

# IEA-Advanced Motor Fuels ANNUAL REPORT 2020

## Annex/Task 59



## Annex 59: Lessons Learned from Alternative Fuels Experience

<b>Project Duration</b>	April 2019 – December 2020
<b>Participants</b>	Austria, China, Finland, Japan (LEVO), Sweden, United States
<b>Task sharing</b>	
<b>Cost sharing</b>	None
<b>Total Budget</b>	~€ 151,500 (~\$184,000 US)
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### Purpose, Objectives and Key Question

Decarbonizing the transport sector is one of the key goals of national and international climate change mitigation policies. Alternative fuels and propulsion systems are of particular importance in reducing GHG emissions from this area. Many countries are actively seeking to increase the share of renewable energy sources in the transport sector.

However, experience with various attempts to introduce alternative fuels and vehicles to the market has shown that this is not always successful. Several participants in the AMF TCP have therefore proposed an annex on lessons learned from market launch attempts.

The questions that this project should answer are:

- Which factors determine whether the market launch of alternative fuels and vehicles will succeed or not?
- Can success factors and pitfalls, lessons, and recommendations for better action be deduced from the experiences of different countries in the last decades?
- How can people involved in the development of market introduction measures be supported?

### Activities

To answer these questions, Annex 59 analyzed particular case studies that take into account the specific framework conditions for each country. The first step was to identify relevant case studies for each participating country.

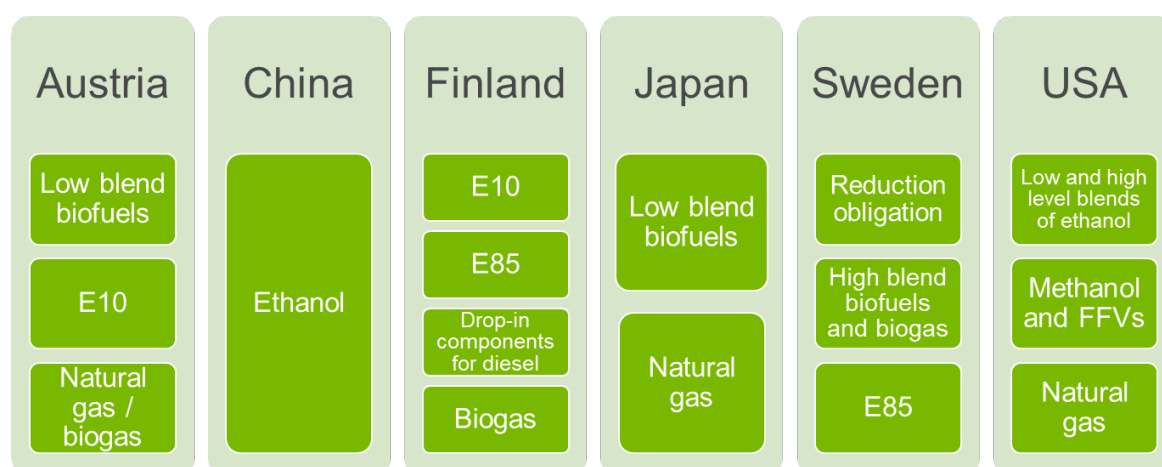


Fig. 1. Overview of the defined specific case studies

Austria, China, Finland, Japan, Sweden and the United States collected data and information on past market introduction case studies and described these according to the developed template. In addition to the descriptions, relevant stakeholders were interviewed and their insights were collected.

The case studies' drivers for market implementation, country-specific circumstances, measures taken, and stakeholders involved were checked against the result of the market implementation as part of the analysis. Success factors and show-stoppers as identified in the case study descriptions were supplemented with the results from analysis by the annex.

The findings from different cases in the participating countries were presented in an expert workshop and results were discussed with experts inside the AMF TCP as well as with external experts. The lessons learned and recommendations derived from our project were discussed with the workshop participants to verify the findings. Based on the results and discussions of the expert workshop, the annex determined the final lessons learned and recommendations, as well as policy briefs and key messages.

### **Key Findings**

The key findings within this project can be divided into three important pillars for a successful market introduction of alternative fuels:

#### **Policy**

Policy is a very important instrument for transitioning the future transport system. A constant political driver is necessary to overcome the peak of implementation barriers. There is the need for long-term policies with a comprehensive strategy. This includes a package of measures with financial and non-financial incentives. Another policy aspect is the coordination of government, academia, and industry within the implementation process.

#### **Inclusion**

The involvement of all groups of stakeholders along the value chain is necessary. The different groups of stakeholders include automotive industry, motor fuels industry, fuel and vehicle marketers, customers, government and advocates. The perception of the general public on alternative or new fuels is often very bad and needs to be improved. Larger markets — or even the international market — need to be included. This is particularly important for small countries with low domestic biofuel production. Inclusion also means that the future transport system should be built up by a broad mix of alternative systems and fuels. All technologies are needed for the transition.

#### **Benefits**

Policy and inclusion should lead to benefits. It is essential that there are visible benefits or even cost benefits for all groups of stakeholders to make the alternative fuel or propulsion system attractive. At the moment, alternative fuels are not price competitive with fossil fuels because the costs do not include all points, there are no costs for GHG emissions or other climate relevant effects.

### **Main Conclusions**

For the successful implementation of alternative fuels and vehicles in the transport system there is the need for long-term and comprehensive policies which include markets, stakeholders and different technologies to gain benefits for all types of stakeholders along the value chain.

### **Publications**

Andrea Sonnleitner, "Lessons Learned from Alternative Fuels Experience," Presentation at the CEBC Central European Biomass Conference, Jan. 24, 2020, Graz, Austria.

Presentations from the AMF Annex 59 Expert Workshop on Lessons Learned from Alternative Fuels Experience (Oct. 30, 2020, virtually)

[Lessons Learned from the Austrian Case Studies - Andrea Sonnleitner, BEST Bioenergy and Sustainable Technologies](#)

[Lessons Learned from the Chinese Case Study - Ye Wu, Tsinghua University](#)

[Lessons Learned from the Finnish Case Studies - Nils-Olof Nylund, VTT Technical Research Centre of Finland](#)

[Lessons Learned from the Japanese Case Studies - Masayuki Kobayashi, Organization for the Promotion of Low Emission Vehicles \(LEVO\)](#)

[Lessons Learned from the Swedish Case Studies - Magnus Lindgren, Swedish Transport Administration](#)

[Lessons Learned from the U.S. Case Studies - Michael Wang, Argonne National Laboratory](#)

AMF Annex 59 Lessons learned on alternative fuels experiences – End Report (2021, in preparation), will be available on [https://www.iea-amf.org/content/projects/map\\_projects/59](https://www.iea-amf.org/content/projects/map_projects/59).