Deliverables PSA Fuel Price comparison

Assisting Member States with the implementation of Article 7.3 of Directive 2014/94/EU (Fuel Price Comparison)

[Written by Ilias PASSIOS, Antonis PEPPAS, Chrysa POLITI]
[February – 2021]

EUROPEAN COMMISSION

Directorate-General for Mobility and Transport
Directorate B Investment, Innovative & Sustainable
Unit B4 Sustainable & Intelligent Transport

Contact: Antonio Tricas Aizpún

E-mail: antonio.tricas-aizpun@*ec.europa.eu*

European Commission
B-1049 Brussels

Deliverables PSA Fuel Price comparison

Assisting Member States with the implementation of Article 7.3 of Directive 2014/94/EU (Fuel Price Comparison)

Directorate-General for Mobility and Transport
MOVE/B4/SUB/2018-491/CEF/PSA/SI2.798275

Europe Direct is a service to help you find answers to your questions about the European Union.

Freephone number (*)**:**

00 800 6 7 8 9 10 11

(*) The information given is free, as are most calls (though some operators, phone boxes or hotels may charge you).

Luxembourg: Publications Office of the European Union, 2021

ISBN 978-92-76-29301-9
doi: 10.2832/585488

CONTENTS

Programme Support Action (PSA):
Assisting Member States in the implementation of a common methodology for alternative fuels unit price comparison in accordance with Directive 2014/94/EU

"FPC4Consumers"

Contract Number: MOVE/B4/SUB/2018-491/CEF/PSA/SI2.798275
Starting date of the project: 01/02/2019
Duration: 15 months

= Deliverable D1.2_V1 =

"Informative material (pamphlet and poster). The material will be prepared by the Coordinator. MS will translate it to their language"

Programme Support Action (PSA) No : MOVE/B4/SUB/2018-491/CEF/PSA/SI2.798275

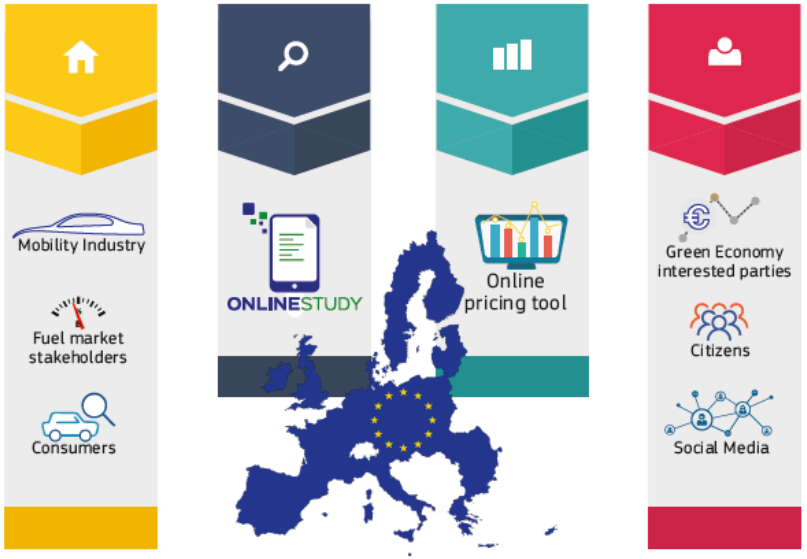
THE NEED

Article 7.3 of Directive 2014/94/EU

"Where appropriate, and in particular for natural gas and hydrogen, when fuel prices are displayed at a fuel station, a comparison between the relevant unit prices shall be displayed for information purposes. The display of this information shall not mislead or confuse the user. To increase consumer awareness and provide for fuel price transparency in a consistent way across the Union, the Commission shall be empowered to adopt, by means of implementing acts, a common methodology for alternative fuels unit price comparison."

Objectives

- support a consistent implementation in a pilot schema of the provisions of Article 7.3 of the Directive
- define the format, contents and location of the information to be displayed at the filling stations based on the methodology adopted by the Commission Implementing Regulation
- carry out pilot actions to assess consumer understanding, feedback and behaviour concerning the format, contents and location of the information to be displayed at the filling stations on fuel prices for comparison
- present recommendations to the Commission, for further discussion with the Member States and coherent application in all Member States
- support Member States in making information available to consumer at the filling/charging stations and also via digital tools



Consumers involvement

Online consumer questionnaire

For at least 1500 consumers in each of the participating Member States with more than 20 M inhabitants and will be limited to 700 consumers to the rest cases.

Pilot schema

At least 10 filling stations per Member State, placed in:

- urban areas
- the TEN-T Comprehensive Network
- the TEN-T Core Network

with the participation of at least 400 persons per Member State

Portal/online tool presenting:

- the methodology defined to calculate the average fuel costs for the different vehicles in euros/national currencies per 100km
- the determination of the average fuel costs for both alternative and conventional fuels, expressed in euros/national currencies per conventional unit
- the fuel consumption data provided in the certificate of conformity for all vehicles existing on the market
- the average fuel prices – for both alternative and conventional fuels, expressed in euros/national currencies per 100km, for all models of vehicles including light duty vehicles
- the environmental performance of alternative fuels vehicles in relation to vehicles running with conventional fuels, based on applicable emission legislation

FPC €/100 km Consumers

The action plan

1. Dissemination of the fuel price methodology in each of the participating Member State
2. Definition of the contents, format and location of the information on fuel price for comparison, to be displayed at fueling stations
3. Pilot action to test different options concerning format, contents and location of fuel prices for comparison at the filling stations
4. Consistent implementation of the provisions of Article 7.3 of the Alternative Fuel Infrastructure Directive in all Member States
5. Development of a portal/online tool to display fuel prices/costs
6. Coordination

Grant agreement

under the Connecting Europe Facility (CEF)

No MOVE/B4/SUB/2018-491/CEF/PSA/SI2.798275

Starting date: February 2019

Completion date: 30 April 2020

Total Cost: EUR 2,346,257

Grant of the action: EUR 1,913,005

Programme Support Action (PSA):
Assisting Member States in the implementation of a common methodology for alternative fuels unit price comparison in accordance with Directive 2014/94/EU

"FPC4Consumers"

Contract Number: MOVE/B4/SUB/2018-491/CEF/PSA/SI2.798275
Starting date of the project: 01/02/2019
Duration: 15 months

= Deliverable D1.2_V2 =

"Informative material (pamphlet and poster). The material will be prepared by the Coordinator. MS will translate it to their language"

FPC €/100 km Consumers

EU Programme Support Action

"Assisting Member States in the implementation of a common methodology for alternative fuels unit price comparison in accordance with Directive 2014/94/EU"

Article 7.3
Directive 2014/94/EU

"Where appropriate, and in particular for natural gas and hydrogen, when fuel prices are displayed at a fuel station, a comparison between the relevant unit prices shall be displayed for information purposes."

The project has received funding from the European Union's Programme Support Actions, under Connecting Europe Facility (CEF) for Transport

FPC €/100 km Consumers www.fpc4consumers.eu

9
Member States

36+
Stakeholders workshops

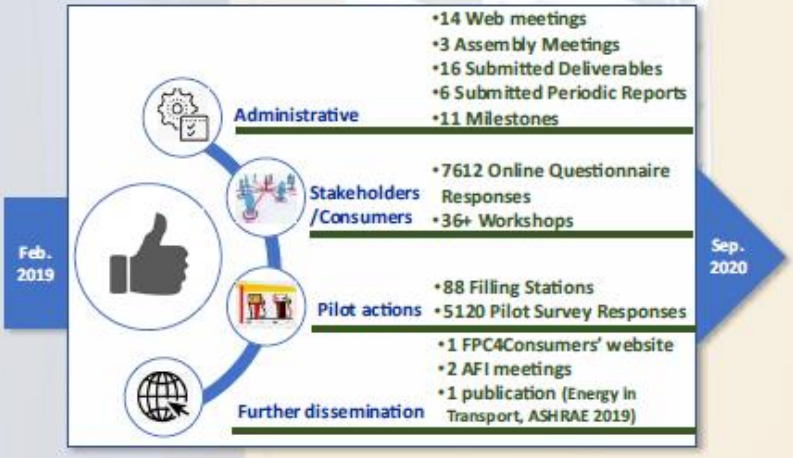
7200
Consumers
(online questionnaire)

90+
Fueling Stations
(Pilot action)

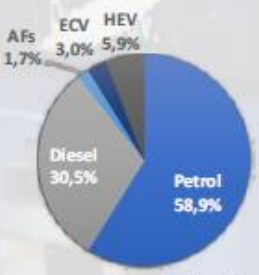
5120
Consumers
(on fueling stations)

Programme Support Action Objectives

- support a consistent implementation in a pilot schema of the provisions of Article 7.3 of the Directive
- define the format, contents and location of the information to be displayed at the filling stations based on the methodology adopted by the Commission Implementing Regulation
- carry out pilot actions to assess consumer understanding, feedback and behaviour concerning the format, contents and location of the information to be displayed at the filling stations on fuel prices for comparison
- present recommendations to the Commission, for further discussion with the Member States and coherent application in all Member States
- support Member States in making information available to consumer at the filling/charging stations and also via digital tools



Infopoint



New passenger cars by fuel type in the EU – 2019 (*Source: ACEA*)

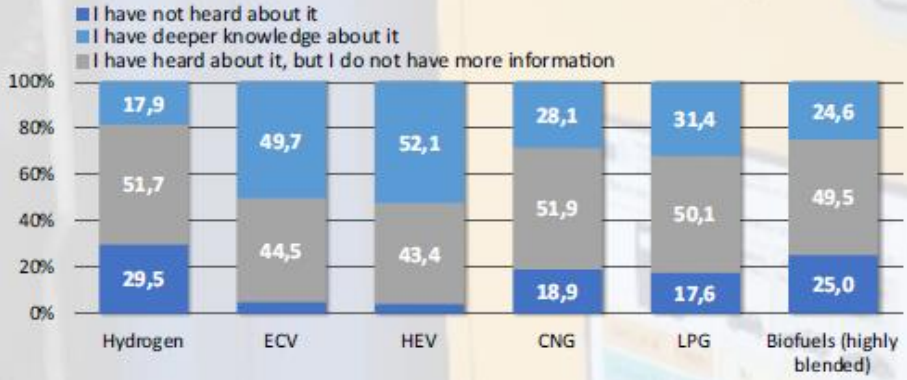
Governments the world over, are looking to **cleaner, sustainable alternative fuels** and many countries have pledged to **ban** the sale of **new petrol and diesel cars** by 2040.

On the contrary, **only 10.6%** of new passenger cars in EU **used alternative fuels** for 2019. (*ACEA*)

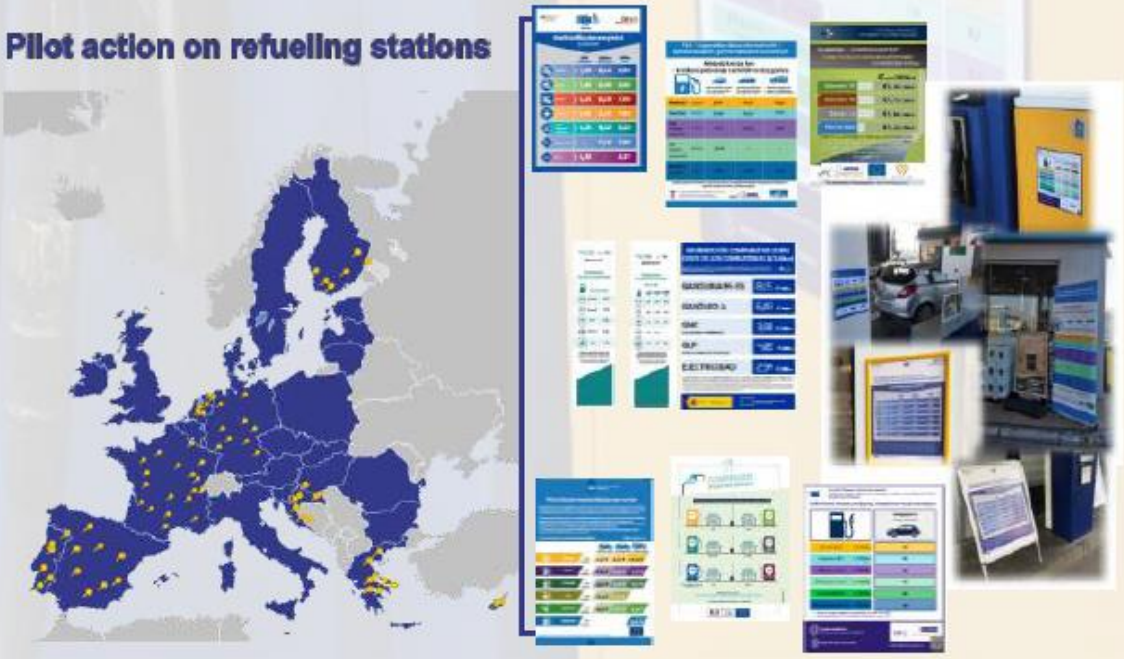
The **almost 50%** of consumers has **partial knowledge** regarding **AFs** and **1 out of 3 consumers** have **not heard about biofuels or hydrogen (FPC survey)**

Fuel costs is the **second mosti mportant** parameter when purchasing a new vehicle **(FPC survey)**

Knowledge of fuels (*Source: FPC Online Survey*)



Pilot action on refueling stations



Common Methodology

*The **price** as amount of applicable currency per 100 km is calculated as follows:*

Vehicle consumption per 100km × Fuel prices per conventional unit

Vehicle consumption

Sample Selection:

- At least **1 segment** (**max. 3 segments**) for price calculations
- At leastt op **3 best-selling vehicles per segment(s) per fuel type**. If not enough vehicles (as hydrogen vehicles) , sample can be smaller
- Vehicle categories: **(1) Mono-fuel vehicle (liquid, gas), (2) Pure electric vehicle and (3) Fuel cell vehicle**. Ifl imited data, **Bi-fuel gas vehicles** instead of Mono-fuel gas vehicles

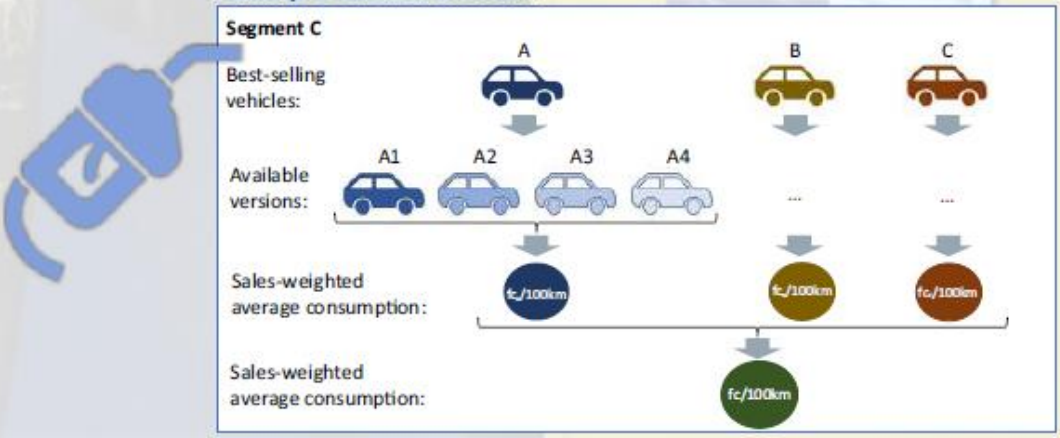
Data Collection:

- **WLTP consumption data** related to the **combined cycle** only
- If **no WLTP data** for a vehicle model, **exclude this model**
- If **no WLTP data** for a best-selling vehicle, **exclude this vehicle**. Iti s possible to use the 4th vehicle in sales
- If **no vehicle sold** for a specific fuel type, **exclude** this **fuel type**

Calculation Method:

- Sales-weighted average consumption of selected versions per best-selling vehicle
- **Sales-weighted average** ofb est-selling vehicles consumption per fuel type

Example calculation WLTP:



Fuel prices per conventional unit

Sample Selection:

- Apply the FPC to the following fuel types: (1) **petrol**, (2) **diesel**, (3) **electricity**, (4) **hydrogen**, (5) **CNG** and (6) **LPG**

Data Collection:

- Collect **fuel prices** measured in euros per conventional fuel type unitf or the **previous calendar quarter** oft he year

Calculation Method:

- Estimate the **average prices** for each fuel type
- In respect with **electricity**, **one single price** (based on the average price at home and public charging mix) is **preferred**
- For MS that cannot provide one single price, iti s **acceptable** to **display average two prices:**
  - **public** charging
  - **home** charging
- If public charging is not available, the **average price oft he home** charging **only** will be displayed

"Where appropriate"

Recommendations:

Unmanned filling stations should be exempted from display obligations due to the implementation costs and the requirementt o update the displays frequently.

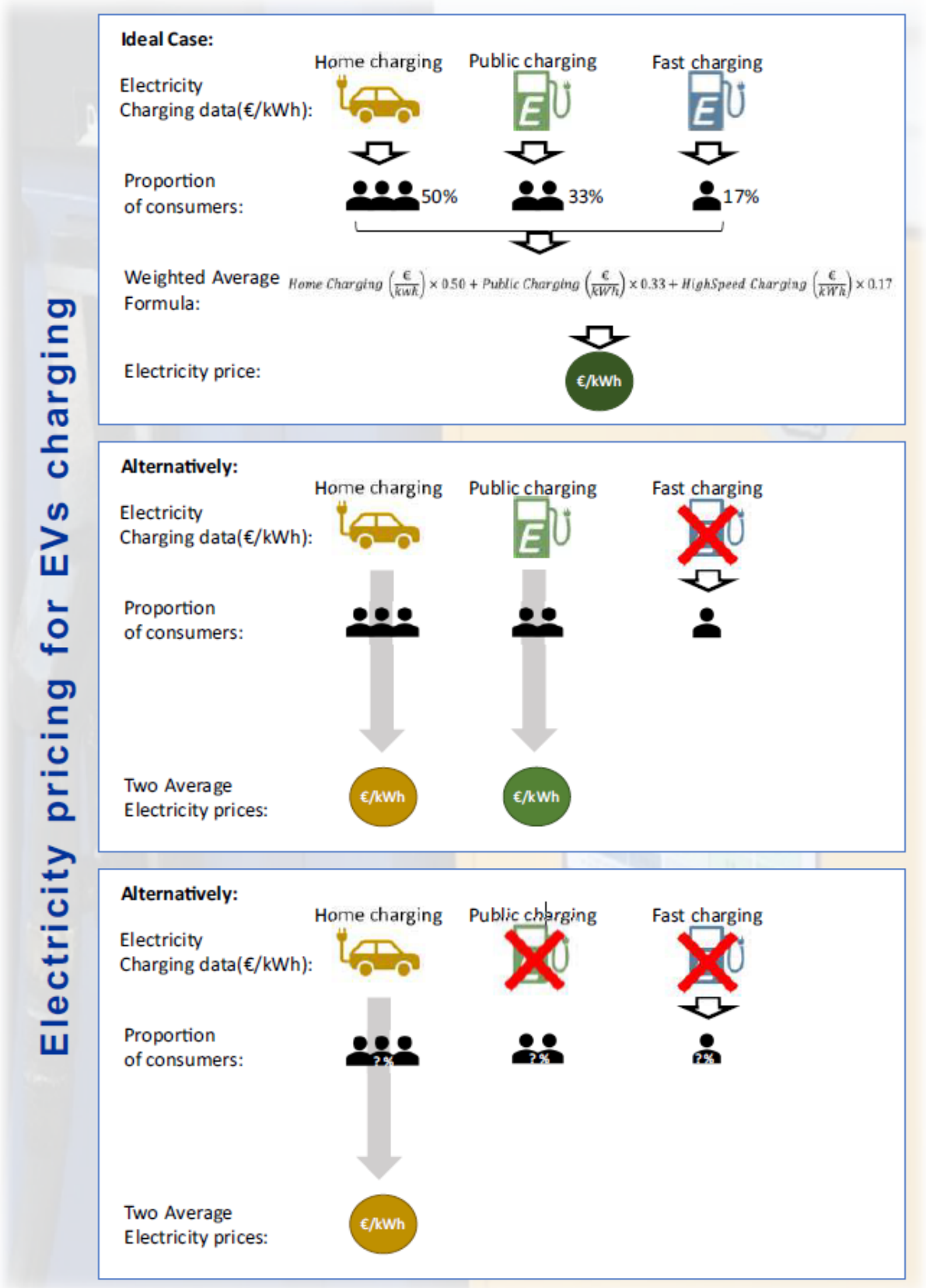
Option I:

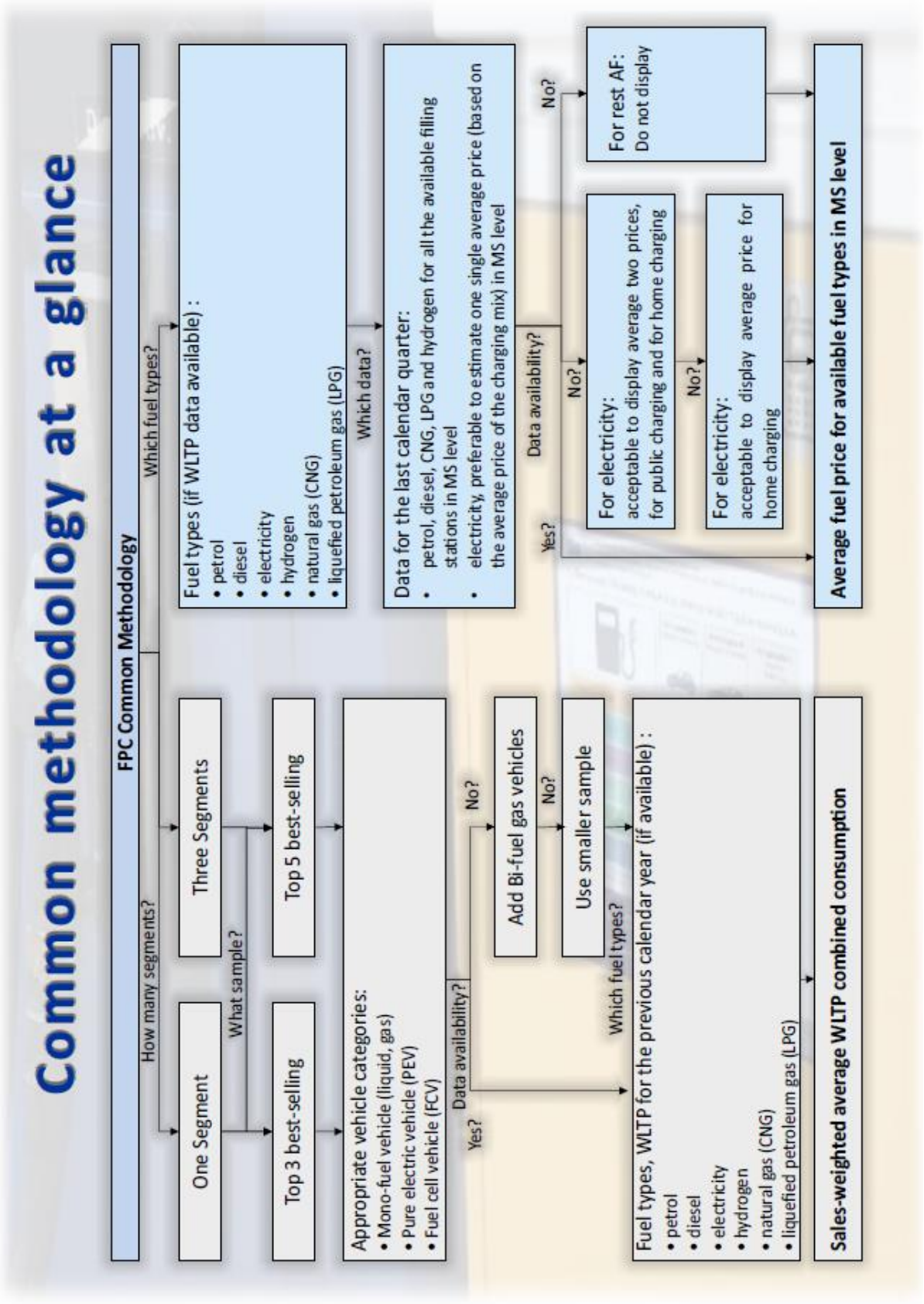
At leastt he following manned filling stations should display the FPC prices (€/100km):

- represent **at leastt he 10%** oft he manned filling stations in the MS
- Selection criteria are defined at MS level, **giving priority** to filling stations which provide **at leastt hree differentf uel types** out of which at least **an alternative fuel type**
- The fuel types are considered the following:
  - petrol,
  - diesel,
  - electricity,
  - hydrogen,
  - CNG,
  - LPG.

Option II:

- Filling stations that have less than A* multi-productf uel dispensers (MPD) **should be exempted** from display obligations
- **All remaining stations** should display the FPC prices (€/100km)
- The **number A*** is determined at MS level. Iti s recommended to selectt he **average number of MPD** at MS level.
- In any case, the number offi lling stations thatf ollow Art 7.3 should **not be less than 10% oft he filling stations in the MS**


Electricity pricing for EVs charging
Ideal Case:
Electricity Charging data(€/kWh):
Home charging
Public charging
Fast charging
Proportion of consumers:
50%
33%
17%
Weighted Average Formula:
Home Charging (€/kwh) × 0.50 + Public Charging (€/kWh) × 0.33 + HighSpeed Charging (€/kWh) × 0.17
Electricity price:
€/kWh
Alternatively:
Electricity Charging data(€/kWh):
Home charging
Public charging
Fast charging
Proportion of consumers:
Two Average Electricity prices:
€/kWh
€/kWh
Alternatively:
Electricity Charging data(€/kWh):
Home charging
Public charging
Fast charging
Proportion of consumers:
Two Average Electricity prices:
€/kWh


Common methodology at a glance
FPC Common Methodology
How many segments?
Three Segments
One Segment
What sample?
Top 5 best-selling
Top 3 best-selling
Appropriate vehicle categories:
• Mono-fuel vehicle (liquid, gas)
• Pure electric vehicle (PEV)
• Fuel cell vehicle (FCV)
Which fuel types?
Fuel types (if WLTP data available) :
• petrol
• diesel
• electricity
• hydrogen
• natural gas (CNG)
• liquefied petroleum gas (LPG)
Which data?
Data for the last calendar quarter:
• petrol, diesel, CNG, LPG and hydrogen for all the available filling stations in MS level
• electricity, preferable to estimate one single average price (based on the average price of the charging mix) in MS level
Data availability?
Yes?
No?
For electricity:
acceptable to display average two prices, for public charging and for home charging
No?
For electricity:
acceptable to display average price for home charging
No?
For rest AF:
Do not display
Average fuel price for available fuel types in MS level
Data availability?
Yes?
No?
Add Bi-fuel gas vehicles
No?
Use smaller sample
Which fuel types?
Fuel types, WLTP for the previous calendar year (if available) :
• petrol
• diesel
• electricity
• hydrogen
• natural gas (CNG)
• liquefied petroleum gas (LPG)
Sales-weighted average WLTP combined consumption


Coordinator:
Ministry of Infrastructure and Transport of Greece
Implementing body: National Technical University of Athens (NTUA)
Ministry of the Sea, Transport and Infrastructure of Croatia
Ministry of Energy, Commerce and Industry of Cyprus
Ministry of Transport and Communication of Finland
Implementing body: Finnish Transport and Communication Agency (Traficom)
Ministère de la transition écologique of France
Implementing body: Union Francaise des Industries Petrolieres (Ufip)
Federal Ministry for Economie Affairs and Energy of Germany
Subcontractor: German Energy Agency (dena)
Ministry of Infrastructure and Water Management of The Netherlands
Implementing body: Netherlands Enterprise Agency (RVO)
Directorate General for Energy and Geology of Portugal
Ministerio para la Transicion Ecologica,
Subdireccion General de Hidrocarburos of Spain
€/100 km
Grant agreement
under the Connecting Europe Facility (CEF)
No MOVE/B4/SUB/2018-491/CEF/PSA/SI2.798275
Starting date:
February 2019
Completion date:
30 September 2020
Total Cost:
EUR 2,346,257
Grant of the action:
EUR 1,913,005
Help Desk
PSA Coordinator
Hellenic Ministry of Infrastructure and Transport
Contact point:
Ilias PASIOS, h.pasios@yme.gov.gr
PSA Coordinator,
Implementing Body
National Technical University of Athens
Contact point:
Antonis PEPPAS, peppas@metal.ntua.gr
Select Countries
Results
Prices
FPC Consumers
€/100 km
www.fpc4consumers.eu

Programme Support Action (PSA):
Assisting Member States in the implementation of a common methodology for alternative fuels unit price comparison in accordance with Directive 2014/94/EU

"FPC4Consumers"

Contract Number: MOVE/B4/SUB/2018-491/CEF/PSA/SI2.798275
Starting date of the project: 01/02/2019
Duration: 15 months

= Deliverable D1.5 =

"A final dissemination event with the EC, stakeholders and participating Member States"

AUTHOR

Author	Member States	Contact (e-mail, phone)
Ilias PASIOS	GREECE	h.pasios@yme.gov.gr
Antonis PEPPAS	GREECE	peppas@metal.ntua.gr
Chrysa POLITI	GREECE	chrysapol@metal.ntua.gr

CONTRIBUTORS TO THE DOCUMENT

Author	Member States	Contact (e-mail, phone)
Anni HYTTI	FINLAND	Anni.Hytti@traficom.fi
Atte MELASNIEMI	FINLAND	atte.melasniemi@traficom.fi
Paulien OFFICIER	THE NETHERLANDS	paulien.officier@rvo.nl
Cécile DUMAS	FRANCE	cecile.dumas@developpement-durable.gouv.fr
Iulia DOLGANOVA	GERMANY	Iulia.Dolganova@bmwi.bund.de
Norman WENDT	GERMANY	Wendt@dena.de

DOCUMENT CONTROL

Document version	Date	Change
V0.0	16/09/2020	Initial Version
V0.1	18/09/2020	Updated version FI input included
V0.2	21/09/2020	Updated version NL input included
V0.3	23/09/2020	Updated version FR input included
V0.4	25/09/2020	Updated version DE input included
V1.0	29/09/20	Final Version

DOCUMENT DATA

Document data	Deliverable
Point of Contact	i) H. Pasios, Ministry of Infrastructure and Transport, Greece, email: h.pasios@yme.gov.gr ii) A. Peppas, National Technical University of Athens, Greece, email: peppas@metal.ntua.gr
Version	V1.0
Date	05/10/2020
Distribution list	All MS

DISSEMINATION LEVEL

Dissemination level		
PU	Public	**X**
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

DOCUMENT APPROVAL

Author	Member States	Status
Ilias PASIOS	GREECE	Approve
Tomislav ŽIDOV	CROATIA	Approve
Anni HYTTI, Atte MELASNIEMI	FINLAND	Approve
Anastasia GEORGARAKI	CYPRUS	Approve
Cécile DUMAS	FRANCE	Approve
Iulia DOLGANOVA	GERMANY	Approve
Paulien OFFICIER	NETHERLANDS	Approve
Rui BORGES	PORTUGAL	Approve
Isidoro ROMERO	SPAIN	Approve

CONTENTS

INTRODUCTION

This document aims to present the final online workshop, organized at the end of the Programme Support Action (PSA). In the course of the event, the objectives and the main outcome of the PSA were presented to the market and social world.

The final event was initially planned to take place in Athens, Greece on 30th and 31st March 2020. It would be hosted and organized by the Coordinator, while a core group, embodied by representatives from the participating Member States (MS), would support the preparation and the conduct of the event.

Due to COVID-19 outbreak, the PSA was extended until September 2020 and it was decided that the event will take place online. Therefore, an online workshop was organized on the 8th of September, to facilitate the participation of the consortium as well as the European Commission Officers and the representatives from all MS. In the final event, wide participation from stakeholders and media was included. All this informative material was published on the PSA website. Members of the consortium can share this information on national level, either directly with the relevant stakeholders or more generic.

The consortium delivered a well-prepared online workshop. Participants were informed on the Recommendations of the PSA for consistent implementation of the Article 7.3 of the Alternative Fuel Infrastructure Directive (AFID), which is to be applied on December 7th, 2020. At the end of the online workshop, a "Round table discussion" was foreseen, allowing stakeholders as well as representatives of the MS to address their questions and receive clarifications for the Art. 7(3) implementation steps. The online workshop was concluded successfully and a recorded version will be available on the FPC4Consumers website as well as the FPC4Consumers YouTube channel for further dissemination. (https://www.youtube.com/watch?v=z8vQmEAForY).

1. PRELIMINARY ACTIVITIES

An online workshop, including wide participation from stakeholders and media, was organized at the end of the project to present the target actions to the market and social world. According to the Grant Agreement (GA) of the PSA, the meeting would be physical and it would be hosted by the Coordinator.

However, this option was not feasible after the COVID-19 outbreak. COVID-19 led to restrictive measures on traveling and public health and safety measures, such as on physical distancing. Also, public gatherings and mass events were either banned or postponed, and specific restrictions were applied such as a limited number of participants. Given this situation, a physical conference with a minimum of 300 participants (Milestone 10) invited from the different MS could not be held. [1],[2]

The consortium investigated the available options for organizing the event and decided to proceed with an online workshop. This option allowed the uninterrupted participation of the invitees as well as the dissemination of the PSA outcome to a wider audience. The event was scheduled on 8th of September expected to last four hours.

1.1 Scope

The scope of the event was to present the PSA activities and results in relation to the EU legislation and the AFID. In the course of the meeting, a brief policy update on the alternative fuels and infrastructure was planned in order to introduce the framework and the need for the FPC4Consumers PSA. In this regard, a presentation on electric mobility and hydrogen mobility, in view of legislative and regulatory aspects related to the deployment of alternative fuels infrastructure was scheduled to provide a clear, comprehensive framework to the participants. Then, the overall project's activities, including the brief introduction of involved MS, the objectives and targets of the Action as well as the activities implemented were planned to presented followed by the main findings of the online consumer survey and the pilot actions. The last presentation would refer to the outcome of the PSA and the recommendations for consistent implementation of Article 7.3 of the AFID would be presented in detail. Afterwards, a Q&A session, as well as a discussion between the European Commission and the MS representatives on the recommendations, was foreseen.

1.2 Selecting the online platform

The main objective of the event was to disseminate the recommendations of this PSA on the implementation of the fuel price comparison. Given the COVID-19 situation, the organisation of an online workshop enables the participation of a wider audience including not only stakeholders and organisations but also European consumers. Therefore, the online workshop was decided to be hosted by an online-conference platform and broadcasted live via the FPC4Consumers official pages on Facebook and YouTube.

---

[1] *European Commission - Travel and transportation during the coronavirus pandemic*

[2] *World Health Organization (WHO)*

In specific, the WEBEX platform was selected for the online workshop based on the requirements of the event, such as the number of participants etc. In order to ensure the effectiveness of the workshop, only the speakers, as well as invitees who had received an official invitation and had registered, were able to join the platform. Furthermore, stakeholders and consumers, who would like to attend the event, were able to watch via social media as the selected online platform allowed the live streaming of the online workshop through Facebook and YouTube. As the event was recorded, it is still available for all interested ensuring a broad and lasting dissemination.

1.3 Invitations & Registration

The consortium scheduled the date of the event and distributed a newsletter (i.e. Save-the-Date) at the end of July. The workshop was foreseen to allow active participation of invitees who would like to address questions and to position on the fuel price comparison topic as well as the live-streaming for attendees who were interested in getting informed about the topic.

Considering the online workshop's topic and its importance for the European Transport stakeholders, official invitations were sent by the Coordinator to the following organisations:

- Commission services: Mobility and Transport (MOVE), Transport European Commission
- Consortium: Members of Participating MS Ministries and Implementing Bodies
- Members of the Alternative Fuels Committee (AFI Committee)
- Members of the FIA
- Members of the UPEI
- Related Stakeholders (fuel retailers, etc.)

The event participants were registered in order to get the credentials needed for joining the online workshop. The General Data Protection Regulation (GDPR) was taken into account in order to ensure data safety of the invitees.

Simultaneously, the online workshop was disseminated to consumers via social media. The event was announced to the European citizens to watch on via Facebook and YouTube. An invitation for the consumers was provided at the website as well as at the Facebook profile of the FPC4Consumers.

1.4 Communication material and Dissemination

For promoting the event, several announcements and official invitations were planned to ensure the participation of the interesting parties. The consortium prepared the communication material for disseminating the event. The first announcement was made through the official website of the PSA in July 2020. (Figure 1)

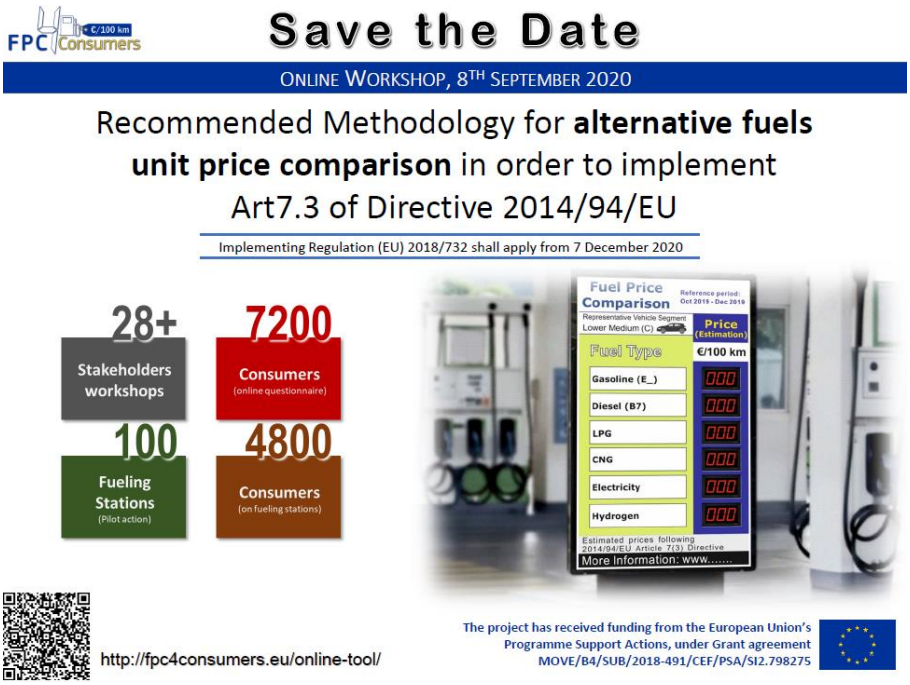


Figure 1 Save the date FPC workshop

For the next phase, the invitees were separated to event participants and events viewers. Therefore, two different types of invitations were implemented.

For the event participants, the official invitations were sent at the end of August by the Coordinator attached with a registration link. (Figure 2)

Figure 2 Invitation for the FPC workshop

Regarding the event viewers, a targeted promotional campaign was separately launched: Two dedicated Facebook pages were created, in Greek and in English, together with a promotional 28 sec. "giggle" video with "gif" slides in both languages that was uploaded on both pages, the workshop invitation and a different registration form for those interested in attending the workshop. This form also led to a separate email address (info@fpc4consumers2020.eu), created especially for the workshop and for those that wanted to ask for more information about it.

Figure 3 1st gif slide of the giggle promotional video in Greek

Figure 4 Last gif slide of the giggle promotional video in English

Those interested in attending the workshop were guided to the YouTube channel that was created (https://www.youtube.com/watch?v=z8vQmEAForY). The YouTube channel live-streamed the workshop from Webex.

A maximum of 38 unique live users were at the same time watching the workshop through the YouTube channel, whereas 120 unique users in total have watched the workshop through this channel.

At the same time, a 2min. video in English presenting the targets and the achievements of the program was created.

2. THE EVENT

The FPC4Consumers online workshop took place on the 8th of September and lasted almost 4 hours. The participants joined the event on 10:15 CET and the live streaming initiated on 10:30 CET. The online workshop was dedicated to presenting the FPC4Consumers PSA in terms of framework, main findings and conclusions, the legislative framework of the electric and hydrogen mobility in Europe as well as the position of the European Commission.

2.1 Agenda

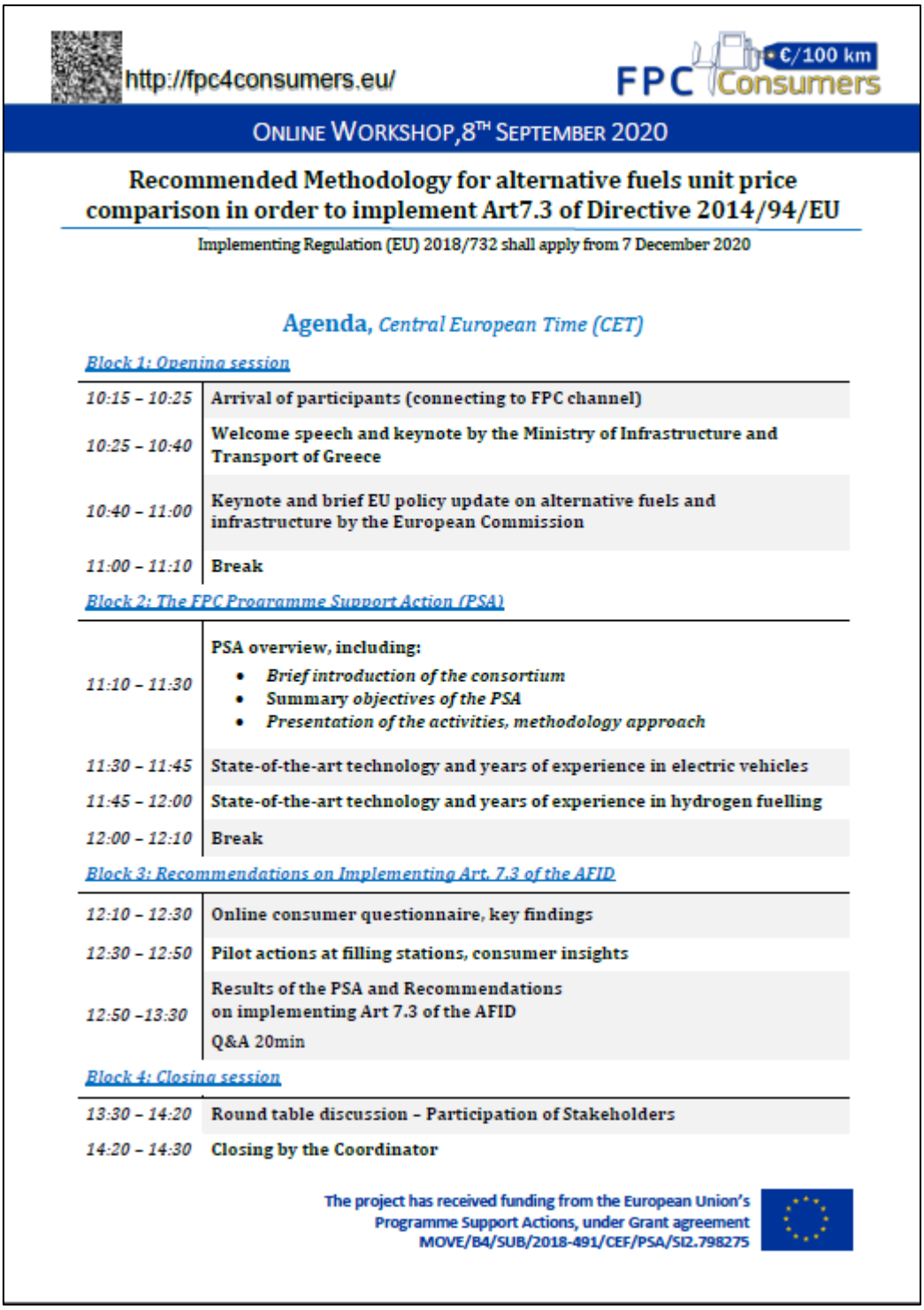
The agenda was divided into four blocks, including the opening session, the FPC PSA framework, the presentation of the Recommendations and the closing session.

To begin with, the Hellenic Ministry of Infrastructure and Transport started the online workshop and welcomed the participants. Then, the representative of the European Commission presented a brief policy update about the Green Deal and the upcoming application of the Implementing Regulation (EU) 2018/732.

In the course of the second block, the framework of the FPC was introduced including the presentation of the main activities and the main accomplishments of the PSA. Afterwards, state-of-the-art technology in electric vehicles and hydrogen fuelling was given, dedicated to legislative and regulatory aspects related to the deployment of alternative fuels infrastructure.

The third block was dedicated to the key findings of the PSA and the presentation of the recommendations related to the implementation of the Art. 7.3 of the AFID. These recommendations have already been published in July encouraging the MS to develop their implementation plan for the AFID obligations. However, an informative workshop presenting the background of the recommendations would be a great opportunity for disseminating the purpose of the action to the consumers as well as ensuring the effective understanding of the recommendations by the responsible authorities and stakeholders. A twenty-minute Q&A session was foreseen after the presentation of the recommendations in order to provide clarifications where needed.

Finally, a round table discussion was arranged on the last block, to encourage stakeholders to get involved and express their opinions concerning the recommendations and the upcoming implementation of the Article. The agenda of the meeting is presented in the figure below.



http://fpc4consumers.eu/

FPC Consumers €/100 km

ONLINE WORKSHOP, 8TH SEPTEMBER 2020

Recommended Methodology for alternative fuels unit price comparison in order to implement Art7.3 of Directive 2014/94/EU

Implementing Regulation (EU) 2018/732 shall apply from 7 December 2020

Agenda, *Central European Time (CET)*

Block 1: Opening session	
10:15 – 10:25	Arrival of participants (connecting to FPC channel)
10:25 – 10:40	Welcome speech and keynote by the Ministry of Infrastructure and Transport of Greece
10:40 – 11:00	Keynote and brief EU policy update on alternative fuels and infrastructure by the European Commission
11:00 – 11:10	Break
Block 2: The FPC Programme Support Action (PSA)	
11:10 – 11:30	PSA overview, including: • *Brief introduction of the consortium* • Summary *objectives of the PSA* • *Presentation of the activities, methodology approach*
11:30 – 11:45	State-of-the-art technology and years of experience in electric vehicles
11:45 – 12:00	State-of-the-art technology and years of experience in hydrogen fuelling
12:00 – 12:10	Break
Block 3: Recommendations on Implementing Art. 7.3 of the AFID	
12:10 – 12:30	Online consumer questionnaire, key findings
12:30 – 12:50	Pilot actions at filling stations, consumer insights
12:50 –13:30	Results of the PSA and Recommendations on implementing Art 7.3 of the AFID Q&A 20min
Block 4: Closing session	
13:30 – 14:20	Round table discussion – Participation of Stakeholders
14:20 – 14:30	Closing by the Coordinator

The project has received funding from the European Union's Programme Support Actions, under Grant agreement MOVE/B4/SUB/2018-491/CEF/PSA/SI2.798275

Figure 5 Agenda of the workshop

2.2 Participant profiles

The event has received the participation of representatives of the private and public sector around Europe (via Webex). In specific, external stakeholders from all the fields of the transport industry, which include fuel retailers and industrial companies, were invited and joined the event. In parallel, regulatory bodies of the European MS and especially members of the AFI Committee participated in the online workshop. Figure 6 and Figure 7 depict the participation of the different MS, which joined the event.

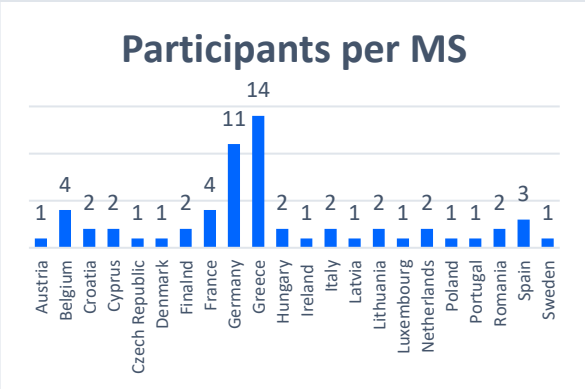


Figure 6 Participants per MS

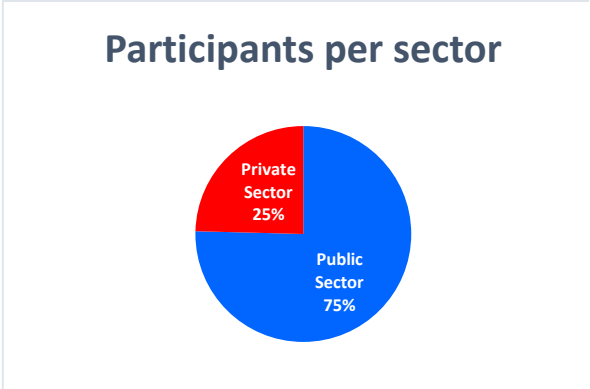


Figure 7 Participants per sector

Table 1. List of participating Organisations / Companies

Organisations / Companies		
European Commission	Federal Ministry for Economic Affairs and Energy – Germany	Ministry of Infrastructure and Transport – Greece
ACE Auto Club Europa e.V. – Germany	Federal Public Service of Economy - Belgium	Ministry of Mobility and Public Works – Luxembourg
ADAC e.V. – Germany	Finnish Transport and Communications Agency (Traficom) - Finland	Ministry of the Sea, Transport and Infrastructure of the Republic of Croatia – Croatia
AustriaTech – Austria	French Ministry for the Ecological Transition – France	Ministry of Transport and Communications – Lithuania
AVIN OIL ΜΟΝΟΠΡΟΣΩΠΗ AE – Greece	Hellenic Petroleum – Greece	Ministry of Industry and Trade – Czech Republic
BMVI – Germany	KTI Institute for Transport Sciences Non-Profit Ltd. – Hungary	National Technical University of Athens – Greece
BP Europa SE – Germany	Mineraloelwirtschaftsverband – Germany	RVO – Netherlands
Bundesverband Freier Tankstellen e. V. (bft)/ Association of Independant Petrol Stations – Germany	Ministerio para la Transición Ecológica y el Reto Demográfico – Spain	SPF Economie – Belgium
	Ministero dello Sviluppo Economico – Italy	SPF Mobility and Transport – Belgium
Consumer Rights Protection Centre – Latvia	Ministry for Innovation and Technology – Hungary	Swedish Consumer Agency – Sweden
Danish Road Traffic Authority - Denmark	Ministry of Climate – Poland	UFIP the association of petroleum industry – France
Dept. of Transport – Ireland	Ministry of Economy, Energy and Business Environment – Romania	UPEI - Europe's Independent Fuel Suppliers
DGEG – Portugal	Ministry of Energy of the Republic of Lithuania – Lithuania	VDIK – Germany
Dutch Ministry of Infrastructure and Water Management – Netherlands	Ministry of Energy, Commerce and Industry – Cyprus	Verbraucherzentrale Bundesverband (vzbv) – Germany

	EKO ABEE (HELPE group) – Greece	VTT – Finland

Apart from the 120 unique live viewers (maximum 38 simultaneous live viewers) that watched the workshop from YouTube, 23 more watched it through Facebook.

2.3 Presentations

No	Title	Speaker	Representing		Content (Outline)
	Moderator	Emmanouil KONDYLAKIS	**GR**	Hellenic Ministry of Infrastructure and Transport	
1.	*Welcome speech and keynote*	Georgios VLAVIANOS	**GR**	Hellenic Ministry of Infrastructure and Transport	
2.	*Keynote and brief EU policy update on alternative fuels and infrastructure*	Antonio TRICAS-AIZPUN	**EC**	Unit B4 – Sustainable & Intelligent Transport DG Mobility & Transport – European Commission	• European Green Deal • Fuel and vehicles projections 2050 • Fuel Price regulation main recommendations
3.	*Overall PSA activities*	Ilias PASIOS	**GR**	Hellenic Ministry of Infrastructure and Transport	• Administrative, duration and financial plan • Objectives of the PSA • The activities and overall methodology approach
4.	*State-of-the-art technology and experience in electric vehicles*	Claude RENARD	**FR**	Direction générale de l'énergie et du climat Ministère de la transition écologique	• Standardisation • Legislation • Penetration to the market/Consumers preferences • Future opportunities & Challenges
5.	*State-of-the-art technology and experience in hydrogen vehicles*	Evrim AKAR	**NL**	Ministry of Infrastructure and Water Management	• Standardisation • Legislation • Penetration to the market/Consumers preferences • Future opportunities & Challenges
6.	*Online consumer questionnaire, key findings*	Anastasia GEORGARAKI	**CY**	Ministry of Energy, Commerce and Industry	• Setting the requirements • Evaluation process • Overall outcome • Differences between MS
7.	*Pilot actions at filling stations, consumer insights*	Iulia DOLGANOVA / Norman WENDT	**DE**	Federal Ministry for Economic Affairs and Energy / German Energy Agency	• Scope & need of the action • Requirements based on GA • Implementation and Results • Outcome from the pilot activities
8.	*Results of the PSA and Recommendations on implementing the Art.7.3 of the AFID*	Antonis PEPPAS	**GR**	National Technical University of Athens	• The framework of the action • The calculation process • The format of the display • The location of the display • The type of filling stations • The online presentation

9.	*Closing speech*	Ilias PASIOS	**GR**	Hellenic Ministry of Infrastructure and Transport

CONCLUSIONS

This report is dedicated to the presentation of the FPC4Consumers online workshop that was performed on the 8th of September, 2020. Throughout the event, the consortium performed actions to disseminate the outcome of the activities carried out in the framework of the PSA to the relevant stakeholders (from consumers to industry). The recommendations on implementing the Art. 7.3 were presented in detail and questions / concerns by the participants were addressed. The online workshop was completed successfully and a recorded version will be available on the FPC4Consumers website as well as the FPC4Consumers YouTube channel for further dissemination.

DEGREE OF PROGRESS

This document is in line with the work proposed in GA.

DISSEMINATION LEVEL

Public

Programme Support Action (PSA):
Assisting Member States in the implementation of a common methodology for alternative fuels unit price comparison in accordance with Directive 2014/94/EU

"FPC4Consumers"

Contract Number: MOVE/B4/SUB/2018-491/CEF/PSA/SI2.798275
Starting date of the project: 01/02/2019
Duration: 15 months

= Deliverable D2.1 =

"Definition of the contents, format and location of the information on fuel price for comparison, to be displayed at fuelling stations"

AUTHOR

Author	Member States	Contact (e-mail, phone)
Ilias PASIOS	GREECE	h.pasios@yme.gov.gr
Antonis Peppas	GREECE	peppas@metal.ntua.gr
Chrysa Politi	GREECE	chrysapol@metal.ntua.gr

CONTRIBUTORS TO THE DOCUMENT

Author	Member States	Contact (e-mail, phone)
Cécile DUMAS	France	cecile.dumas@developpement-durable.gouv.fr

DOCUMENT CONTROL

Document version	Date	Change
V0.0	23/07/2019	Initial Version
V0.1	24/07/2019	General comments / Revision
V1.0	25/07/2019	Final Version

DOCUMENT DATA

Document data	Deliverable
Point of Contact	i) H. Pasios, Ministry of Infrastructure, Transport and Networks, Greece, email: h.pasios@yme.gov.gr ii) A. Peppas, National Technical University of Athens, Greece, email: peppas@metal.ntua.gr
Version	V1.0
Date	25/07/2019
Distribution list	All MS

DISSEMINATION LEVEL

Dissemination level		
PU	Public	**X**
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

CONTENTS

INTRODUCTION

The main scope of this document is to provide a detailed description of the information on fuel price for comparison, which will be displayed at fueling stations in terms of contents, format and location. This deliverable is considered a well-studied approach of the Coordinator taking into account the legislation as well as the requirements described in Grant Agreement. The proposed option is based on the preliminary results derived from the methodology on price calculation, which is identified by NTUA and will be evaluated by all MS.

Therefore, this deliverable will define the framework for the implementation of the pilot actions to test different options concerning format, contents and location of fuel prices for comparison at the filling stations (Activity 3).

1. DEFINITION OF THE CONTENTS, FORMAT AND LOCATION OF THE INFORMATION ON FUEL PRICE FOR COMPARISON, TO BE DISPLAYED AT FUELLING STATIONS

The aim of this document is to define the contents, format and location of the information on fuel prices to be compared and displayed at filling/charging stations including validation of the defined options with consumers/drivers. In this line, both legal and economic issues and the consumer's point of view were investigated in order to ensure the optimum implementation of this activity and to improve the price transparency of different fuels at the filling/charging stations. To this regard, Art. 7 para. 3 of the Directive states: "Where appropriate, and in particular for natural gas and hydrogen, when fuel prices are displayed at a fuel station, a comparison between the relevant unit prices shall be displayed for information purposes. The display of this information shall not mislead or confuse the user. To increase consumer awareness and provide for fuel price transparency in a consistent way across the Union, the Commission shall be empowered to adopt, by means of implementing acts, a common methodology for alternative fuels unit price comparison."

Considering various presentation options, different methods that might result in more transparent price labelling at filling stations were analysed. The analysis focused on:

- the definition of possible options for the content, format, including the elaboration of different samples of representative models-segment of vehicles running with conventional and alternative fuels, and location of the information to be displayed at filling stations
- an assessment of the vehicle types to be included in the sample in order to optimize the consumers' perception of the fuel cost of the different fuel options for each car/fuel type, and considering that the fuel consumption provided in the certificate of conformity of the vehicles will be based on the World Harmonized Light Vehicles Test Procedure (WLTP)
- an analysis of the costs and benefits of the variable display and location options. This will enable Member States to develop specific roadmaps and implement planning, based on the category, which meets their characteristic. The categorization can also help to structure the workshops and allocation of tasks.

Concerning the content of the fuel price information, it was thought fruitful to firstly define the framework of the common methodology for the fuel price calculations. In this line, several scenarios were tested in order to define the vehicle types to be included in the sample and the representative models-segment of vehicles, which will be used for fuel price calculations. Thereafter, the presented content will consist of fuel prices expressed in €/100km for the available fuels in national level. It is under investigation the option of presenting the available fuels in EU level in different colours so to avoid misleading consumers. In addition, the selected vehicle to represent fuel consumption of different fuel types and segment will derive from the following methodology as it shown in Figure 8.

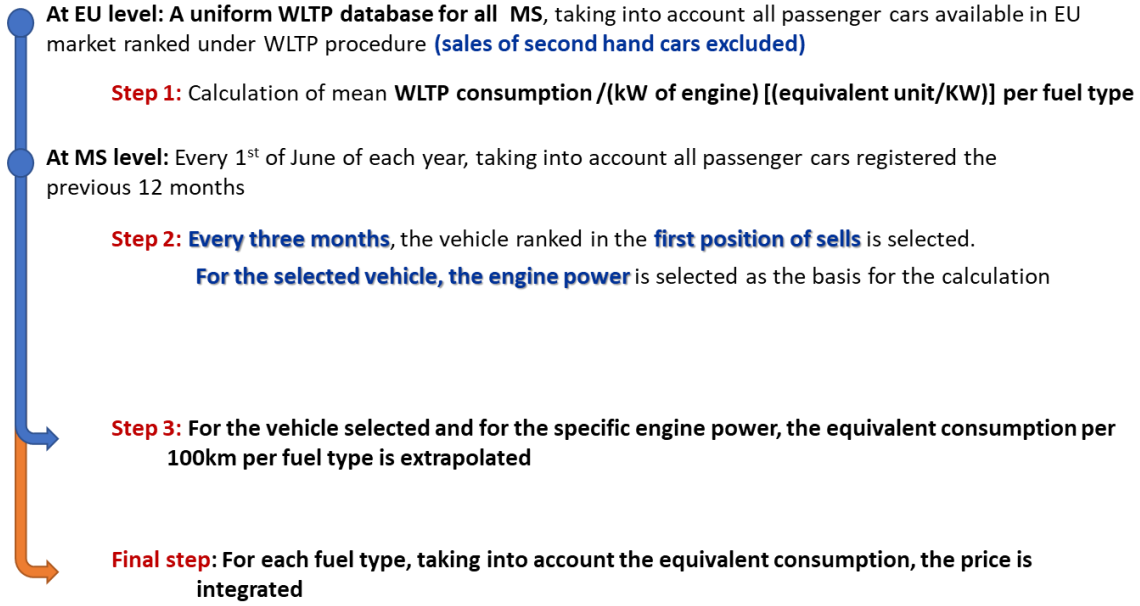


Figure 8. First approach on Common Methodology.

In particular, a vehicle database is suggested to be developed including vehicles registered in EU level for the last year (and will be updated every six months). This database will consist of vehicle models and manufactures of vehicles as well as fuel type, fuel consumption and engine power. This information will be utilized for the next step in which calculations of normalized vehicle consumption and fuel price will be performed. As it shown in Figure 9 all different segments of vehicles as well as all available fuel types in EU will be taken into account to the database and the final results.

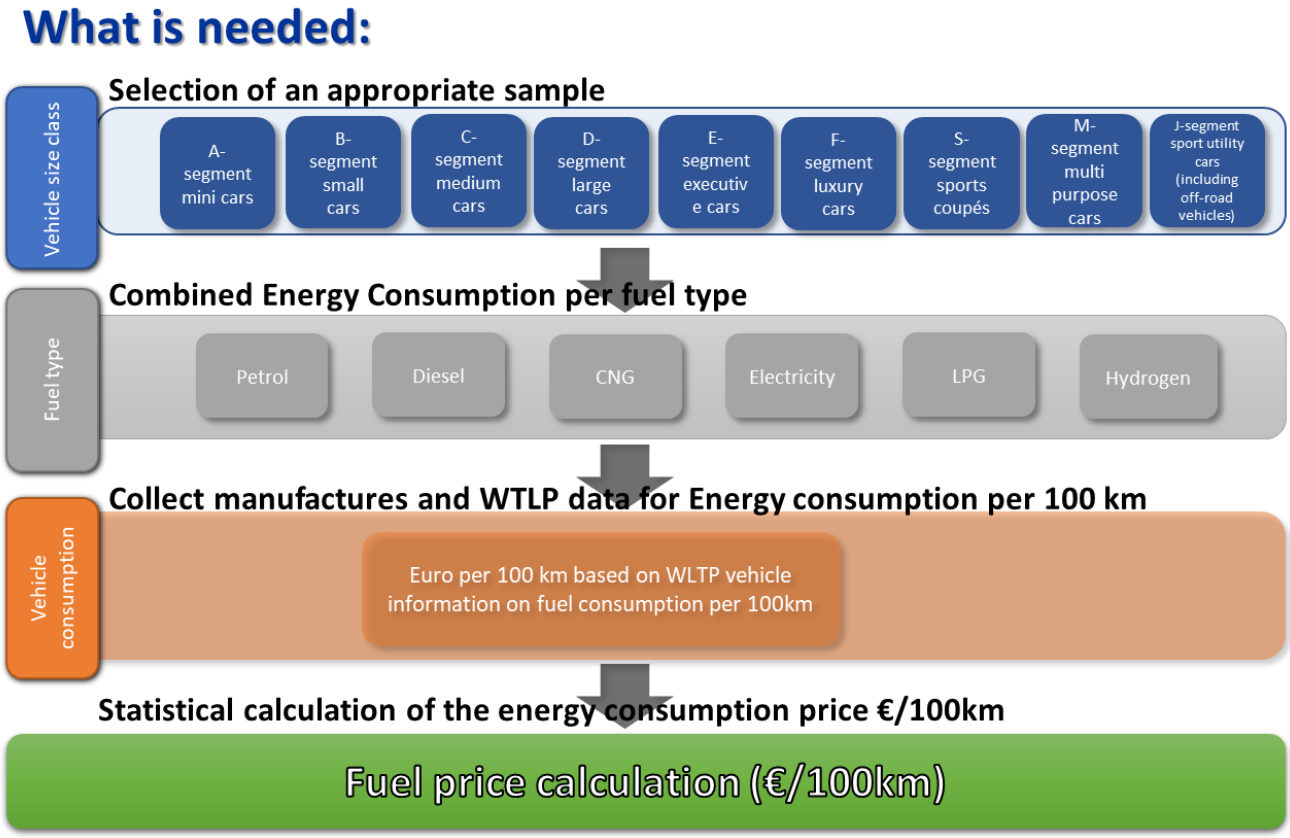


Figure 9. Common methodology information chart.

For the next step, the initialization of the methodology parameters will be performed. Figure 10 shows these parameters including the mean price of each fuel type to be presented at filling station (A) and the combined fuel consumption per vehicle derived from the database(B). As it shown, vehicle fuel consumption (B) measured in WLTP will be normalized to the power engine of each vehicle(C).

A (€/sell unit): **Mean Price per fuel type per selling unit (lt, kWh, kg),** *MS level, mean value of last quarter*

B (sell unit/100 km): **Database with WLTP values (only), for vehicles registered within Europe.**

Fuel type (a, b, c, d, e, f)	C = Equivalent unit (per kW/100 km)
Diesel, Petrol, LPG	lt
Electricity	kWh
CNG, Hydrogen (Fuel cell)	kg

→ **C (a, b, c, d, e, f)**

Figure 10. Introduction to methodology parameters

Moreover, the representative vehicle will be defined in relation to market trends. The bestselling vehicle will be selected and fuel prices will be calculated for its specific power engine (P). Figure 8 suggests to update the information about the representative engine power every three months however this topic is still under discussion. Figure 11 presents the formula by which the fuel prices will be calculated by utilizing the information gathered from the previous steps.

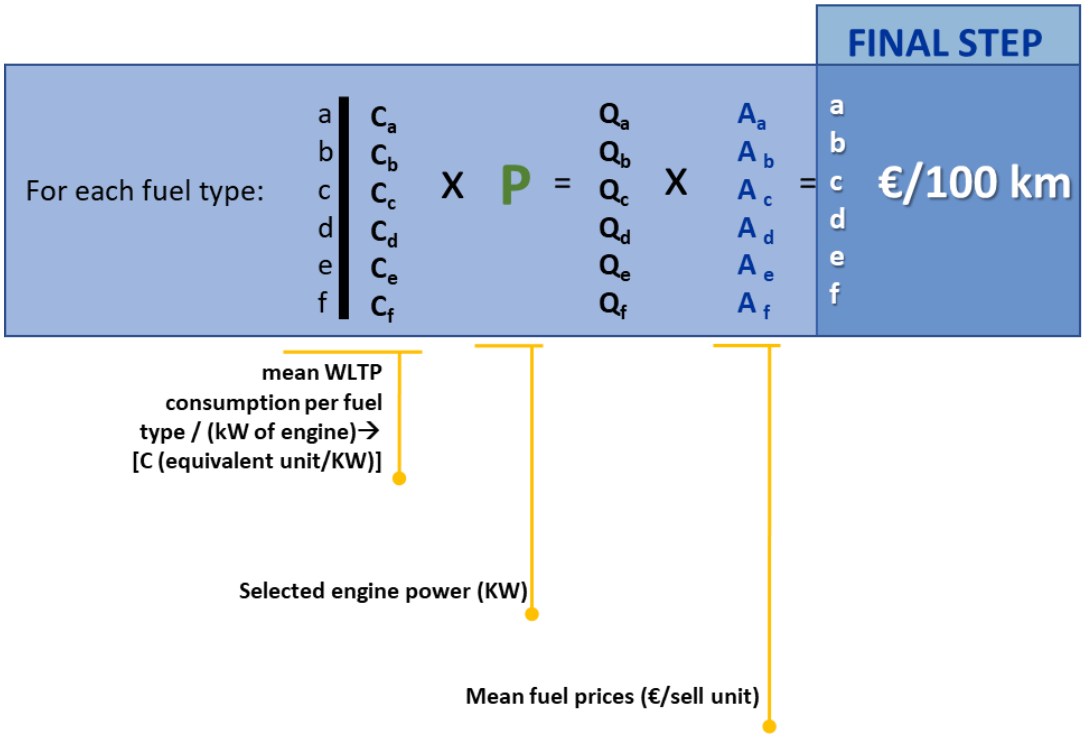


Figure 11. Calculation of Fuel Price Content.

Therefore, fuel price comparison information will be based on a transparent and understandable method, easy adaptable from all MS. The prices will illustrate costs of consumers' vehicle market orientation and will guarantee a fair play for the fuel

market. It is mentioned that this methodology is a first approach of a technical solution to be implemented in the pilot actions and it has been introduced to the MS in the second monthly web meeting.

In terms of format of fuel prices to be compared and displayed at filling/charging stations, several options were identified and evaluated. The most effective options include the presentation of prices in a table and the visualization of the results in bar graphs and pies. In fact, consumers are already familiar with the table format and they are able to comprehend instantly the information. On the other hand, visualization of the information will enhance the understanding of the price comparison and the ability of the consumer to memorize the price balance among different fuel types. Figure 12 illustrates a first approach of table to be presented at Greek pilots. As it is shown the information for the selected power engine is given in the upper side of the table and then the consumer can compare fuel prices among available fuel types in EU. For the case of Greece, Hydrogen is not available and consequently, it is marked with a different colour. Figure 126 illustrates a first approach of bar graph displaying fuel prices both in €/100km and the current price in €/fuel unit. It is mentioned that this colouring is not mandatory and it may be updated at pilot actions.

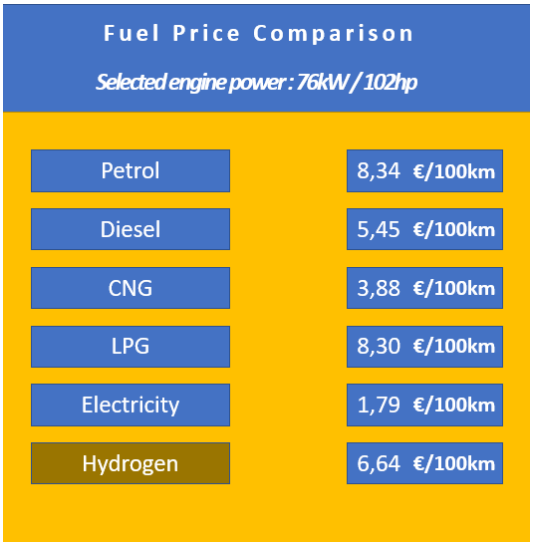


Figure 12. Fuel Price Comparison Table for Greece.

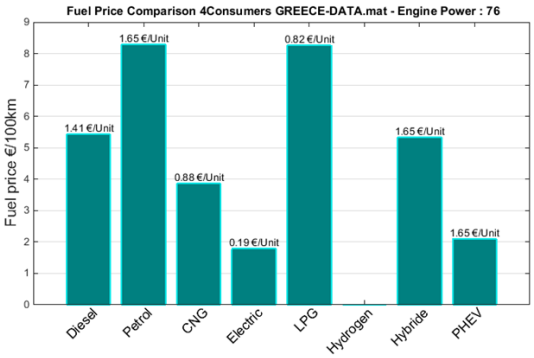


Figure 13. Fuel Price Comparison Bar Graph for Greece.

Regarding the location of the fuel prices, options of displaying the different fuel prices either on the fuel station totem or at the pump were proved economically unattainable and, in some cases, they did not comply with the national regulation framework. In case of Greece, FEK 2983 B/30-08-2017 defines precisely the exact format of the information, which will be displayed on the totem and mentions that the necessity of displaying the provided fuel types only. Therefore, it is not feasible to perform any modifications on the totem in the framework of this PSA action. In addition, while the display of fuel prices at the receipt offers an economically more convenient technique, the impact on the consumers is expected to be inadequate. Therefore, the proposed location for the fuel price comparison information to be displayed is an advertising monitor. This monitor / screen will be placed in sight of consumers while all safety precautions and relevant legislation will be reviewed and applied.

This option provides significant benefits. Firstly, fuel prices content can be extracted from the website and be displayed in real time as well as be up-to-date

without additional costs. Secondly, the visualization of the fuel prices, including tables, diagrams and any supplementary feature can be designed, tested and established effortlessly and instantly. Thirdly, the display of the website will promote its importance and will leverage consumers to trust and to use it. Thus, an advertising monitor is proposed to be utilized for the fuel price comparison information to be displayed at filling/charging stations.

CONCLUSIONS

The present document is a well-studied approach of the Coordinator regarding the definition of the contents, format and location of the information on fuel prices to be compared and displayed at filling / charging stations.

Fuel price comparison information was optimized in terms of contents, format and location aiming achieve successful interaction with the consumers. It is critical to avoid misleading situations and allow an effective comparison among the available fuel types. In this line, both legal and economic issues and the consumer's point of view were investigated in national level. Thus, this manuscript proposes guidelines for the display of fuel price comparison information in filling / charging stations.

The future steps include an update of this deliverable presenting a common approach agreed on by all MS before the implementation of the pilot actions to test different options concerning format, contents and location of fuel prices for comparison at the filling stations (Activity 3).

DEGREE OF PROGRESS

This document is in line with the work proposed in the GA.

DISSEMINATION LEVEL

Public

Programme Support Action (PSA):
Assisting Member States in the implementation of a common methodology for alternative fuels unit price comparison in accordance with Directive 2014/94/EU

"FPC4Consumers"

Contract Number: MOVE/B4/SUB/2018-491/CEF/PSA/SI2.798275
Starting date of the project: 01/02/2019
Duration: 15 months

= Deliverable D3.1 =

"Action Plan, methodology for data exchange and harmonization"

AUTHOR

Author	Member States	Contact (e-mail, phone)
Ilias PASIOS	GREECE	h.pasios@yme.gov.gr
Antonis PEPPAS	GREECE	peppas@metal.ntua.gr
Chrysa POLITI	GREECE	chrysapol@metal.ntua.gr

CONTRIBUTORS TO THE DOCUMENT

Author	Member States	Contact (e-mail, phone)
Anni HYTTI	FINLAND	Anni.Hytti@traficom.fi
Paulien OFFICIER	THE NETHERLANDS	paulien.officier@rvo.nl
Nienke SMEETS	THE NETHERLANDS	nienke.smeets@minienw.nl

DOCUMENT CONTROL

Document version	Date	Change
V0.0	16/01/2020	Initial Version
V0.1	31/01/2020	Feedback received
V1.0	03/02/2020	Final Version

DOCUMENT DATA

Document data	Deliverable
Point of Contact	i) H. Pasios, Ministry of Infrastructure and Transport, Greece, email: h.pasios@yme.gov.gr ii) A. Peppas, National Technical University of Athens, Greece, email: peppas@metal.ntua.gr
Version	V1.0
Date	14/02/2020
Distribution list	All MS

DISSEMINATION LEVEL

Dissemination level		
PU	Public	**X**
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

DOCUMENT APPROVAL

Author	Member States	Status
Ilias PASIOS	GREECE	APPROVED
	CROATIA	APPROVED
Anni HUTTI	FINLAND	APPROVED
Anastasia GEORGARAKI Stelios STYLIANOU	CYPRUS	APPROVED
	FRANCE	APPROVED
	GERMANY	APPROVED
Nienke SMEETS	NETHERLANDS	APPROVED
Maria Alexandra NICOLAU	PORTUGAL	APPROVED
	SPAIN	APPROVED

CONTENTS

INTRODUCTION

The main scope of this document is to investigate the available options of establishing data exchange with the National Access Points (NAPs) and develop a harmonization method of the information acquired from FPC4Consumers project. According to Grant Agreement (GA), the Consortium will define a common method for transmitting FPC prices (€/100km) of alternative and conventional fuel types (see D3.3) through the NAPs based on predefined criteria. However, the Alternative Fuels Infrastructure Directive (AFID) and the GA do not oblige Member States (MS) to link the FPC data to the NAP. It has also yet to be determined, based on the information from the pilots, if making a link to the NAP is necessary in order to provide the information on the Fuel Price Comparison to consumers. Therefore, this Programme Support Action (PSA) will focus on assessing the link with the NAPs in terms of relevance and feasibility. In this context, a review of the available options for integrating FPC prices (€/100km) to the NAPs will be performed. Hence, this document will provide guidance and control mechanisms for the consortium and NAPs administrators in case of a future link of the FPC data collection with the NAPs.

1. MAIN CONSIDERATIONS RAISED FROM MS

According to ITS Directive (2010/40/EU), NAP is considered a tool for accessing, exchanging and reusing transport-related data. The NAPs appear in diverse forms, such as a database, data warehouse, data marketplace, repository, and register, web portal or similar, based on the type of data concerned and provide discovery services, for ensuring the effective transmission of the requested data sets. In this direction, the document presents the concerns raised for exchanging the fuel price comparison data with the NAPs.

In the framework of the PSA, this approach will be evaluated in order to provide valuable guidelines for future implementation of data exchange given the context of the AFID directive. In this context, the evaluation is focused in defining how relevant are the FPC prices (€/100km) to be included in NAPs, what is required for the proper implementation of the FPC prices and how this would benefit the consumers and the related stakeholders.

1.1 Relevance of information

The content of information, which is communicated to the consumers at pilot filling stations, consists of prices in € or national currencies per 100km for each fuel type available in MS and for selected vehicle segments (D3.3). This approach is currently under investigation and a survey is performed in order to evaluate the impact of this information to consumers' perspective in correspondence with alternative fuels. Thus, the findings of the pilot actions may affect the understanding of whether the planned fuel price comparison information is relevant for consumers.

At this point, fuel prices under the same unit are discussed to be presented to the NAPs in future. In this case, it is essential to ensure that this information is related to the transportation sector and the scope of NAP platforms. Currently, the NAPs in several MS have information related to traffic and multi-modal transport. Additionally, efforts are made in order for the NAPs to present information about the location of filling stations and the prices of the fuels that are provided there. This information is required to be accurate and up-to-date in order to avoid misleading consumers. On the contrary, FPC prices (€/100km) are indicative and intended more for educational purposes and thus very different by nature comparing to other information categories in NAPs. In addition, the 100 km price information is directly targeted at consumers and it is less relevant for third party users. Therefore, the accuracy is limited and they cannot be connected to the retail prices of any filling station in the MS. Taking this into consideration, FPC prices (€/100km) are slightly relevant to NAPs scope and further investigation is required if including them in NAPs is relevant for the FPC implementation without causing confusion to the consumers.

1.2 Feasibility of linking FPC prices to NAPs

The action of linking the FPC prices to the NAPs is divided in identifying the data sources and preparing the NAPs to host the prices. The collection of the input data needed for FPC price calculations is proved a challenging process during the PSA.

In this framework, each MS collects data manually in order to run the pilot actions and fulfil the requirements of the GA. For these purposes, several related stakeholders are involved acknowledging that these actions are performed under the support of the European Commission. However, defining data sources to provide input information continuously and calculating the FPC prices (€/100km) on a regular basis and preferably automated is still under investigation from the consortium. In specific, for the case of the Netherlands, this information cannot just be used by third parties, as it needs a disclaimer and context. Stakeholders in the Netherlands also made clear that the government should communicate the 100 km prices. Accordingly, there are several issues regarding the information sources, including the diversity of data formats from different sources and the lack of sources for prices at commercial electricity charging points. In specific, no availability of real-time prices for all fuels, no harmonised segmentation for all MS and frequency update of reference vehicles compose potential issues of establishing an exchange of FPC data with the NAPs.

On the other hand, existing NAPs are not currently able to support the transmission of FPC prices. Several actions are required in order to prepare the NAPs to host this information. Indicatively it is noted that the Greek does not currently comprise the information categories for fuel prices. Therefore, it is essential to investigate – based on all insights collected from the consortium, pilots, stakeholders, consumers, project discussions, etc. – the benefit of sharing the 100km price in a national database taking into account all matters discovered during the PSA.

2. METHODOLOGY FOR DATA EXCHANGE AND HARMONIZATION

Activity 3 aims to prepare the ground for displaying FPC prices (€/100km) in terms of format, contents and location effectively. In this direction, related actions include the definition of FPC prices (€/100km), the testing of the variable options at filling stations (D3.3) and the development of a portal/online tool for the transition of fuel prices (D3.2). Accordingly, this information is examined to be included in the NAPs for alternative fuel pricing as well as conventional fuel pricing, as stated in GA. This step involves the implementation of tests in order to validate that the requirement of accessibility and data format are met as well as to investigate how frequently the dynamic updating of data needs to be applied. Therefore, this section introduces the key points that need to be deliberated in case of linking the FPC prices to the NAPs.

2.1 Collection of data

Data collection includes yearly statistics of national fleets and average fuel prices (€/fuel unit) over maximum the last calendar quarter prior to the time of calculations. This information is required for calculating FPC prices (€/100km) based on the common methodology for fuel price comparison (to be described in D6.3 Final Report). In the framework of this PSA, the collection of relevant data is performed in MS level. Potential data sources include statistic organisations, mobility stakeholders and fuel retailers associations.

2.2 Quality criteria

One essential issue to be addressed is data quality. According to the current NAP policy, the owner of data collection undertakes the responsibility of the collection content in terms of correctness, reliability and validity. In the context of this PSA, the participating organisations of each MS will collect, validate and disseminate the data collection for FPC project purposes. Therefore, the assignment of data ownership will be performed at the MS level.

2.3 Communication with NAPs

Regarding the delivery of FPC data to the NAPs, two options have been identified. The first option is to send and store the FPC prices (€/100km) to the NAPs as a data collection. In this line, the responsible authority/organisation requires to collect and form the data into a metadata file and provide them to the NAP administrator under specific Metadata Creation Guidelines. These guidelines were developed by relevant stakeholders in Austria, Germany and The Netherlands based on the Coordinated Metadata Catalogue in the framework of EU ITS Directive 2010/40/EU. This process will support the harmonization of metadata as well as the utility and interoperability of both datasets and the NAP platform itself.

However, the most suitable way to implement this communication would be to avoid storing redundant data and provide links to the NAPs. This approach focuses on connecting the portal / online tool, which will be delivered in Activity 5 of this PSA, with the NAPs platform. Thus, NAPs will be able to display FPC prices (€/100km) while saving storage space and computational costs. However, this

approach requires the proper preparation of the portal / online tool to be able to deliver data to the NAP on a regular basis.

In this direction, an alternative would be for the NAP to simply provide a link to the location where the data is stored, namely the national online tool where the FPC and all the other relevant information can be found. This way, the data itself does not have to be delivered to the NAP. In the Netherlands, the NAP does not store/own data but provides information on where data can be found.

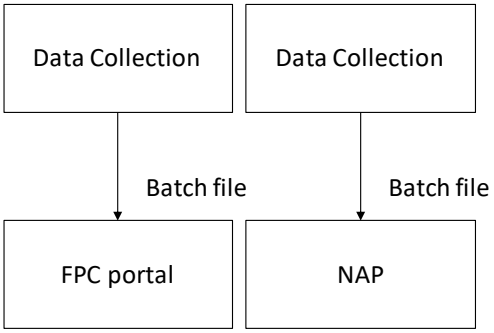


Figure 14.Data delivery to the NAP - Option 1

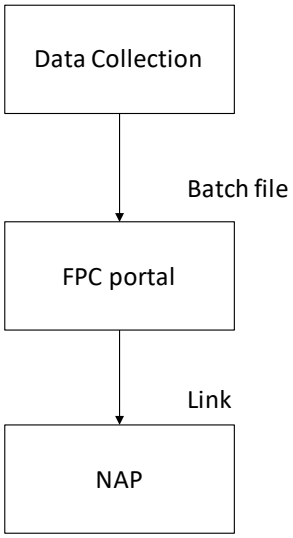


Figure 15.Data delivery to the NAP - Option 2

These steps should be further studied during the PSA and should remain open to be decided on a national level. The consortium will focus on evaluating the available options and provide advantages and disadvantages. Nevertheless, participating MS support an approach that examines the different options and their feasibility for data exchange and harmonisation of the information acquired from the project.

3. ACTION PLAN

Fuel price comparison under the same unit affects consumers' perspective on selecting and purchasing a new vehicle powered by alternative fuels. According to GA, this data is examined to be included in NAPs for facilitating consumers' information and increasing the level of consumers' environmental awareness. However, this assumption needs to be discussed and backed up by data gathered from the pilot actions. Simply having a link to the NAP will neither increase consumer awareness nor provide them with more information. Additionally, having the data in the NAP does not mean that they will be automatically transmitted from the NAP to fuel stations. Therefore, it is essential to be clarified what will be achieved by making a link to the NAP. However, initial planning is foreseen in case of future implementation.

The first stage to be accomplished is the definition and validation of the fuel prices which will be included in NAP datasets. Based on deliverable D3.2 the FPC prices for at least three segments and available fuel types will be displayed on the portal/online tool for each MS in the framework of this PSA. These prices will have been estimated and evaluated by the responsible authority/organisation in the MS level, who collected the related input data.

In addition, the FPC prices (€/100km) are dynamic data and they are planned to be updated every calendar quarter prior to the time of calculations. However, this frequency is under investigation and it will be tested in terms of reliability and consistency during pilot actions (also examined in the online questionnaire survey, Activity 2).

The second stage to be defined is the official authority to undertake the task of data ownership and distribution in MS level. During this PSA, participating MS are contracted to perform all necessary actions in relation to data collection and distribution. However, future implementation requires transparency in defining the responsible organisations and the economic resources to support this action.

The last stage is the establishment of communication between the FPC data provider and the NAP. As mentioned before, three options have been identified for this task. However, the selection of the communication option depends on the selected authority to implement the task and its availability on databases and resources.

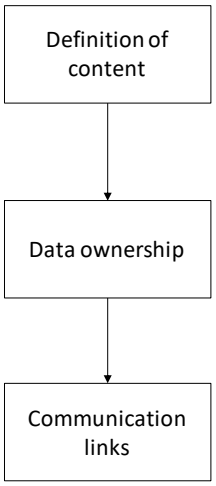


Figure 16. Action plan

CONCLUSIONS

The present document summarizes the main considerations of the consortium in relation to displaying fuel prices per 100km at NAPs. A key point to be addressed is whether this action will be beneficial for the implementation of the Fuel Price Comparison. Advantages and disadvantages will be set out based on the results of the pilot actions and the interaction with the relevant stakeholders. Obviously, it is important to avoid bringing additional burden and bureaucracy to national administrations or fuel retailers. It is noted that severe drawbacks would appear in case of immediate application of this action.

Furthermore, an initial approach of identifying a method for data exchange and harmonization of the information related FPC4Consumers project is introduced. Fuel price comparison presents potential for affecting consumers' decision on purchasing new vehicles powered by alternative fuels. In this direction, the benefits of future integration of FPC prices (€/100km) in order to facilitate the implementation of the obligation in art 7.3 of the AFID on NAPs is investigated and the main aspects for this integration, are summarized. However, both the AFID and the GA are not oriented in linking the FPC data to the NAP. Therefore, this deliverable will serve as a fundamental stage of indicating potential thresholds and providing guidance in case of exchanging data with NAPs.

DEGREE OF PROGRESS

This document is in line with the work proposed in GA.

DISSEMINATION LEVEL

Public

Programme Support Action (PSA):
Assisting Member States in the implementation of a common methodology for alternative fuels unit price comparison in accordance with Directive 2014/94/EU

"FPC4Consumers"

Contract Number: MOVE/B4/SUB/2018-491/CEF/PSA/SI2.798275
Starting date of the project: 01/02/2019
Duration: 15 months

= Deliverable D4.2 =

"Guidelines for boosting user acceptance on the proposed transparent fuel pricing system"

AUTHOR

Author	Member States	Contact (e-mail, phone)
Ilias PASIOS	GREECE	h.pasios@yme.gov.gr
Antonis PEPPAS	GREECE	peppas@metal.ntua.gr
Chrysa POLITI	GREECE	chrysapol@metal.ntua.gr

CONTRIBUTORS TO THE DOCUMENT

Author	Member States	Contact (e-mail, phone)
Isidoro ROMERO	SPAIN	ijromero@miteco.es
Paulien OFFICIER	NETHERLANDS	paulien.officier@rvo.nl
Juhani LAURIKKO	FINLAND	juhani.laurikko@vtt.fi
Anni HYTTI	FINLAND	Anni.Hytti@traficom.fi
Tomislav ŽIDOV	CROATIA	Tomislav.Zidov@mmpi.hr
Rui BORGES	PORTUGAL	Rui.Borges@dgeg.gov.pt
Iulia DOLGANOVA	GERMANY	Iulia.dolganova@bmwi.bund.de
Cecile DUMAS	FRANCE	cecile.dumas@developpement-durable.gouv.fr
Anastasia GEORGARAKI	CYPRUS	ageorgaraki@mcit.gov.cy

DOCUMENT CONTROL

Document version	Date	Change
V0.1	05/06/2020	Initial Version
V0.2	15/06/2020	Updated version, **ES**, **NL**, **FI** and **HR** input included
V0.3	17/06/2020	Updated version, **FR** input included
V0.4	19/06/2020	Updated version, **PT** input included
V0.5	22/06/2020	Updated version, **CY** input included
V0.6	25/06/2020	Updated version, **DE** input included
V1.0	25/06/2020	Final Version

DOCUMENT DATA

Document data	Deliverable
Point of Contact	i) I. Pasios, Ministry of Infrastructure and Transport, Greece, email: h.pasios@yme.gov.gr ii) A. Peppas, National Technical University of Athens, Greece, email: peppas@metal.ntua.gr
Version	V1.0
Date	10/07/2020
Distribution list	All MS

DISSEMINATION LEVEL

Dissemination level		
PU	Public	**X**
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

DOCUMENT APPROVAL

Author	Member States	Status
Ilias PASIOS	GREECE	Approve
Tomislav ŽIDOV	CROATIA	Approve
Anni HYTTI	FINLAND	Approve
Anastasia GEORGARAKI	CYPRUS	Approve
Cecile DUMAS	FRANCE	Approve
Iulia DOLGANOVA	GERMANY	Approve
Nienke Smeets	NETHERLANDS	Approve
Rui BORGES	PORTUGAL	Approve
Isidoro ROMERO	SPAIN	Approve

CONTENTS

INTRODUCTION

The deliverable presents the acquired experience from pilot actions in relation to Fuel Price Comparison (FPC) displays. The participating Member States (MS) performed tests at filling stations, in the framework of Activity 3, in order to define the optimum way to display the FPC information. All actions were oriented to gain understanding on consumers' opinions regarding fuel price comparison information. Initially, the overall objective of the analysis was to result in united guidelines to be implemented to all MS. However, it is proved that the diversity between the MS demands an approach that provides multiple options for implementation. Therefore, this document presents the core principles of the implementation of Art. 7.3 of the Alternative Fuel Infrastructure Directive (AFID), as well as the specifications, observed at the participating MS.

1. CONSUMERS PREFERENCES BASED ON PILOT ACTIONS

Pilot actions were focused on investigating the most appropriate way of displaying the FPC at the filling stations. In the course of the pilots, consumers were asked about the displays they would prefer and the best location to place these displays. The consortium decided not to provide the respondents with any options but to record all their answers (open questions). Due to this, a complete evaluation of the respondents' spontaneous preferences was conducted taking into account all the influential factors, including the design of the display, the information displayed, the mean of display and the location.

1.1 Content of FPC display

Respondents commented on the information displayed during pilot actions. The majority understood the purpose of the display; to facilitate the comparison of the different fuel prices. However, it was observed that some respondents found there is too much information to comprehend and ergo they suggested presenting the least information needed. In this regard, the displayed information should be **brief** and **direct** in order to ensure consumers' engagement and avoid confusing them or losing their interest in reading.

1.2 Design of FPC display

Regarding the design of the **FPC displays**, the data were presented in a table form, using different fuels and vehicle icons for the different segments. The display included the logos of the Programme Support Action (PSA), the European Union and the organization responsible for the FPC implementation. After asking whether respondents noticed the display in the first place or if the information was easy to understand, the respondents were asked whether they would prefer another type of display. Here, instead of functional aspects of the display content, respondents suggested improvements to the visuals of the displays. Among the collected answers (**2418** in total), the most common addressed are the following:

- Improve appearance (**10.9%**)
- Brighter colours (**3.7%**)
- Larger letters (**2.3%**)
- Maybe use figures, bars, graphs (**1.4%**)

Some respondents indicate that the display could be improved by choosing more appealing, brighter and striking colours. Thereby, the display would capture attention, raise consumers' awareness and be more visible. In addition, some respondents suggested specific colouring each fuel type presented.

Regarding the writing of FPC, consumers mentioned the need for clear, large letters that will allow the visitor to read the FPC display immediately and understand the communicated message. They also pointed out that adding the unit (€/100 km) to all numbers would facilitate the understanding of the prices. Therefore, the FPC display should be **distinctive**, with intense colours and clear font.

1.3 Format of display

The pilot FPC format was based on presenting a table with prices of the different fuels and vehicles' categories. The display of either one, three segments' fuel prices or both was tested in the course of the pilot actions. In the pilots, the majority of respondents are able to comprehend faster the FPC of one segment. This is the case in the majority of the participating MS. On the contrary, presenting both options at the same filling station, which was tested at Finland, Germany, Croatia and the Netherlands, was proved incomprehensible according to Figure 17. Regarding the three-segment display, even though the majority of respondents in the overall data, considered it difficult to understand, there were MS such as the Netherlands, which expressed a preference for this option, as their country-specific results give another impression. The three-segments allow the display of more AF prices, such a hydrogen an LPG, which are not necessarily represented in the best-selling segment. Hence, the fuel price comparison displays should include the information of **at least one vehicle segment**. However, MS will be able to present three segments optionally.

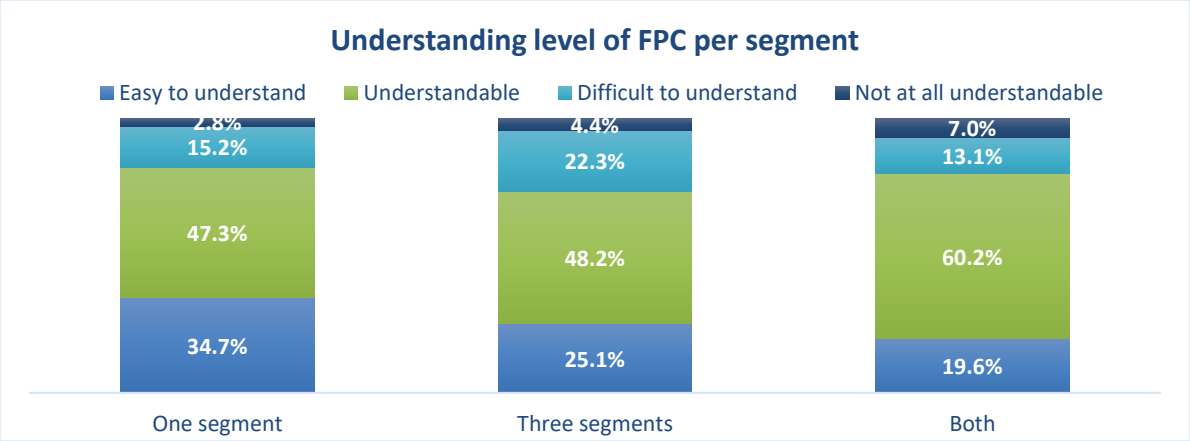


Figure 17 Pilot's interviews – Q2 per segment(s) (3)

1.4 Means of display

The demonstration of FPC was thoroughly investigated by the consortium in the framework of the PSA. Several display options were evaluated in terms of feasibility (i.e. cost, legislation) and effectiveness (i.e. impact on consumers). During pilots, the options tested included (1) Informative sheets and leaflets, (2) Posters, Banners and Plaques and (3) Monitors. However, not all options were tested in all MS due to different operating environments. Each MS selected the most suitable option(s) for their case. The evaluation of these options is based on how noticeable they are and on the responses of the survey consumers, who indicate the most preferred way to present the FPC.

The overall results from all the participating MS show that option (2) is the most noticeable mean of displaying the FPC at filling stations. The posters, banners and plaques were appealing depending on the location, to consumers who visited the filling stations and attracted their attention. In parallel, when respondents were asked to express which display, they would prefer, the majority voted for the

[3] Basis of one segment (100%): 1757 responses| Basis of three segments (100%): 1712 responses| Basis of both (100%): 1617 responses

Monitor (**39.4%**) or the Poster (**38.4%**). The Leaflets option is acceptable with a percentage of **19.8%**.

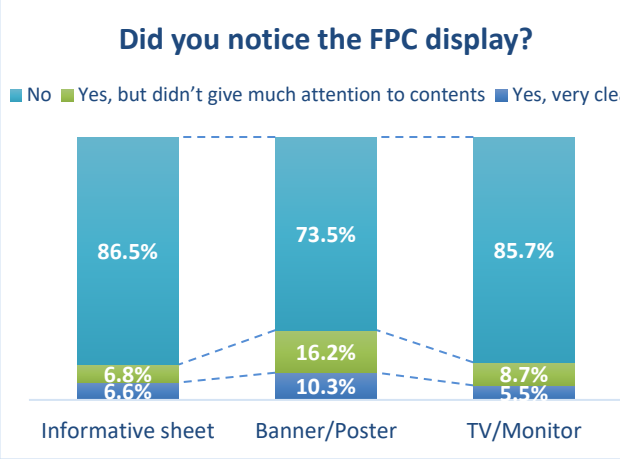


Figure 18 Pilot's interviews – Q1 per display material (4)

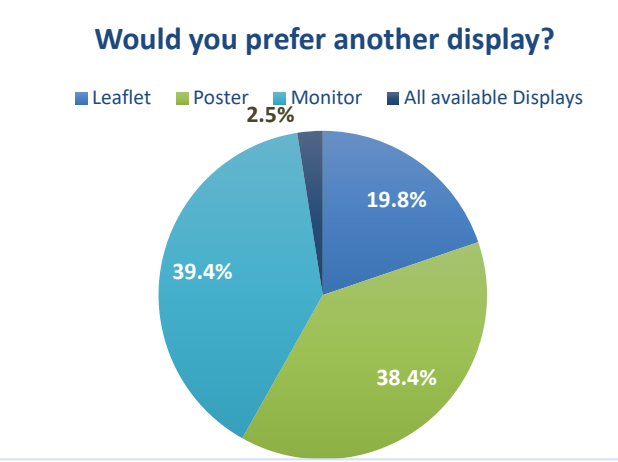


Figure 19 Pilot's interviews – Q3 (5)

Therefore, the FPC display should be presented on either printed material **Posters, Banners and Plaques** or digitally on **monitors/TVs**. In principle, these alternatives seem the most suitable from the researched options but it needs to be evaluated nationally which best suits the legislation and local business environment.

1.5 Location of FPC displays

The best location for the FPC displays at filling stations was also studied during pilot actions. The participating MS tested variable locations at the station in order to both accomplish noticeable locations for the consumers and feasible non-interfering options for the filling stations' operators. It is out of scope of this PSA, given the underlying EU legislation, to test the FPC in other locations than the filling stations. In summary, the tested options were the following:

- Directly at the pump (i.e. poster, informative sheets/leaflet, banner, monitors)
- Outside of the shop (i.e. poster, banner, monitors)
  - Outside entrance
  - On window
  - On a door
- Inside the shop (i.e. poster, banner, informative leaflet, monitors)
  - Inside entrance
  - At the cashier/ money receiver
  - On a wall

It is noted that not all options were applied to all pilot filling stations due to the different tested pilot schemes and the specific features and national regulation of each MS. In terms of visibility, the abovementioned locations were evaluated

[4] Basis of Infor. Sheet (100%): 891 responses| Basis of banner/poster (100%): 2651 responses| Basis of TV/monitor (100%): 651 responses

[5] Basis (100%): 1123 responses

separately based on whether the respondents noticed the FPC. The overall compiled results (Figure 20 Pilot's interviews – Q1Figure 20) show that, when the FPC was placed on a wall (poster) inside the filling station's shop, almost **50%** of the respondents that were presented this option noticed it. The options of outside the entrance of the shop (**35.9%**) and at the pump (**28.0%**) were also promising locations (Figure 20).

Furthermore, based on the answers provided by the respondents in relation to the best location to display the FPC, the consolidated results (Figure 21), illustrate their preference to see the FPC near/at the pump with a share of **65.9%**. Complementarily, it is suggested by the respondents to place the FPC inside the entrance of the shop (**13.8%**), on a wall (**7.1%**) and at the cashier (**6.3%**).

Taking everything into account, the most appropriate locations for displaying the FPC would be at the **fuel pump**, near the station's **shop entrance**, on **a wall** inside the shop or **near / at the cashier**. Each MS and each filling station should select the display location based on the following options and its specific characteristics and regulations at the national level.

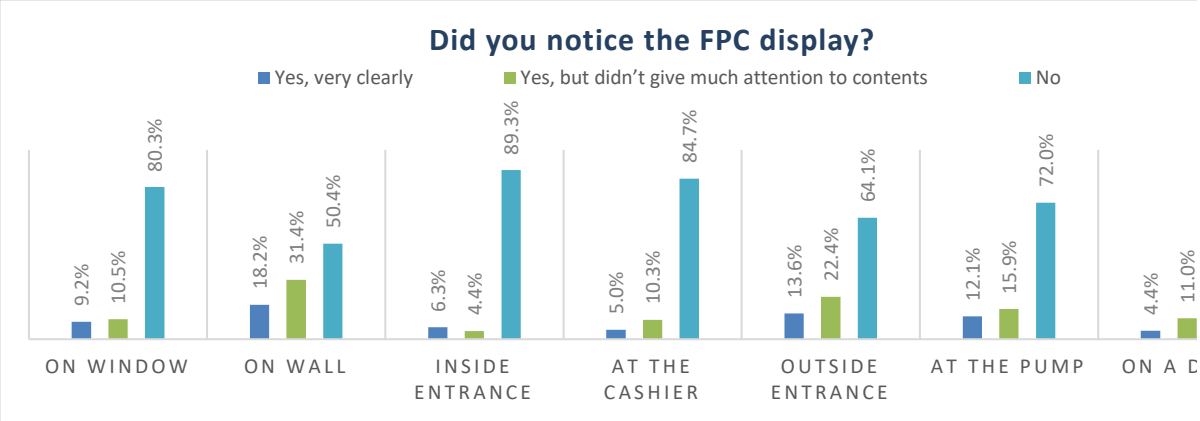


Figure 20 Pilot's interviews – Q1 per tested location (6)

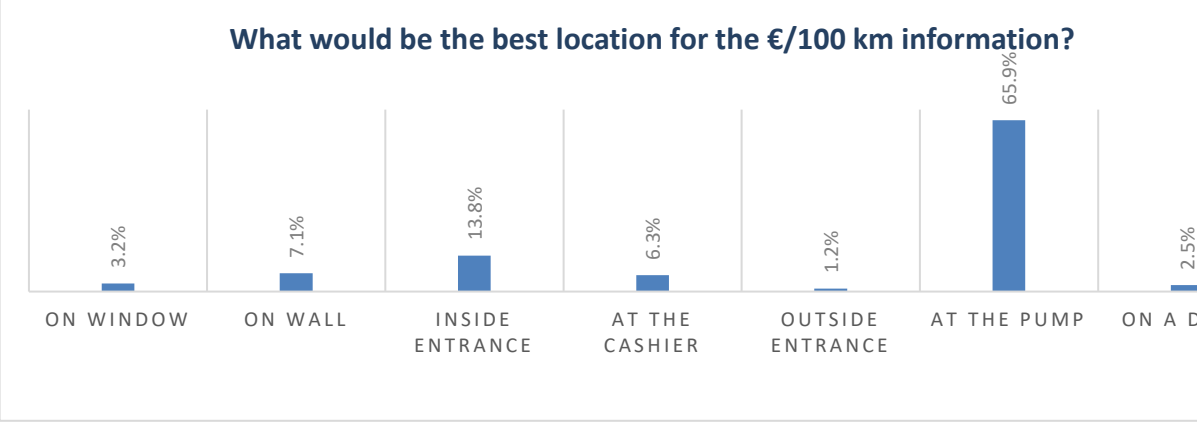


Figure 21 Pilot's interviews – Q4 (7)

[6] Basis of at the pump display (100%): 708 responses| Basis of outside the entrance display (100%): 1466 responses| Basis of on a window display (100%): 879 responses| Basis of on the door display (100%): 1416 responses| Basis of inside the entrance display (100%): 459 responses| Basis of at the cashier display (100%): 1747 responses| Basis of on a wall display (100%): 121 responses

[7] Basis (100%): 2688 responses

2. NATIONAL PERSPECTIVE ON IMPLEMENTING THE FPC

The pilot implementation of the Art. 7.3 of the AFID, within the framework of the PSA, revealed differences between the participating MS in relation to the business environments, the perception of Alternative Fuels (AF) and the national regulations, and in survey results. For instance, it was clear from the early stages of the PSA that the penetration of the AF in the local and national fuel markets varies significantly, and varies in type i.e. consumer versus business market. Accordingly, the consumers' knowledge and use of AF differ as well. Hence, each MS is required to take into account its specific characteristics in order to implement the FPC effectively.

An essential step for implementing the FPC is to **disseminate** the purpose of the action simultaneously with the demonstration of the FPC displays at filling stations. Thereby, this will raise consumers' awareness about the displays and they will understand more easily the FPC. It is evident that the dissemination actions during the PSA, especially with stakeholders, led to beneficial comments/suggestions for the PSA and the FPC display approach.

The experience acquired during the PSA at the national level is presented to the sections below in order to facilitate the implementation of the AFID for those MS that did not participate in the PSA.

2.1 Greece

In Greece, the pilot actions were implemented at filling stations located both at TEN-T corridors and urban areas. The respondents were introduced to posters and banners presenting either one or three segments, placed at the entrance of the shop and near/at the pump. The results showed that placing the FPC at the pump was more effective since the consumers would notice the FPC even if they didn't visit the filling station's shop. In fact, in Greece a great share of consumers never visits the filling stations' shop and ergo placing the FPC there would affect negatively the results of the FPC. Respondents also showed a preference for the price comparison of one segment's prices. The one-segment approach allowed them to focus on fuel prices and not be distracted by the deviations that occurred between the different segments. Also, the one-segment prices were correlated to the fuel prices and they were easier to memorise. In terms of design, the colours used for the pilot FPC display based on a pale-palette of blue and green. The respondents indicated that brighter colours and large clear fonts would improve the FPC display and increase the FPC influence on consumers. It is evident that the more appealing an advertisement is the more it affects the consumers. In conclusion, the general guidelines are in-line with the results acquired from Greek pilots and will facilitate the implementation of the AFID in the long run.

2.2 Croatia

In Croatia, the pilot activities took place at 10 filling stations located both at TEN-T Core and Comprehensive corridors and urban areas, aiming to cover all regions of Croatia. The general concept was to present either one or three segments on posters, banner, monitor and informative sheets. Activities took place in the filling station shops where the method was tested on a monitor, at the entrance of the shops (with posters and banner) and at the pumps (informative sheets). At the same time, leaflets were distributed at filling stations where a pilot project was conducted with information on the methodology for comparing fuel prices. The

results showed that a large number of respondents prefer the FPC at the pump when refuelling vehicles because they have enough time to study the FPC information without being distracted by other information through advertisements. Since most respondents in Croatia enter the store for payment after refuelling vehicles, the monitor is also one of the most acceptable options for PFC. Respondents also showed a preference for the price comparison of one segment's prices because it seems more memorable. Most respondents find the comparison of fuel prices understandable. They believe that such information could influence their choice when buying a new car and are open to using alternative fuels, but they believe there are a number of obstacles to a more pronounced transition to alternative fuels.

2.3 Finland

In Finland, the pilot actions took place at 10 filling stations both at TEN-T Core corridors and urban areas. Activities in all stations took place only in the outside area, where a four-sided stand, or a "mini-totem", of 2.5 m height and 0.6 m width was used as the FPC display. In this display, two of the sides had the 1-column option and two had the 3-column option, and the respondents were asked to choose their favourite of these. In most cases, there were two stands in use during the action, but in a few selected cases only one stands was used. The stands were primarily located near the pumps to a place to which customers filling their tanks should have a clear sight. However, in a few cases one display was placed very close to the entrance to the indoor space of the station, while the other was near the pumps.

The reasoning behind focusing the activity to the outside area was that some stations that were agreed to be used as pilot scenes did not have any indoor space at all. Secondly, it was known beforehand that regardless of the type of the station, most customers pay their fill-up beforehand at the automatic teller machine located right at the pump or very close to it. This way the amount of candidate respondents was expected to be at maximum.

As a general result and regardless of the station location or type, respondents very seldom paid any attention, or even noticed, the FPC-displays, even if they were fairly large (2.5 m x 0.6 m), and distinctively different from the other displays at the stations. About half of the respondents did not notice the display before the interviewer pointed it out to them. There was a slight tendency that in smaller stations, where the number of pumps and the area was smaller, the displays were noticed more often than in large stations.

Overall, the way of making price comparison in €/100km for each fuel option seemed easy to take in, as almost 90% of the respondents had no difficulties to comprehend, what the message of the display was. Of the 1- or 3-column options, the majority (nearly 60%) favoured the simpler 1-column type for its clarity and ease of understanding.

In Finland, we decided to include the new fuel labels in the FPC displays, as the labels are also part of the AFID and its implementation. It appears that the new fuel labels are not very known yet, which is quite understandable, as they are a relatively new item, and have been officially in use since October 12, 2018.

When asking for feedback on the display, respondents mentioned that the colour scheme used in the displays was quite anaemic, and brighter colours could increase the observation rate. Also, affixing the unit (€/100km) to each of the numbers, instead of displaying it as a general term, could make the message clearer. Some

respondents also mentioned graphical elements like bars as a way to ease the quick grasp of the information.

Respondents in Finland had no clear preference for the placement or size of the display, but both a large totem or a wall poster, and smaller, near-pump display or monitor were chosen by some 43 or 44% of the respondents, while nearly 10% could not say, which was the best.

The response to the question whether this kind of price information could play a role when the respondent makes the next purchase option regarding cars the response was quite positive, as over 60% of the responses were either "definitely yes" or "maybe", and only about 30% responded that "no, not at all".

2.4 Cyprus

In Cyprus the pilot action was implemented in February of 2020 in 10 filling stations located in urban areas and or TEN-T core. The filling stations were located in all areas under the effective control of the Republic of Cyprus and represented all oil distributing companies. The filling stations were selected based also on the amount of their turnover. The survey took place in all pilot implementing filling stations with 407 responders. The information was displayed in one segment in order to make clear the fuel price comparison information between fuels and avoid confusion of too much information. Posters and banners were placed mostly in the outside area and less in the inner area. Regardless of the location of the information displayed, the majority of the responders did not notice the fuel price comparison display (69%) and even if they noticed, they did not paid much attention to its content (16%). Of those noticing the information, the vast majority stated that it was easy to understand or understandable (86%). Only 14% of the responders found difficult to understand the information or not at all understandable. Most of the responders would not prefer another display and did not provide any suggestions for the location. Some suggestions varied between several location options with most prevalent the options near/on the petrol pumps and at the entrance of the petrol station. For the critical question, whether the fuel price comparison display would influence their choice at the next car purchase, 44% of the responders would not be influenced at all, 34% would definitely be influenced and about 20% may be influenced.

2.5 France

The **offline survey** was conducted in February 2020 with 1703 respondents interviewed in 14 filling stations located in the TEN-T network or in urban areas. Tested displays were non-segmented A5 flyer, segmented and non-segmented A2 poster, and monitor (segmented and non-segmented). **Considering the format of the fuel price comparison display, it must be pointed out that**:

- A5 flyers were displayed in the shop or on a pump. **When placed on a pump, the A5 format corresponds to the maximum size that can sometimes be used due to lack of place**. **Thus, the displayed information must be minimised**. Too much information will drown the main message to be carried, that is to say the attractive status of alternative fuels prices.
- **The fuel price comparison, when displayed on an advertising screen, will not be permanent in a number/most of cases.** This option will moreover have financial burden (reduction in the display

duration of advertisement). This financial burden will have to be assessed if this option is selected.

Other main findings of the offline survey are:

- 13% of respondents noticed the display (22% in the best case, which corresponds to A5 flyer when displayed on a pump),
- About 3 respondents out of 4 found the display easily understandable (particularly A5 flyers),
- Non-segmented displays are the ones considered as the most easily understandable (strongly driven by A5 flyers),
- More than one respondent out of 2 consider that the most suited location to display the fuel price comparison are the pumps,
- Non-segmented displays are considered to be more accurate considering prices assessment,
- About 3 respondents out of 10 think that the fuel price comparison could influence their choice when buying a new car.

The highlights of the offline survey are that about 1 respondent out of 8 noticed the fuel price comparison, and that the best location to display the fuel price comparison from a consumer point of view is the pump. In addition, survey results clearly identify the following consumers' common way of thinking: "pump = price & shop = service". However, it is critical to bear in mind that consumers do not have our expert comprehensive vision on the topic. We have to take a step back towards surveys results to set up a mechanism which has to be effective, relevant and proportionate. Moreover, this mechanism must fit in filling stations landscape, and must not create excessive burden for operators.

France position is that the obligation should impose the least possible burden whilst raising the consumers' awareness to the attractive prices of alternative fuels. Also, several options regarding the display mode must be offered to operators (in view of matching stations configuration in particular)**. Also, the frequency of display updates should be extended to more than 3 months.** An update on an annual basis is preferred as it has the benefit of harmonising the data reference periods of both fuel prices and car registration/consumption.

It must be highlighted that fuel suppliers want to avoid a display on the pump at all costs. Their main arguments are:

- The lack of space (unpractical if to be shown on each pump - too much burden),
- The practical aspect of this location display (it is the one that requires the greatest effort in terms of maintenance due to potential related hazards/environmental impacts),
- The confusion caused in consumers' minds if there is a coexistent display of indicative prices and prices charged.

In view of these arguments in particular, fuel suppliers ask for flexibility on where to show the fuel price comparison in the pump area if this is the selected location.

2.6 Germany

In Germany, during the on-site survey, 1,055 people at 15 petrol stations were interviewed about the effectiveness of different means of communication (posters, roll-up/banners, pump toppers, monitors, brochure stands, magnetic strips, payment plates, customer stoppers). There were clear differences in perception between the individual means of communication. The money tray directly at the counter was named the most perceived means of communication with 19%. The second most perceived display option was the poster with 12%. The monitor and magnetic stripe on the petrol pump received the least attention, respectively 6% and 3%. At the same time, when asked about the most suitable place for the FPC display, 65% of the respondents preferred the fuel pump. Such a result could be explained by the fact that the consumer spends the longest time at the pump and is mostly undisturbed. In addition, the density of other information is the lowest at this location. The money tray despite its visibility was not favoured by the respondents due to the presentation characteristics such as size and legibility. From this, it can be deduced that the placement of the fuel cost comparison could be done with a suitable means of communication at the petrol pump or clearly visible in the cash register. In Germany, all communication means used during the pilot action presented the results for three vehicle segments, but for the further national implementation of the FPC, the one-segment approach will be favoured.

During the pilot phase, 10% of consumers noticed the additional fuel price information. This apparently low perception level must, however, be seen in context, considering also the attention being paid to other information and adverts. First, most consumers were confronted with the information only once; second, the means of communication were installed at very different places; and third, the price displays had to compete with numerous other adverts. It would take more time to find out how many consumers actually notice the display. This means that a perception level of 10% must not be regarded as negative, especially in view of the short pilot phase of approximately two weeks.

On the basis of the outcome of the German pilot project, the following recommendations can be made for the location and type of the harmonised price display:

- The harmonised price/cost information should be made accessible for consumers where they can best notice it. Consumers can best notice the information when it is displayed on the fuel pump. As customers spend the longest amount of time at the fuel pump, the price display should be clearly visible from the pump.

- The price information should be clear and easily understandable. Comprehensibility thus takes priority over completeness. This means that it may be useful to reduce the number of displayed alternative fuels.

- In order to be noticed, the information should be as large as possible. It would be ideal to have a screen of a minimum size that raises customers' awareness by means of alternating pictures.

- From the customers' point of view, a digital display on the fuel pump would be the most effective location. At most filling stations, however, this will not be possible without investing time and money (except when also used for advertisement purposes), and at most filling stations the measure is not likely to be implemented in the coming year. The alternative would be a stand-up display on the fuel pump that is large enough (at least A3). Another alternative would be a large stand-up display at or in front of the fuel pump which can be easily noticed by customers. Both alternatives would be relatively inexpensive.

- The clear price display at filling stations should be complemented by digital information provided on an official website. Access could be made available via a QR code.
- If screens on fuel pumps or in the shops of filling stations become more common, it might be an effective measure to display alternately adverts and price information on the screen. This would have the advantage of attracting consumers' attention and at the same time saving time that would be necessary to update information.

2.7 The Netherlands

During the pilot action, a survey was set out amongst 423 consumers and 8 interviews were held with the filling stations. Ten filling stations located in the TEN-T network or in urban areas took part in the pilot. The results of the survey were discussed with the relevant stakeholders. The NL notes first of all the following:

- The results in the overall data versus the national data can differ. This highlights the necessity to take into consideration the national context when implementing;
- The actual FPC was seen clearly by just 2% in the NL; 6% did see it, but did not give it much notice; it should be noted that the majority was not planning to buy a car within the next two years;
- Nearly 90% found the FPC understandable or easy to understand;
- Consumers prefer either a poster or a monitor when displaying the FPC; the results show that a poster is seen significantly better than a monitor;
- 99% indicated correctly what the FPC was showing; the majority beliefs the FPC fits their own consumption;
- The difference in understanding the FPC on a 1 segment of 3 segment display is not significant for the NL;
- 66% beliefs the FPC will not affect its future purchasing choice; the type of display does not affect this;
- The majority beliefs the FPC gives an incomplete overview of the relevant costs as it only addresses one;
- The interviews with the filling stations and the execution of the pilot have made clear that the three-monthly update of the FPC on location is costly and complex.

Given the limited effect of the FPC on consumer behaviour, the NLs aims for a proportionate implementation that matches the findings during the pilot. To enable this the following is taken as starting points:

- The compliance costs for the filling stations will be kept low. Meaning: a focused scope of the target group, use of existing techniques and the possibility for filling stations to choose between type of display (poster or monitor) and the location in the shop;
- The type of display used should not increase the litter at the stations: flyers and informative sheets are not an option;
- The aim is to increase the effect of the FPC on consumer behaviour by ensuring that the relevant information is on the website, and by promoting the website through social media/ digital newsletters;
- The FPC cannot be shown at the pump itself due inter alia to local legislation;
- A three segmented display will be shown given the results for the NL, allowing to also include LPG and hydrogen.

Based on the reaction of consumers on the format itself, the NL looked into the following options:

- Use of brighter colours: this format will be adapted to this;
- Make explicit the aim of the FPC: during the pilot a disclaimer was added on the FPC given the concerns of the stakeholders. The results have made clear that the FPC matches current consumption. The new format will therefore address mainly the aim of the FPC, and will mark that the FPC gives a price indication only.

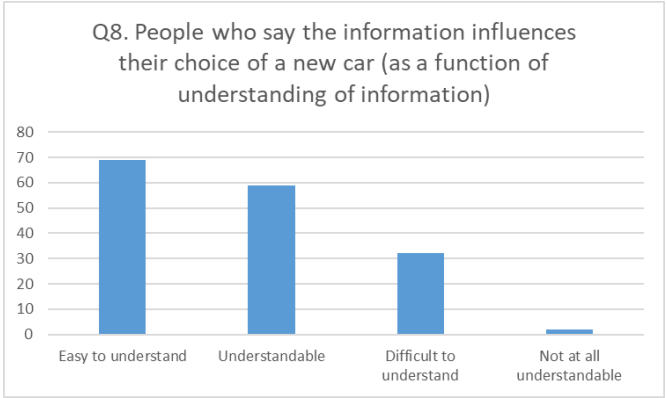
The NLs believes that when the AFID is evaluated, the lessons of this pilot should be taken into consideration. The NLs believes the FPC should primarily be communicated online and not at a physical location given amongst others the three-monthly update obligation.

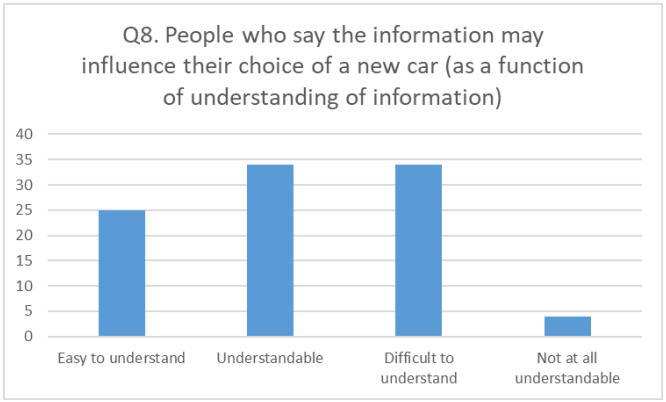
2.8 Portugal

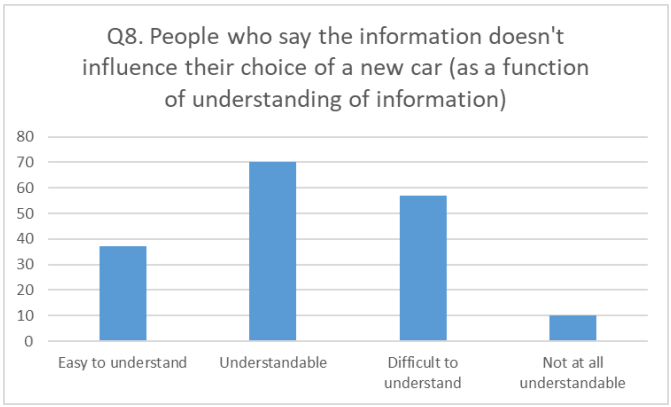
The pilot actions were taken in 12 filling stations in TEN-T network and urban areas, as required by the project contract. Of these 12 filling stations, 2 were located in supermarkets. In Portugal this type of filling station is very popular because they normally have the lowest prices in the market. They are normally smaller self-service stations with a drive-through cashier and selling mainly petrol and diesel.

The method used for the pilot action was based on testing all possible combinations of location, format and content. The one and three column price comparisons were produced in the form of large and small paper posters as well as electronic files for LED displays. The information was displayed at the cashier, on the wall and doors of shops as well as indoor and outdoor electronic boards. A few conclusions regarding the national results for the pilot test, which may differ from the overall EU results, should be highlighted:

1. The overwhelming majority of respondents (86%) did not see the information, independently of format or location;
2. Almost half of those who saw the information (47%) did so at supermarket pumps;
3. The majority of respondents (67%) found the information understandable (38%) or easy to understand (29%);
4. For the consumers exposed to the one column display, 45% found the information easy to understand and 33% found it understandable. For the case of the three column display only 12% found it easy to understand and 43% found it understandable.
5. There is a clear positive correlation between the stated influence of the information on the purchase of a new vehicle and the understanding of the information (see graphs below).







6. For the consumers exposed to the 1 column display, 33% say their consumption is similar to the displayed values, while for the consumers exposed to the three column display 39% say the consumption is similar.

From this we extract a few conclusions regarding the Portuguese case:

- The FPC display has to compete with a lot of other information and only in the supermarket pumps (that don't have a shop and therefore no publicity or products on sale) does it achieve a reasonable visibility. Apart from that these specific types of pump we find no clear option for format or location.
- Understanding of the information is easier for the one column display. Extra columns do not appear to add any significant gains to the consumer's perception.
- Understanding of the information seems to be crucial for achieving the purposes of the Directive i.e. creating a favourable consumer perception towards alternative fuels.
- Future implementation should take the necessary measures to increase public understanding of FPC.

2.9 Spain

In the case of Spain, social distancing measures which entered into force in March 2020 due to COVID19 sanitary crisis prevented the national coordinator to perform the pilot actions that were planned for April. These actions however will be performed as soon as the restrictions are lifted and results will be sent to the PSA coordinator.

Despite that, online dissemination activities were performed by the Ministry establishing a dialogue with relevant national stakeholders during the last months and collecting valuable feedback.

The representatives of the oil industry, which are the most affected by the implementation of art.7.3 expressed the following concerns:

- In the oil industry opinion, the objective of art. 7.3 should be helping the consumer in their car purchase decision, providing clear, useful and relevant information.
- Showing EUR/100 km information in the filling stations would cause doubts, confusion and disorientation in the users. Prices in different units, corresponding to different time periods and alternative fuels not sold in the filling stations would cause this confusion. As a result, the oil industry suggests these prices to be shown only in a web portal substituting the informative information with just a link to the webpage.
- Nevertheless, in the case that showing the EUR/100km information in the filling station is unavoidable (as it is), this information should comply with the following requisites:
    - Homogeneous information: Prices should correspond to the same distribution channel. For instance: electric domestic recharge price should not be compared with petrol price in a station.
    - Truthful: Adequate selection of vehicles is key for a proper comparative.
    - Source of information should be public: for instance, using the Ministry webpage for fuel market prices.
    - Representative: Prices should be updated as fast as possible.
    - Selection of fuel stations affected by the obligation should comply the following:
        - Stations with high sales (more than 5 million leters per year)
        - Freedom to choose the information format and location should be granted as long as this information is visible for drivers.
        - Information should be the same for all filling stations affected

FPC methodology was also discussed with Spain Association of car and tracks manufacturers resulting into these comments:

- Representativeness of country vehicles market should include not just new selling vehicles but all vehicles in use. However, lack of WLTP data for old vehicles and number of vehicles is a barrier.
- It is agreed that model selection should include a weighted average of at least Top-3 most selling vehicles for each technology selected taking into account similar model weight and power characteristics, not necessarily in the same segment.
- Price for electricity should represent a price of recharging service equivalent to the fuel refuelling in terms of refuelling time. However, lack of ultra-fast recharging points is an obstacle.

CONCLUSIONS

The deliverable presents guidelines for boosting user acceptance on the fuel price comparison displayed at filling stations. The consortium performed pilot actions testing variable ways and means of presenting the FPC to the consumers. The survey targeted at concluding in guidelines for the FPC displays, which will allow the maximisation of consumers' acceptance and understanding as well as the minimisation of FPC intervention to the filling stations' operation. Thereby, the participating MS concluded to specific guidelines, which provide several options for each implementation step. The main outcomes of the pilot actions are summarized below:

- the format is easy to understand, especially the display of one segment, however the selection should be based on national preferences, including both one and three-segment displays
- as the majority of respondents tend not to notice the displays spontaneously, the displays could be more eye-catching to attract attention in the fuelling station environment
- out of the tested options, leaflet seems the least appealing while posters and monitors visible from the pump are the most supported display types

This approach will allow the rest MS to implement the Art. 7.3 of the AFID consistently and effectively. To conclude, this document will serve a basis for providing complete recommendations on implementing the Art 7.3 of the AFID to all the MS.

DEGREE OF PROGRESS

This document is in line with the work proposed in GA.

DISSEMINATION LEVEL

Public

GETTING IN TOUCH WITH THE EU

In person

All over the European Union there are hundreds of Europe Direct information centres. You can find the address of the centre nearest you at: https://europa.eu/european-union/contact_en

On the phone or by email

Europe Direct is a service that answers your questions about the European Union. You can contact this service:

– by freephone: 00 800 6 7 8 9 10 11 (certain operators may charge for these calls),

– at the following standard number: +32 22999696, or

– by email via: https://europa.eu/european-union/contact_en

FINDING INFORMATION ABOUT THE EU

Online

Information about the European Union in all the official languages of the EU is available on the Europa website at: https://europa.eu/european-union/index_en

EU publications

You can download or order free and priced EU publications from: https://publications.europa.eu/en/publications. Multiple copies of free publications may be obtained by contacting Europe Direct or your local information centre (see https://europa.eu/european-union/contact_en).

EU law and related documents

For access to legal information from the EU, including all EU law since 1952 in all the official language versions, go to EUR-Lex at: http://eur-lex.europa.eu

Open data from the EU

The EU Open Data Portal (http://data.europa.eu/euodp/en) provides access to datasets from the EU. Data can be downloaded and reused for free, for both commercial and non-commercial purposes.

MI-04-21-037-EN-N

ISBN: 978-92-76-29301-9

doi: 10.2832/585488