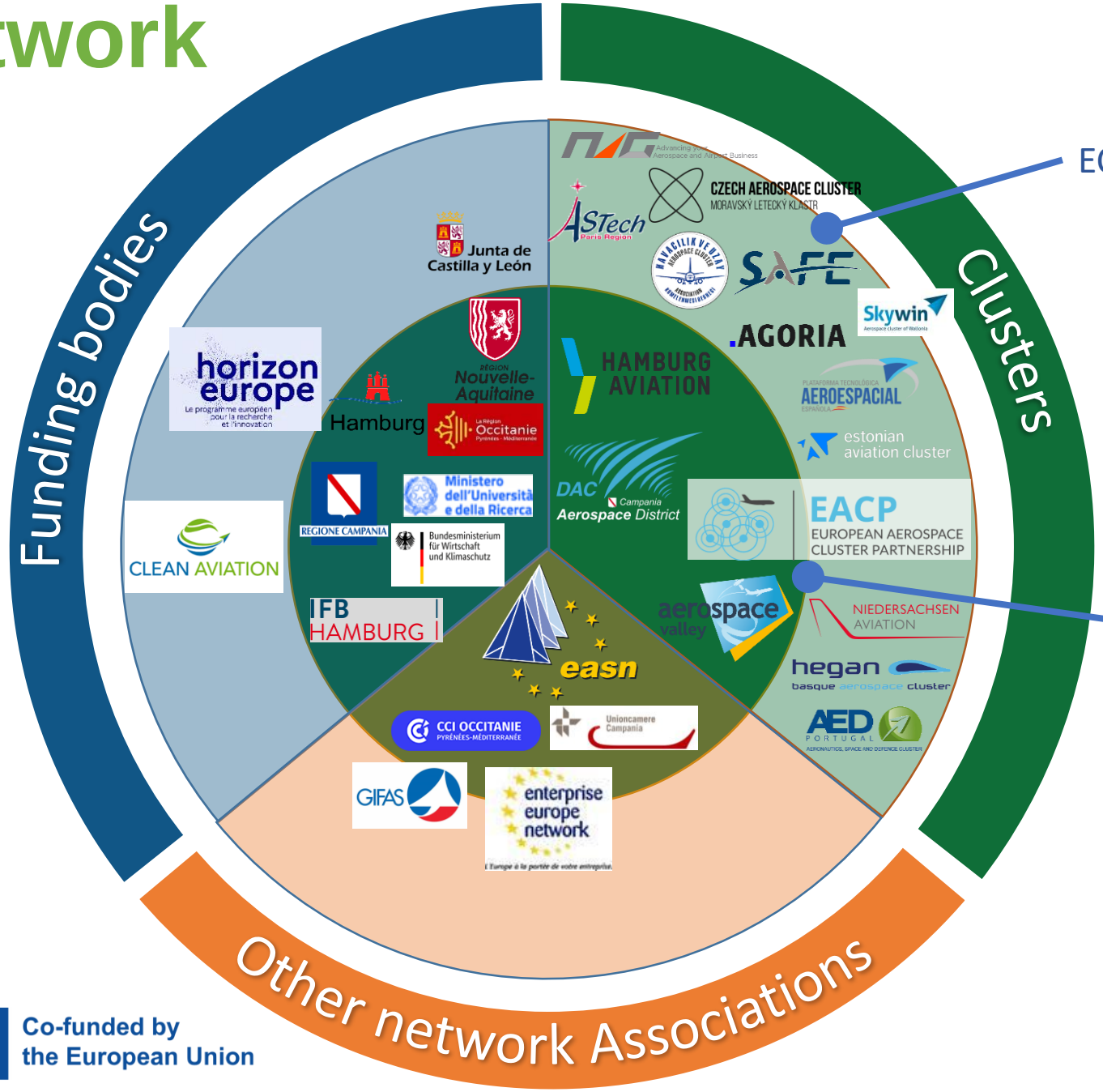
HOW can you participate?

1. Sign the ESG charter to become official member
2. Join online meetings every two months to stay updated
3. Other options of participation, e.g. in workshops

ECARE network

21 members

9 countries



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ECARE first results

Taxonomy & mappings (D2.1)

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Presentation of the ECARE taxonomy

The ECARE taxonomy was created from:

- ✓ The ACARE & EDA taxonomy
- ✓ Technical skills of each cluster
- ✓ Cross-correlation between RIS3 & CA SRIA

The purpose of this taxonomy is:

1) Have a common basis for analyzing the different funding programs
2) Trace the correlations between the RIS3 of the 4 regions and the CA SRIA,
3) Link projects and calls to technological building blocks
4) Identify and map the technological skills of supply chain players

Presentation of the ECARE taxonomy

The agreed version of the ECARE taxonomy is characterized by the following **24 first level topics:**

A. Flight physics - A1. Aerodynamics
A. Flight physics - A2. Thermal & Fluidynamics
A. Flight physics - A3. Structural Mechanics & Smart Materials
B. Manufacturing Processes/Design Tools/Techniques
C. Materials Technology - C1. Electronic
C. Materials Technology - C2. Photonic/Optical
D. Device Technology
E. Design Technologies for Platforms
F. Aerostructures
G. Propulsion - G1. Endothermic Systems
G. Propulsion - G2. Green Propellant & Combustion
G. Propulsion - G3. Electric Systems
H. Avionics & On-board Systems - H1. General
H. Avionics & On-board Systems - H2. Communications
H. Avionics & On-board Systems - H3. Sensor Systems
H. Avionics & On-board Systems - H4: Major s/s
I. Flight Mechanics
J. Information and Signal Processing Technology
K. Integrated Design & Validation
L. Integrated Systems Technology
M. Human Factors
N. Innovative concepts & scenarios
O. Operating Environment Technology
P. Simulators, Trainers and Synthetic Environments

Each first-level theme is made up of subtopic allowing for a greater level of detail, the taxonomy is **composed of 210 subtopics**. Here are examples:

B. Manufacturing Processes/Design Tools/Techniques
B.01 Design for Improved Reliability & Maintainability
B.02 Cost Engineering
B.03 Concurrent Engineering and Reduced Design Cycle
B.04 Advanced Prototyping
B.05 Additive Manufacturing
B.06 Robotics
B.07 Techniques and Systems for Production Manufacturing
B.08 Project Management and Control
B.09 Manufacturing Process Simulation
B.10 Lean Manufacturing
B.11 Process Control Technology
B.12 Environmentally Friendly Factory Processes
B.13 Knowledge-based Engineering

A detailed description of each sub-level theme has been made:

F. Aerostructures		
	F.01 Metallic Materials & basic processes	High temperature materials for engines and light alloys for airframe. Improvement of the properties of already in use materials, improvement of materials in the process of being introduced, prospection and development of new materials. Development of new assembling technologies and the corresponding modelling. Development of specific tools for materials processing (alloy making furnaces, powder metallurgy, deposition techniques, oxidation and corrosion furnaces, heat treatments furnaces, machining facilities). Techniques of physico-chemical and microstuctural investigations (Xray analysis, scanning electron microscopy and microanalyses). Mechanical characterisation.

G. Propulsion - G3. Electric Systems		
	G3.01 Electrical propulsion architectures (parallel, series, distributed)	Research to understand electric propulsion systems including their integration into air vehicles. Also includes work on relevant platform integration aspects and associated structural design issues, as well as power provision, storage and distribution systems. Also includes work on electromagnetic systems designs and their integration into air platforms, such as power supplies and power management systems. Also includes associated predictive modelling and simulation on all of the above aspects.

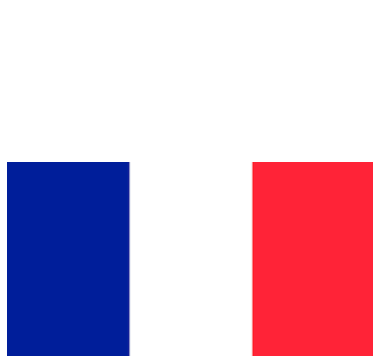
ECARE methodology for the mapping of funded projects

Methodology used to collect the information:

1) Use of the internal bases of each cluster partner of the project
2) Transmission of funded project lists by funding bodies (region and national)
3) Collection of information during interviews with the companies interviewed

Nowadays a total of 246 funded projects have been identified:

- ✓ 107 for Italy
- ✓ 79 for Germany
- ✓ 60 for France



ECARE first results for the mappings of funded projects

Collecting this type of information allow to know:

1) Know who finances which project and which technological bricks
2) Know the volume of funding
3) Know the TRL
4) Know the percentage of funding
5) Identify gaps or replicating calls
6) Know the funded projects to ensure continuity
7) Further analyse the data.

It also serves as a foundation for the content of the ECARE digital platform.

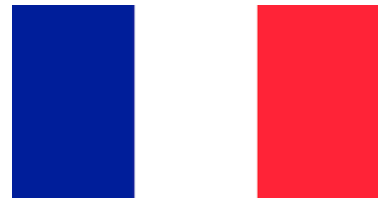
ECARE methodology for the mapping of calls

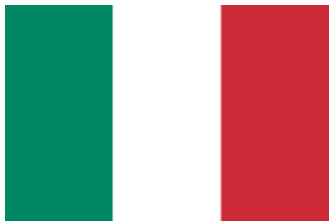
Methodology used to collect information: Use of internal databases and knowledge of each project partner/cluster to obtain all calls

The objective is to list current regional, national and European calls in the 4 ECARE pilot regions.

Nowadays a total of 291 calls have been identified :

- ✓ 21 regional and national calls identified in France
- ✓ 23 regional and national calls identified in Germany
- ✓ 46 regional and national calls identified in Italy
- ✓ 201 European calls





ECARE first results for the mappings of calls

Collecting this type of information allows us to:

1) Know how funding is directed at regional, national and European level
2) Have easy access to financing
3) Identify funding gaps
4) Have statistics regarding:
   - The type of financing (RDI, CAPEX, etc.) available in connection with the technological bricks
   - What type of financing exists? Partnership? Mono-partner?

It also serves as a foundation for the content of the ECARE digital platform.

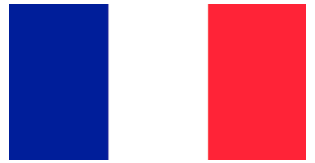
ECARE methodology for the Identification of stakeholders competences

Methodology performed :

- ✓Each partner identifies aeronautics entities in its region
- ✓Identification and positioning of technological bricks on which stakeholders are positioned in connection with the ECARE taxonomy

Nowadays a total of 348 stakeholders competences have been identified :

- ✓175 in France
- ✓94 in Germany
- ✓79 in Italy



ECARE first results for the mappings of stakeholders competences

Collecting this type of information allows us to:

- Map stakeholders competences and technological bricks in a clear and visible format
- Find new partners for collaborative projects
- Identify the technological competences

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ECARE first results

Gaps & first list of synergies (D3.1)

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Interviews with supply chain

- Each partner/cluster identified interviewees among **its own members**
- Interviews based mainly on **semi-open questions**
- 58 interviews: **SME** (47%), **Intermediate sized interprise** (10%), **Large Company** (19%), **RTO** (12%) and **Research university** (12%)

- Objectives:
  - ✓ Collection of aeronautics **stakeholders positions** on funding for R&D&I
  - ✓ Identification of **R&D&I projects**
  - ✓ Identification of correlation and **gaps between R&D&I projects & ECARE taxonomy**
  - ✓ Collection of the **most impactful best practices** in terms of funding synergies
  - ✓ Identification of **funding needs & wishes of synergy mechanisms**

National Workshops (1st session)

- The aim of the National WorkShops was to consult the national/regional funding authorities on their experience and potential best practices regarding synergies between Clean Aviation and national/regional funding bodies.

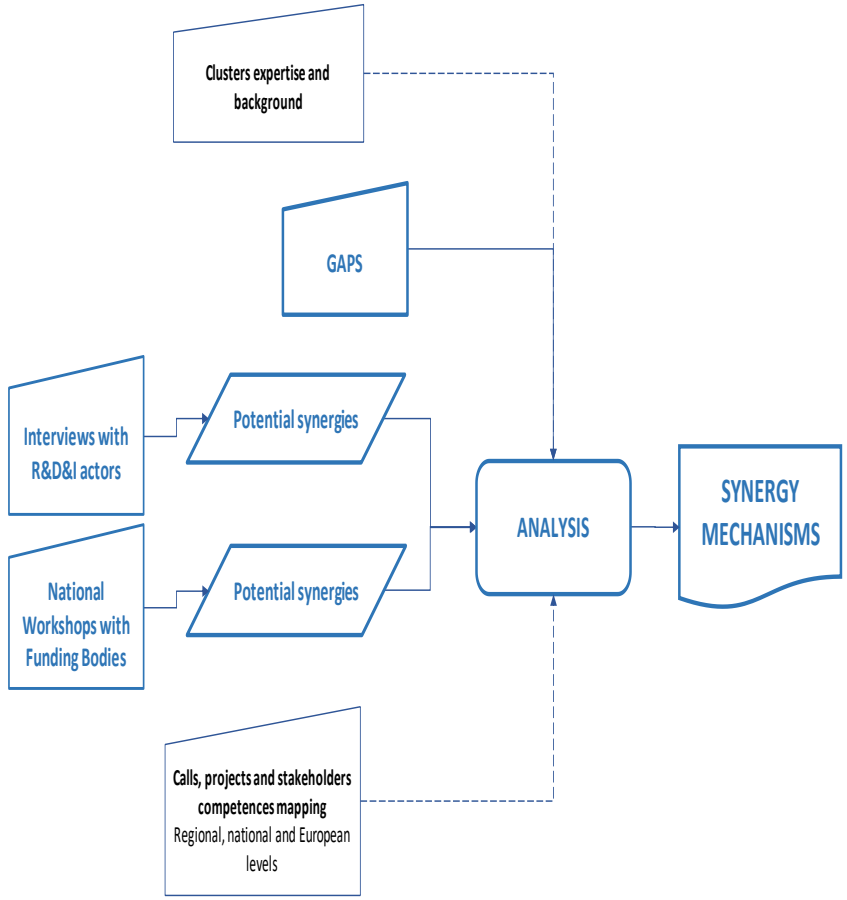
- The discussion was divided into three sessions based on the following challenges:
  - How to connect regional and national funding bodies to European funding bodies and vice versa?
  - What has been identified as missing from public funding?
  - How regional and national funding bodies can help the regional supply chain actors to develop their knowledge on new technologies (fuel cell, hydrogen, hybrid, etc.) and participation in Clean Aviation?

- Date of NWS:
  - **HAv**: 15th of June
  - **AV**: 9th of June
  - **DAC**: 14th of June

Interviews and national workshops correlation

- Result of interviews analysis with the supply chain:
  - 5 funding needs
  - 9 synergy needs

- Cross-correlation of feedback from national workshops, interviews and mappings resulted in:
  - 17 gaps
  - 18 synergy mechanism



Links to public deliverables

- D2.1: Taxonomy presentation, mapping tools and methodologies
- D3.1: Needs identified from the supply chain
- D3.2: Gaps analysis and first synergies identified

Synergy definition

Within the ECARE framework, synergy is defined as a strategic collaboration between at least two funding bodies. The purpose of this synergy is to generate financial leverage and enhance operational efficiency with the ultimate goal of advancing innovations to meet aircraft decarbonization objectives.

Synergies in this context translate into the rationalization of public funds, minimizing financing duplications, expediting processes to maintain competitiveness, and mobilizing all relevant stakeholders, be they financiers or beneficiaries of such funding.

ECARE TNWS – Panels

- *Objective:*
  - Facilitate meaningful interactions, gather diverse perspectives, and foster collaborative discussions on synergies.

- Panels:
  - Panel 1: Strategic alignment of policies & harmonisation of processes to prepare synergies ➔ **Room 1**
  - Panel 2: Communication & transparency mechanism to promote synergies ➔ **Room 2**
  - Panel 3: Operational pathway to implement synergies ➔ **Room 3**

ECARE TNWS guidelines

- *Guidelines for Participants:*
  - Contribute to open brainstorming
  - Share your views and experience.
  - Engage in constructive discussions.

- *Your Input Matters:*
  - We encourage active participation and value your insights in shaping the future of collaborative efforts within ECARE.

Now it’s time to work in groups! Please join the group with the number written on your name badge.

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Work in groups and presentation of panels findings

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Panels presentations

- The panels presentations are available in the attachment

- The findings highlighted during the event will be presented in future communications and disseminations

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Presentation of ECARE digital platform

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ECARE digital platform

Dedicated digital platform that will support the ECARE main objectives and actions, as well as providing important tools for its continuation beyond the project's lifetime.

- Consists of 3 elements
  - A set of tools allowing information collection
  - A collaboration space providing functionalities that will allow synergies to be promoted
  - An information database and appropriate tools to source of information

ECARE digital platform

A secure web application

- Secure environment (state-of-the-art security policies)
- All data are located within EU (Mons, Frankfurt, Amsterdam)
- End-to-end encryption (frontend / backend)
- Privacy first (GDPR)

ECARE digital platform

Element one: Information collection

- Funding opportunities (collection of calls / European / National / Regional)
  - Search (free text / parametric search)
  - Filter (taxonomy terms / region / deadlines etc)
  - Sort (alphabetically / arithmetically)
- Projects (ongoing)
  - Search (free text / parametric search)
  - Filter (taxonomy terms / keywords / free text)

ECARE digital platform

Element two: Collaboration space

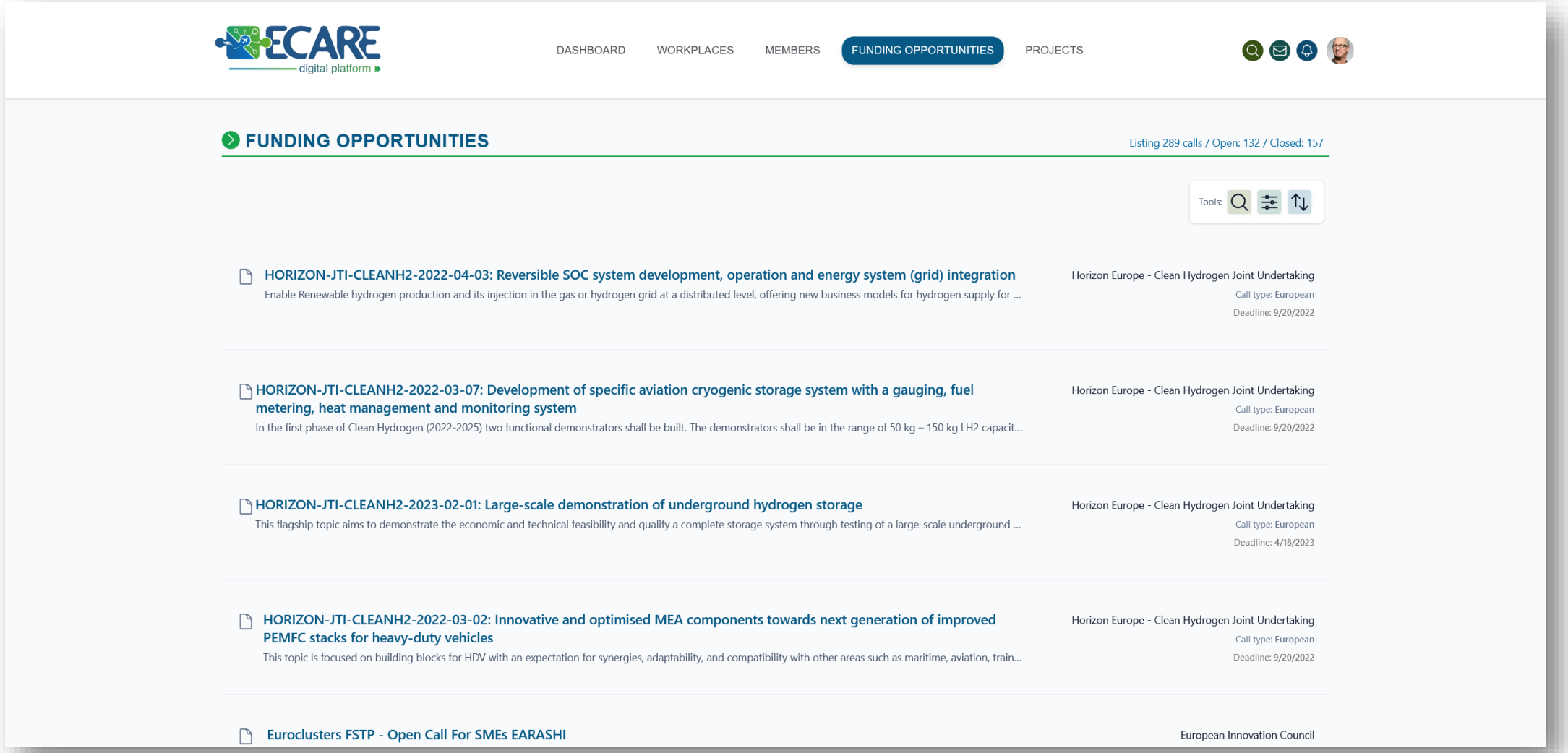
- Workgroups (private / public collaboration spaces)
  - Discussion forums (open / restricted / private)
  - File sharing (through forums / direct to another user)
  - Polls (open / restricted)
- Partner search/match (based on user profile)
- Private messaging (synchronous or asynchronous direct messaging)

ECARE digital platform

Element three: Information database

- Synergies handbook
- Repository of completed projects
- Supportive material / links / guides

ECARE digital platform



ECARE digital platform

Incorporates “smart” features

- Notifications for new Calls / Projects / Members
- Suggestions based on user profile
- AI-aided search engine
- Automated translation of non-English calls
- Personalized newsletters

ECARE digital platform

Current status:

- Final stages of development
- Exhausting testing on security features and functionalities

Available soon!

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Wrap-up with Clean Aviation

Stanley TANG – ECARE Project Officer

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