Green Engine
Revolutionizing Emission Control

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Green Engine has developed a product that can revolutionize the emission control system for engines

- Emission control $71 billion
- Stricter emission standards
- Current approaches rely on precious metal
- Our solution costs substantially less
- Revenue $400,000,000 in 5 years
The problem

<table>
<thead>
<tr>
<th>Engine type</th>
<th>Gasoline</th>
<th>On-road diesel</th>
<th>Off-road diesel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regulation on NOx</td>
<td>60%↓ 2014</td>
<td>73%↓ 2012</td>
<td>backward applicable 2014</td>
</tr>
</tbody>
</table>
Current approach & problem

Gasoline: fuel → engine → NOx → catalytic converter → clean

Rhodium price rising

$1190 Jan. 2009
$2380 Apr. 2011

Diesel: much more expensive than catalytic converter
The solution

Swiss-Roll fuel reformer

- 90% fuel
- 10% H₂

Engine

Clean

Precious metal free
Competitive advantages

H₂ tank
- hard to refill
- high pressure
- dangerous
- huge

Water-electrolysis Plasmatron
- need electricity
- hurt fuel efficiency

Swiss-Roll
- Compact
- Low cost
- Not hurt MPG
Market strategy

- least time for certification
- current: EGR ~$10K, SCR ~$35K
  Swiss-Roll: costs substantially less
- strategic partnership with CCAT
Revenue projection
Off-road diesel only

Projection based on data provided by CCAT
Funding milestones

5 / 2011
Proof of concept
- $50,000
- Engine test
- Patent application
- Government certification

8 / 2011
Seed round
- TBD
- CEO, CFO
- CCAT partnership
Team

Chien-Hua Chen
coc-CTO
Swiss-Roll
portable gas mask

Kevin Chu
coc-CTO
fuel-air mixing
Detroit Eng. Products

Frank Jing
COO
modeling & control
BA: Economics

Prof. Paul Ronney
Tech. Advisor
Swiss-Roll (2 patents)
engine (20yr)
combustion (30yr)

Advisors

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VP CCAT
Emission Control (35yr)

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TCA
Investors Circle

Jeffrey Nameth
General Manager
Volvo SoCal & AZ
Thank you!

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Additional slides
Swiss-Roll fuel reformer

fuel reform

heat exchange

H₂

fuel
The revenues are calculated from the market occupation percentage times the price.

As a conservative estimation, the diesel engine market sizes are all based on 2010 figures in California (250,000 off-road, and 750,000 on-road). The prices of SwissRoll will be $5,000 for off-road and $2,500 for on-road.

The market size of gasoline engines is estimated by the cost of Rhodium in auto catalyst in 2010 (about $1.8 billion). The price is assumed to be the same with Rhodium in 2010 since Rhodium price is expected to increase rapidly in the following years.

5-year forecasts:

- Year 1: $1.3 million
- Year 2: $14.4 million
- Year 3: $45.6 million
- Year 4: $123.5 million
- Year 5: $221.3 million

Revenue projections
Alternative energy source

Electric or hybrid vehicles
< 1% market share (mostly hybrid)
stationary facilities

Solar power
low energy density

Nuclear power
lack of mobility
NO! -___-