Renewable Natural Gas

Benefits to our Communities
Amp Americas is a values-based sustainable transportation fuel producer and distributor.

**Our Business**

- Produce Renewable Natural Gas
- Distribute RNG at 22 CNG stations

**Our Values**

- Be profitable
- Be sustainable
- Create value for our stakeholders
  - Improve our air
  - Create jobs
- Be copied!
Our Partner Fair Oaks Farm

• Leading innovator in dairy sustainability and commercial practices

• 18,000 herd of milking cows

• Milk production, public education, sustainability demonstration and commercialization

• Selected innovations
  – Manure management with anaerobic digester
  – Nutrient recovery – phosphorous, fiber
  – Water management – reduction, reuse, recycling
  – Sustainable energy production: electric, heat, transportation fuel

• **Vision:** transparent, carbon neutral milk production
ampCNG’s project at Fair Oaks Farm is a partnership with one of the largest dairy farms in the US. We transform manure from 18,000 cows into methane to fuel our trucks.

Source: Fortune Magazine February 1, 2016
Pretreatment and Preparation
Emission and Odor Reduction
Advanced Heat Recovery

Heat recovered from Digestate, Gas Compression, Engine Cooling and Exhaust Heat Recovery
Value Added Fiber Sales
Advanced Nutrient Recovery
Low Nutrient Water
Electricity Generation
Gas Upgrading Skid (G.U.S.)
Truck fueling
Smog is a national problem

>150 counties non-attainment
>700 maintenance

Diesel trucks cause 26% of smog

NOx from Mobile Sources

Mobile 55%
Fuel burn 24%
Industrial 10%
Other 10%
Heavy Trucks 49%
Light Vehicles 51%

Source: EPA, amp analysis
Dairy gas creates enormous air benefits...

**Smog**

Smog-causing NOx reduced 10x with Cummins Near-Zero engine

gNOx/bhp-hr

- **Diesel**: 0.20
- **CNG**: 0.02

-10x

**Greenhouse gas**

Dairy RNG like removing 3.5 diesel trucks of GHG emissions

gCO$_2$e/MJ

- **Diesel**: 98
- **Dairy RNG**: -260

-3.6x
Dairy gas creates enormous economic benefits...

### Amp Americas

<table>
<thead>
<tr>
<th>Jobs</th>
<th>Infrastructure investment</th>
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<tbody>
<tr>
<td>50+</td>
<td>&gt;$10M</td>
</tr>
<tr>
<td>12 permanent</td>
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</tr>
<tr>
<td>400+</td>
<td>&gt;$40M</td>
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<td>45 permanent</td>
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### Industry potential

<table>
<thead>
<tr>
<th>Jobs</th>
<th>Infrastructure investment</th>
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<tbody>
<tr>
<td>30,000+</td>
<td>&gt;$6B</td>
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<tr>
<td>7,000 permanent</td>
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<tr>
<td>80,000+</td>
<td>&gt;$8B</td>
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<td>9,000 permanent</td>
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Challenges for the industry

RNG investment requires Renewable Fuel Standard certainty – multi-year RIN price and demand certainty
  RVOs set one year at a time
  Price volatile

CNG trucks require fuel savings to justify investment, but…
  Diesel vs. CNG spread has narrowed
  VETC expired
What to do about it

• CNG: Renew 5 year VETC with 5 year sunset
  – Revenue neutral with <1cent diesel tax
  – Would unlock 25-50% conversion of heavy trucks

• RNG: Renewable Fuel Standard – Create 5 year rolling RVO and price floor
  – Certainty of RIN demand and price
  – Create certainty beyond 2022 – end of current targets

Stability and predictability for CNG, RIN markets would put drive air quality improvement, create thousands of jobs, and $billions in infrastructure investment