

EASA DATAPP WEBINAR

What is the untapped benefit of fuel-reduction schemes? Updating NPA-2016-06 (A) economic impact assessment

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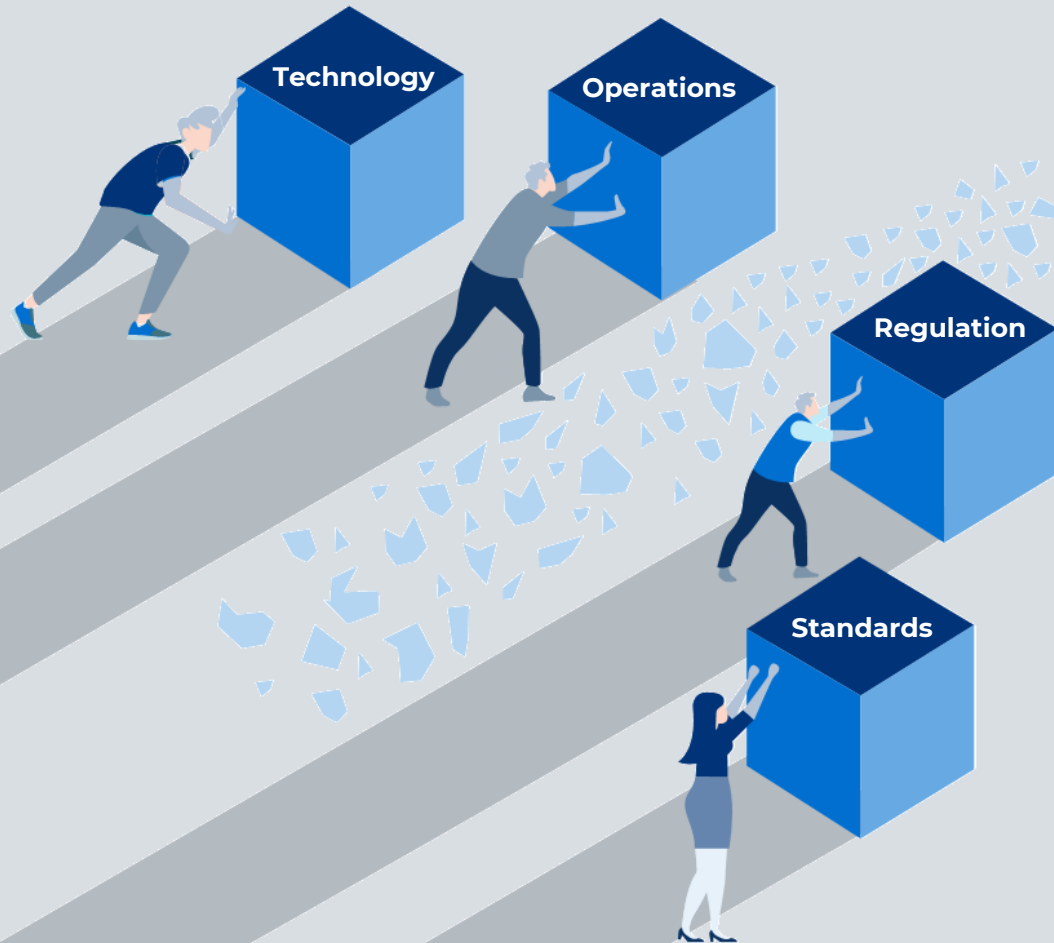
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DIGITAL TRANSFORMATION



Can we keep the pace in
all dimensions?

THE DATAPP PROJECT

EASA's Research Project

CASE STUDIES

The DATAPP project focuses its research on three different aviation fields, structured and particularised each on a Case Study

CS3 Flight training data for EBT and CBTA



CS4 Digital fuel management



CS5 Flight data models for safety



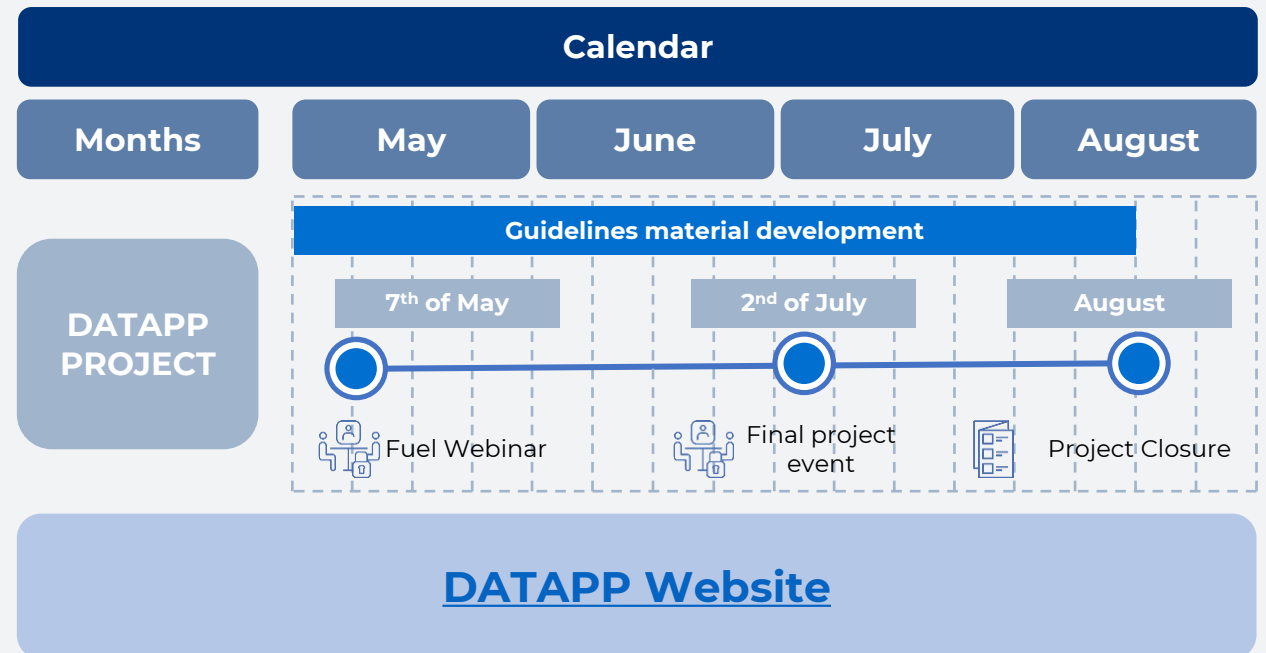
PROJECT CALENDAR

& MATERIALS' PUBLICATION

The **project is currently in its third phase**, in which a **gap analysis** of the existing regulation **is being conducted and** a series of **guideline materials** are being developed. **All results** will be published on the project's website once they are approved by EASA.

The **final project event will be held at the beginning of July** to present the results obtained during the project.

Project closure: August 2024



THE DATAPP PROJECT

CASE STUDY 4 – DIGITAL FUEL MANAGEMENT

TOP 5 CHALLENGES



Definition of **fuel data input** for fuel reduction schemes



Development of **statistical and predictive models**



Validation and deployment frameworks



Definition and monitoring of **safety performance**



Management of **operating conditions data**

SOME OF THE PROPOSED SOLUTIONS...

Regulatory initiatives for **fuel-related data collection & validation**

- Minimum requirements and selection criteria of fuel-related data sources (What data sources / parameters are recommended for each fuel-scheme?)
- How fuel data should be validated for fuel reduction schemes?

Collection, validation, and communication of **operating conditions data**

- Minimum requirements for selection + integration of operating conditions data sources

Regulatory initiatives for **fuel consumption estimation models**

- Standardised framework for generalizing statistical models (not aircraft tail-specific while ensuring risk mitigation)
- What constitutes statistically relevant data?

Regulatory initiatives for the **definition and monitoring of safety performance**

- Standardised lists of SPIs
- Alignment of fuel initiatives with Safety Management System (SMS)



34 Interviews



Attendance to EASA working groups



Webinar & Open questionnaire

THE DATAPP PROJECT

CASE STUDY 4 – DIGITAL FUEL MANAGEMENT

TOP 5 CHALLENGES



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Development of **statistical and predictive models**



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Definition and monitoring of **safety performance**



Management of **operating conditions data**

SOME OF THE PROPOSED SOLUTIONS...

Regulatory initiatives for **fuel-related data collection &**

Regulatory initiatives for **fuel consumption estimation**

What is the expected impact of the proposed solutions?

DATAPP Economic impact assessment questionnaire



[link](#)



34 Interviews



Attendance to EASA working groups



Webinar & Open questionnaire

AND...WHAT IS THE UNTAPPED BENEFIT OF FUEL REDUCTION SCHEMES?

What did the NPA (2015) say about the **savings that fuel reductions** would allow?

Table 14 — Economic impacts of Options 1 and 2 compared to Option 0, based on 2015 traffic

General information for 2015		Value	Average min per flight		
Flights intra EASA MSs		6 907 486	84		
Flights from/to EASA MSs		1 458 576	312		
CS-25 aircraft fleet for EASA MSs (1.2.2016)		6 854			
Estimated aircraft fleet for flights intra EASA MSs		5 912			
Estimated aircraft fleet for flights from/to EASA MSs		942			
Cost of fuel in EUR/kg ²⁰		0.7			
Type of savings per flight		Option 1 vs Option 0		Option 2 vs Option 0	
		Short-haul flight	Long-haul flight	Short-haul flight	Long-haul flight
Fuel load savings in kg (only on the first flight)		100	400	580	4 625
Fuel burn savings in kg		6	156	35	1 804
Overall fuel savings in kg		106	556	615	6 429
Fuel burn savings in kg/min		0.05	0.20	0.29	2.31
		Option 1 vs Option 0		Option 2 vs Option 0	
		Short-haul flight	Long-haul flight	Short-haul flight	Long-haul flight
One-off fuel load savings in 1 000 t				3.4	4.4
Fuel load savings per flights		0.6	0.4		7.8
Total fuel burn savings per aircraft fleet type			1.0		5.5
Overall fuel load savings			0.7		
One-off fuel savings (million EUR)					
Overall fuel savings per fuel cost EUR/kg					
		Option 1 vs Option 0		Option 2 vs Option 0	
		Short-haul flight	Long-haul flight	Short-haul flight	Long-haul flight
Annual fuel burn savings in 1 000 t				168	1 053
Fuel burn savings per flights per average duration					1 221
Total fuel burn savings per type of flight		29	91		
Overall fuel burn savings			120		855
Annual fuel burn savings (million EUR)			84		
Overall fuel savings per fuel cost EUR/kg					

€893,3M



NPA 2015
Option 2

- Estimated total of 893,3M€ savings at EU level
- 1.276.000 tonnes of fuel saved*
- ~ 4.032.160 tonnes of CO₂
- 2015 traffic figures...and fuel cost

* (~0.59% reduction vs total annual fuel consumption estimated with 2015 traffic levels)

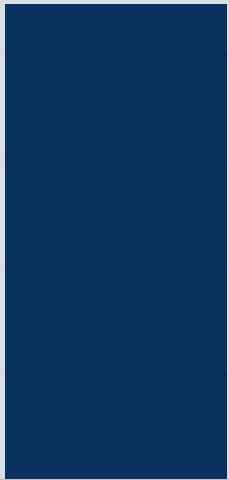
Annual Fuel Burn Savings (M€)

AND...WHAT IS THE UNTAPPED BENEFIT OF FUEL REDUCTION SCHEMES?

Same assumptions, **we remodeled with 2023 traffic levels and updated cost of fuel...**

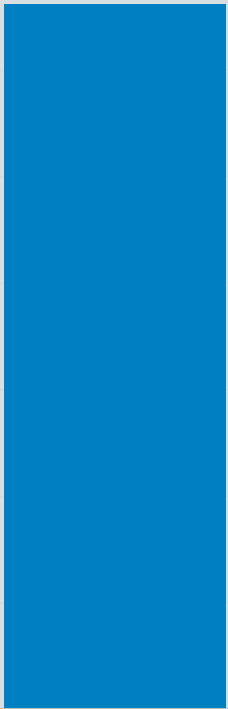
Long-haul										
	Baseline (Pre-implementation)		NPA Option 2				Current situation			
		fuel (kg)		Fuel reduction	Flight share	Fuel (kg)		Fuel reduction	Flight share	Fuel (kg)
Total		112846				108092				111588
Taxi	20-min taxi	600				500				583
			Relative share of the flights with reduction (e.g. STF)		100%	500	Relative share of the flights with reduction (e.g. STF)		17%	500
			Relative share of the flights with no reduction		0%	600	Relative share of the flights with no reduction		83%	600
Trip	13	99854	Average			99554	Average			99854
			Relative share of the flights to get 1-% reduction in fuel trip	1%	30%	98855,46	Relative share of the flights to get 1-% reduction in fuel trip	1%	0%	98558,8936
			Relative share of the flights without areduction in fuel trip	0%	70%	99854	Relative share of the flights without areduction in fuel trip	0%	100%	99854
Contingency	5%	4993	Average	Contingency %		1427,956	Average	Contingency %		4122,43896
			Relative share of the flights to 100 kg	0,10%	30%	100	Relative share of the flights to 100 kg	0,10%	3%	100
			Relative							

€893,3M



NPA 2015 Option 2

€1.323,4M



NPA Updated 2023

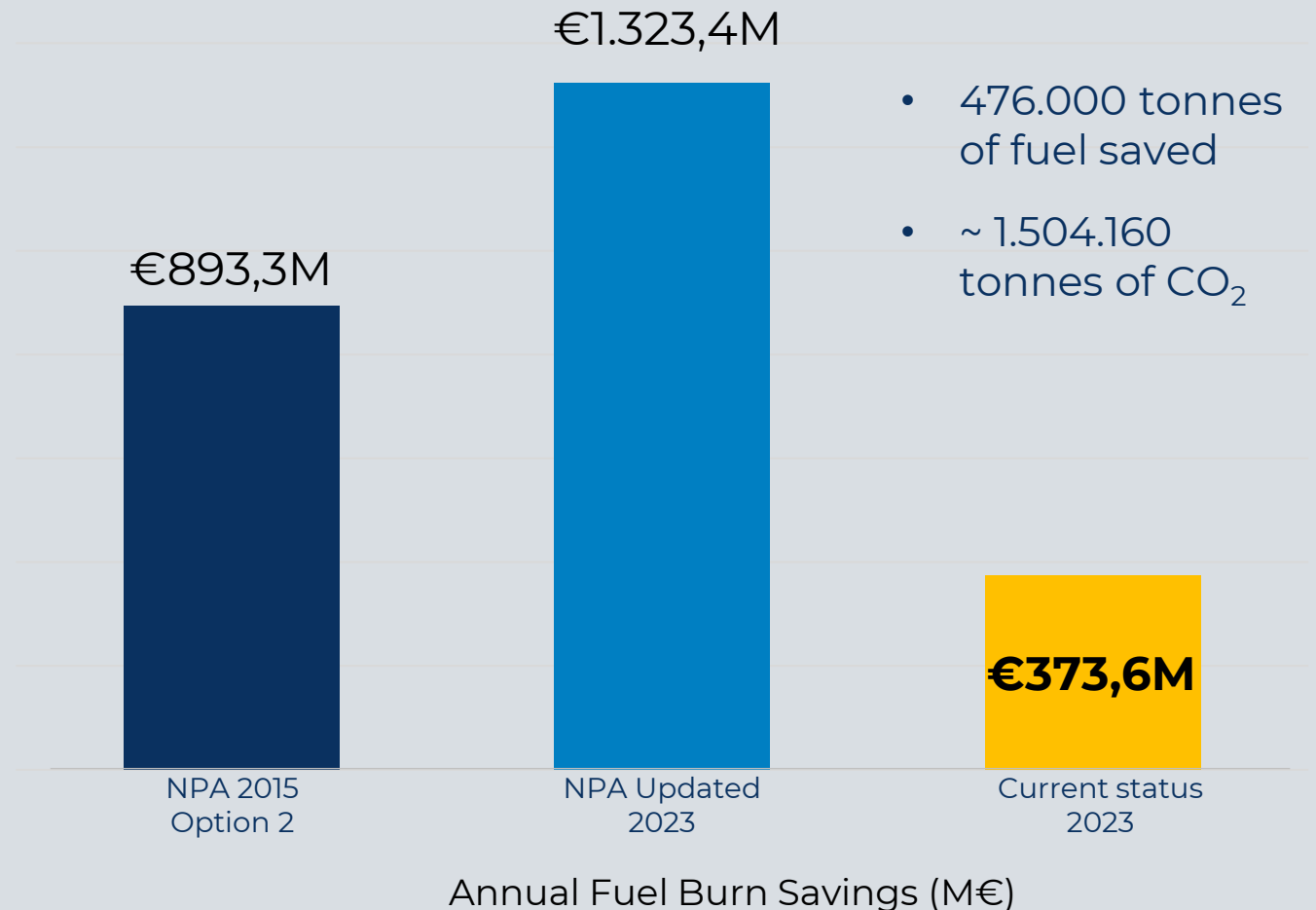
Annual Fuel Burn Savings (M€)

- Maximum savings to be achieved as per current traffic levels!
- 1.688.000 tonnes of fuel saved*
- ~ 5.334.080 tonnes of CO₂

*(~0.60% reduction vs total annual fuel consumption estimated with 2023 traffic levels)

AND...WHAT IS THE UNTAPPED BENEFIT OF FUEL REDUCTION SCHEMES?

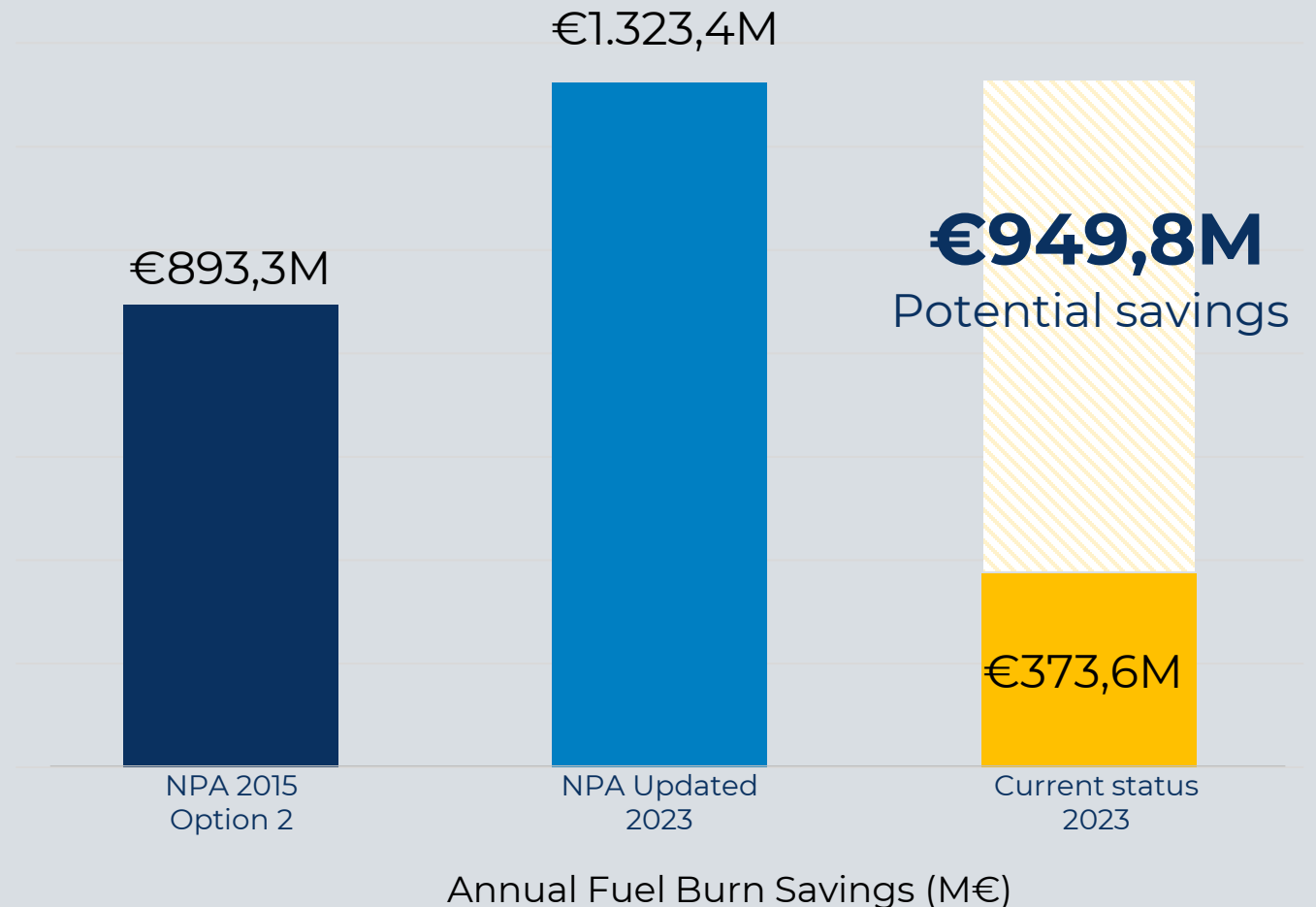
Based on the interviews and questionnaires carried out, we have made **a first estimate of the level of adoption** (%LH/SH flights per airline, per reduction) of the reduction schemes to estimate **the current situation...**



AND...WHAT IS THE UNTAPPED BENEFIT OF FUEL REDUCTION SCHEMES?

Based on the interviews and questionnaires carried out, we have made **a first estimate of the level of adoption** (%LH/SH flights per airline, per reduction) of the reduction schemes in order to estimate **the current situation...**

...and with that we estimate the **potential benefit available through the adoption of fuel-reduction schemes**



WE NEED YOUR INPUT

1

Please join the **live survey** during the duration of this **webinar**

2

Including the name of the **airline** you represent will help adjust the assumptions made

3

Remember to **hit the Send button** once finished

Send

slido

The screenshot shows the Slido interface with a blue header bar containing 'Q&A' and 'Polls' tabs. Below the header, a 'Survey' section is visible with a folder icon and a user count of '0 83'. The first question is 'Please introduce the operator you represent:' with a progress indicator '1/6'. Below the question, it states 'This information is optional, but would improve the quality of the assessment done regarding the market share.' and provides a text input field with the placeholder 'Type your answer ...'. The second question is 'Which fuel scheme do you currently apply?' with a progress indicator '2/6'. Below the question, it says 'Please select all the options that apply:'. There are four options, each with a checkbox: 'Basic fuel scheme', 'Basic fuel scheme with variations in the taxi fuel', 'Basic fuel scheme with variations in the contingency fuel', and 'Individual fuel scheme'. The third question is 'Which is the percentage of your short-haul flights that apply reductions in taxi fuel?' with a progress indicator '3/6'. There are two options, each with a radio button: '0%' and '<25%'.

QUESTIONS & ANSWERS

THANK YOU!

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