How Changes in Fuel Specifications Affect Stockpiling

Didier Gaffet – SAGESS France

Petrostocks 2007 : New Perspectives

New Orleans USA - January 29-31, 2007

PLAN

1. SAGESS policy
2. Consequences on contracts
3. Specifications change : a huge & costly program
4. Impacts of biocomponents

Conclusions

SAGESS policy 1/3

SAGESS mission : in France (metropolitan territory), buy, store & maintain Srategic Reserves in 3 categories of products, in proportion with yearly consumption, and permanently at specification.

1. Own stocks / not storage, except a small depot (36 km3).

➔ This, compared to a situation where SAGESS would own most of its storage allows optimisation of storage in the country at lower storage costs.

2. Impose minimal rotation of its products (rule « 1, 2, 3 ») :

Category 1	Jet A1	→ every year
Category 2	Gasoline	→ every two years
Category 3	Distillates (ADO & HO)	→ every three years

➔ Products (if biofree) without aging problems.

SAGESS

SAGESS policy 2/3

3. Maintain strategic reserves at last specifications. In case of change, SAGESS anticipates to be ready in due time.

4. Maintain strategic reserves in proportion with yearly consumptions.
    - Obligations are fixed by legislation at category level
    - Inside category 3 (distillates ADO & HO), the objective is having ratio diesel / heating oil equal to consumption's.

SAGESS policy 3/3

Comments

- Items 2 (rotation) & 3 (specification) are systematically included in contracts. Nevertheless, when products are stored by pure stockists, SAGESS must look for candidates to do these changes.
- For both items 3 & 4 (consumption), SAGESS pays the cost differential between products.
- To take benefit of reasonable costs differential & to smoothen logistic flows, SAGESS anticipates as early as possible the change process.
- Matching item 3 helps matching 2.
- Item 4 is respected by combining items 2 & 3.

Consequences on contracts

Storages are hired to owners through contracts (in 130 depots).

Contracts include commitments for partners to :

- rotate products according to rule « 1, 2, 3 »
- upgrade products according to specification change, cost quality differential being charged to SAGESS

Examples of some specification changes done or to be done in the future :

- 1/1/2000 : Gasoline at 350 ppm sulfur, & diesel at 500 ppm S
- 1/1/2005 : Motor fuels at 50 ppm S
- 1/1/2008 : Heating Oil at 1000 ppm S
- 1/1/2009 : Motor fuels at 10 ppm S.

SAGESS

Specification changes : a huge & costly program

Difficulties linked to specifications changes :

-Logistic constraints ⇨ low flowrates to empty & fill reserves

-High differentials as deadline approaches

⇨Anticipation necessary

...but product may not yet be available

⇨ strong collaboration with operators

Examples :

•2005 specs (50 ppm) :

1735 km3 diesel & 1156 km3 gasoline : cost = 17 M€, ie 6 €/m3

•2008 specs (HO 2000 ↘ 1000 ppm) :

3300 km3 : cost = 45 M€, ie 14 €/m3

•2009 specs (50 ↘ 10 ppm) :

3000 km3 : cost = 50 k€, ie 17 €/m3

SAGESS

Impact of biocomponents 1/3

3 concerns : taxes considerations, specifications & stability.
In France :

- Taxes considerations.
  - ➢TGAP (Taxe Générale sur les Activités Polluantes = General Tax on Polluting Activities)
    Principles : strong tax (paid by operator who sells the product to the consumer) if biocomponents content is < limit. Each year, limit goes up. Calculation is done globally and yearly, by the operator (certificates).
  - ➢Taxes exemption for biocomponents.
- Specifications. No compulsory minimum, but a maximum (5% vol. of ester in diesel; 2.7% of oxygen & 5% vol. in gasoline). The 5% maximum could be doubled within a few years, which will be necessary when TGAP will have encouraged refiners to incorporate a ratio near by maximum.

Impact of biocomponents 2/3

Stability of biocomponents : still to be verified. That's why biocomponents are incorporated the latest possible in the logistic process.

Reminder : stockist is at all time responsible for the quality of the product; stability is a key issue.

Situation :

- Measurement methods of fuels stability containing biocomponents are not finalised; numerous studies are on going.
- Up to a limit (to be defined), there should be no problem of stability; thus the rules could be identical as with biofree fuels (rotation « 1, 2, 3 », depending product) ➔ to be confirmed.
- With products containing biocomponents > limit, a quicker rotation period could be necessary. The stability period depends upon the origin of the mixed products.

  For example, Ester from sunflower seems more stable than the ones from animal greases.

SAGESS

Impact of biocomponents 3/3

Actual rule : until measurements methods are verified, and allow to get accurate rotation rules, no biocomponent should be incorporated in strategic reserves

Details :

Caverns : due to the difficulty to rotate, no biofuel is and will be incorporated. Products will come from biofree specific blendings. When unstocking (due to specification process, strategic unstocking...), biocomponent could be incorporated, with production of certificate (TGAP impact).

Refineries and non sleeping depots : products are commingled in most of the cases. Rotation is very quick. Biocomponent normally not a problem.

Sleeping depots : fuels must not content any biocomponent until their effect on stability is controlled.

Change in specifications : conclusions

- Change of specifications does not change stockpiling for biofree fuels.
- On the contrary changes are good opportunities to rotate products, and to tune stocks distribution.
- Biocomponents will affect rotation periodicity due to stability loss.
- For the moment, no biofuel should be incorporated in strategic reserves until methods of measurement of stability and rules are defined.