PAAC’s Natural Gas P3 Project

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PAAC Metrics

- **Fleet:** 730 Buses, 83 LRVs, 2 Inclines, ACCESS
- **Riders:** 220,000 average weekday, 65 million yearly
- **Garages:** 4 & 1 Heavy Maintenance Shop
- **Diesel Fuel:** 600,000 gals/month or 7.2 M gals yearly
  Current average lock-in price @ $3.32
- **Fuel Costs:** $25 million annually
Project Scope

• Retrofit existing East Liberty garage for CNG use

OR

• Build a new facility along the East Busway

AND

• Build a high compression CNG fueling station on site

• Retrofit the Northside Main Maintenance Shop to service & fuel CNG buses

• Purchase CNG buses on a phase-in basis per Federal rules
# Perception v. Reality

## 2013 Engine Certification Levels

<table>
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<tr>
<th>MANUFACTURER</th>
<th>MODEL</th>
<th>UNITS</th>
<th>NMHC</th>
<th>NOx</th>
<th>NMHC+NOx</th>
<th>CO</th>
<th>PM</th>
<th>HCHO</th>
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<tr>
<td>Cummins Inc.</td>
<td>Hybrid</td>
<td>ISB</td>
<td>g/bHp-hr</td>
<td>0.04</td>
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<td>ISL</td>
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<td>*</td>
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<td>CNG</td>
<td>ISL G</td>
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<td>7.8</td>
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</table>

| g/bHp-hr     | grams per brake horsepower-hour |
| NMHC         | non-methane/hydrocarbon        |
| NOx          | oxides of nitrogen             |
| CO           | carbon monoxide                |
| PM           | particulate matter             |
| HCHO         | formaldehyde                   |

Source: California Air Resource Board
The Economics

• Is there sufficient external funding through Federal, State or private sector grants to reduce capital costs and financial risk to the Port Authority?

• What is the market’s appetite for risk sharing?

• Is the fuel price differential sufficient to justify infrastructure costs and provide operating budget relief?

• What benefits does the P3 model provide under State law?

• Is the project financially feasible?

• What is the ROI?
Questions