THE AVIATION ENVIRONMENTAL SYSTEM

IMPLEMENTATION AU TCHAD

ICAO

European Union

ENGLISHPOINT MARINA HOTEL
MOMBASA, KENYA

13/12/2018

SOMMAIRE

COORDINATEURS ET POINTS FOCAUX AES/CORSIA TCHAD (2017)

HISSEIN CHIGATTOME

SADICK DOUGA

BRAHIM ADAM FADOUL

INTRODUCTION

2015

- Mise en place AES
- Remise de matériels
- Atelier de formation
- Désignation point focal

2016

- Pas de résultats

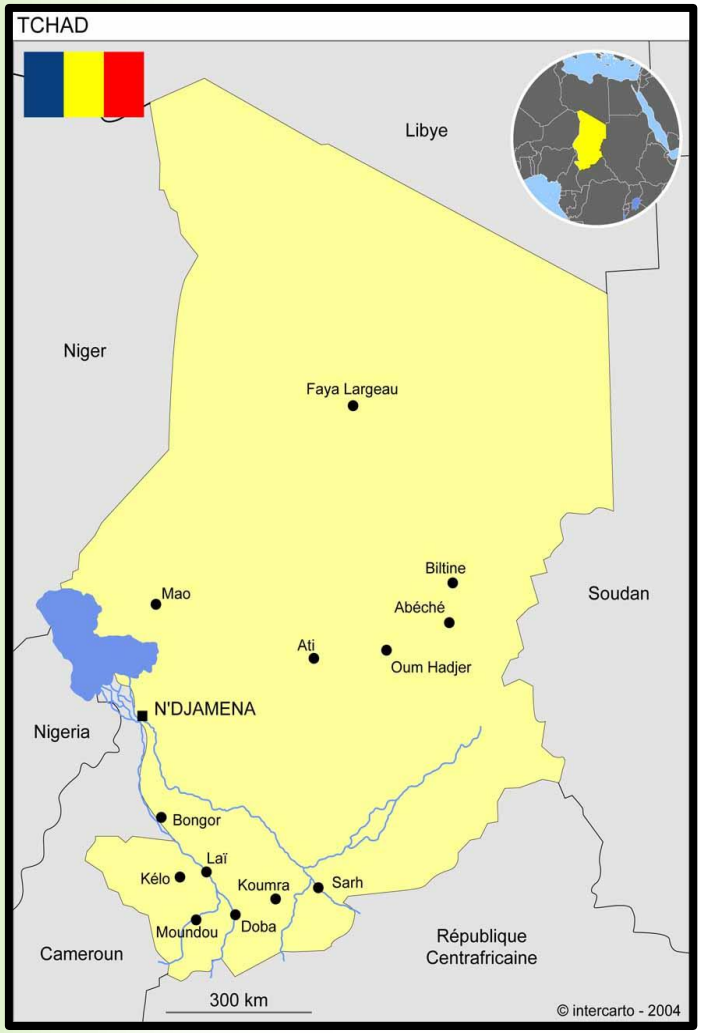
2017

- Visite du coordinateur
- Nouveaux points focaux
- Atelier de formation
- Transmission mensuelle rapport Co_2

2018

- Mise à jour AES
- Mise à jour BASELINE
- Transmission mensuelle rapport Co_2

CONTEXTE TCHADIEN



Un seul aéroport international au Tchad:
l'aéroport international Hassan Djamous de N'Djaména

CONTEXTE TCHADIEN

Gestionnaire aéroport et espace aérien

Handling monopole de THS

2004 - 2012

CONTEXTE TCHADIEN

COMPAGNIES ETRANGERES DESSERVANT L'AEROPORT DE N'DJAMENA

Ethiopian
የኢትዮጵያ
THE NEW SPIRIT OF AFRICA

AIRFRANCE

تاركو للطيران
TARCO AIR
The Legend of Africa

EGYPTAIR
A STAR ALLIANCE MEMBER

Camair-Co

Air Côte d'Ivoire

TURKISH AIRLINES

ASKY

الخطوط الملكية المغربية
royal air maroc

Ceiba
INTERCONTINENTAL

CONTEXTE TCHADIEN

Définition OACI

Non applicable

Méthode de calcul

IPCC/GIEC

Sources de données

Manifestes de vols
THS

ICAO CARBON CALCULATOR

FORM ENV1

AES

RAPPORT Co_2

OACI

TRAITEMENT DES DONNEES

INTERNATIONAL CIVIL AVIATION ORGANIZATION

ENVIRONMENTAL PROGRAMME

FORM ENV1

Date:
Last name: ELHADJ MADAM
First name: SEIDNA
Email: elhadjseidna@yahoo.fr
Data provider: THS

Flight number	Date of departure	Airline	Origin	Destination	Aircraft	Seats available	Passengers carried	Payload available	Freight carried (incl. express)	Mail carried	Scheduled	Fuel consumed	APU usage time	Taxi time
								(Kilogrammes)	(Kilogrammes)	(Kilogrammes)		(Liters)	(Minutes)	(Minutes)
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o

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								(Kilogrammes)	(Kilogrammes)	(Kilogrammes)		(Liters)	(Minutes)	(Minutes)
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
ET939	01/11/2018	ETH	NDJ	ADD	B738	154	101	21300	0	0	1		0	5
ET938	01/11/2018	ETH	ADD	NDJ	B738	154	73	21300	0	0	1		0	5

TRAITEMENT DES DONNEES

ICAO Carbon Emissions Calculator (Entire Flight)
Version 2.6

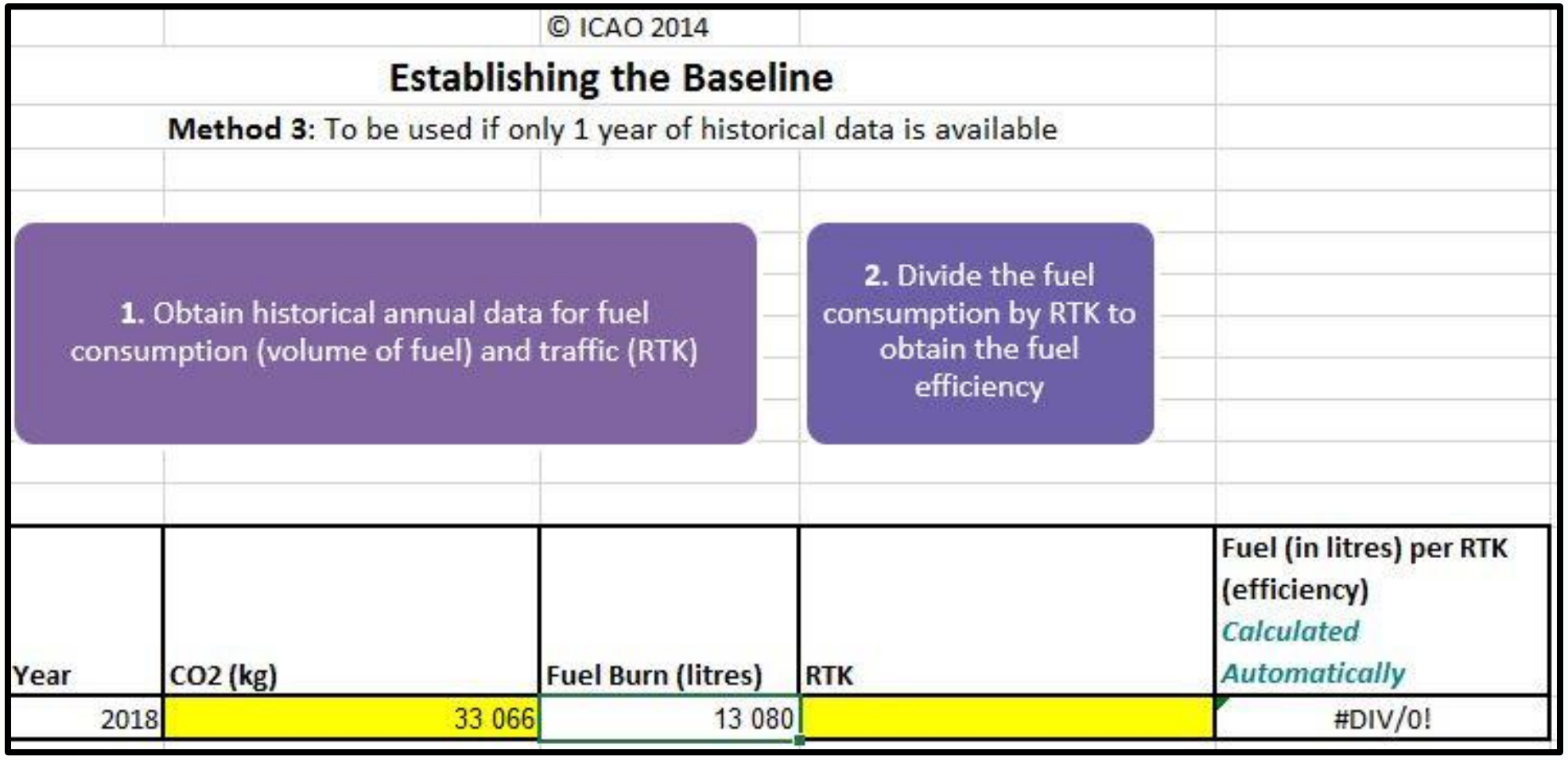
Results	
Total CO_2 (tonnes):	33,1
Total flights:	1
Remarks: Run complete d-déc-yyyy 01:20	

Click to Compute CO_2

Insert schedule data below this row

Airport Pair or Distance in km	Number of Flights	Aircraft Code	CO_2 (kg)	Messages
NDJ-ADD	1	738	33 066	

TRAITEMENT DES DONNEES



© ICAO 2014

Establishing the Baseline

Method 3: To be used if only 1 year of historical data is available

1. Obtain historical annual data for fuel consumption (volume of fuel) and traffic (RTK)

2. Divide the fuel consumption by RTK to obtain the fuel efficiency

Year	CO2 (kg)	Fuel Burn (litres)	RTK	Fuel (in litres) per RTK (efficiency) *Calculated Automatically*
2018	33 066	13 080		#DIV/0!

TRAITEMENT DES DONNEES

INTERNATIONAL CIVIL AVIATION ORGANIZATION

ENVIRONMENTAL PROGRAMME

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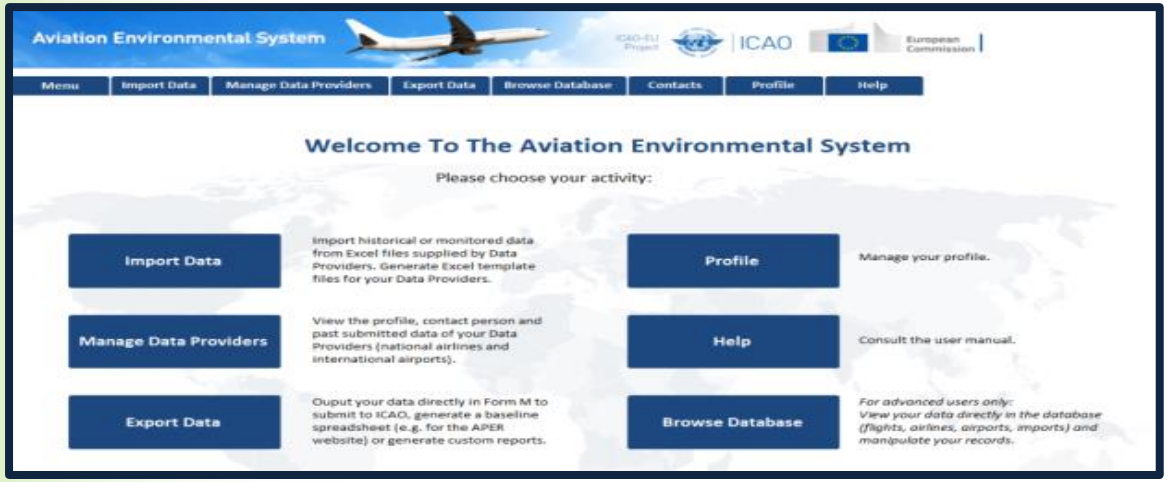
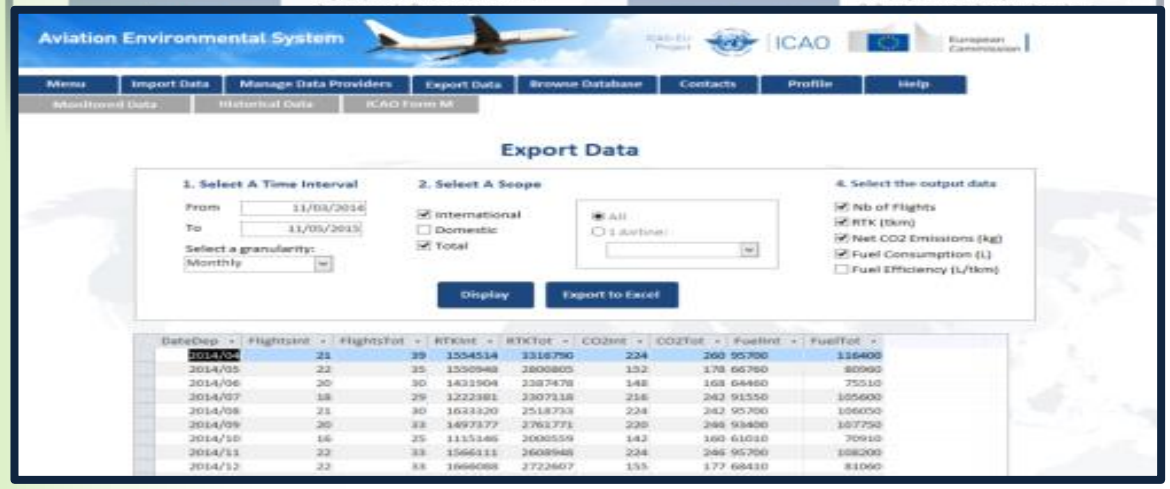
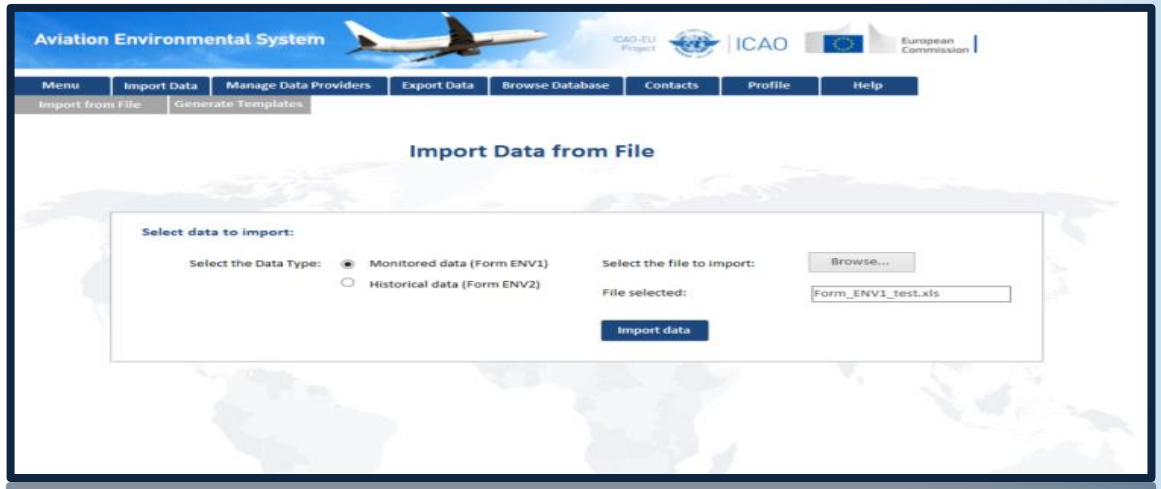
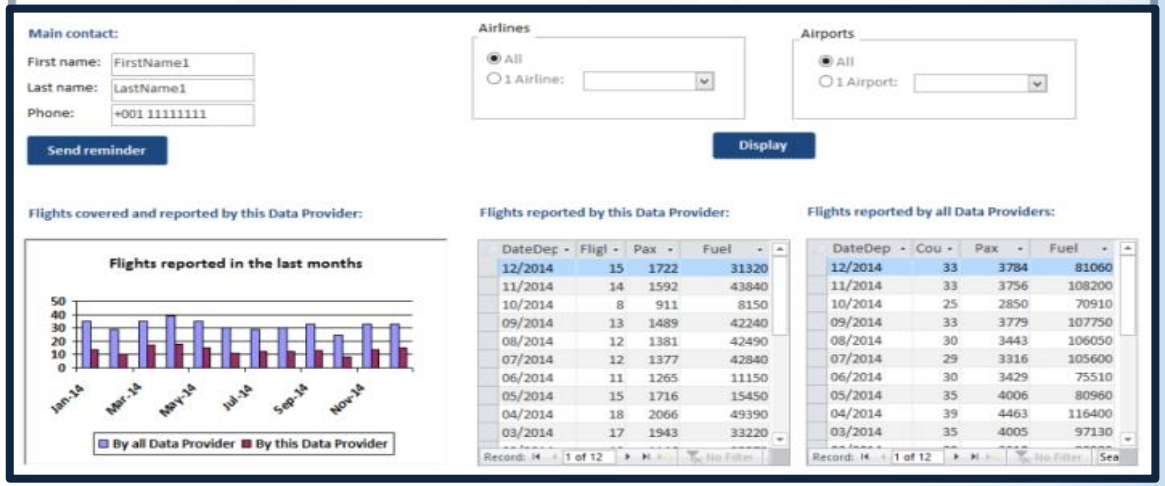
								(Kilogrammes)	(Kilogrammes)	(Kilogrammes)		(Liters)	(Minutes)	(Minutes)
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
ET939	01/11/2018	ETH	NDJ	ADD	B738	154	101	21300	0	0	1	13080	0	5
ET938	01/11/2018	ETH	ADD	NDJ	B738	154	73	21300	0	0	1	13080	0	5

TRAITEMENT DES DONNEES









RAPPORTS CO2 ET BASELINE

ANNUAL AVIATION CO_2 REPORT

2017

Chad

State-level report - 1 reporting airline(s)

IPCC definition for international flights

MONTHLY REPORTS SUBMITTED

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

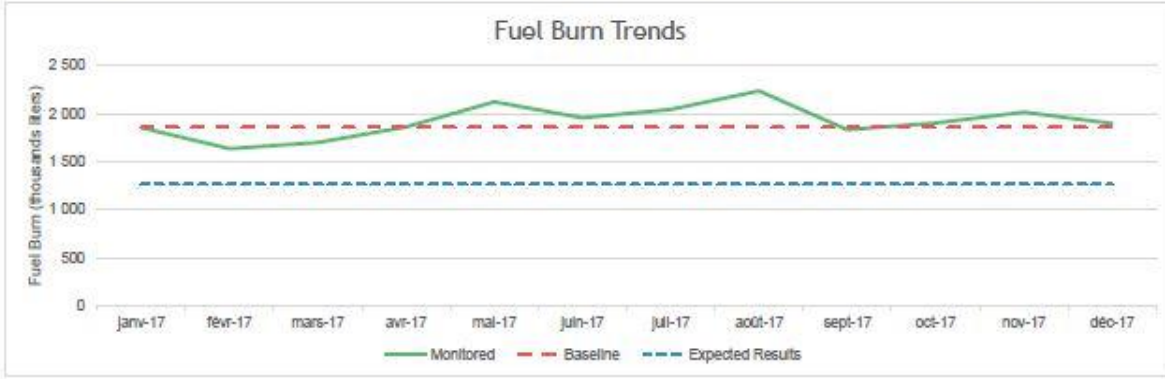
100% of the year covered

KEY METRICS FOR INTERNATIONAL AVIATION

FLIGHTS	RTK (tkm)	FUEL BURN (L)	CO2 EMISSIONS (t)	FUEL EFFICIENCY (L/tkm)
1 621	25 717 466	23 042 657	58 252	2,038

TRENDS

YEAR-TO-YEAR	2016	2017	TREND	% CHANGE
RTK (tkm)	33 926 656	25 717 466	↓	-24%
FUEL BURN (L)	21 111 334	23 042 657	↑	9%
CO2 EMISSIONS (T)	53 369	58 252	↑	9%
FUEL EFFICIENCY (L/tkm)	0,622	2,038	↑	228%



Most Fuel Efficient Aircraft

	Aircraft	Number of flights*	Fuel efficiency (L/tkm)
1	DASH8	28	0,55
2	DH8	153	0,557
3	A333	2	0,74
4	B734	6	0,773
5	AT45	2	0,83

* Only aircraft with at least 2 flights were considered.

Least Fuel Efficient Aircraft

	Aircraft	Number of flights*	Fuel efficiency (L/tkm)
1	B744F	2	24,185
2	B777	11	22,472
3	B747F	9	14,572
4	B777F	14	14,196
5	B747-400	3	11,456

* Only aircraft with at least 2 flights were considered.

RAPPORTS CO2 ET BASELINE

MONTHLY AVIATION CO_2 REPORT

nov-18

Chad

State-level report 1 reporting airline(s)

IPCC definition for international flights

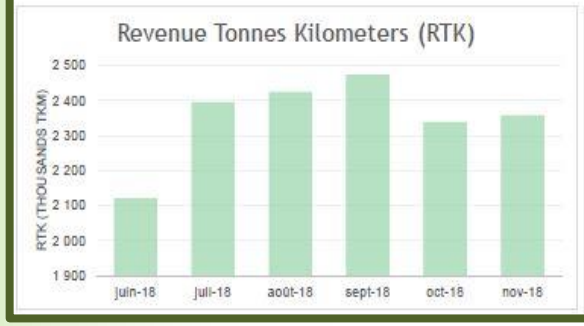
KEY METRICS FOR INTERNATIONAL AVIATION

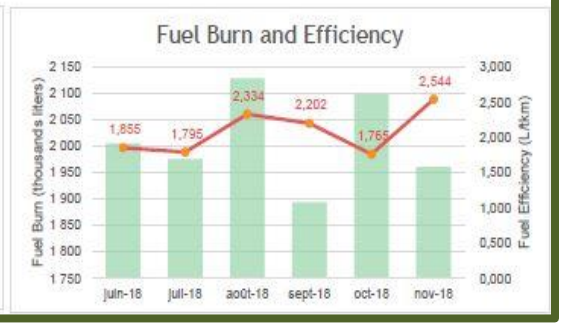
FLIGHTS	RTK (tkm)	FUEL BURN (L)	CO2 EMISSIONS (t)	FUEL EFFICIENCY (L/tkm)
141	2 357 009	1 961 143	4 957	2,544

TRENDS

MONTH-TO-MONTH	nov-18	oct-18	% CHANGE	6 MONTHS TREND
RTK (tkm)	2 357 009	2 338 888	1%	
FUEL BURN (L)	1 961 143	2 098 697	-7%	
CO2 EMISSIONS (kg)	4 957	5 305	-7%	
FUEL EFFICIENCY (L/tkm	2,544	1,765	44%	

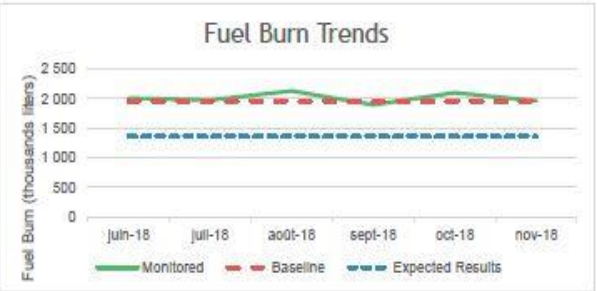
YEAR-TO-YEAR	nov-18	nov-17	% CHANGE	1 YEAR TREND
RTK (tkm)	2 357 009	2 153 569	9%	
FUEL BURN (L)	1 961 143	2 014 413	-3%	
CO2 EMISSIONS (T)	4 957	5 092	-3%	
FUEL EFFICIENCY (L/tkm	2,544	3,211	-21%	





Efficiency of Mostly Used Aircrafts

	Aircrafts	Flights	Fuel Efficiency (L/tkm)
1	A320	9	0,574
2	B735	5	0,593
3	A332	13	0,819
4	B739	8	0,929
5	A319	13	1,068



Most Fuel Efficient Routes

	Routes*	Flights	Fuel Efficiency (L/tkm)
1	FTTJ-HECA	9	0,574
2	FTTJ-HAAB	30	0,587
3	FTTJ-HSSS	5	0,593
4	FTTJ-LFPG	13	0,819
5	FTTJ-LTBA	8	0,929

* Only routes with at least 2 flights were considered.

Least Fuel Efficient Routes

	Routes*	Flights	Fuel Efficiency (L/tkm)
1	FTTJ-HKJK	13	17,961
2	FTTJ-FKKD	50	1,357
3	FTTJ-GMMN	13	1,046
4	FTTJ-LTBA	8	0,929
5	FTTJ-LFPG	13	0,819

* Only routes with at least 2 flights were considered.

Routes with Highest Load Factors

	Routes*	Flights	Load Factor
1	FTTJ-HSSS	5	0,725
2	FTTJ-HECA	9	0,617
3	FTTJ-LFPG	13	0,589
4	FTTJ-HAAB	30	0,577
5	FTTJ-FKKD	50	0,461

* Only routes with at least 2 flights were considered.

Routes with Lowest Load Factors

	Routes*	Flights	Load Factor
1	FTTJ-HKJK	13	0,034
2	FTTJ-GMMN	13	0,347
3	FTTJ-LTBA	8	0,398
4	FTTJ-FKKD	50	0,461
5	FTTJ-HAAB	30	0,577

* Only routes with at least 2 flights were considered.

RAPPORTS CO2 ET BASELINE

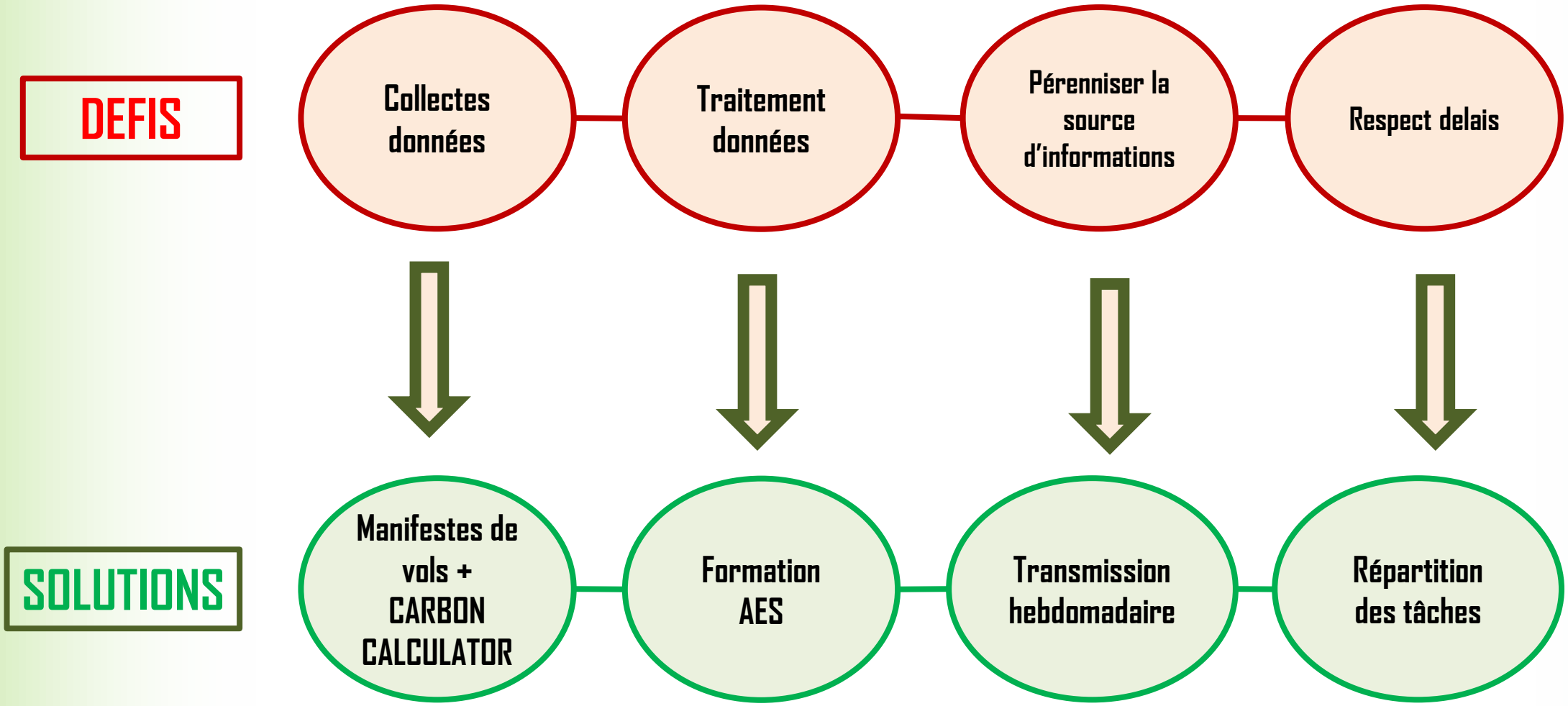
SCENARIO DE REFERENCE				
Année	TPK international (tkm)	Carburant consommé International (L)	Emissions CO_2 International (kg)	Rendement efficient de carburant
2014	61 078 707	38 007 076	96 081 888	0,62
2015	64 376 957	40 059 458	101 270 310	0,62
2016	67 853 313	42 222 669	106 738 907	0,62
2017	**71 517 392**	**44 502 693**	**112 502 808**	**0,62**
2018	75 379 331	46 905 838	118 577 959	0,62

PLAN D'ACTION DU TCHAD (2015)

SCENARIO DE REFERENCE				
Année	TPK international (tkm)	Carburant consommé International (L)	Emissions CO_2 International (kg)	Rendement efficient de carburant
2017	**25 717 466**	**23 042 657**	**58 252 135**	**0,62**

RAPPORT ANNUEL 2017

EXPERIENCES



BESOINS D'ASSISTANCE

Vol inaugural : 01/10/2018

Flotte: 2 Bombardier Dash Q400

MISE A JOUR :

- Plan d'action
- Méthode de calcul

Quand ? Comment ?

ATOUTS:

- Moins d' énergie fossile
- Soleil 320j/an
- Température: 30 - 45 °C

- ETUDE DE FAISABILITE
- EXPERTISE

MERCI !

QUESTIONS ?