2006 New England Rail Forum & Expo
March 28, 2006

Fuels: Where Are We Today and Where Will We Be Tomorrow

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Sprague Energy

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What is driving fuel choice?

- Environmentalists
- Federal regulations
- State legislation
- Local legislation
- Consent Decrees
- Energy dependence

Countries throughout the world are moving to lower sulfur fuels to reduce worldwide emissions and provide product consistency

What is Currently Happening?

Sulfur Level
50,000 ppm
5,000 ppm
2,000 ppm
500 ppm
15 ppm

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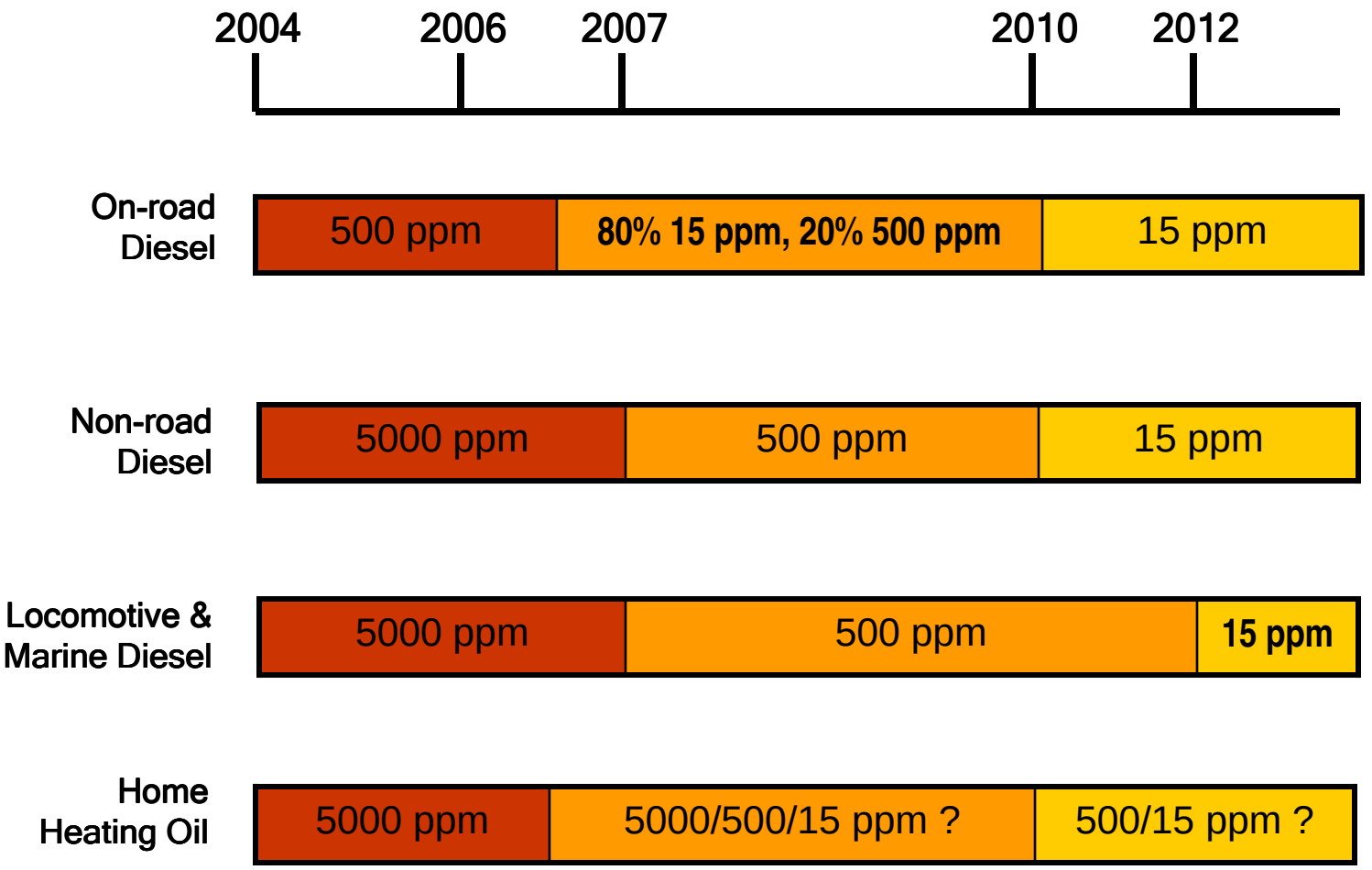
Low Sulfur Diesel Regulations



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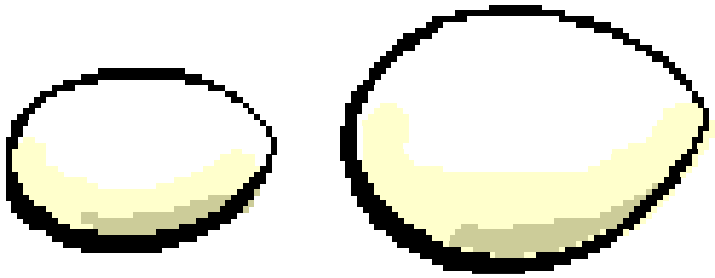
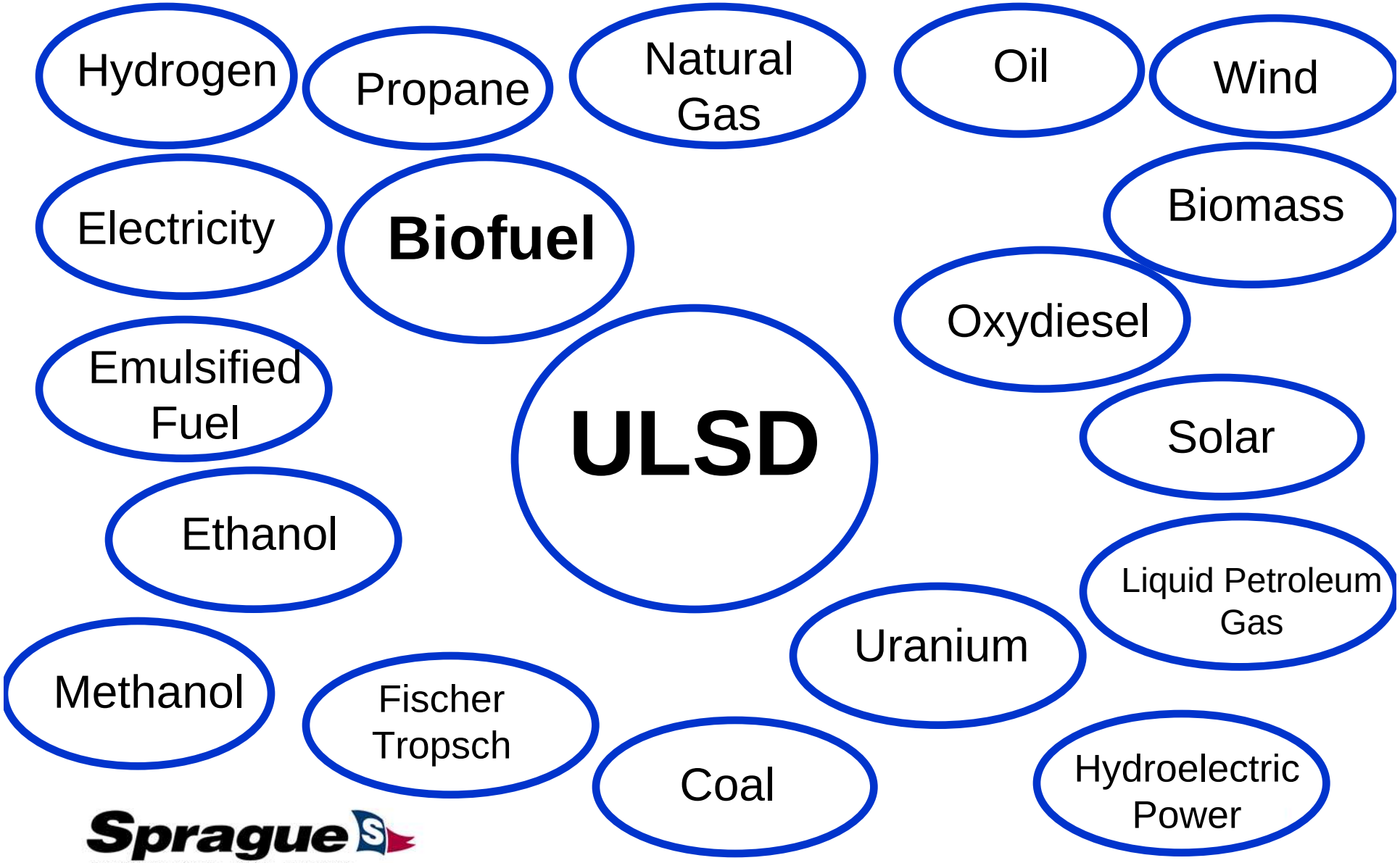
Obstacles to Alternative Fuels



- Availability of supply
- Lack of a fueling infrastructure
  - Infrastructure cost
  - Cost to supply fuel
  - Lack of demand
- Equipment range limitations
- New equipment cost and availability
- Equipment cost of conversion
- Fuel Cost
- Lack of experience, education, training, etc.

Fuel Alternatives



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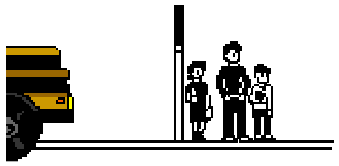
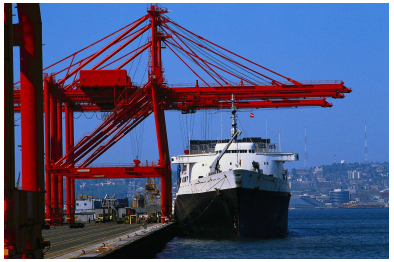
Why ULSD

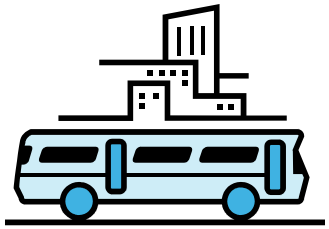
- Environmental acceptance
- Meets EPA regulations
- Immediate emission reductions
- Enabler to new emission reduction technology
- Supply readily available
- Unlike other alternative fuel options, ULSD has no infrastructure or fleet changes/modifications
- Least costly alternative fuel option
- Meets/exceeds OEM fuel specifications
- Most ULSD, we know Sprague's does, exceeds ASTM and engine manufacturers' lubricity specifications

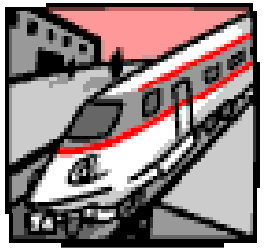
ULSD Applications

ULSD Typical Applications









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ULSD Proven Emission Reductions*

	ULSD Base Fuel Only	ULSD with DPF Retrofit **
THC	76%	92%
CO	29%	94%
PM	23%	88%

KEY:
PM = Particulate Matter
CO = Carbon Monoxide
THC= Total Hydrocarbons

*Society of Automotive Engineers, Inc. 2001-01-0511:
"Performance and Durability Evaluation of Continuously Regenerating Particulate Filters on Diesel Powered Urban Buses at New York City Transit"
** 99% reduction in PM particle counts across all size ranges, including the smallest particles.

User Experience with ULSD

Operability

- No measurable difference in equipment performance
- Easy to switch from engine perspective
- May be used in older equipment – no need to store two fuels

Fuel Performance

- Current refinery production of ULSD does not meet engine manufacturers lubricity specifications
- Fuel meets/exceeds engine manufacturers' specifications and warranty using lubricity additive
- Utilize a unique synthetic additive for all temperature variations

Supply & Distribution

- Although the use of these fuels is transparent to the end user, transporting fuel to end user with minimal or no contamination is a challenge
- Requires segregated product at fuel terminals, pipelines, racks and delivery trucks
- At this time cannot use pipeline for transportation

Lubricity Standards

	Standard
American Society for Testing and Materials D6079 High Frequency Reciprocating Rig ASTM HFRR D6709	520 microns
Engine Manufacturers' Recommendation	460 microns
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What Are End Users Looking for in a ULSD Supplier?

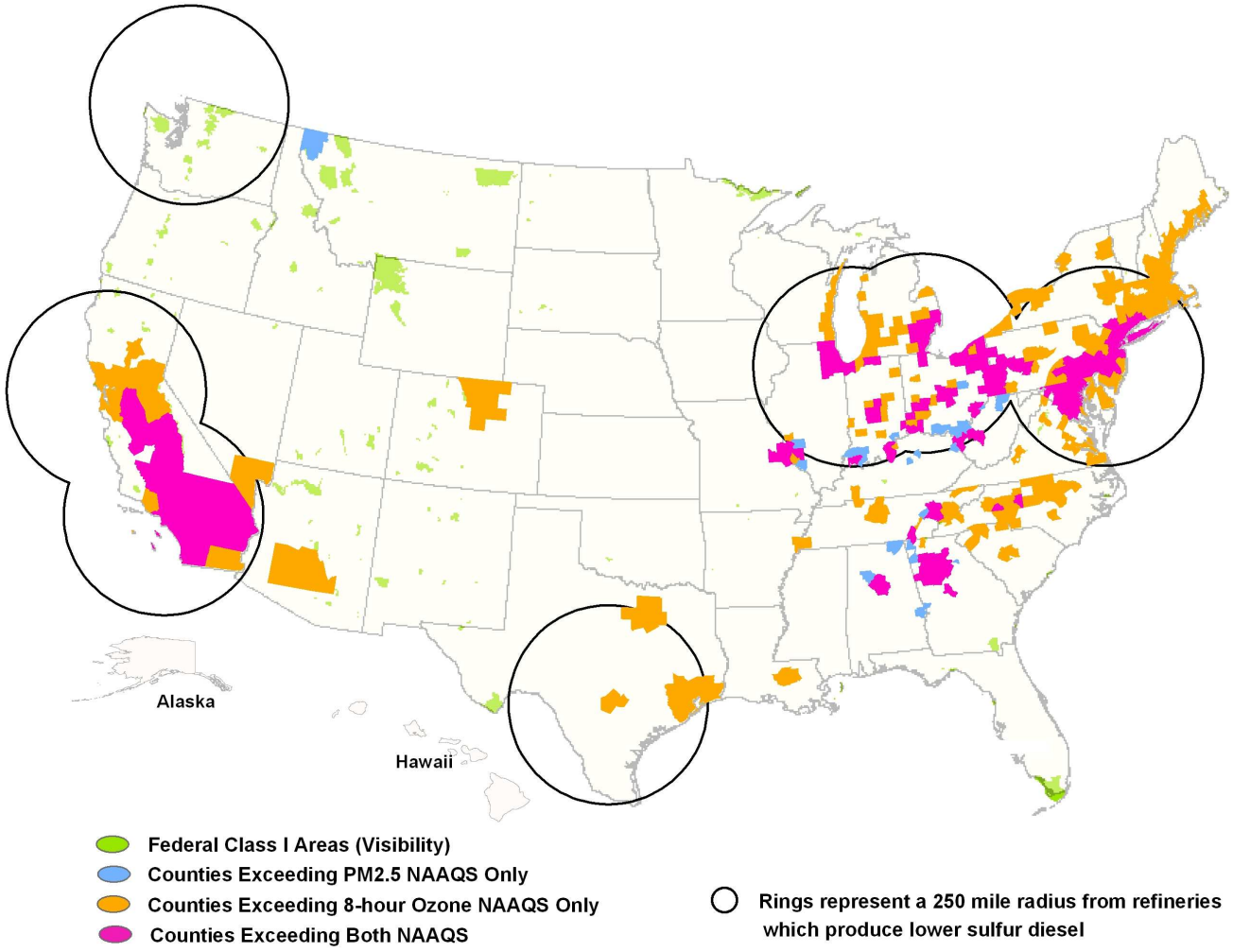
- Supply agreement which provides ULSD from a minimum of two refineries producing the product to ensure finished product availability
- To be actively engaged in the supply and delivery of ULSD or some other specialty product for a minimum of two years
- Multiple storage terminals for storage backup and delivery
- Minimum of thirty days inventory
- Segregated delivery transports with back-up segregated transports to ensure quality product delivery in case of transport downtime and emergency
- Ability to accurately blend biofuel and other products
- Quality Control Program to ensure product integrity and immediately provide on request test results for lubricity and other product specifications
- Product specifications for lubricity and calculation methodology
- Confirmation process to ensure product meets sulfur and lubricity standards

Others Who Have Switched to ULSD

- MTA New York City Transit Authority
- City of New York
- State of New York
- New Jersey Transit
- City of Philadelphia
- Southeastern Pennsylvania Transportation Authority
- Connecticut Transit
- Massachusetts Bay Transportation Authority
- Rhode Island Public Transit Authority
- City of New Haven
- Massport
- City of Boston Public Schools
- Con Edison
- Wyeth
- City of Medford

National Availability of ULSD

(Source: EPA Website)



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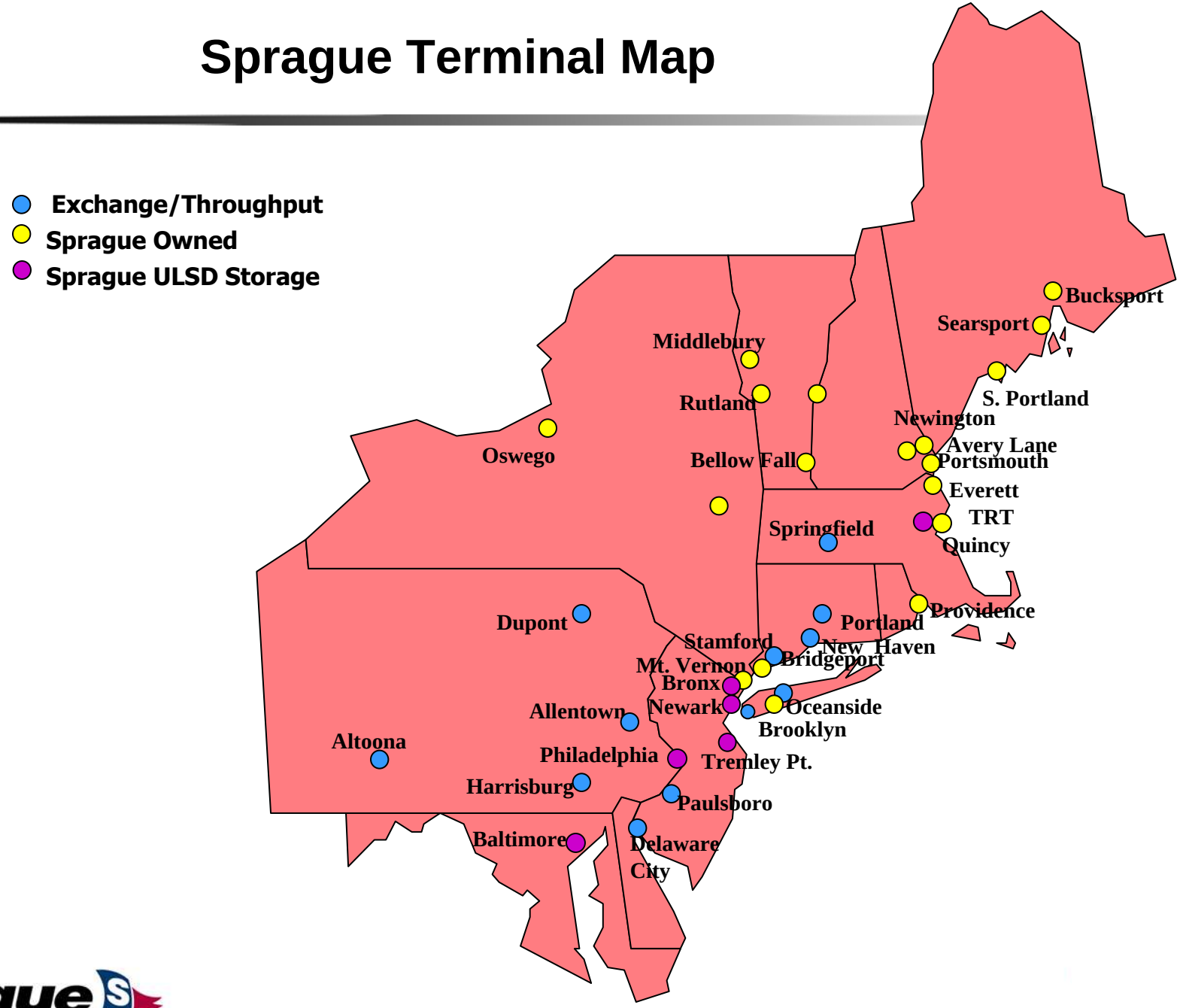
Sprague Terminal Map



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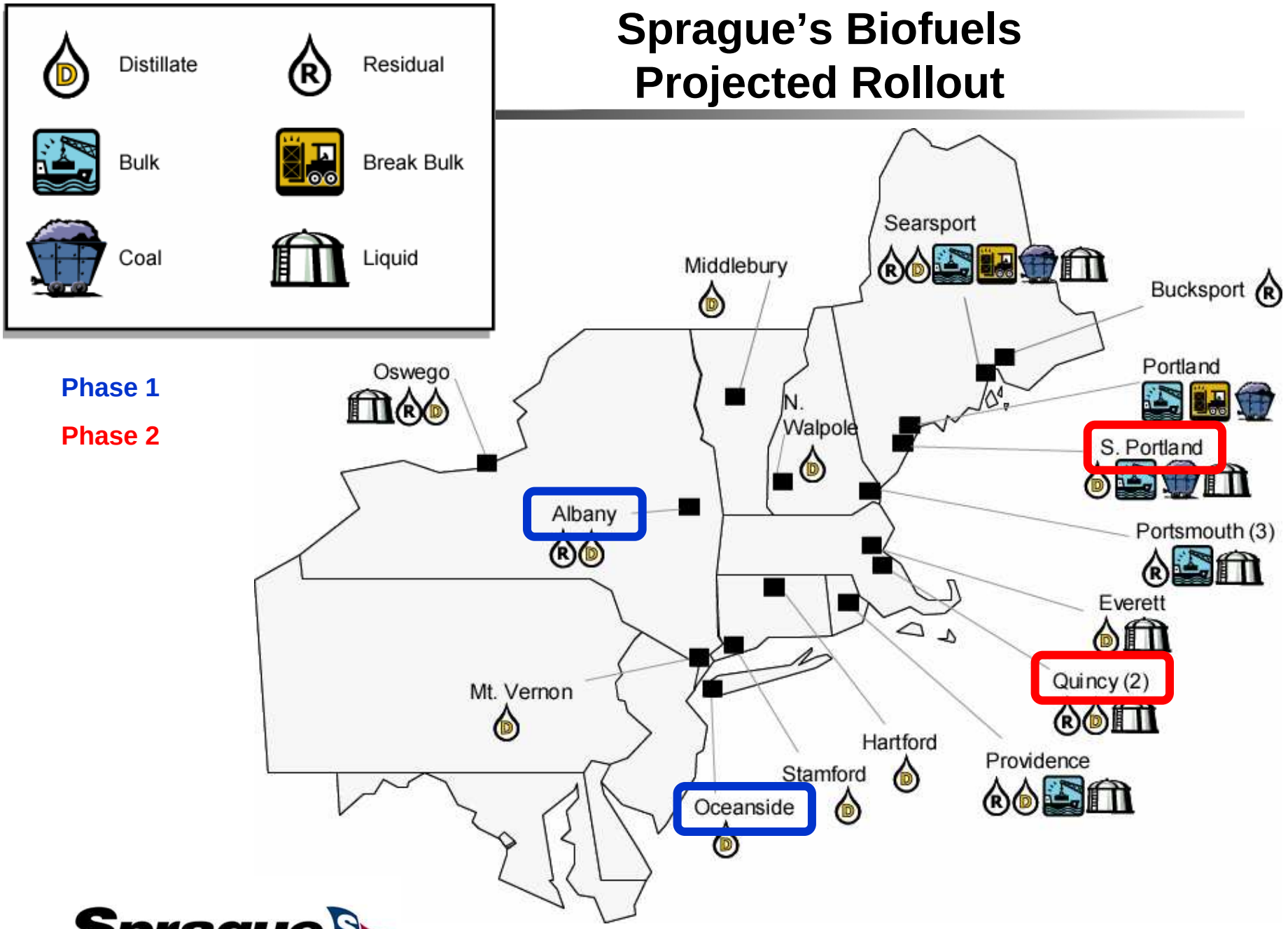
Why Biofuel

- Energy Dependence
- Emission benefit with higher sulfur fuels
- Economical in conjunction with tax incentives and high conventional fuel costs
- Renewable
- Stimulates economy

Sprague's Biofuels Projected Rollout



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What Are End Users Looking for in a Biofuel Supplier?

- Reputable experienced supplier with multiple sources of supply
- Multiple supply terminal network
- Ability to accurately blend fuels
- Quality control program
  - BQ 9000 certification
  - Conforming to NBB storage and handling guidelines
- Product specifications meet all ASTM specifications including sulfur (ASTM D 6751, ASTM D 975)
- Winterization process
- Pricing Options
  - Firm fixed price
  - Variable pricing mechanism

A Cleaner Future Starts Today

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