

Chicago Area Alternative Fuels Deployment Project

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City of Chicago Department of Transportation
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Overview

Timeline

- Start date: February 2010
- Completion date: December 2013
- Status: 77% complete

Barriers

- · Barriers and risks
 - Unforeseen permitting issues
 - Construction delays
 - Availability of equipment

Budgets

- Total project funding: \$39,624,980
 - US DOE funding: \$14,999,658
 - Recipient share: \$24,635,322

Partners

- Gas Technology Institute (GTI)
- Chicago Area Clean Cities Coalition
- State of Illinois, municipalities, and private companies



Relevance

Chicago Climate Action Plan



Calls for a 10% increase in alternative fuel use in Chicago by 2020

25% Reduction by 2020



Project Budget

\$15 million

+

\$24.6 million

in USDOE ARRA funding received by City and partners

leveraged in additional project investments



Relevance

Project Objectives

Increase alternative fuel vehicles & hybrids

310 CNG Vehicles (129 Medium & Heavy Duty), **83** Gasoline Hybrids, **10** Heavy Duty Diesel Hybrids and PHEVs

Develop fueling & charging infrastructure

316 Electric Charging stations (73 DC Fast Charging), 17 CNG stations,1 LPG station, 11 E-85 stations

400 metric tons/yr in reduced criteria pollutants

7,500 metric tons/yr in reduced CO2 (eq. to removing almost 1,400 cars/yr)

3 million gallons of petroleum/yr displaced

77 full time equivalent jobs



US DOE Sponsor—Project Oversight 16 Project **Approach-Partnerships Partners** City of Chicago DOT Samantha Bingham Prime Coordination of Project Partners Project Reports GTI 350 Green Ted Barnes - PM **City of Chicago** Hali Sittig-PM Coordination with Subawardees **Dept of Fleet and Facilities Mngt** Subawardee Matt Stewart · Project reporting and invoicing Electric Charging station Subawardee support infrastructure developer Technical support Patson-Exel-Diageo **Vehicles Green Taxi Program Foodliner Peoples Gas** Hybrid and Alt Fuel Taxis Vehicles and Infrastructure Vehicles **Commonwealth Edison Forest Preserve DuPage** Clean Energy / Yellow Cab Vehicles and Infrastructure Vehicles and Infrastructure Vehicles and Infrastructure Doreen's Pizza Groot **Village of Downers Grove** Vehicles and Infrastructure Infrastructure Infrastructure **DuPage County DOT** I-GO **Waste Management** Vehicles and Infrastructure Vehicles and Infrastructure Infrastructure

Municipal Partners — Shared Fueling



City of Chicago- Dept. of Fleet Management 50 NGVs, 6 CNG Stations, 11 E-85 Stations





DuPage County DOT 15 NGVs, 1 CNG station



DuPage County Forest Preserve 15 NGVs, 3 Hybrids, 1 CNG/LPG station



Waste Haulers — Time-Fill and Public Fueling



Waste Management
15 Waste Haulers, 1 CNG station



Groot Industries 20 Waste Haulers, 2 CNG stations



Taxis —Public Infrastructure Dependent



Clean Energy 2 Public Fueling Stations



Yellow Cab 89 NGV Taxis







Green Taxi Program
70 NGVs, 50 Hybrids, 55 Companies

Private Industry— Public Fueling



Foodliner
6 Long-haul Heavy-Duty CNG Trucks





Private Industry— Public Fueling









GO Airport Express 2 NGV Shuttle Vans



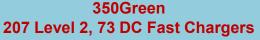
Doreen's Pizza
1 CNG station for existing fleet

Electric Vehicle Supply Equipment



Car Sharing Companies I-Go and Zipcar Using 350Green EVSE







Utilities/Non-Profits



ComEd 35 Hybrids, 8 Hybrid Bucket Trucks, 1 PHEV Digger, 36 Level 2 EVSE





Peoples Gas
12 NGVs, 1 CNG Station



Technical Accomplishments

Snowball Effect —US DOE Funds Lead to Outside Investments/Improvements

Green Taxi Program

55 CNG taxis

>\$750,000 in private funds

City Policy Changes

2 major changes to incent green taxis Released RFP for "Green" O'Hare fueling station **WM and Groot Projects**

3 More Waste Haulers

> 75 CNG Trucks, 3 Stations >\$5,000,000 in private funds

Additional WM Public station

Near Midway Airport

New Alternative Fuel

Infrastructure

Early Nissan Leaf Release

City Flex Fuel Vehicles

"Locked out" of gasoline

AT&T CNG Vehicles

>50 NGVs; >\$500,000 private funds



Technical Accomplishments

Accomplishments to Date

352 Vehicles Deployed

259 CNG Vehicles (87 Heavy Duty),83 Gasoline Hybrids, 10 Heavy DutyDiesel Hybrids and PHEVs

223 Stations Operational

198 Electric Charging stations (26 DC Fast Charging), 15 CNG stations, 1LPG station, 9 E-85 stations,

\$11.6 million in USDOE costs incurred

\$20.6 million in Recipient share incurred

1,650,000 gallons of petroleum displaced

3700 tons of GHG emissions reduced



equivalent to removing 726 cars off the road

Future Work

Federal Fiscal Year 2012

Vehicles

Deploy final 51 vehicles; ordered awaiting arrival or admin. tasks

Stations

Complete final 2 CNG and E-85
Install final EVSE

Ongoing Efforts

Data / Reporting

Continue data collection and reporting on all vehicles, stations, and activities

Marketing

Plan additional events, further develop strategy, and continue current efforts



Summary

- Project will increase the number of alt fuel vehicles & hybrids (403 vehicles)
- Project will develop fueling & charging infrastructure to support growth of alternative fuel use (345 Stations)
- Combined Benefits of the Project
 - Over 400 metric tons/yr in reduced criteria pollutants
 - Over 7,500 metric tons/yr in reduced CO₂ (eq. to removing almost 1,400 cars/yr)
 - Over 3 million gallons of petroleum/yr displaced
 - 77 full time equivalent jobs

