

**API Climate Challenge
Program**

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Natural Gas STAR Workshop

June 19, 2003

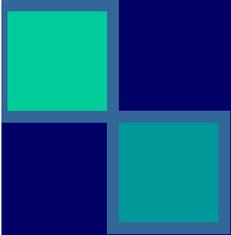


Background

- **API: 400 member companies engaged in all aspects of the petroleum industry**
 - **API supports Administration's approach**
 - **Scientific investigation to reduce uncertainties**
 - **Near-term cost-effective voluntary actions**
 - **Long-term technology development – innovative, cost-effective GHG reductions**
 - **Petroleum Industry Sector Partnership – 2/12/03**
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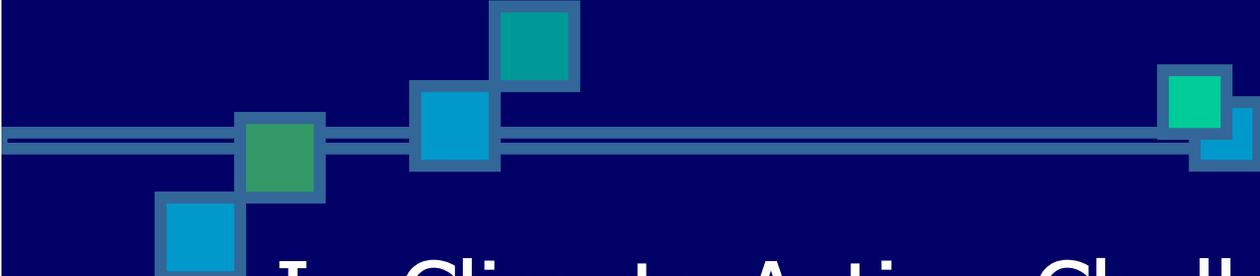


API Climate Challenge Program

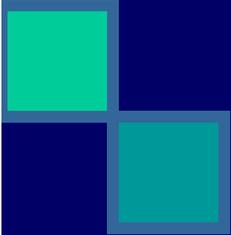


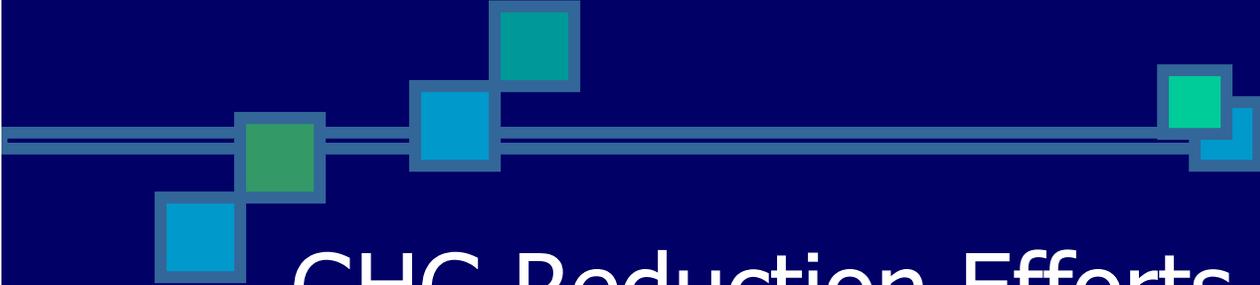
Goal: 100% of API oil and gas sector membership will develop GHG management plans with one or more of these programs:

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- ***Climate Action Challenge*** - near-term industry GHG intensity reduction
 - ***Climate R & D Challenge*** – long-term technology development to reduce GHG intensity
 - ***Climate GHG Estimation & Reporting Challenge***



I. Climate Action Challenge

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- Improve member's aggregate refinery energy efficiency by 10% from 2002-2012.
 - Monitor & report on implementation of the following GHG reduction efforts:
 - Reducing methane venting and flaring from oil/gas exploration and production
 - Expanding use of CHP at refineries and oil and gas production operations
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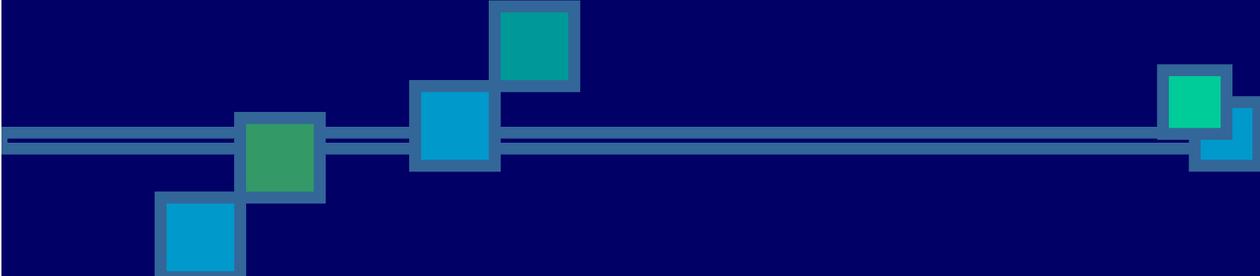
GHG Reduction Efforts (cont'd)

- Reducing methane emissions from transportation/distribution of natural gas
 - Reducing CO₂ venting – e.g., amine acid gas separation plants
 - Expanding carbon capture, including sequestration
 - Improving energy efficiency while meeting energy needs of expanding economies
 - Increasing participation in cost-effective voluntary programs e.g., Natural Gas STAR and CHP Challenge
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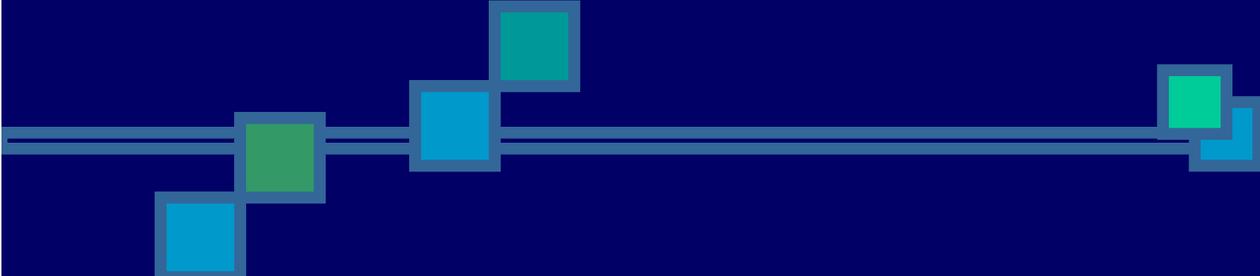
II. Climate R & D Challenge

- Technology R&D to reduce GHG intensity (long-term):
 - Advanced, energy efficient technologies as part of a long-term, economically viable strategy
 - Alternative energy technologies (hydrogen, wind, solar, geothermal)
 - Alternative motor fuels and advanced vehicle and engine technologies
 - CO₂ capture, sequestration/utilization technologies
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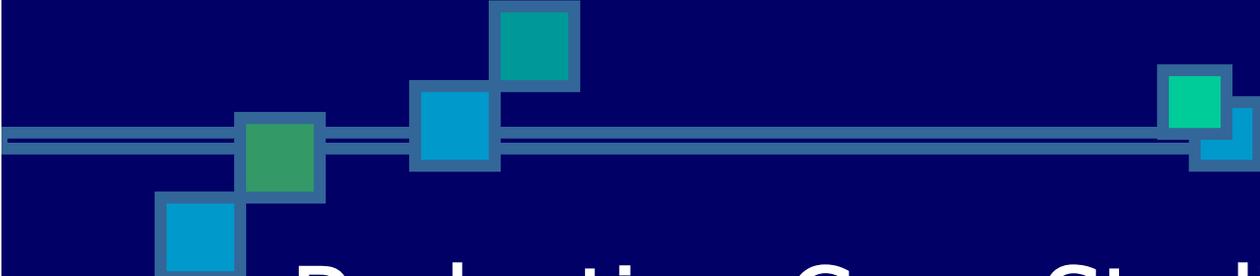
III. GHG Estimation & Reporting Challenge

- API Member companies pledge to:
 - Utilize *API Compendium of GHG Emission Estimation Methodology* for worldwide operations
 - Participate in an expanded API GHG Benchmarking Program using *API Compendium*
 - Report US GHG emissions to API for consolidation and aggregate reporting
 - Members encouraged to participate in DOE/EIA 1605(b) program.
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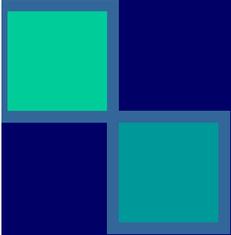


Special Study: Quantifying Emission Reductions

- Promote industry best practice
 - Understand emission reduction potential associated with specific activities
 - Assess Compendium
 - Estimate emissions from specific GHG emission reduction project examples
 - Identify upgrades to address needs identified as part of this GHG emission reduction project
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Reduction Case Studies

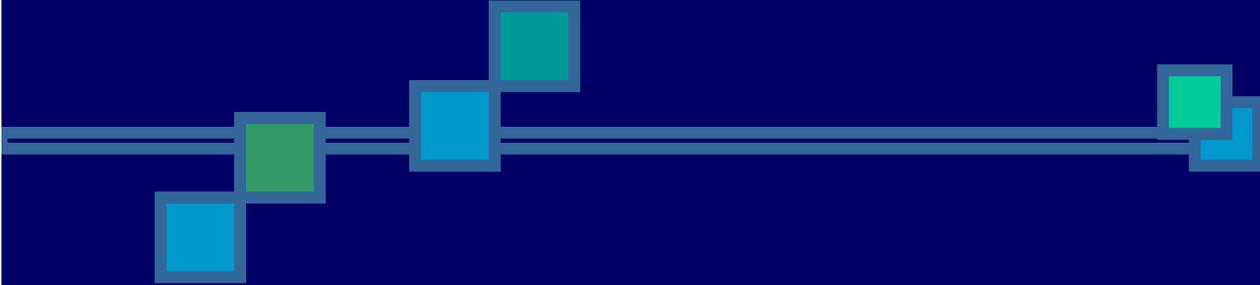
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- Cogeneration
 - Capturing production tank flashing losses
 - Dehydration process optimization
 - Fugitive leak detection and repair (LDAR)
 - Pneumatic device retrofit
 - Refinery heater/boiler combustion tuning
 - Flaring production vent streams
 - Geologic sequestration
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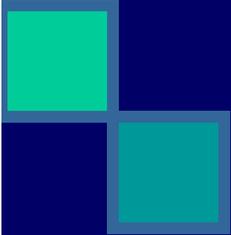
Summary of Pneumatic Device Case Study Reductions

Baseline emissions	23,444 tonnes CO ₂ Eq.
Potential Reduction Scenarios	Estimated % Emission Reduction
Improved maintenance	35%
Replace high-bleed with low-bleed devices	93%
Retrofit high-bleed to eliminate pilot bleed rate.	99%
Replace natural gas with compressed air	99.5%
Replace high bleed devices with self-contained devices	100%





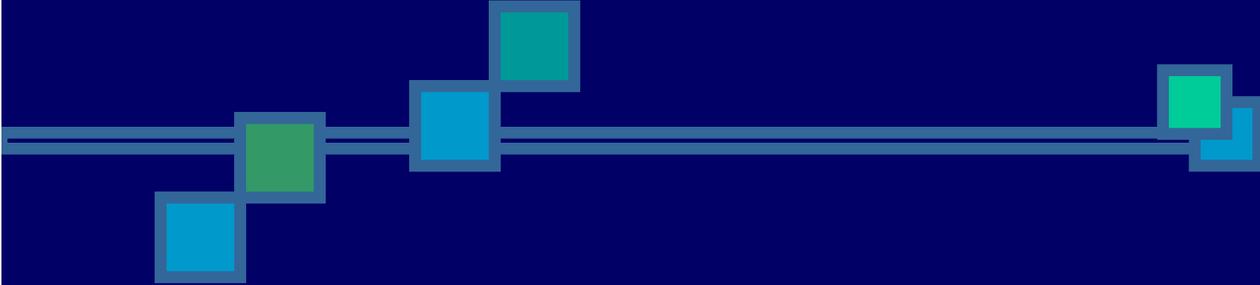
Next Steps (1-2 years)

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- Develop suitable refinery efficiency metric
 - How does API goal contribute to President's 18% GHG intensity improvement target?
 - Develop international GHG reporting protocol (IPIECA/API/OGP)
 - Strive to harmonize emissions methodologies (e.g., CAPP, ARPEL, E&P Forum)
 - Liaison with ISO, WRI, etc.
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Next Steps (cont'd)

- Expand *Compendium* activities
 - Publish revised *Compendium* & Reduction Case Studies
 - Develop GHG aggregation and reporting format
 - SANGEAtm GHG calculation tool (ChevronTexaco)
 - QA/QC of member submittals to ensure data quality prior to public release
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