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Key Points

I. History

II. Technology Development

III. Technology Application

IV. Regulatory - Hurdles

V. Results

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History

- Oilfield Birth
- Regulatory Motivation
- Cost Effective Options
- Various Failures
- Testing Difficulties-Facilities
- Good Results-Now What?

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Technical Development

- Choice of 2 cycle - DDC
- Cam Shaft
- Piston Design
- Injection Patterns
- System Patents

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Technical Applications

- Regulatory Approval Process
- Urban Bus-Johnson Matthey
- Stationary Sources
- Portable Equipment
- Carl Moyer Acceptance
- Future Applications?

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Regulatory Hurdles

- Built Certification Program
- Think Outside the Box
- Portable Equipment Language
- Alternative Fuels - Eliminating Categories
- Lack of Research $$$