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FUELS INTERNATIONAL PLC

MSAR® - a low cost substitute for heavy fuel oil
Power generation, Marine fuels, Refinery refuelling

2014 AGM Update





www.quadrisefuels.com

28. 11 . 2014

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"This is an exciting and rewarding time for the Company, our partners and clients, and our shareholders with the anticipated realisation of continuous commercial revenues in 2015".

Ian Williams
Executive Chairman
Annual Report and Financial Statements 2014

"Considerable progress towards commercial revenues"

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Highlights

- Positive results from seaborne trials leading to **Mærsk** confirmation of "Proof of Concept"
- **Akzo** Agreements: world-wide rights to formulations & technology
- Programme agreed to produce MSAR® at major **Saudi** refinery potentially leading to large scale fuel conversion projects
- **Ecopetrol:** Joint Feasibility Study confirms fuels proposal
- £ 10.7 million (gross) raised from March **share placing**
- **GM Marine & GM Power** in place for 2015

2014 market cap range to date: £ 230 to £ 370 million

Marine MSAR® with Mærsk

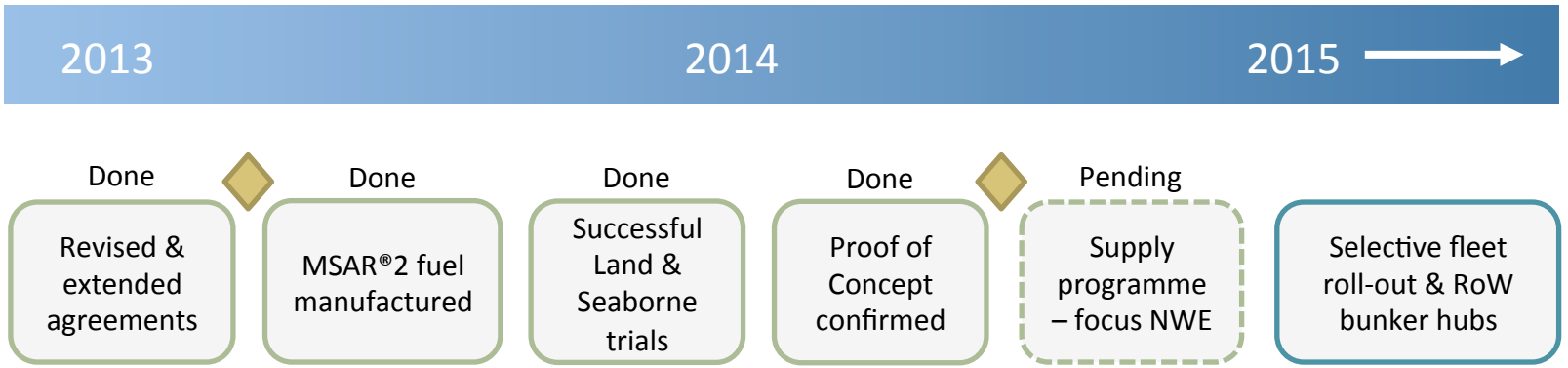


The Market:

- 200 mtpa market – fully accessible
- Increasing emission standards
- Intense freight competition
- Fuel = 75% of operating cost

Quadrise / Mærsk:

- Cost & emission opportunity
- Land & Seaborne trial programme completed with OEMs
- Mærsk "Proof Of Concept" milestone confirmed
- Joint supply development programme (bunker hubs)
- LONO certifications part of commercial roll-out



Development & De-risking of Marine MSAR®



Saudi: MSAR® Production & Fuel Substitution Project

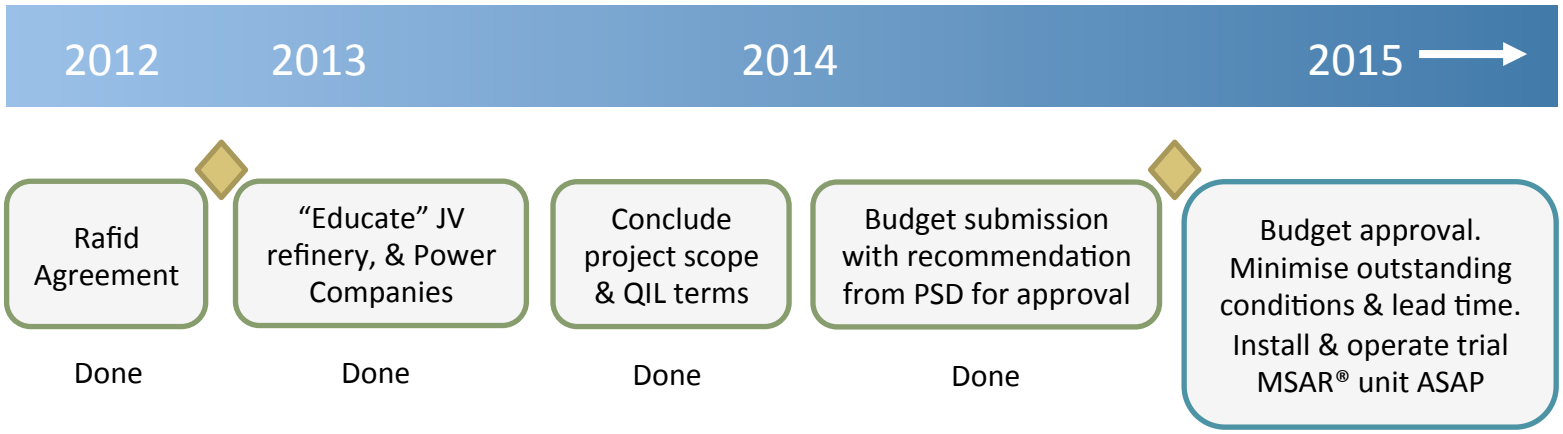


The Market:

- One of the highest global energy consumers per capita
- $ 17 billion distillate fuel imports per annum
- Power generation uses over 30 mtpa (crude oil, fuel oil & diesel)
- National imperative to reduce crude oil consumption

Quadrise / Rafid / Saudi client:

- Much effort on briefing stakeholders & raising profile
- Scope: Replace crude oil use with HFO / MSAR®
- Integrated large refinery / power complex designated
- Project proposal submitted for 2014/15



Other active projects



Global Oil Major:

- Multi-site opportunity
- Senior management attention
- Lab test on European residue completed
- Both marine & power options for MSAR®
- Candidate for marine supply programme

Asia : YTL PowerSeraya refuelling (Singapore):

- Former Orimulsion® consumer – 1.8 mtpa
- MOU renewed on 17 October 2014

Central & South America: Ecopetrol

- Completion of Joint Feasibility Study
- Refinery economics re-confirmed project merits
- Residue testing confirmed MSAR® compatibility
- Next milestone: Presentation of final report to top management

AkzoNobel relationship

- The AkzoNobel relationship remains central to the Group
- Alliance Agreement superseded by two new principal contracts; Joint Development Agreement & Exclusive Commercial Agreement

Summary:

- AkzoNobel will provide technical expertise to support the JDA
- AkzoNobel to supply additives under the Exclusive Commercial Agreement
- Quadrise "owns" the customer (refinery & end-user) and OEM relationships

Key changes:

- ✓ No Akzo royalty payments
- ✓ Shared ownership of jointly developed IP
- ✓ Quadrise:
  - Supply OEM equipment & AkzoNobel tech services
  - Sole licensor of MSAR® Technology
  - Own R&D capability to complement joint development

Adding Value - Emerging Developments

- Sound progress on resourcing & structure
- Potential to extend the business mode
- Plant & process opportunities to improve economics
- Security of Intellectual Property – patent applications
- Independent R&D capabilities







"…anticipated realisation of commercial revenues"

- Industry gamechanger with sound fundamentals
- Huge international market
- Partnering with major world class industry players
- Uniquely experienced management team
- Technically verified & commercial potential demonstrated
- Limited competition

Clear pathways to revenue:

- ✓ Marine MSAR® production & LONO certification leading to early commercial rollout
- ✓ Saudi demonstration plant in 2015 leads to progressive scale-up
- ✓ Ecopetrol potential subject to senior management approval
- ✓ Global oil major opportunities led by Marine progress
- ✓ New AkzoNobel agreements provide for increased flexibility

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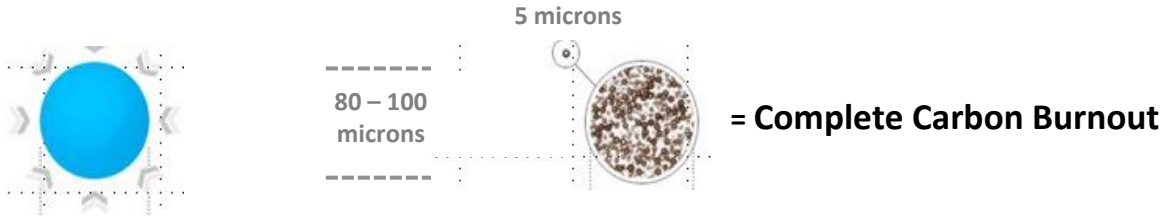
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Appendix - Technology

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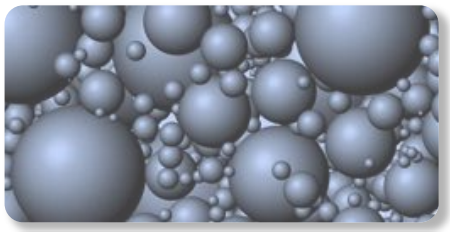
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MSAR – a game changing emulsion fuel…



A stable **'Oil-in-Water'** emulsion system:

- Tiny droplets of extra-heavy hydrocarbon
- Dispersed in water
- Using proprietary additives



Key benefits:

✓ Viscosity reduced using water in place of valuable light oil

✓ Stable lower cost substitute for heavy fuel oil

✓ Offers enhanced combustion & emissions

Tremendous value added, at low cost…

Price spreads sustained – projected to continue

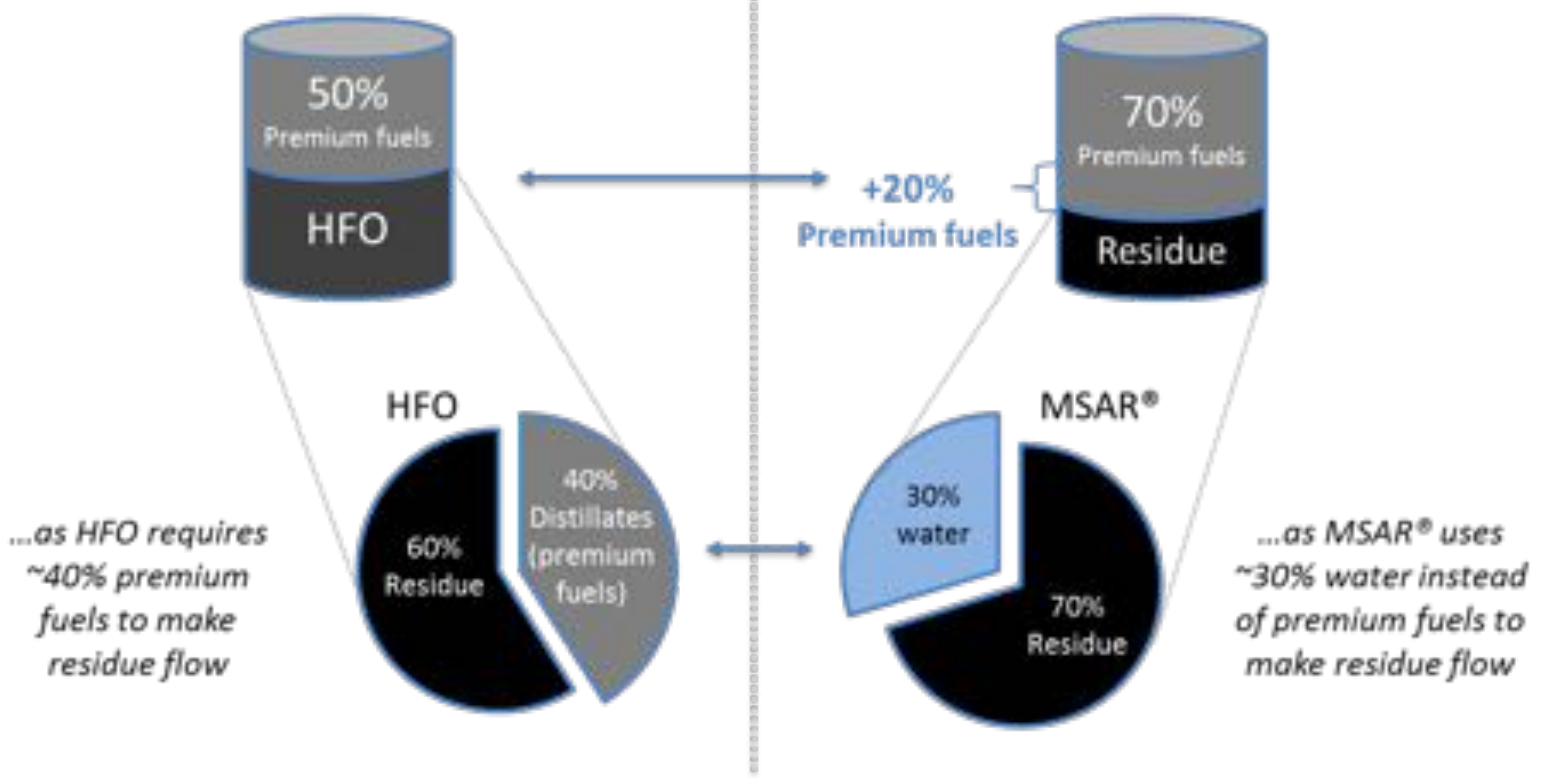
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In a refinery producing HFO…

…typically just 50% of the crude processed is sold as premium-value transportation fuels…

In a refinery producing MSAR®…

…some 70% of the crude processed is sold as premium-value transportation fuels…



A 200,000 bbl/d refinery gains up to $ 100 million/annum (shared between Refinery, Consumers & Quadrise)

This value is shared…



1 **Refinery margins increase**

2 **Fuel oil consumers save on costs**

3 **Quadrise benefits from license & service fees**

4 **AkzoNobel benefits from chemicals sales**

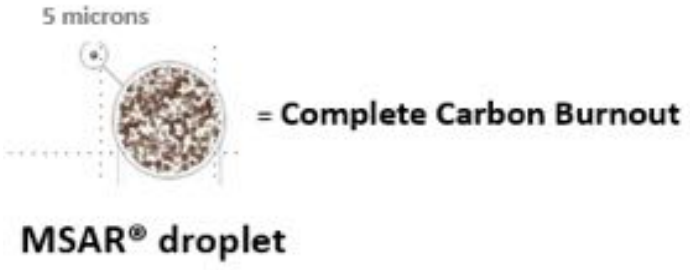
Quadrise is the "Integrator"

- **Establish market for MSAR®**
- **Install equipment at refinery**
- **Provide licence & experts**
- **Arrange support/supply of MSAR® to consumers**

Three potential modes of operation…

Mode	Description	Implications
Licence	Refinery owns the processing plant & equipment	• Appropriate for current phase of development • No capex & minimal working capital • Margin based on supplies & services
Toll Processing	Quadrise owns a ring-fenced plant within refinery complex	• Hydrocarbons owned by the refinery • Processing fee means higher margin
Merchant Plant	As per Toll but Quadrise purchases the input residue & sells MSAR® to the end-user	• Optimum margin • Substantial working capital requirement • Balance sheet implications • 12 – 24 months before trade finance available

Important environmental advantages



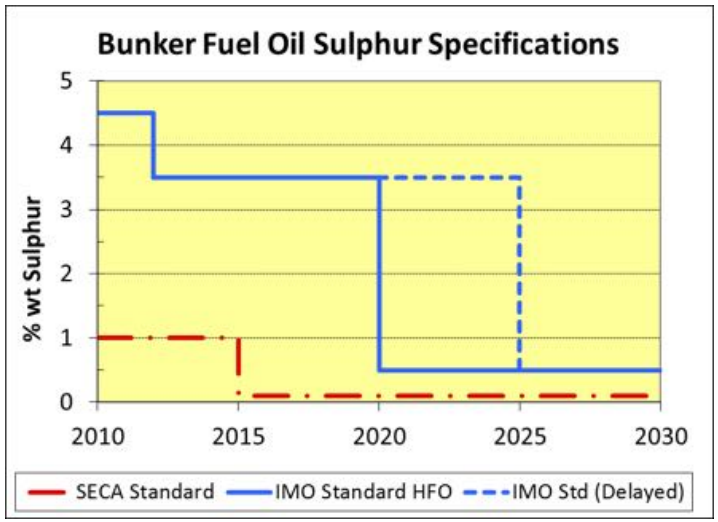
1. Energy Savings

✓ MSAR® stored & transported at lower (ambient) temperatures

2. Lower NOx & Particulates (Black Carbon)

✓ Lower combustion temp = 20% lower NOx emissions

✓ Complete burnout = lower particulate emissions



3. Affordable Compliance

✓ Marine sulphur limits will reduce (MARPOL)

✓ Distillate fuels demand likely to drive up price

✓ MSAR® investment much smaller with lower CO_2 impact

✓ Compliance (e.g. scrubbing) can be subsidised and accelerated

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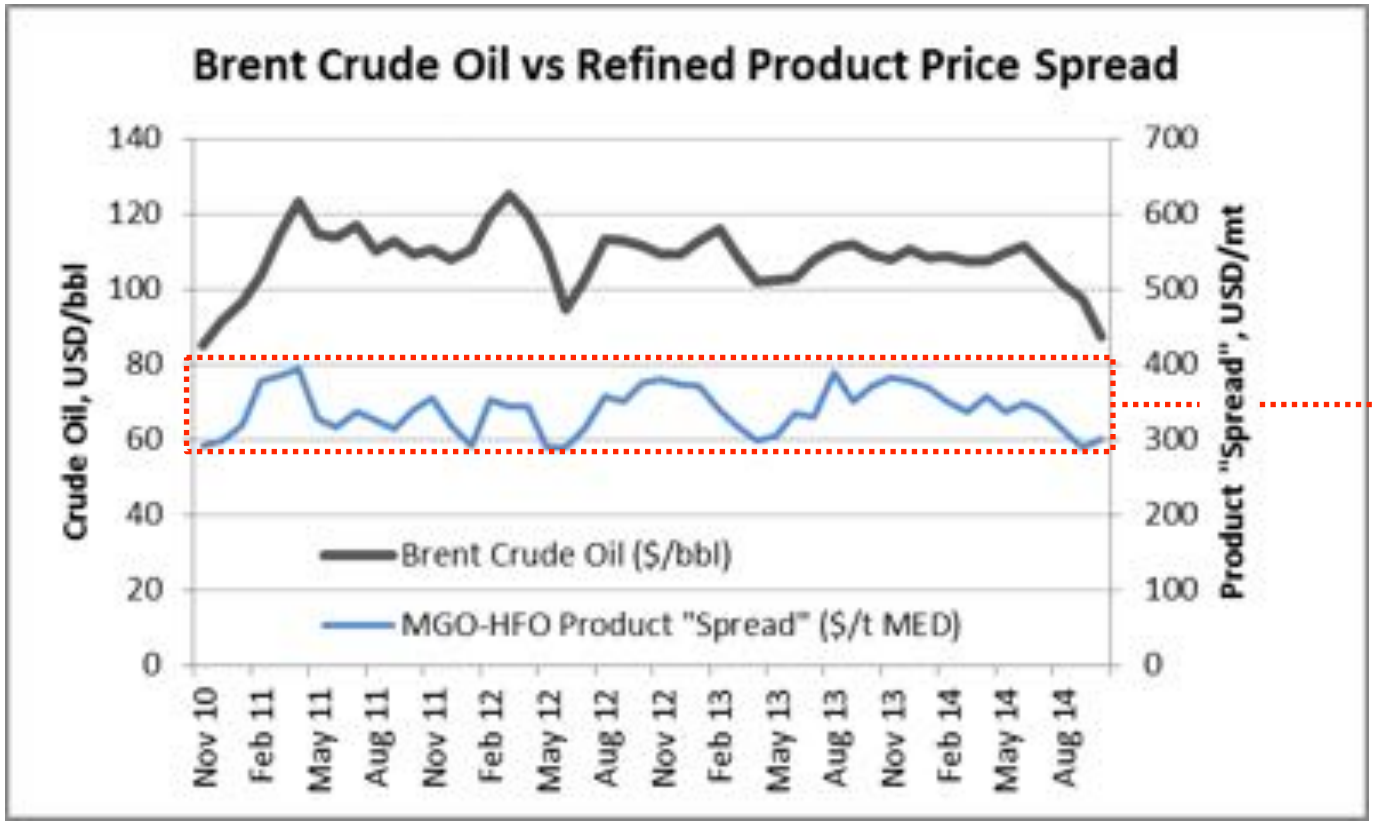
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Appendix – Oil Economics

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Resilience of the Quadrise Economic case



The economics of MSAR® are driven principally by the "spread" in refinery Fuel oil (HFO) and Gasoil (MGO) values and not the absolute crude oil price.

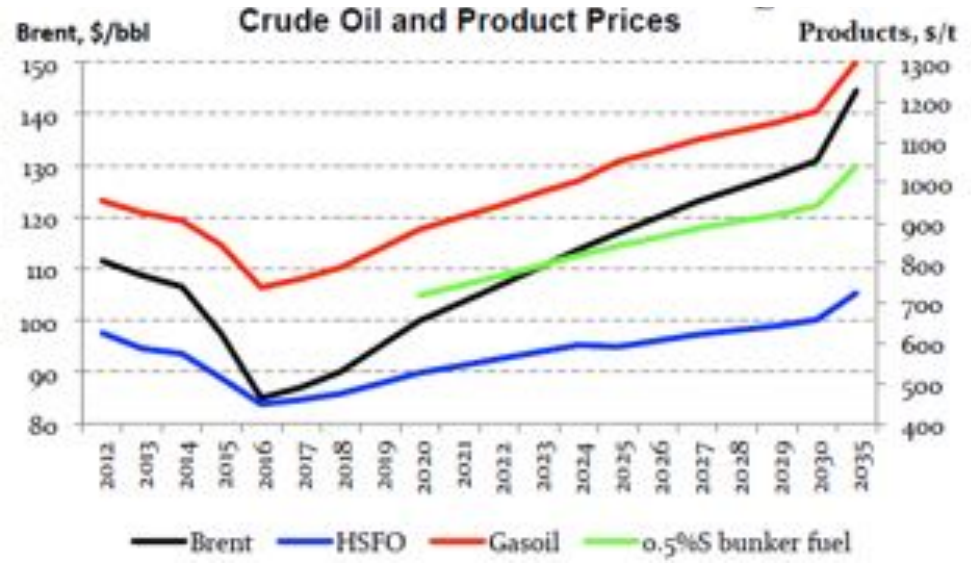
During the last 4 years the ~$300-400/mt has supported the MSAR® case, this is still the case today with crude oil at $75-80/bbl...

Increased distillate demand in the marine market

- Following the 2015 change in marine fuel sulphur limit (to 0.1%S) there will be a significant increase in Marine Gasoil (MGO, or Diesel) demand annually:
  - In the EU, MGO demand is expected to increase by 10 Million tons
  - Demand in the US will also increase, reducing current exports by 10M tons
  - The increase in marine middle distillate demand is occurring when there is already a worldwide shortage
- The MGO price is likely to become very high compared to today's prices

*Data courtesy of **Veritas Petroleum Services,***
Singapore International Bunkering Conference 2014

The "spread" between Gasoil and Fuel Oil (HSFO) is predicted to widen in the future, further supporting the MSAR® economic case in our view



*Data courtesy of **The International Bunker Industry Association,***
Singapore International Bunkering Conference 2014