

European Observatory of airport capacity- TF1

France: capacity and environmental policy for Paris Airports



P.. Ayoun DGAC Observatory Airport Capacity TF1 12 December 2014

Direction générale de l'Aviation civile

Ministère de l'Écologie, du Développement durable et de l'Énergie

Capacity and environment: Regulation of Paris airports

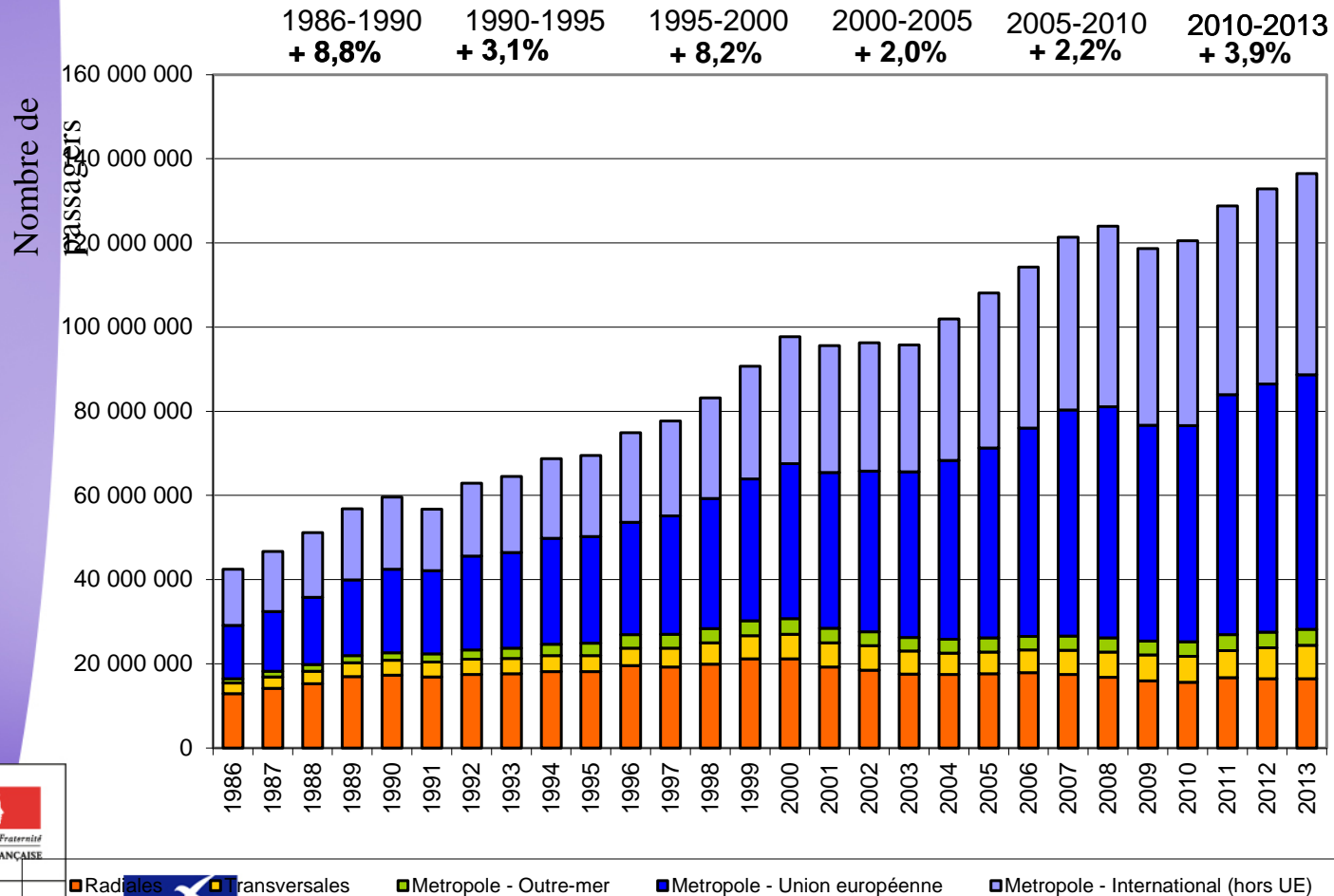
1. Air transport in France: overview: Y 2000 the capacity challenge
2. Principles and framework of environmental regulation in Paris
3. Current debates about air transport in France

This presentation does not engage DGAC.

25 years of growth of air traffic

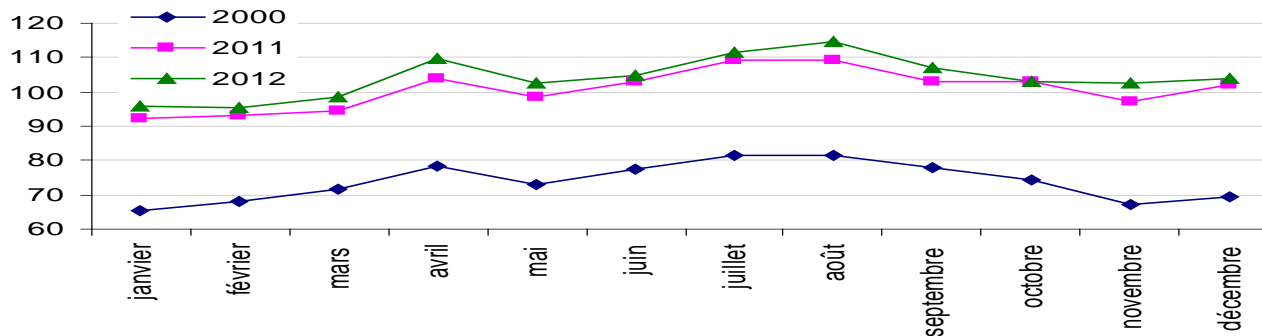
Passengers 1986-2013 : +4,4%/y

Flights 1986-2013 : +3,2%/y



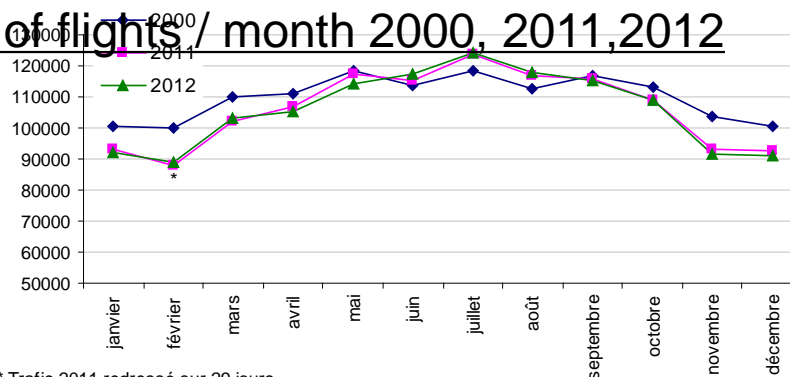
Less flights, deeper peak

PAX /flight 2000, 2011 et 2012



Increase of pax/ flight less in march-september (+38% 2000- 2012) than in winter (+45%).

Number of flights / month 2000, 2011, 2012

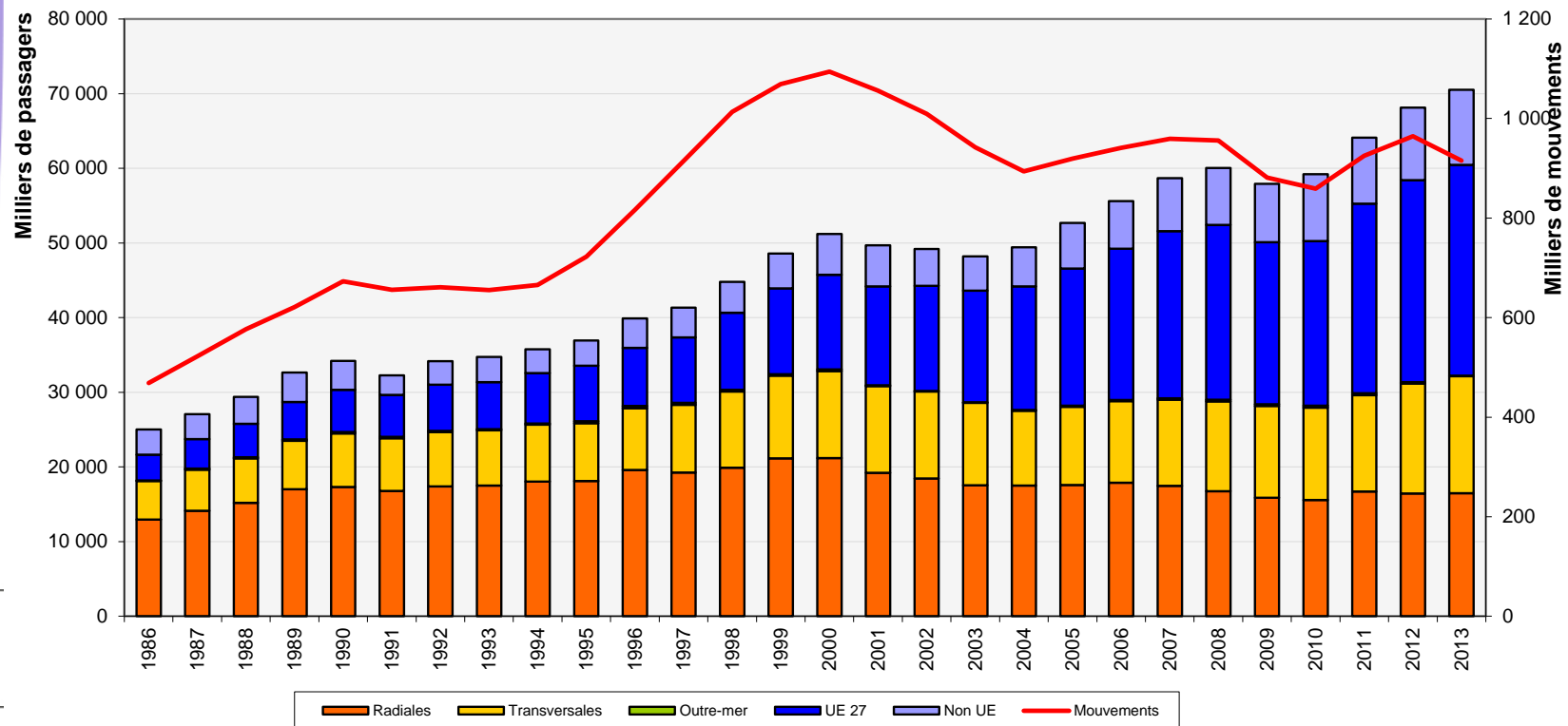


* Trafic 2011 redressé sur 29 jours

Regional airports : strong growth.

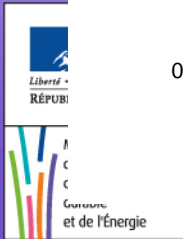
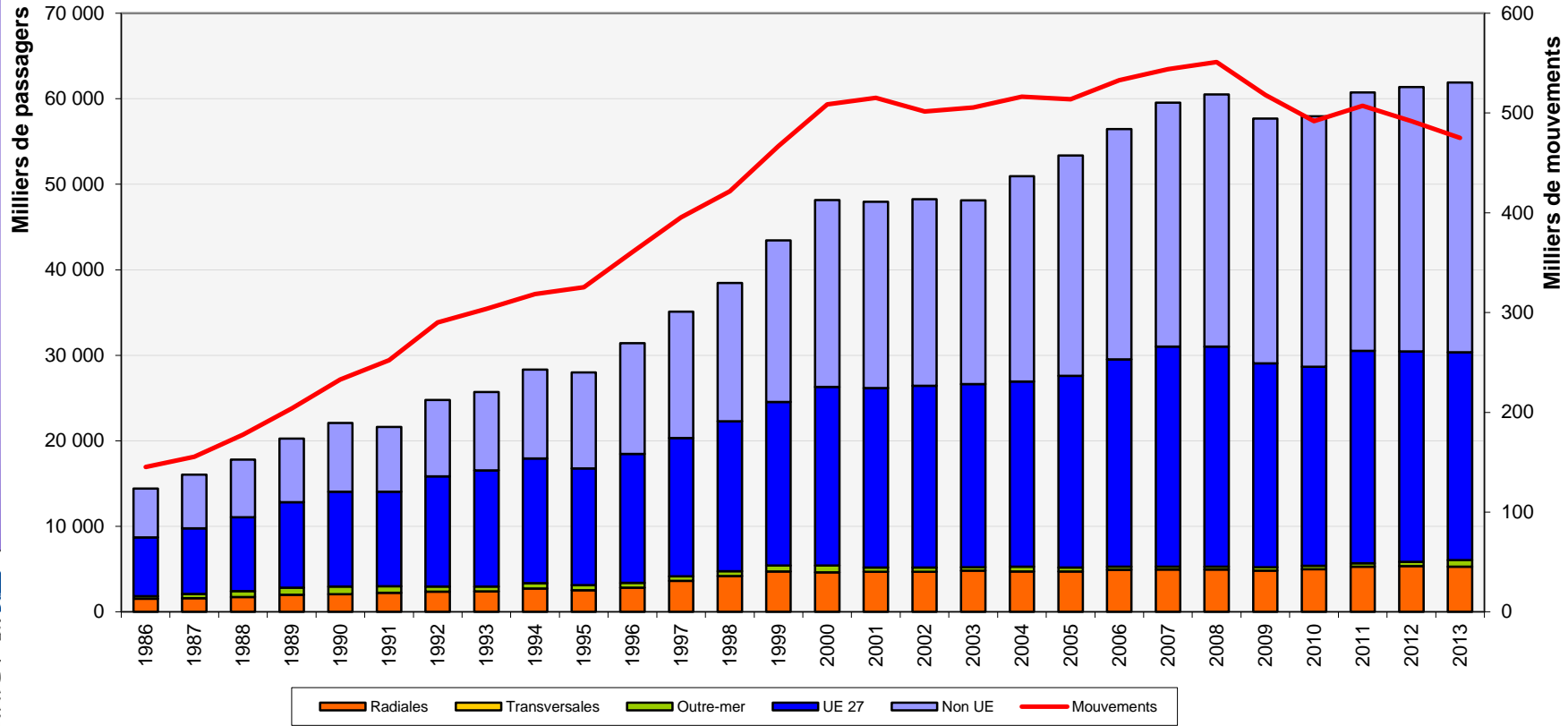
71 M pax in 2013- 41% of traffic (ADP 53%, overseas 6%)

AF: 25% , LCC 37%, 1st pair Orly (11M), Paris 23%, French metropole 22%, overseas 0,1%, EU 40%, outside EU 14%



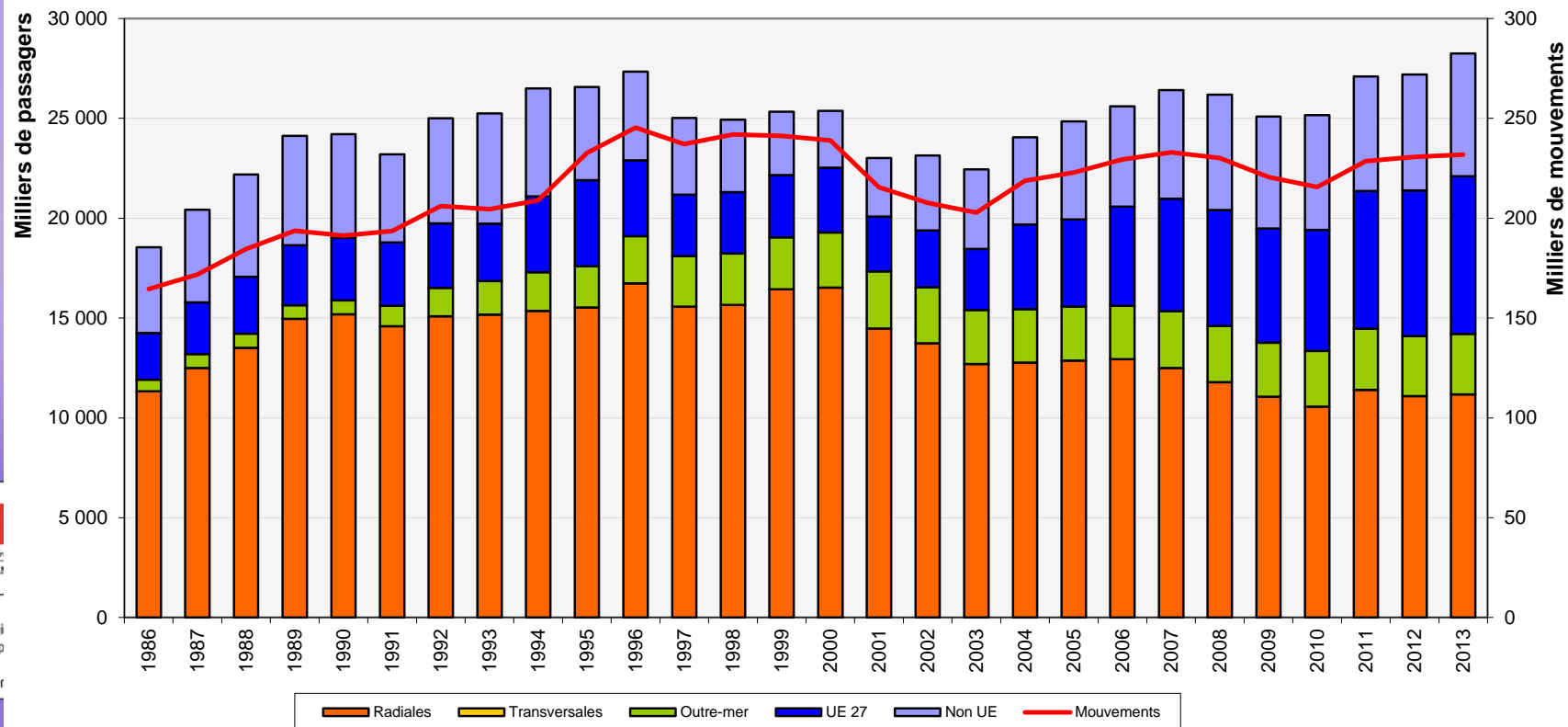
Paris-CDG : 62 million pax in 2013

French metropole : 8,6%, EU : 39,3%, outside EU : 51%, French overseas : 1,2%, Paris-NYC 1st pair, LCC: 8%, AF 54%



Paris-Orly : 28 million pax in 2013 (like in 1996)

AF:37%, LCC, 25%, French metropole 40%, French overseas 11%, EU 28%, outside EU 22%; Paris-Madrid 1st pair



A growth driven by international traffic

Two very different periods:

- 1986- 2000 strong growth of traffic: passengers and flights: open sky in Europe, development of Paris hub
- 2000-2014: +45% PAX despite 09/11, Lehmann brth... **but less flights!**
- Regional airports more dynamic than Paris

Before 2002...

- 1995 -2001: Decision to build a 3rd airport for Paris
- Rapid growth of traffic, delays,
 - Infrastructure of CDG: not yet in place
 - Rationale of a 3rd airport, despite the decision to build 2 more runways in CDG: traffic development (AF, Fedex...) and a political wish to limit traffic at CDG to 55 M pax
 - Difficulty to find a location Beauvilliers, Picardie...
 - Public debate in 2001: choice of Chaulnes location

A new airport at Chaulnes?

130 km from Paris; 2,3 Mds
€+ 2,3 Mds for hst line
(1/2h from Paris)

Capacity 35 M pax (long
tem « missing capacity »
for Paris)



2002: 3 rd airport abandoned and a new deal for Paris

- Strong political oppositions towards new airport
- Building of a new paradigm: limitation of traffic is not necessary but cumulated impacts (noise) must be limited
- To achieve that, a large and consistent package of measures decided for CDG, and confirmed for Orly
- It consists in removing noisiest traffic from CDG, restricting « core night » traffic, and control the result through a global indicator of measured noise.
- At the same time, other pillars of balanced approach mobilized: housing restrictions, financial compensations, new independent authority (ACNUSA)

Restrictions of operations, Orly

1968 : **Curfew** no take offs between 23h15 and 6h00, no landings 23h30 - 6h15.

6 octobre 1994 :

limit of 250 000 slots / year

1999, 2003- 2005-2009 : finer and finer definition of routes (volume de protection environnementale)

27 juillet 2012 APU limitations (LFPO, LFPG, LFPB)

Air navigation procedures

Paris overflight: 2000 m (1948)

[Arrêté du 5 septembre 2012](#) portant modification du dispositif de la circulation aérienne en région parisienne.

Autres arrêtés

Arrêté du 19 octobre 1999 qualifiant d'aéroports entièrement coordonnés les aéroports de Paris-Orly et Paris - Charles-de-Gaulle.

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Arrêté du 12 octobre 2001 modifiant l'arrêté du 19 octobre 1999 qualifiant d'aéroports entièrement coordonnés les aéroports de Paris-Orly et Paris-Charles-de-Gaulle.

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Arrêté du 7 février 2002 relatif au dispositif des routes d'arrivée et de départ des aéronefs de la circulation aérienne générale évoluant, selon les règles de vol aux instruments, dans la zone de contrôle et la région de contrôle terminale de Paris.

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CDG: restrictions of operations

1997, 1998, 1999 Progressive restrictions of Chapter 2

2001/2003 : interdiction of « noisiest » chap 3 (margin <5) for night operations (23h15- 6h) for take-offs; Implementation in 5 years, to be completed by 2005.

First full balanced approach study in Europe

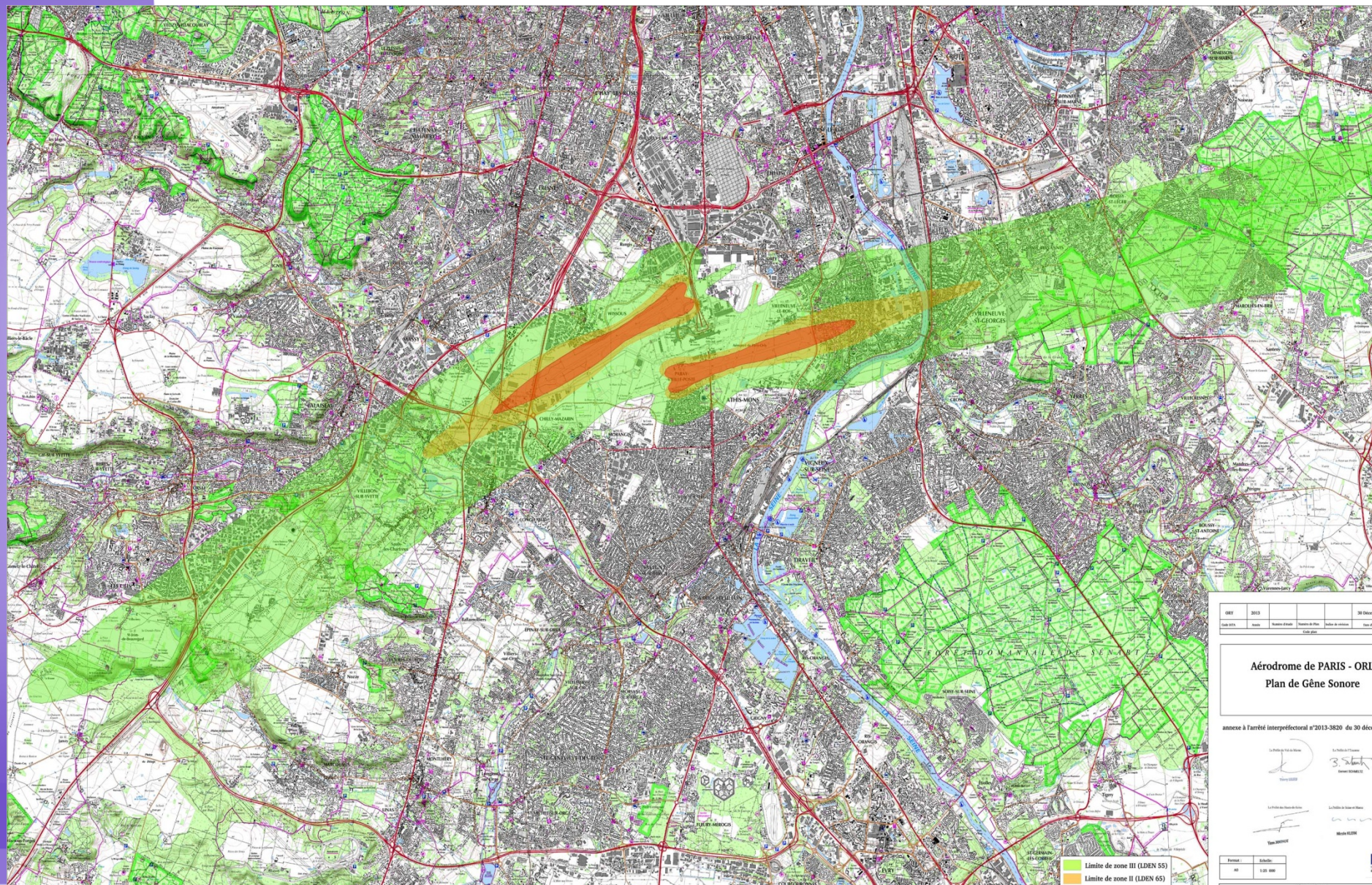
2002: Night slots (0h-5h) frozen and decreasing (no reattribution), and strict interdiction of non scheduled flights at night

2003 noise limits (99/104 epndb – certified noise) between 0 and 5h.

September 2011: ban between 22h and 6h of planes with margin <8 chap.3 (new balanced approach study) / 2nd step from 2014 ban of margin <10



Only: zone of financing of sound insulation (PGS)



ORF	2013				30 Dec 2013
Code ORF	Année	Tranche d'Année	Nombre de Projets	Surface de l'ensemble des Projets (en m²)	Etat des Projets

Aérodrome de PARIS - ORLY
Plan de Gène Sonore

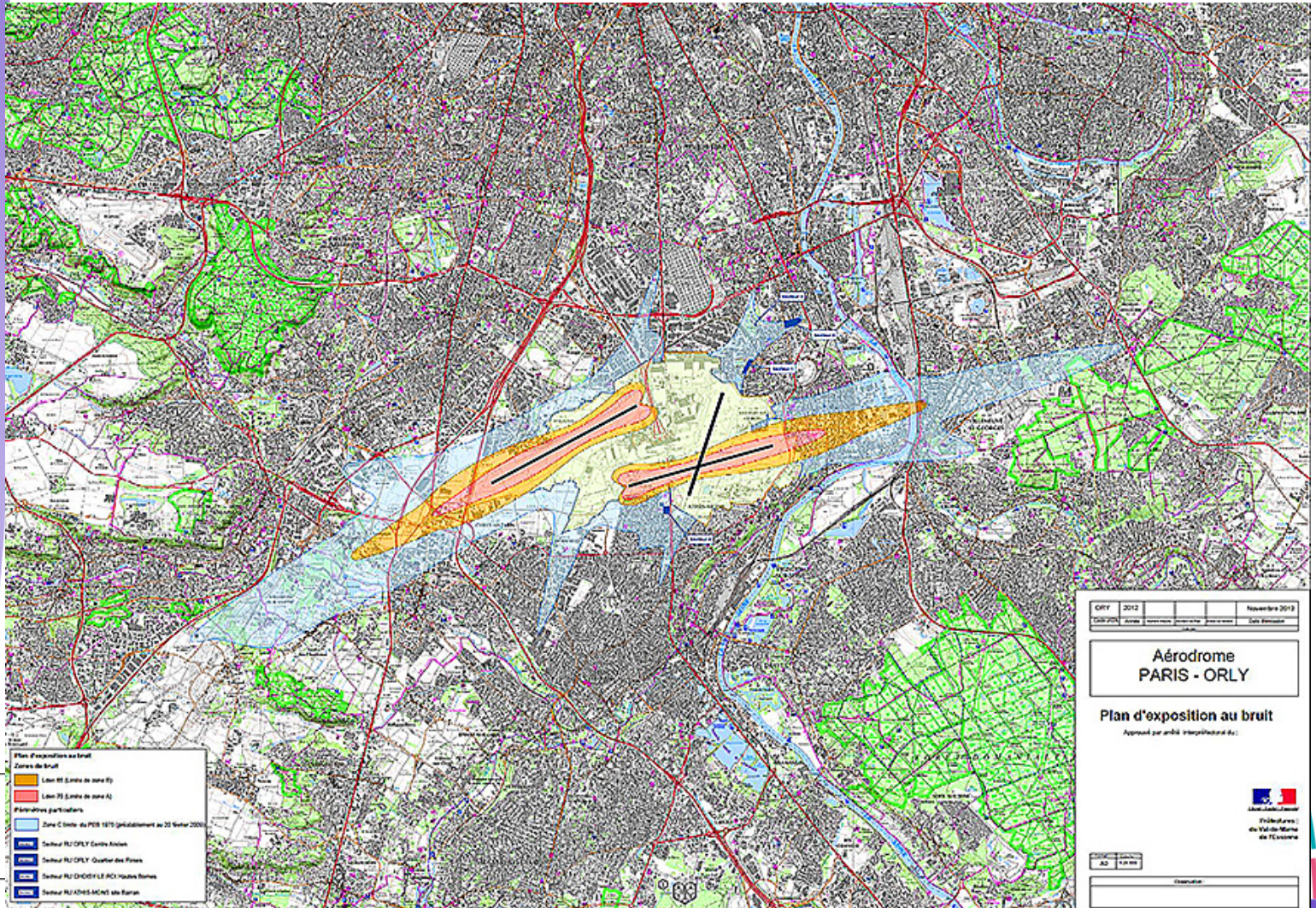
annexe à l'arrêté interpréfectoral n°2013-3820 du 30 décembre 2013

Le Préfet de Paris
Le Préfet de la Seine-Saint-Denis
Le Préfet de la Seine

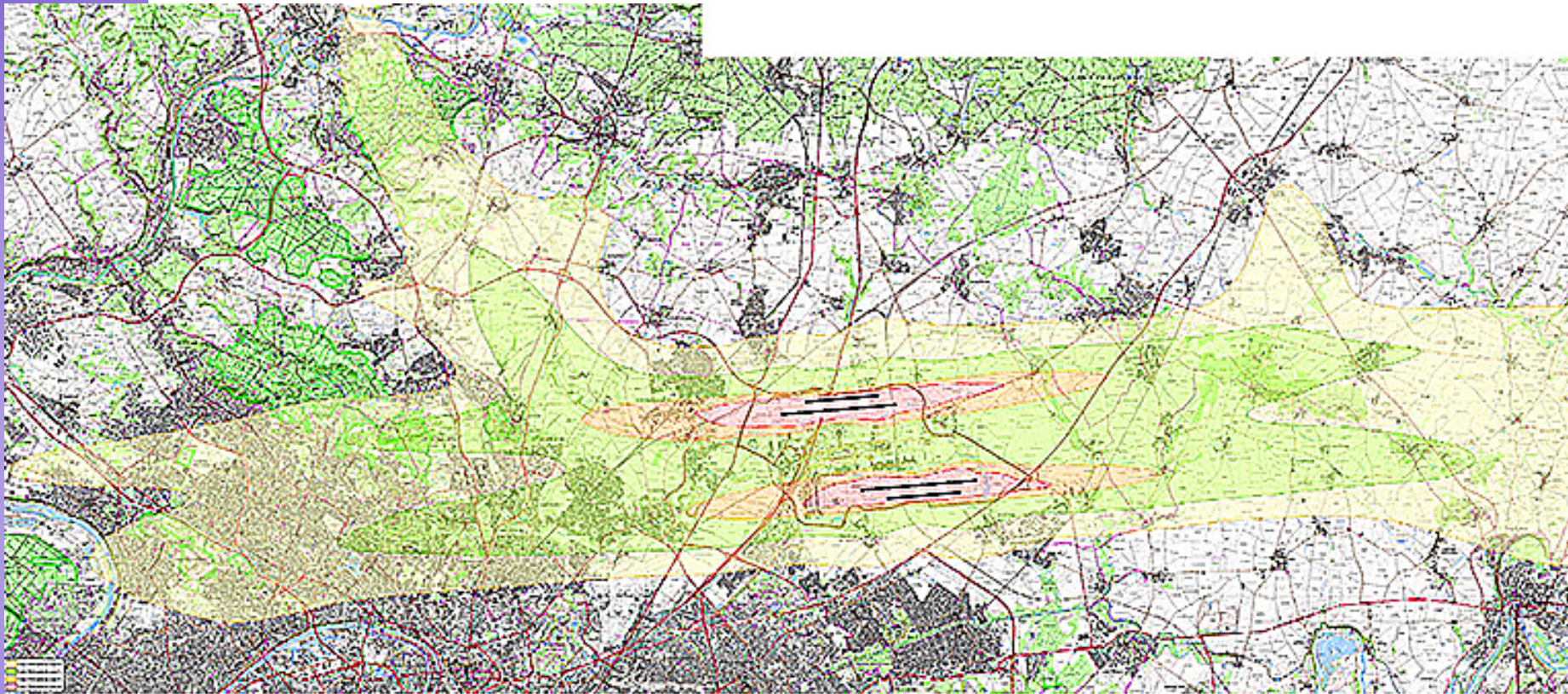
Michel KLEIN

Projet	Statut
01	0,00 000

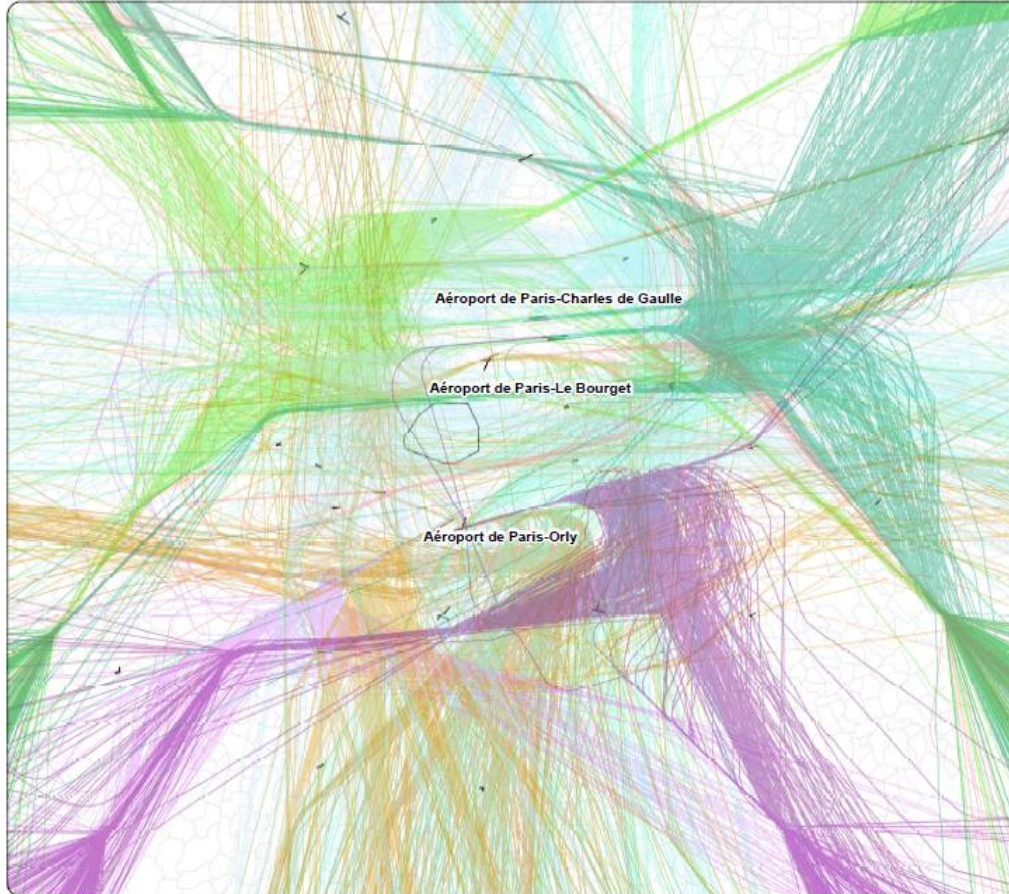
Orly: housing restrictions (PEB)



CDG Housing restrictions (PEB) 2007



Routes



Légende

— plateformes

Légende

- Arrivées CDG Ouest
- Arrivées Le Bourget Ouest
- Arrivées Orly Ouest
- Départs CDG Ouest
- Départs Le Bourget Ouest
- Départs Orly Ouest
- Arrivées CDG Est
- Arrivées Le Bourget Est
- Arrivées Orly Est
- Départs CDG Est
- Départs Le Bourget Est
- Départs Orly Est



0 2 4 8 km

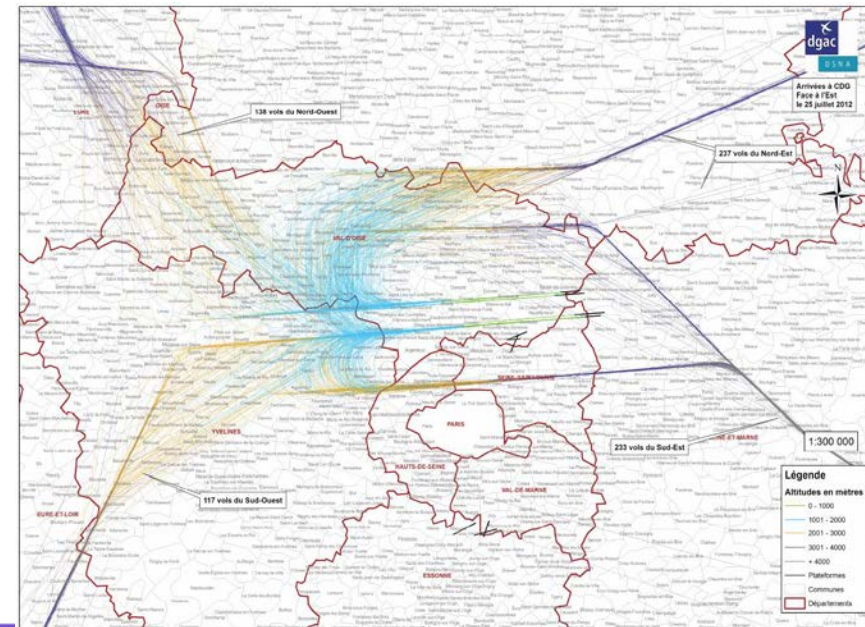
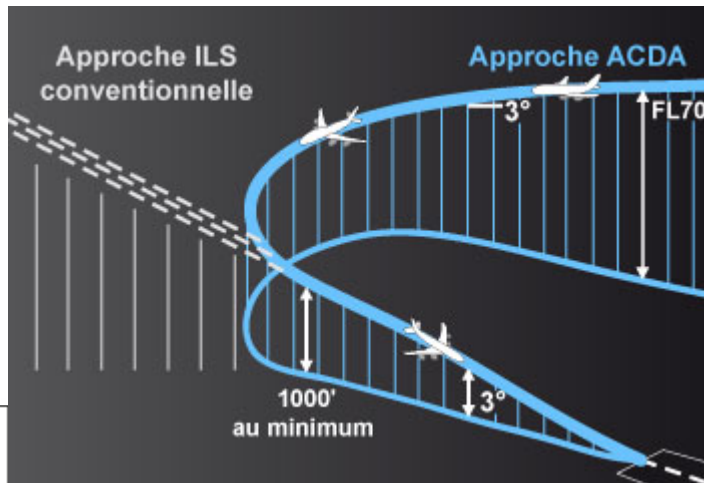


Raise FAP by 300 m: 2012 (ORY and CDG)

Raising by 300 m the final approach point reduces up to 50% noise (3 to 4 db) in overflighted zones

Gain increased with continuous descent approach procedures (CDA)

Dans une procédure de descente par palier, dès que l'avion intercepte l'ILS, il remet les gaz pour faire un palier d'environ 30 secondes (2 miles nautiques ou 4 km) avant d'entamer sa descente vers la piste. Dans une descente en profil continu ou lisse, dès qu'il intercepte l'ILS, l'avion descend en réduisant simplement la puissance de ses moteurs et ne sort ses volets et le train d'atterrissage qu'en approche de la piste..

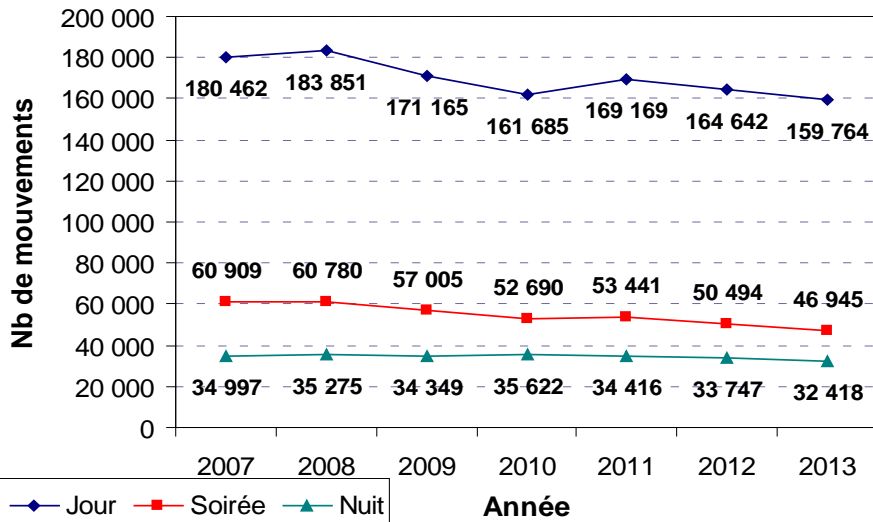


Since 2004, an indicator of measured noise (IGMP) at CDG and a commitment not to exceed level 2001-2003

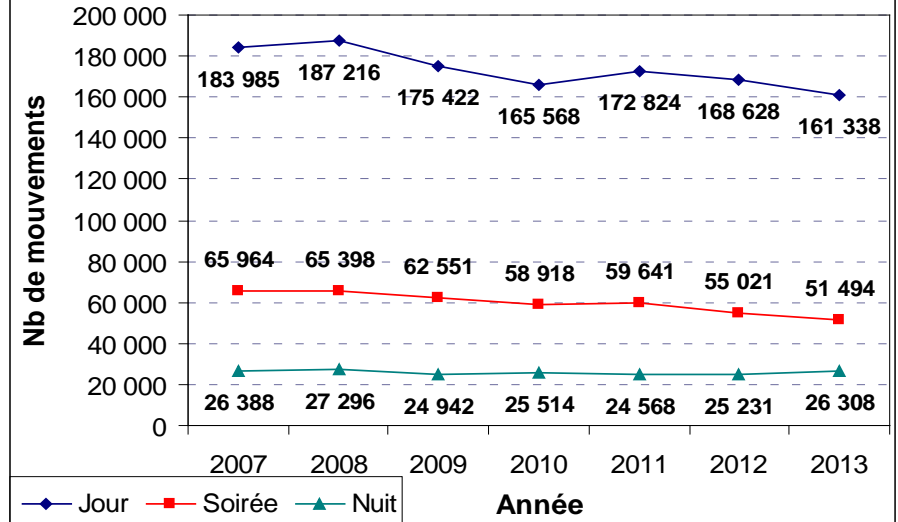


Traffic at CDG: d,e,n

Evolution des atterrissages

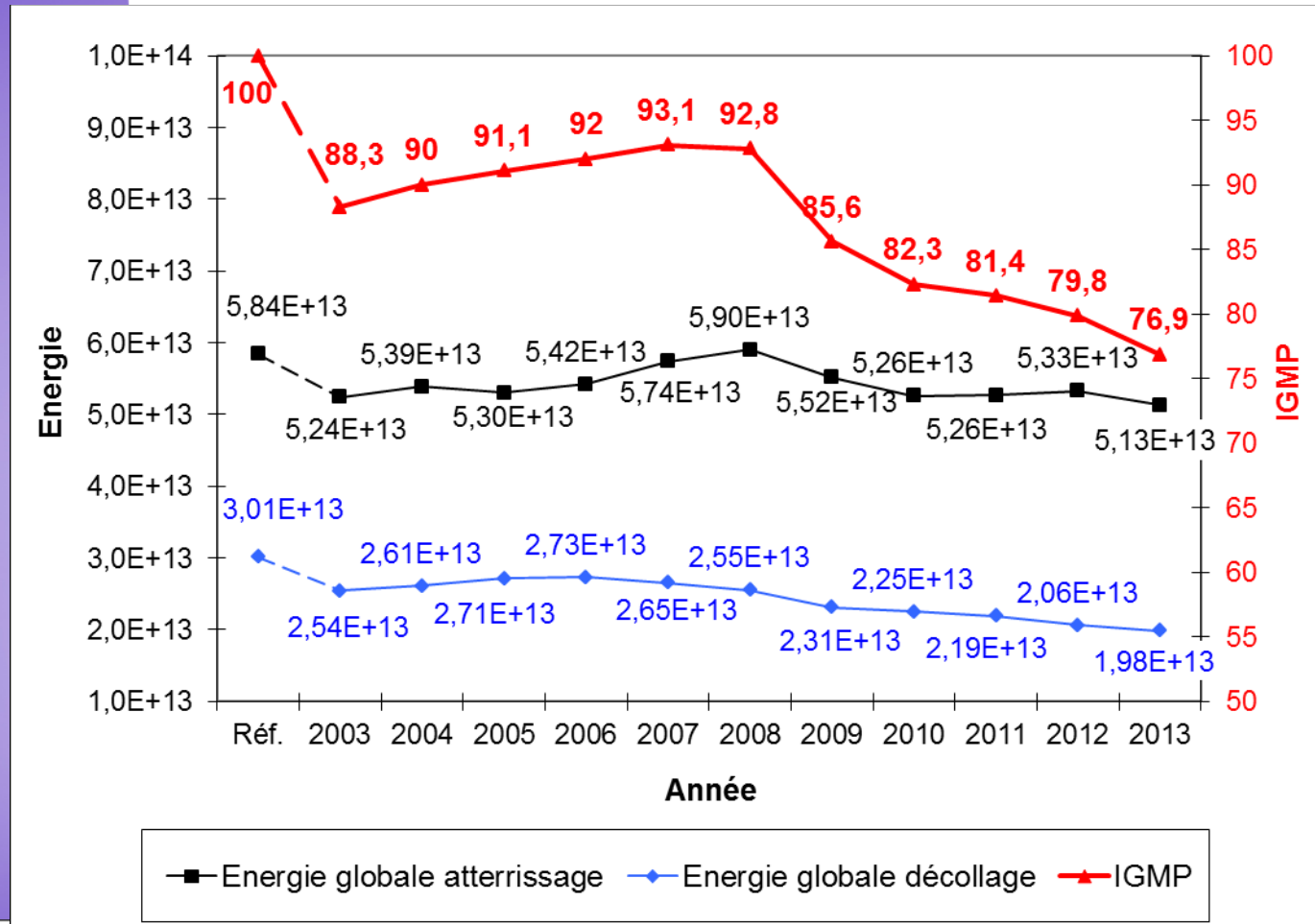


Evolution des décollages



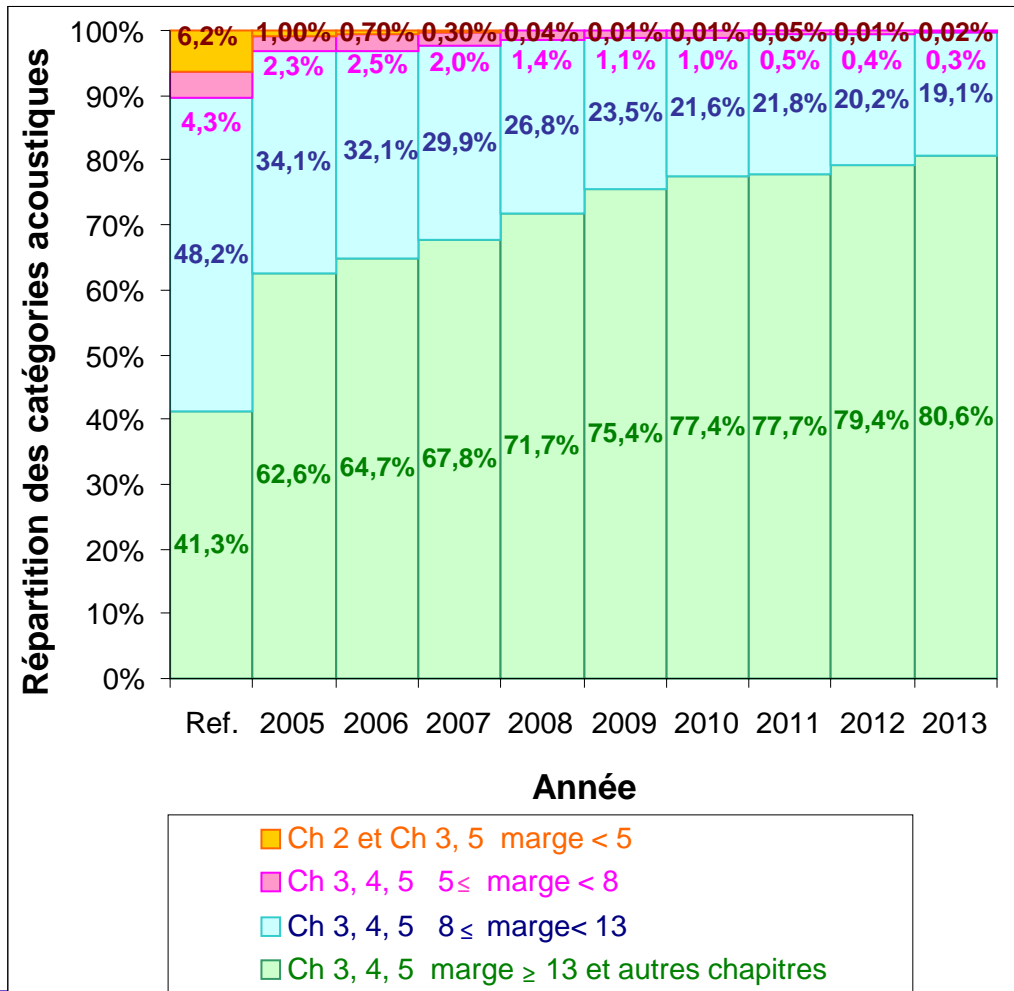
Share of night landings: 14%, night take-offs: 11%

Continuous decrease of IGMP



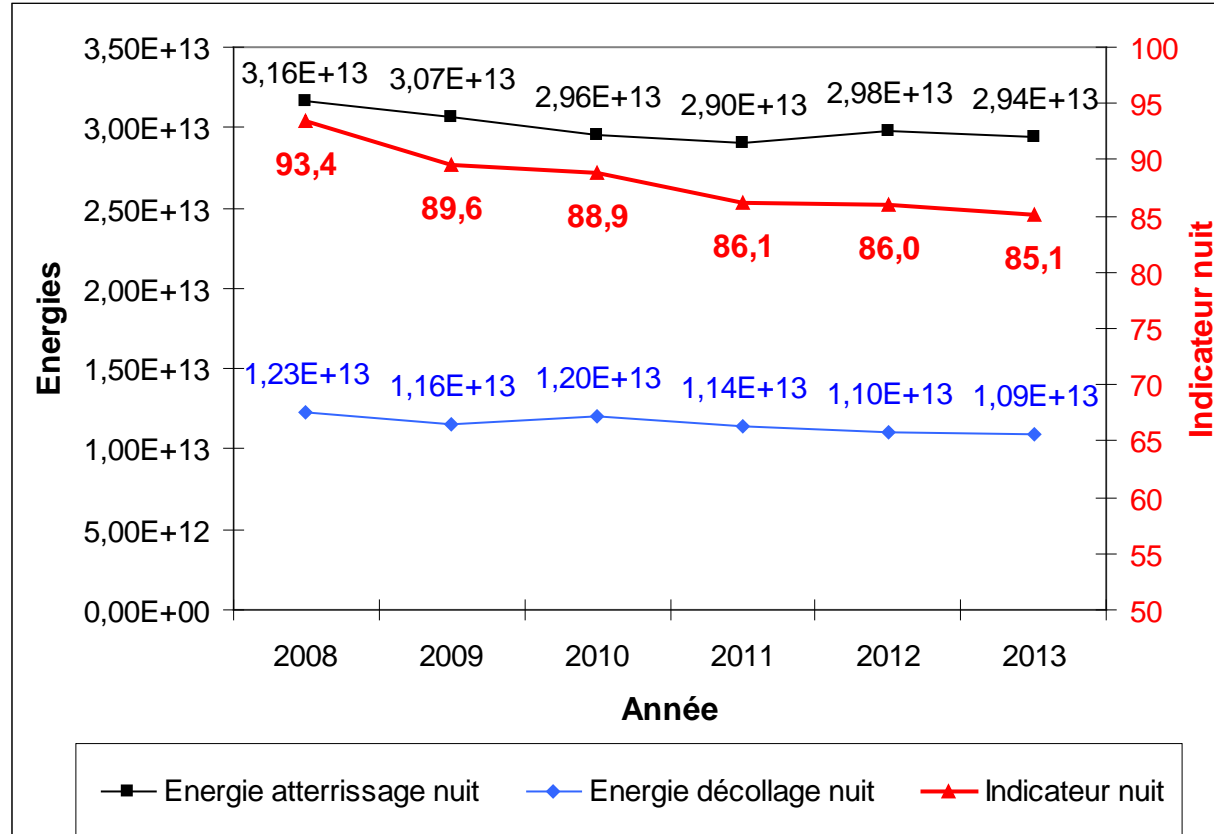
IGMP 2013 = 76,9

A silenter fleet



Fleet modernization explains -1,3 of 2012-2013 IGMP evolution

Night index also decreasing (22h-6h)



L'indicateur de nuit poursuit sa baisse depuis 2008

IGMP - Definition

$$I \quad G \quad n = \frac{1}{2} \times \left(\frac{W_{p,n}}{W_{a,0}} + \frac{W_{d,n}}{W_{d,0}} \right) \times 1$$

Landing Take-off

Year « n » Reference = average 1999, 2000, 2001

W : noise energy of each flight

- Weighted day/evening/night (x10 for night)
- Recalculated at a standard distance
 - 9200 m for take off
 - 5000 m for landing

100 = Limit not to be exceeded



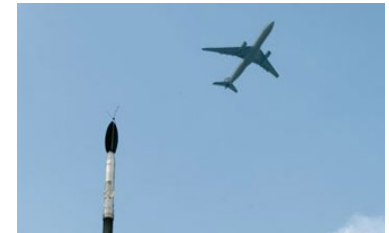
IGMP - Principes

Indicateur

Global

basé sur la mesure du bruit :

- de chaque mouvement
- pendant une année
- à partir de 8 stations dédiées



Mesuré

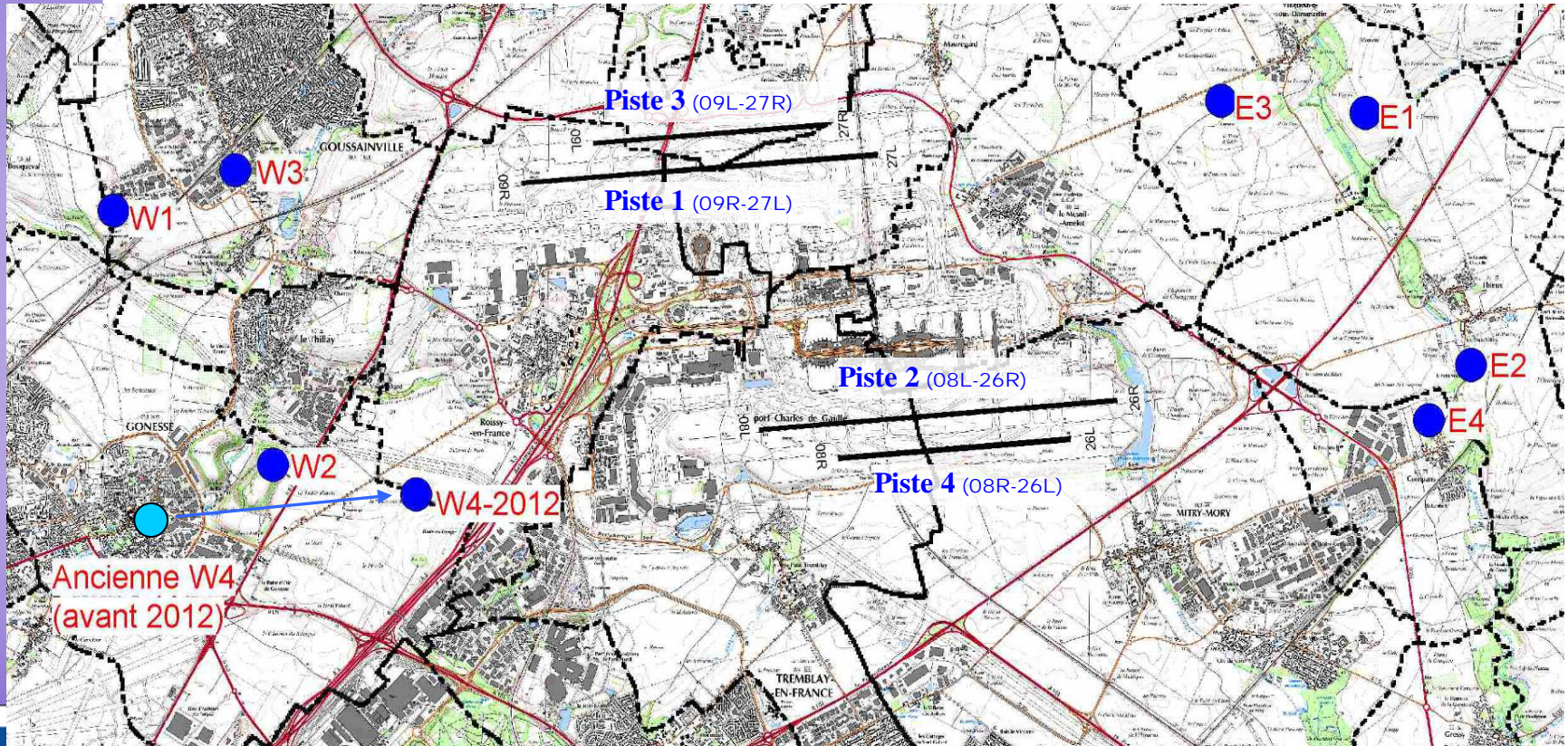
- nuit (22h00-5h59) : niveau mesuré + 10 dB
- soirée (18h00-21h59) : niveau mesuré + 5 dB
- jour (6h00-17h59) : niveau mesuré non pondéré

Pondéré



Position of stations IGMP

8 points of measure at about 5000 m of the closest runway threshold



Conclusions and debates about air transport in France

- Capacity is globally sufficient: moderate growth of flights, no need for a new airport in Paris for next 20 years, but increase of operational capacity through technology, CDM, environment friendly procedures. Potential of capacity developement in regional airports.
- Stabilisation (or decrease)of noise expected (chapter 14), social demand to reduce night flights.
- Local pollution is an increasing concern, although the share of emissions of air transport is limited.
- The current balance between the need to enhance mobility and connectivity and the legitimate concerns of airport neighbourhhod will continue to be searched through a continuous adaptation.