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Emerging Technologies: Petroleum Refining

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Emerging Technologies
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Traditional or Primitive?

- Petroleum began as a primitive fuel
- Petroleum's importance changed by emerging technologies
 - Steam engine
 - Internal combustion engine



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135 Years of Tradition

- History of developing new technologies
- Continuous trend to utilize more of the barrel
- History of being impacted by emerging technologies



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Today -

- Refining is a commodity business
 - High level of competition
 - Low margins
 - High volumes
- Business focus – Reducing Costs



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Role of Emerging Technologies

- Cost Reduction/Improve Efficiencies
 - Software/Computing Power
 - Reliability
 - Process Improvement/Catalysis



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Role of Emerging Technologies

- Low emissions fuels?
 - Compliance with regulations
 - In a commodity business there is little incentive to exceed regulatory requirements



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Emerging Technologies Outlook

Emerging Technologies in Refining (and Production) will prolong petroleum's reign as the most cost effective energy source

transportation
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