

# Embracing Sustainability: On-Demand Carbonic Acid Generation for Water Treatment



The global push towards sustainable practices has spurred innovation in water treatment technologies. Fuel Tech's On-Demand Carbonic Acid Generation process leverages DGI® technology to generate carbonic acid from CO<sub>2</sub> on-demand and in situ, offering a green alternative to traditional strong acids used for pH control.



## Environmental Benefits

- **Reduction in Transportation Emissions:** Traditional strong acids are typically shipped in diluted form, mostly comprising water. By generating carbonic acid onsite, we significantly cut down on transportation-related emissions.
- **Decreased Chemical Production:** By using CO<sub>2</sub> which is a waste product of many industrial processes, we reduce the need to manufacture and transport hazardous acids, shrinking our ecological footprint.
- **Lower Storage Requirements:** On-demand generation minimizes the need for extensive storage facilities, reducing risks associated with spills and leaks.



## Health & Safety Advantages

- **Minimized Hazard Exposure:** Traditional strong acids are highly corrosive and pose significant risks to workers. Generating carbonic acid in situ and on demand eliminates the need to handle these dangerous substances, enhancing workplace safety.
- **Reduced Compliance Burden:** Handling strong acids often requires stringent Occupational Safety and Health Administration (OSHA) and Environmental Protection Agency (EPA) reporting. With Onsite Carbonic Acid Generation, these obligations are minimized, simplifying compliance and reducing administrative burdens.
- **Enhanced Workplace Safety:** Generating carbonic acid in situ eliminates the risk from storing and handling strong acids, and reduces site traffic and exposures to leaks/spills providing a safer environment for workers.
- **Maintain pH Balance:** Carbonic acid reduces the risk of dropping pH too low jeopardizing other biological reactions.

## Cost Implications

- **Lower Transportation Costs:** Reduced need for shipping bulk chemicals translates to lower operational costs.
- **Storage Savings:** Elimination of large storage tanks and related infrastructure reduces capital expenditures and frees valuable space.
- **Insurance and Compliance Costs:** Reduced risks and simplified compliance can lead to lower insurance premiums and fewer regulatory fines.

Adopting on-demand, in situ carbonic acid generation using DGI technology aligns water treatment practices with sustainability goals, providing a safer, greener, and more cost-effective solution. Fuel Tech's innovation in this space underscores our commitment to environmental stewardship and operational excellence.

## Sustainable Water Treatment Innovation

### Global Trend

- A push toward sustainability drives innovation in water treatment technologies.

### Fuel Tech's Solution

- On-Demand Carbonic Acid Generation

### Technology Highlight

- Leverages Fuel Tech's DGI technology
- Generates carbonic acid from CO<sub>2</sub>
- Carbonic acid generation process is produced on-demand and in situ


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**Contact Fuel Tech today to explore  
the environmental, health, and safety benefits of  
On-Demand Carbonic Acid Generation.**



Fuel Tech develops and commercializes state-of-the-art proprietary technologies for air pollution control, process optimization, water treatment, and advanced engineering services. These technologies enable customers to operate in a cost-effective and environmentally sustainable manner.

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