Non-CO₂ Greenhouse Gases: Methane

Source/Sectors: Natural Gas Systems (Distribution)

Technology: Replacement of unprotected steel services (A.1.2.4.3)

Description of the Technology:
Distribution pipelines take the high-pressure gas from the natural gas transmission systems to individual end-users. There were over one million miles of distribution mains in the United States. Distribution system emissions result mainly from fugitive emissions from gate stations and non-plastic piping.

Unprotected steel services are prone to corrosion and leaks. They should be replaced with non-corrosive materials, such as plastic or protected services, that will reduce methane losses from the distribution system (USEPA, 2004; IEA, 2003).

Effectiveness: Good

Implementability: Fair

Reliability: Good

Maturity: Good

Environmental Benefits: It reduces methane emissions.

Cost Effectiveness:

<table>
<thead>
<tr>
<th>Technology</th>
<th>Lifetime (yrs)</th>
<th>MP (%)</th>
<th>RE (%)</th>
<th>TA (%)</th>
<th>Capital cost</th>
<th>Annual cost</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Replacement unprotected steel services¹</td>
<td>5</td>
<td>-</td>
<td>95</td>
<td>3-4</td>
<td>$410,830</td>
<td>$82.17</td>
<td>$9.74</td>
</tr>
</tbody>
</table>

Note: MP: market penetration; RE: reduction efficiency; TA: technical applicability; costs are in year 2000 US$/MTCO₂-Eq.


Industry Acceptance Level: Fair

Limitations: Capital cost is extremely high.

Sources of Information:


