

How Bio Fuels affect stockpiling. French case and stability tests

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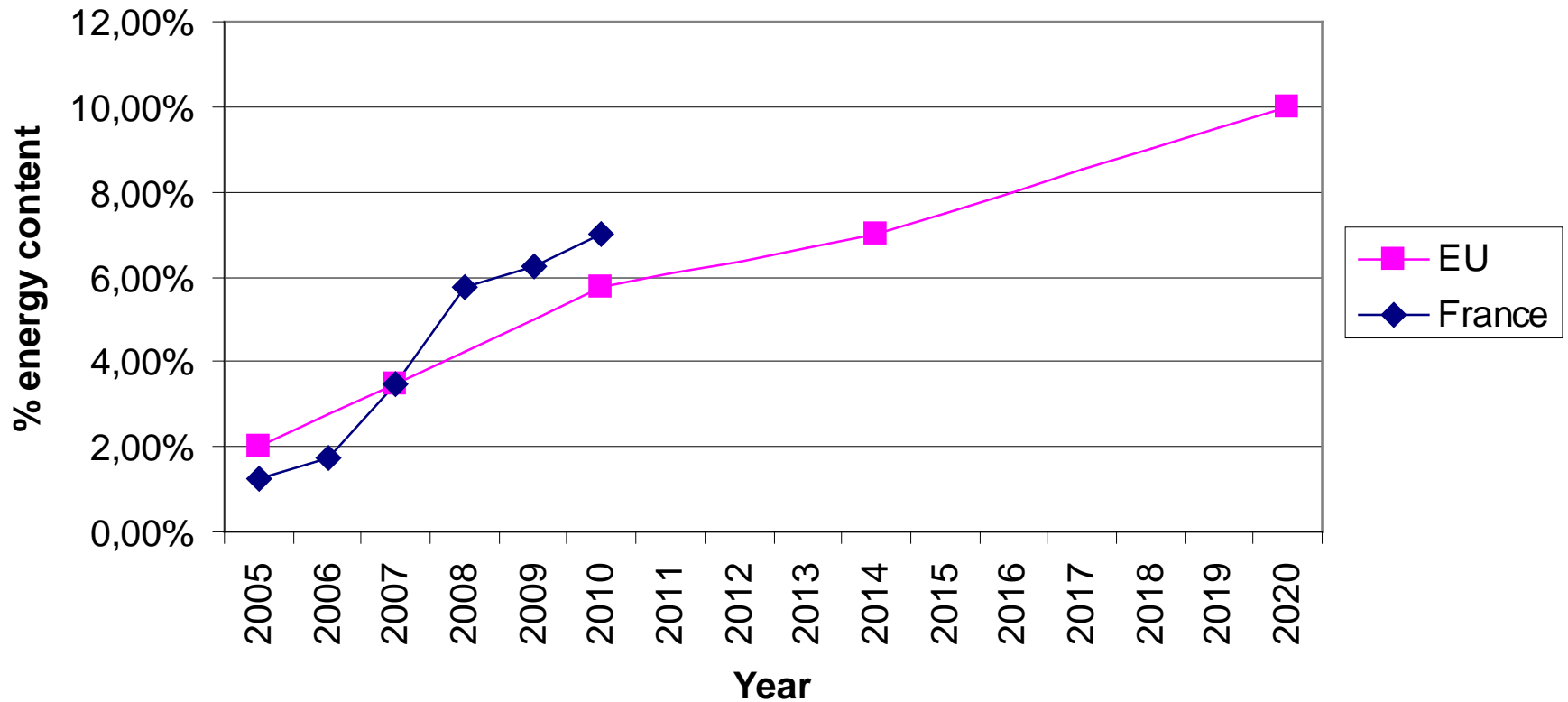
SUMMARY

- 1) European Union & French legislations on bio fuels
- 2) Consequences on marketers activity
- 3) Stability considerations
- 4) SAGESS Policy
- 5) Tests on stability



EU & French legislations on bio fuels (1/2)

EU and French bio component incorporation objectives



EU & French legislations on bio fuels (2/2)

France has the most ambitious target in European Union, for ethanol (Mogas) and FAME (diesel) incorporation

... But several countries on the opposite want to slow down the tendency :

- Germany has delayed its milestone for 10% incorporation
- UK has recommended to slow down EU's incorporation increase objective

➔ These discrepancies & crude price fall down do not change the tendency to incorporate more and more bio components in fossil fuels

Bio Fuels French incentive mechanism

1) Taxes exemption for bio components (reduction of excises)

2) TGAP (General Tax on Polluting Activities) came into force in 1999.

A strong tax (paid by the operator who sells the product, Mogas or ADO) if bio component content is $<$ limit.

Limit goes up each year (see previous slide : 6.25% in 2009).

Calculation is done globally and yearly, by the operator (certificates mechanism)

TGAP stake : for each m3 not incorporated, TGAP value is
 ~ 3.5 times Tax exemption'...and expensive : > 1000 \$



SAGESS policy

SAGESS policy : favour stockpiling

in commercial depots and in commingled tanks

➔ best availability and lower costs

Bio fuels stability concern may :

- need separate storage for fossil component and for bio component
- or ↗ refreshment rate

⇒ **Bio fuels** ↗ **stockpiling cost**

Following slides show how we deal with this.



Stability considerations (France) 1/2

Mogas

Two categories of depots/refineries, knowing that the objective is to add oxygenate above a given limit (to save TGAP tax)

- 1) Finished product **without ethanol** → RBOB is blended with only MTBE or ETBE → finished product Mogas can be (and is) stored as so.
Strategic stocks can be (and are) this Mogas
- 2) Finished product **with ethanol** : a more & more frequent situation.
Blend of ethanol and RBOB unstable → not stored ⇨ two components stored separately & blending done only at trucks loading.
Strategic stocks consist of RBOB only, not ethanol (because in France it is a national production)

⇨ Same stability concern as for fossil Mogas



Stability considerations (France) 2/2

Distillates

Only ADO – diesel oil – is concerned by bio components

Contrarily to Mogas, you can store bio diesel, at least a few months.

Two categories of depots :

1) Bio free diesel and FAME stored separately

Blending of bases : done in a separate tank before loading.

Since bio free diesel is at specification, it can be strategic stock

⇒ Same stability concern as for fossil ADO

2) Only bio diesel is stored

➔ strategic stocks are bio diesel : frequent case ➔ stability concern for > 2,5 MM3

(nearly 50% of SAGESS ADO stocks)

➔ Stability concern ⇒ Better knowledge is necessary



Adopted policy for ADO (France)

1) At first, SAGESS did the maximum to forecast ADO stability depending upon a few criteria
⇒ Working group composed of concerned and competent stakeholders

2) In the mean time,

Identify depots where refreshment of product is slow

In these depots, regular sampling and stability measures

Pursuant to the results, we process it so that it remains at specification

⇒ Stability under control



On going Stability Tests (1/2)

Working Group : with professionals of the business :

stockpiling entity, research institute, operators, and FAME producer

➔ to work on ADO stability.

Objective : identifying some simple rules to forecast stability

First result : it seems no study has reached the objective.

Willingness : following industrial conditions as much as possible.

Constraints : Accelerated Ageing doesn't exist for stability ⇔ tests should roll up with natural ageing, up to 3 years (maximum duration of tests)



On going Stability Tests (2/2)

On going Tests : an experimental plan was set, using 7 blends, each in a separate tank, in industrial conditions, with several criteria :

- Same fossil diesel base,
- 2 different FAME
- 2 incorporation rates
- With and without anti oxidizing agent

Sampling plan & Analysis plan were set

These plans will help evaluate the impact of each criteria.

In case of deterioration of a product (before the limit), test is stopped for this tank, and appropriate shipping is done for this product.

Tests began in January 2009

