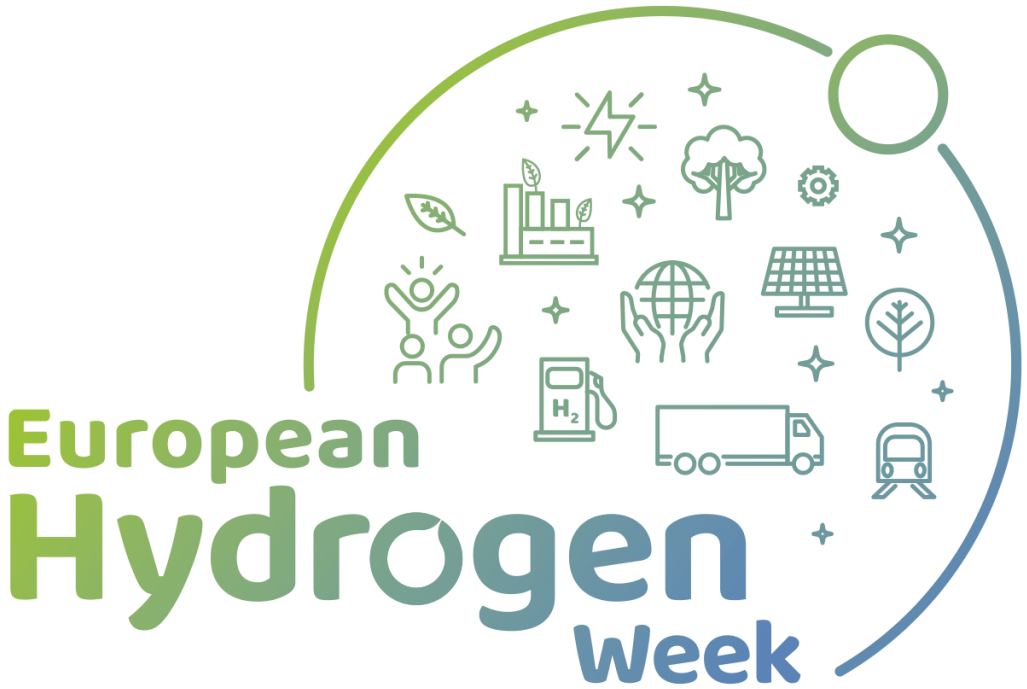
TAHYA

TAnk HYdrogen Automotive



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FCH

European Commission

Project Overview

Call year: 2017
Call topic:
FCH-01-3-2017
Improvement of compressed storage systems in the perspective of high volume automotive application

Project dates:
Jan 1, 2018 - Dec 31, 2020
(extended until 2021)

Total project budget:
€ 3,996,943.75

TAHYA

% stage of implementation
01/11/2021: 95%

FCH JU max. Contr.: € 3,996,943.75
Other financial contribution: none

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European Hydrogen Week

Partners

PolarixPartner (D)

TU Chemnitz (D)

ANLEG (D)

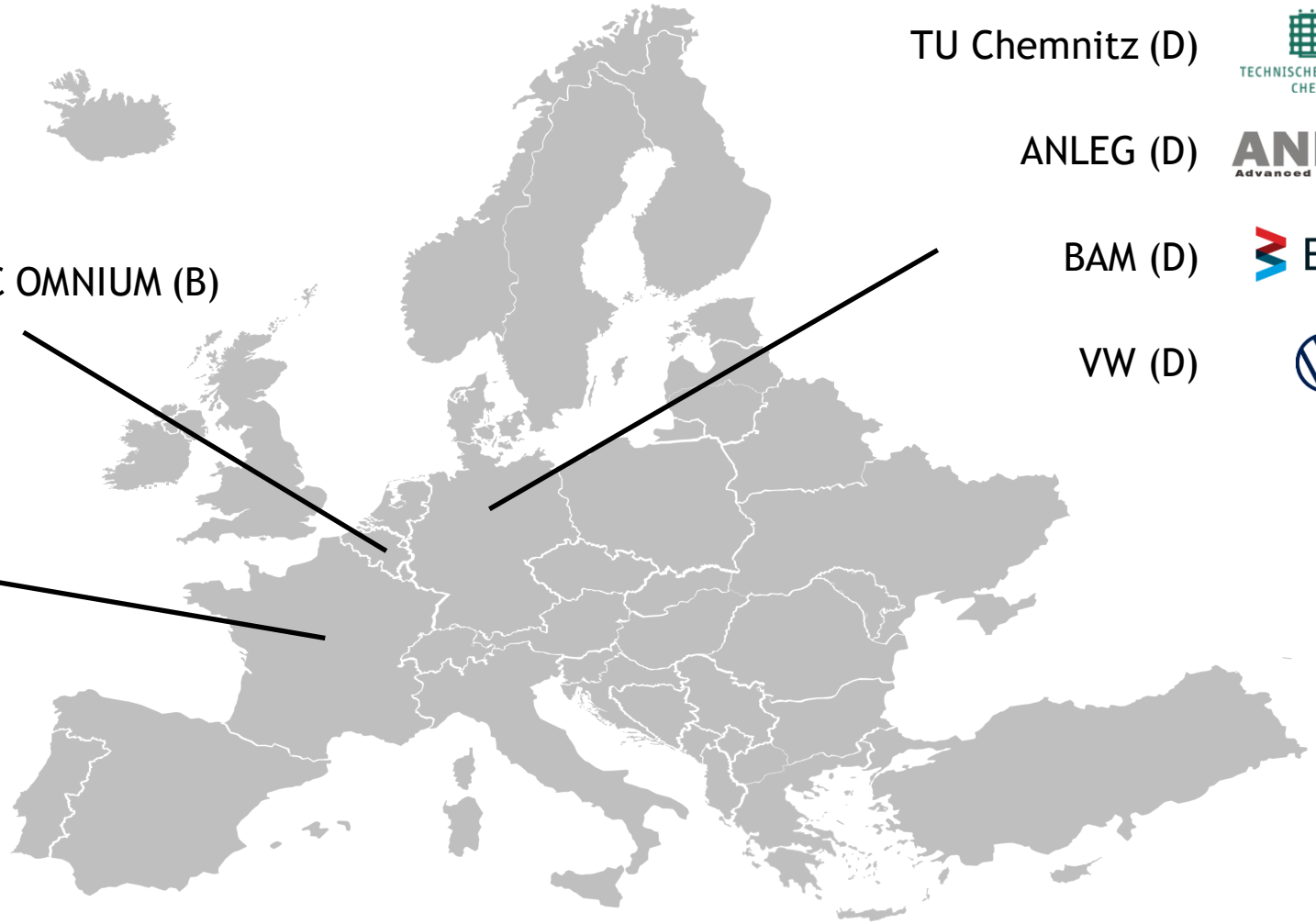
BAM (D)

VW (D)

PLASTIC OMNIUM (B)

RAIGI (F)

ABSISKEY (F)



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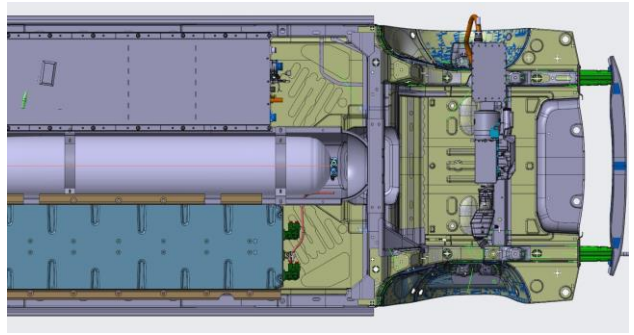
Project Summary (1/2)

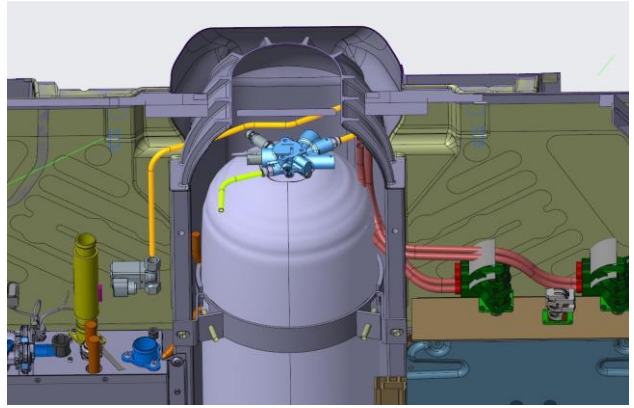
TAHYA - TAnk HYdrogen Automotive

The key objectives of the TAHYA project are:

1. Preparatory work to provide a compatible H2 storage system with **high performances and improved safety** which is Health-Safety-Environment responsible.
2. Provide a compatible H2 storage system with **mass production and cost competitive** according to the specifications of an OEM.
3. Regulation Codes and Standards (RCS) activities to **propose updates on GTR13** and EC79 according to tests results obtained over the duration of the project.

Project Summary (2/2)





SoA H2-Storage System Specification (by VW):

- Single tank architecture, integrated in longitudinal direction between the axles
- Storage system includes on-tank valve (OTV), gas handling unit (GHU), tubing and tank fasteners
- Storage of 5.3kg H2, compressed at 700bar
- Gravimetric efficiency* of 6.5%
- Annual production of 20.000 systems per year
- Targeted system costs of less than €500 per kg H2

*mass of hydrogen / weight of tank system

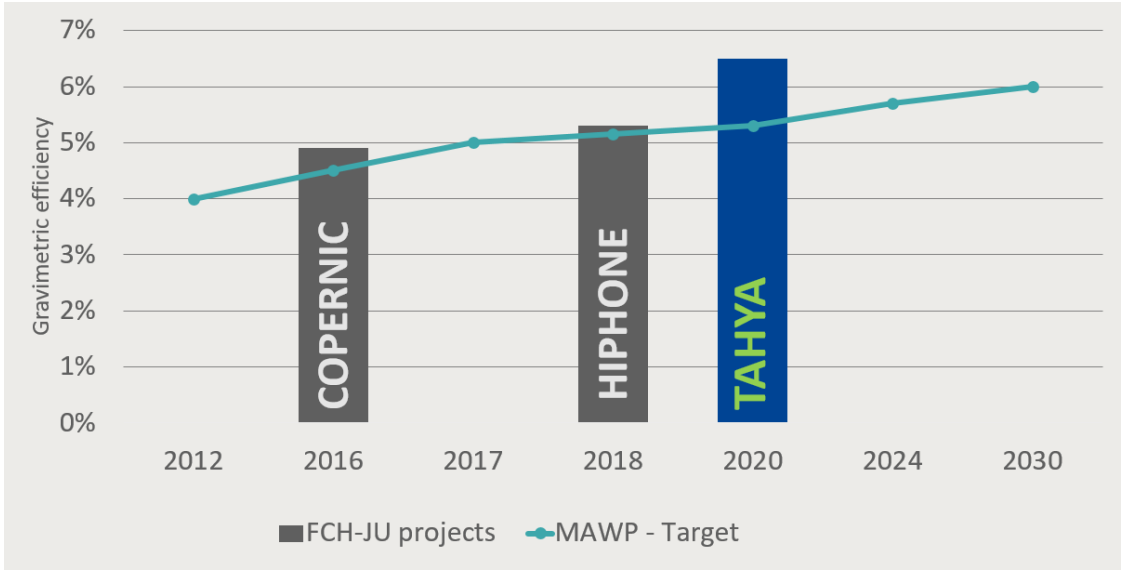
Example And Explanation of Project Progress/Actions - Gravimetric efficiency

Achievement to-date

5.3% → 6.5%

25% 50% 75%

Status at month 46 of a 48 months project at date 01/11/2021



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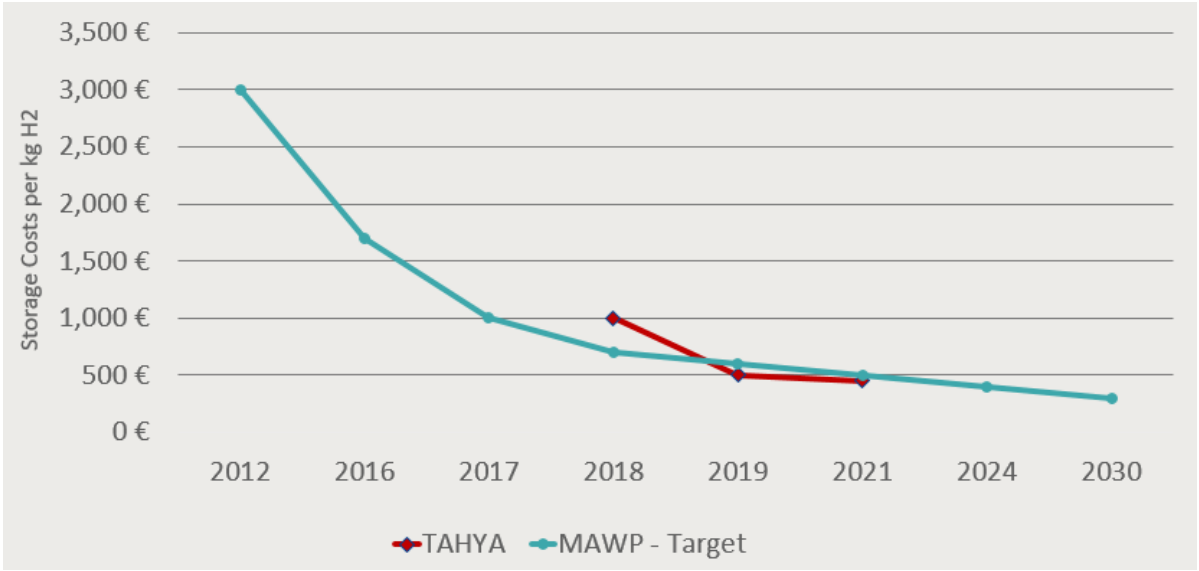
Example And Explanation of Project Progress/Actions - Storage cost per kg of H2

Achievement to-date

€1,000 → €450

25% 50% 75%

Status at month 46 of a 48 months project at date 01/11/2021



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Risks, Challenges and Lessons Learned

Market

Except for BMW, all Europeam OEM's have put FCEV projects on hold

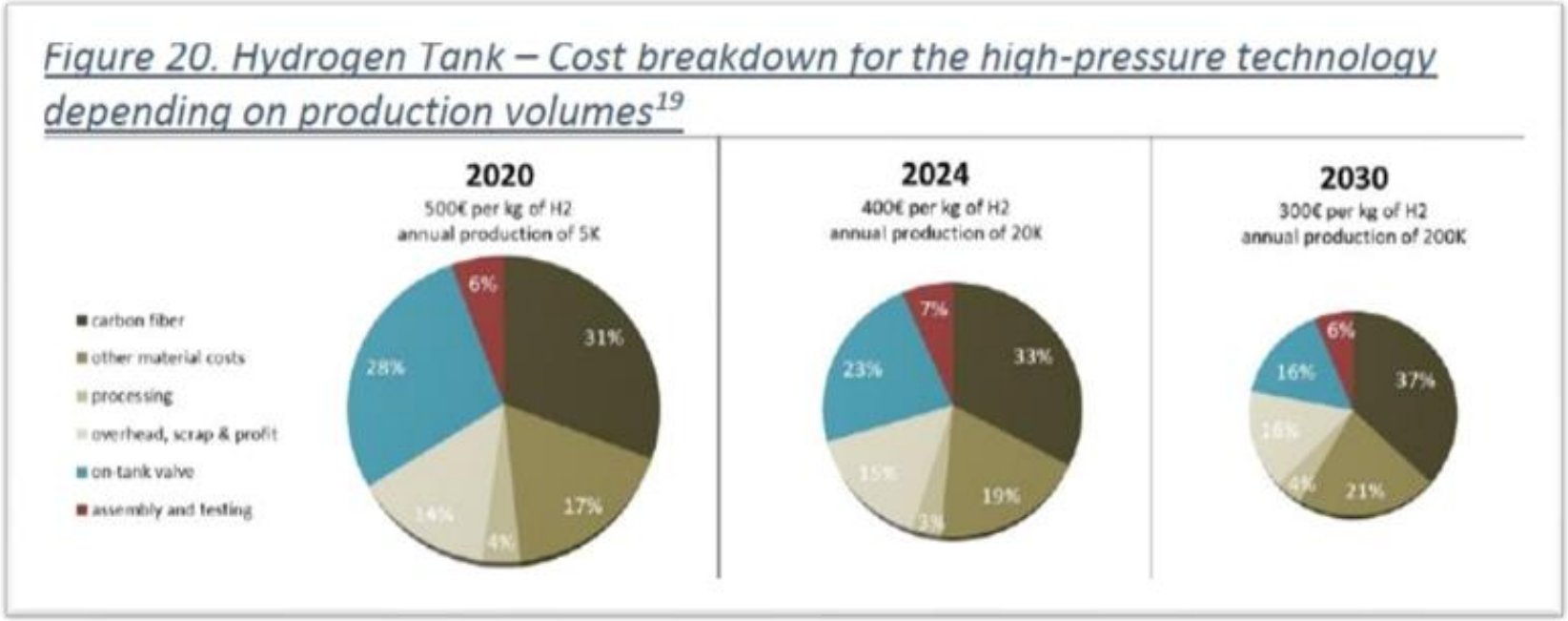
Opportunity

OEM's worldwide focus on light commercial vehicles using a similar tank architecture

Success

A tank technology was developped which sets a new worldwide benchmark

TAHYA results implemented in SRIA

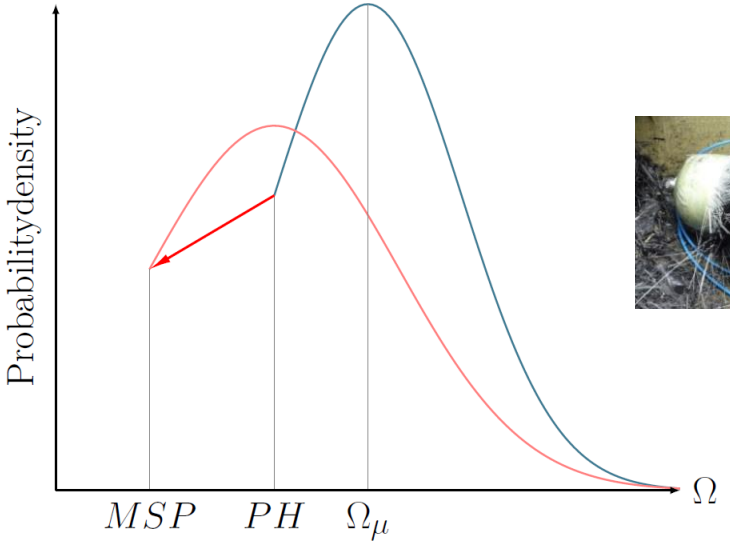


Source: TAHYA, 2019 FCH JU Project Review days

TAHYA results implemented GTR13

The active contribution of BAM during the GTR13 working group meetings was retained in the final draft of the Phase 2 document which will be the basis for the certification of all H2 tank systems worldwide according to ECE R134.

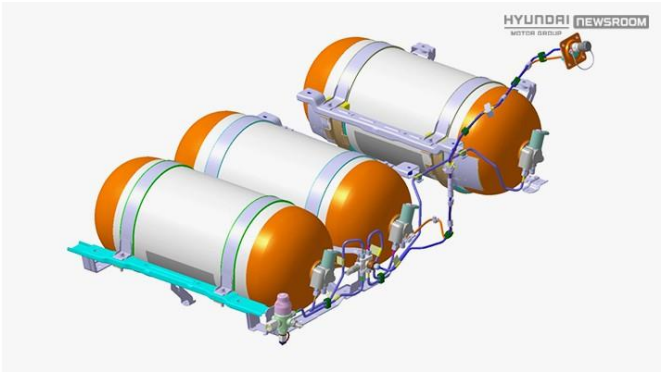
Adoption of the updated RCS is expected by end 2022

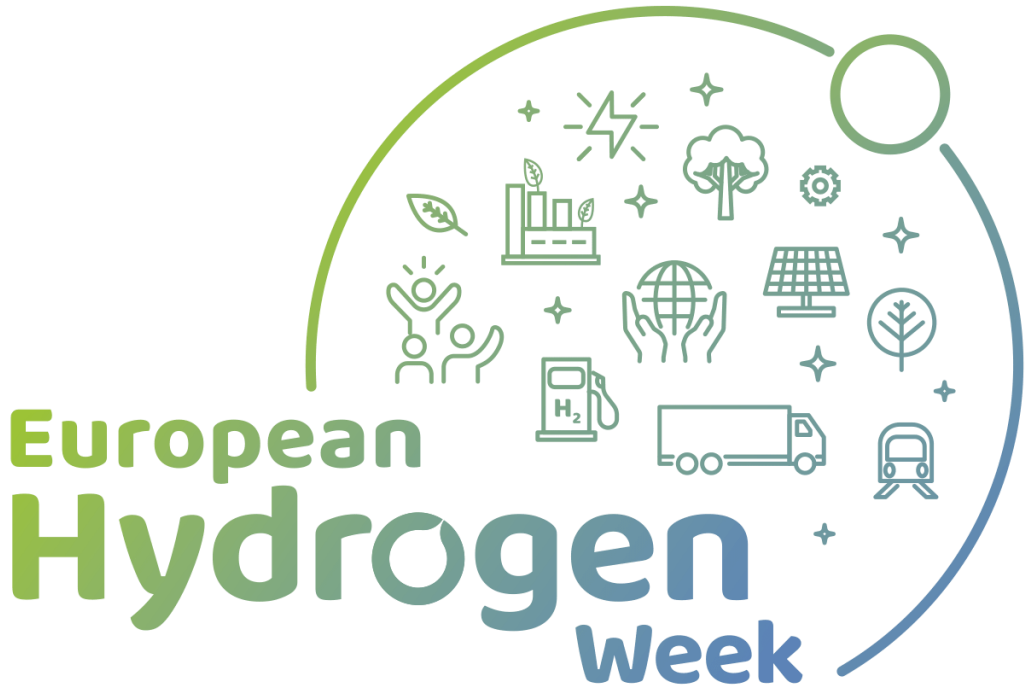


TAHYA helps to secure large order from Asian customer

Based on the results of TAHYA, PLATIC OMNIUM was able to secure a large order for H2 tanks for the HYUNDAI STARIA. SOP is expected by 2023 with an annual production of more than 40.000 tanks. Key technologies include:

- Cost assessment and streamlining
- Optimized tank design
- High productive manufacturing lines





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