

AUSTRIAN POSITIONS FOR ADVANCED PROPULSION TECHNOLOGIES

INTRODUCTION

The present A3PS position paper "**R&D Challenges 2020+**" summarizes envisaged developments and trends, as well as the priorities of the industrial and scientific A3PS members and provides an overview on the R&D challenges in the coming years and the necessary R&D activities to strengthen Austria as a business location.

According to the targets of European Commission^{1,2}, the A3PS expert groups encourage, that Austria supports a **climate-neutral, sustainable, efficient and safe transport system** and innovations by

- 1) **Technology-neutral support of mobility and powertrain innovations** in Austria, taking a holistic view of the value creation process, based on the **LCA (Life Cycle Assessment)** method ("from cradle to grave") in order to meet the 2030 targets and to enable Mission 2050 targets in full.
- 2) Establishment of the **legal framework**, norms, standards and a strategy, both for R&D activities, the rapid implementation of R&D results and for regular operation (street / off-road / rail).
- 3) **Fostering of core competencies** in the field of mobility and powertrain innovations in Austria with a strong focus on value creation in Austria.

The A3PS position papers serve on the one hand to coordinate the activities of the A3PS members and to identify possible synergies. On the other hand, they support the orientation of national R&D activities and technology policy impulses, as a supplement to those priorities that are set at European level.

As a "living document", the position papers are regularly checked for topicality and revised if necessary.

The A3PS position papers, are available for download online at <https://www.a3ps.at/a3ps-position-papers>.

A3PS – AUSTRIAN ASSOCIATION FOR ADVANCED PROPULSION SYSTEMS

A3PS is the **strategic platform** of the Austrian technology policy, industry and research institutions and stimulates the development of advanced propulsion systems and energy carriers – to build up common competence and to accelerate market launches.

A3PS addresses all **advanced powertrain technologies** contributing to the improvement of energy efficiency and to the reduction of emissions and supporting the whole innovation cycle (research, development, deployment).

A3PS Members congregate in four thematic working groups which elaborated positions, trends, R&D demands and demands concerning the essential legal framework for prospective technologies for this document.

¹ EU publication: "Going climate-neutral by 2050: A strategic long-term vision for a prosperous, modern, competitive and climate-neutral EU economy"; download here: <https://op.europa.eu/en/publication-detail/-/publication/92f6d5bc-76bc-11e9-9f05-01aa75ed71a1>

² EU publication: "Communication from the Commission to the European Parliament, the European Council, The Council, the European Economic and Social Committee and the Committee of the Regions: **The European Green Deal**"; download here: https://ec.europa.eu/info/sites/info/files/european-green-deal-communication_en.pdf

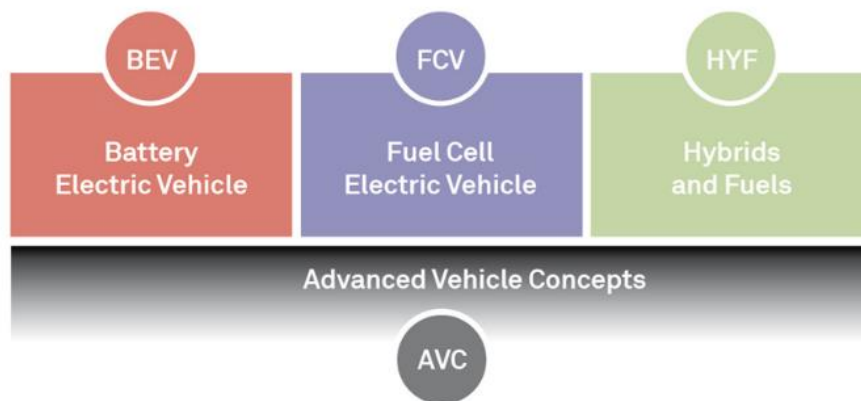


Fig. 1: 4 A3PS thematic working groups

BEV – BATTERY ELECTRIC VEHICLE

The working group focuses on strong scientific and informative public relations work about **battery electric vehicles**. The group analyses strengths and weaknesses of battery electric vehicles and points out research and development needs.

FCV – FUEL CELL ELECTRIC VEHICLE

The working group's focus is on hydrogen **fuel cell electric vehicles**. Besides, the group also deals with **hydrogen** production, infrastructure and storage, since sustainable production, price and availability of hydrogen play a key role for the success of fuel cell vehicles.

HYF – HYBRIDS AND FUELS

The working group concentrates on the identification of needs for research on **hybrid** technology and **internal combustion machines** as well as on advanced **motor fuels**, aiming at efficiency and climate neutrality. The strengths of Austrian institutions in this field are discussed and highlighted.

AVC – ADVANCED VEHICLE CONCEPTS

The working group deals with **advanced and future vehicle concepts** like automatization (driving assistance systems and automated driving), lightweight construction and production technologies. The group links to the other three working groups and focuses on system perspective and integration.