Various Aspects of Above-ground Storage of Strategic Oil Stocks

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Part I : The independent Storage Market

1. Definition :

Independent (or commercial) storage is storage for third parties.

The terminal has different ownership than the oil stored, and has a P / L account.

2. Size :

World above-ground oil storage capacity estimated:	1,3 billion cbm (8 billion bbls)
Independent storage worldwide :	120 million cbm
	8 million bbls) = 10 %
World consumption:	82 million b/d
Independent storage thruput:	8 million b/d = 10 %

3. Role :

- Overflow,
- Seasonal,
- Bunkers,
- Strategic stocks,
- Transshipment,
- Distribution,
- Speculation,
- Futures market

4. Players :

Vopak	20 mln cbm	72 terminals
Oiltanking	10 mn cbm	69 terminals
Kinder Morgan	10 mln cbm	43 terminals
Kaneb	10 mln cbm	35 terminals

Together have a market share of approx. 42 %

Active worldwide in 53 countries

Total 219 terminals

5. Customers

- Oil companies
- Traders
- Governments
- Powerplants
- Bunkering
- Shipping
- Miscellaneous …

6. Profitability (before tax)

ROCE	30-40 %
ROE	20 %

7. Standard Storage Contract

A Standard Storage contract contains the following elements:

- Period,
- Location,
- Tariff,
- Volume rented,
- Thruputs,
- Technical description,
- Options,
- Force majeure (when long term contract).

8. Driving Forces

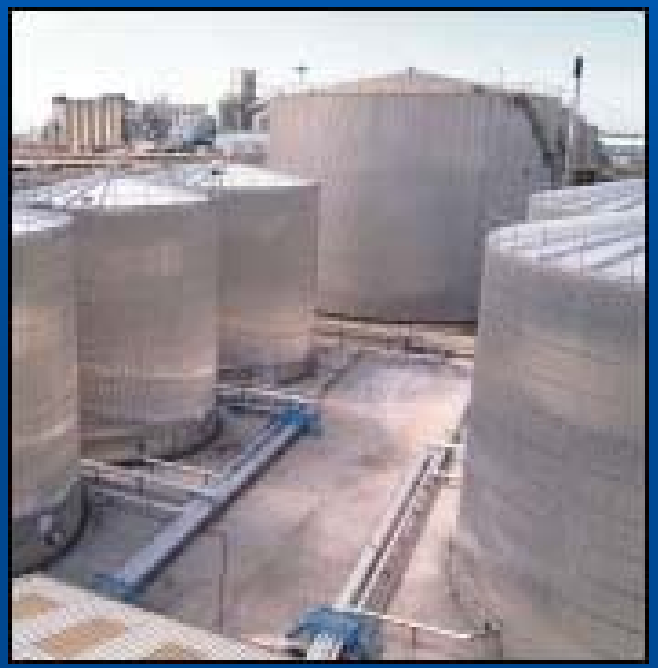
Driving forces market:

- Future oil price
- Political (in-) stability
- Season
- Bottlenecks in normal logistic pattern
- Shipping rates

Part II : Construction and Operating Costs of a new terminal

Construction costs of a 500.000 m³ terminal (3 mln bbls) in China

Construction Cost:	US $
Tankage	23.600.000
Piping	4.950.000
Equipment	5.750.000
Civil	7.850.000
Structural	350.000
Electrical	4.140.000
Instrumentation	4.300.000
Engineering	2.200.000
Indirect Cost	5.000.000
TOTAL COST	**58.140.000**
Cost per m³	**116,28**



Basic Assumptions:

- A simple Terminal; Excluding jetty

Note: Impact price of steel: last 2 years 30 %.

Operating Cost and Depreciation of 500.000 m³ (3 mln bbls) Terminal in China

Operating Cost:	**US $**
Personnel	2.100.000
Maintenance	698.000
Operating	750.000
Energy	850.000
Environmental	230.000
Depreciation	1.930.000
TOTAL COST/ year	**6.558.000**
Cost per m³/ year	**13,12**

Basic Assumptions:

- Throughput: 2.000.000 m³ per year
- Depreciation: 30 years

Part III : Current rates for strategic storage in Europe (estimate)

(in EURO per cbm/year)

Underground, crude	4
Aboveground, crude	6-11
Products	7-20 (!)

The rates depend on the market and on the cost structure of a terminal.
This cost structure depends on size of terminal, age, scope, etc.

Part IV : Miscellaneous

“Tickets” :

A paper coverage of a certain quantity and quality of oil, to cover strategic stock obligations. Product is owned by an other party and reserved for emergency situations.

Monthly fee per ton.

Owner of ticket has option to buy at market price when crisis occurs.

Bi-lateral Agreements:

Needed to keep stocks in another member state (IEA, EU) country.

The agreement guarantees that under all circumstances the oil is and remains available for the owner of the stocks.

The number of bi-lateral agreements in Europe is increasing.

In EU approx. 30 bi-lateral agreements are in place.

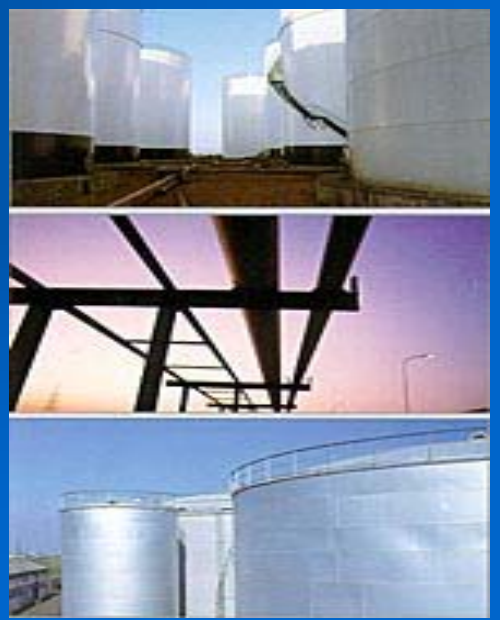
Outlook European Market 2014

A study estimates an additional need for strategic oil storage of more than 20 million m^3.

The current existing storage capacity is not able to absorb such additional volume.

End of Presentation

Thank You for Your Attention!



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