

An Argent Energy presentation
for
The UK Coach Operators
Association



New Fuels ?

Alternative Fuels

- LPG
- LNG
- CNG
- GTL



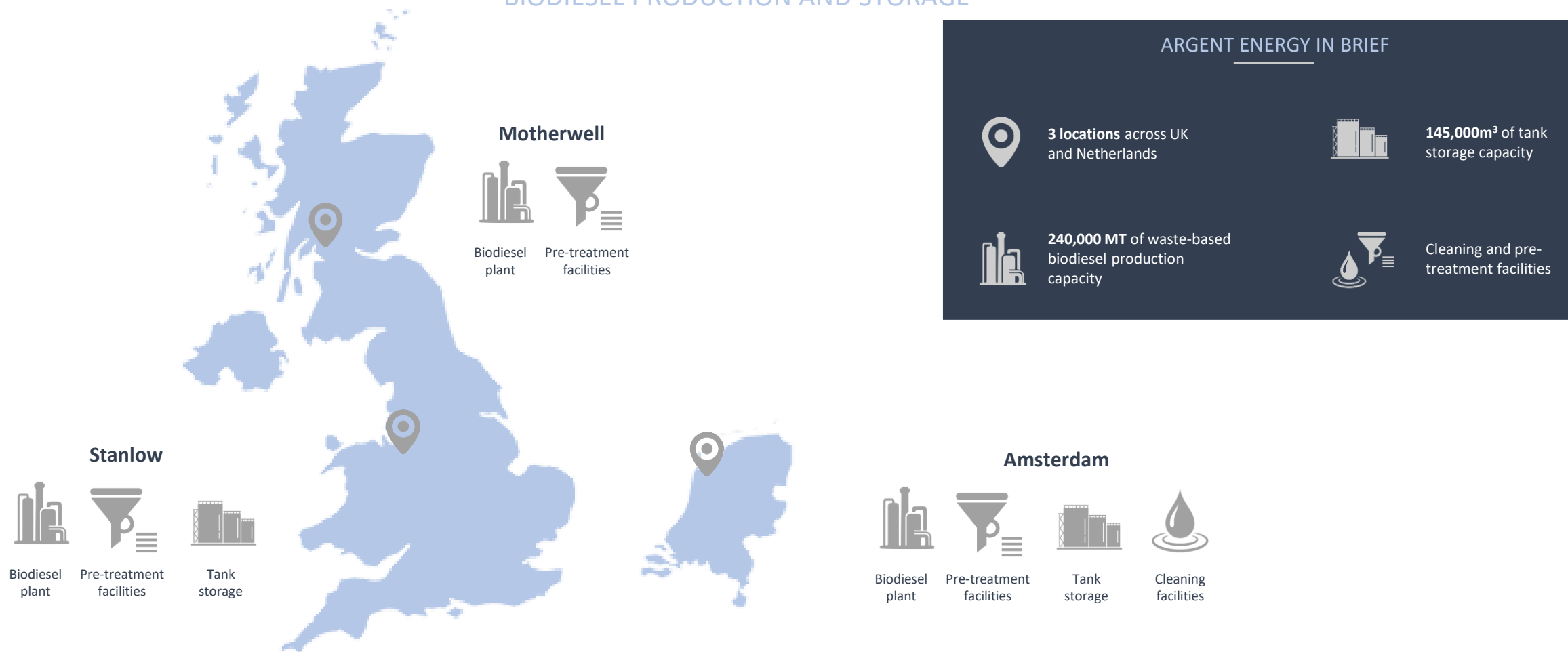
Renewable Fuels

- EV
- Hydrogen (Green only?)
- Ammonia
- Biomethane
- Bio LPG
- Bio LNG
- Bio CNG
- Bio GTL
- HVO
- HEFA
- **Biodiesel**

- John Swire & Sons Ltd is the Parent Company of Argent Energy.
- JSSL has a Global presence and is involved in Trading & Industrial, Marine Services, Beverages & Food Chain, Aviation and Property.
- JSSL has an annual turnover in excess of \$32,000m and more than 130,000 employees worldwide.
- Argent Energy is the UK's leading distilled biodiesel producer, specialising in processing degraded wastes and oils and converting them into high quality biodiesel.
- With the recent acquisition of BDA and creation of Argent Energy NL, Argent Energy is now Europe's leading waste based producer of distilled biodiesel.

Operations in UK and Netherlands

BIODIESEL PRODUCTION AND STORAGE



ARGENT ENERGY IN BRIEF

- 3 locations** across UK and Netherlands
- 145,000m³** of tank storage capacity
- 240,000 MT** of waste-based biodiesel production capacity
- Cleaning and pre-treatment facilities**

Market Sectors for Argent Biodiesel & Biogenic Fuels

- **Road Transport Fuels**
- Non Road Mobile Machinery – Construction, Agriculture, Forestry
- Airside Transportation
- Rail
- Marine
- Power Generation
- Heat/Steam Generation
- High Energy Intensive Industries – Glass, Cement, Distilleries, Ceramics

Through the process of Transesterification, we turn waste oils and fats (FOG) into low carbon fuel which significantly contributes to reducing the CO2 emissions of road transport and other industrial sectors.

What are FOG's;

- UCO
- Fish Oil
- Tallow
- Acid Oils
- Brown Grease
- POME
- Food Waste
- Utility Company Waste

* Argent's processes have no impact on the food or the feed chain and do not contribute to land use change.

The Argent Vision.....

*“Reducing the world’s carbon footprint
using sustainable resources”*

The benefits of High Blend Biodiesel ;

Biodiesel....

- Is renewable and therefore a sustainable energy resource
- Can reduce greenhouse gas emissions and hence help tackle global warming
- Is clean burning and produces less noxious emissions
- **Can be used in most diesel equipment with no, or only minor, modifications**
- **Is compatible with the existing fuel infrastructure**
- **Is compatible with new technology diesel engines and emissions control equipment**
- Is non-toxic, biodegradable, and suitable for use in sensitive environments
- Can be produced locally providing a degree of energy security
- Is somewhat immune to the fluctuations in crude oil price
- **Improves fuel lubricity – less wear and maintenance**
- **Improves fuel cetane number - better cold starting, lower engine noise and reduced emissions**

Argent Energy High Biodiesel Blends - Greenhouse Gas (CO2) reduction calculator

Annual volume

	1,000,000		3,000,000		5,000,000		10,000,000		15,000,000		20,000,000		25,000,000		50,000,000	
Blend %	M/Tonne CO2 Saved	Equip No of Cars off Road every Year	M/Tonne CO2 Saved	Equip No of Cars off Road every Year	M/Tonne CO2 Saved	Equip No of Cars off Road every Year	M/Tonne CO2 Saved	Equip No of Cars off Road every Year	M/Tonne CO2 Saved	Equip No of Cars off Road every Year	M/Tonne CO2 Saved	Equip No of Cars off Road every Year	M/Tonne CO2 Saved	Equip No of Cars off Road every Year	M/Tonne CO2 Saved	Equip No of Cars off Road every Year
10%	285	137	855	412	1,425	686	2,851	1,373	4,276	2,059	5,702	2,745	7,127	3,431	14,254	6,863
15%	428	206	1,283	618	2,138	1,029	4,276	2,059	6,414	3,088	8,553	4,118	10,691	5,147	21,381	10,294
20%	570	275	1,711	824	2,851	1,373	5,702	2,745	8,553	4,118	11,403	5,490	14,254	6,863	28,508	13,726
30%	855	412	2,566	1,235	4,276	2,059	8,553	4,118	12,829	6,177	17,105	8,235	21,381	10,294	42,763	20,589
100%	2,851	1,373	8,553	4,118	14,254	6,863	28,508	13,726	42,763	20,589	57,017	27,452	71,271	34,314	142,542	68,629