

Florida N₂O Abatement



Key Facts:

Project Type: Adipic Acid, N₂O Abatement

Standard: Climate Action Reserve

Location: Florida, USA

ClimeCo and Ascend Performance Materials have created the largest voluntary nitrous oxide (N₂O) abatement project in North America. N₂O is a greenhouse gas (GHG) with a global warming potential 265 times higher than carbon dioxide (CO₂). Ascend developed a proprietary technology to enhance voluntarily control of N₂O emissions from their Pensacola facility. A Thermal Reduction Unit (TRU) destroys N₂O by exposing the compounds to extreme temperatures and limited oxygen. Here, in an absence of free oxygen, the oxygen from the N₂O is stripped and consumed in the combustion process. Ascend's proprietary technology and TRU enhancements have reduced millions of tonnes of GHGs.

GHG removal projects rely on the sequestration and biological or geological storage of CO₂. While low, there is a risk that sequestered CO₂ is released back into the atmosphere. Ascend's GHG avoidance project is different. It destroys N₂O at the source, preventing the GHG from ever entering the atmosphere. Therefore, emission reductions from the Ascend project are permanent and have no risk of reversal. Furthermore, Ascend's emission reduction assertions are backed by high quality N₂O concentration and flowrate data that are collected by a continuous emission monitoring system – the components of which are calibrated rigorously.

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ClimeCo, a leader in voluntary carbon project development, management, and offset credit sales, was the primary author of the Climate Action Reserve Protocol and manages the monitoring, verification, and issuance and sale of offsets for the project. The voluntary carbon market is expected to become supply constrained, particularly for offsets developed in the United States.

This project's offset supply can play a critical role for you and your organization in meeting your carbon reduction goals.

About Ascend

Ascend, the largest fully integrated producer of nylon 6,6 resin, operates three of the world's biggest chemical processing facilities and is committed to leading its industry towards a more sustainable future. They have established a sustainability platform focused on empowering people, innovating solutions, and operating without compromise.

Ascend's safety and environmental performance guides their Commitment to Zero: zero personal injuries, zero process safety incidents, and zero environmental releases. Their commitment to creating materials that make everyday products and essentials safer and more sustainable also extends to the communities they serve. The company helps its local community through its Ascend Cares Foundation, which focuses on children's health and safety, education, housing, hunger, and military and first responder support.

What are Adipic Acid and Nylon 6,6

Ascend's high-performance materials are used to create everyday essential products and new technologies.



Ascend uses adipic acid to produce nylon 6,6, a high-performance engineered plastic found in various products, including cable ties, food packaging, toothbrush bristles, military and first responder uniforms, conventional and electric vehicle components, and airbags, to name a few.

The refining process used to produce higher-purity grades of nylon 6,6 allows Ascend to develop innovative ways to make everyday essential products safer and more sustainable. Engineered plastics like nylon 6,6 now make up 50% of a car's volume, yet contribute only 10% of its weight. One of the material's unique properties is resistance to high temperatures, and its application allows vehicle manufacturers to build smaller, lighter, and more fuel-efficient engines – reducing vehicle emissions without sacrificing performance or comfort.

About ClimeCo

ClimeCo is a leader in the development and management of environmental commodities. We combine unrivaled commodity market expertise to help clients maximize their environmental assets while minimizing regulatory costs. ClimeCo was founded on its expertise in the petrochemical industry and currently manages nearly all voluntary N₂O abatement projects in North America.