

# City of Surrey

## Converting Surrey's Separated Organics into a Vehicle Grade Renewable Fuel

### Waste-to-Wheels Workshop

Presented to the RNG Workshop Program Co-Sponsored by  
Energy Vision and Pace Energy and Climate Center

October 4, 2012

# About Us



With the shortest transportation routes from Asia to North America, British Columbia (BC) has an up to 58 hour shipping transport lead over other West Coast ports. British Columbia also offers duty-free access to the United States for products and services included in the North American Free Trade Agreement (NAFTA). Other key Surrey advantages include:

- A gateway location to regional, national and international markets.
- Access to transportation networks that include close proximity to 2 international airports, major highways, rail access, 2 ports and 2 border crossings.
- Largest supply of available industrial land in the region.



## City of Surrey

**Location:** Province of BC

**Region:** Metro Vancouver

**Population:** 500,000

**Area:** 316.41 km<sup>2</sup> (122.17 sq mi)

### Industrial Sectors:

- Clean Energy
- Finance, Insurance and Real Estate (FIRE)
- High Technology
- Advanced Manufacturing
- Education
- Health
- Agriculture
- Arts.

# THE CATALYST

- City of Surrey Sustainability Charter

(can be downloaded from Surrey's website at [www.surrey.ca](http://www.surrey.ca))

- Metro Vancouver Integrated Solid Waste and Resource Management Plan

(can be downloaded from Metro Vancouver's website at [www.metrovancouver.org](http://www.metrovancouver.org))

# THE VISION

*“To fuel our waste trucks with a renewable biogas generated from organic waste collected at curbside”*



Deputy operations manager Rob Costanzo displays bins to be used to collect food waste in the City of Surrey.



# THE APPROACH

1. Determine % of organic waste contained within our residential garbage stream
2. Two-phase parallel process for Organics Management:
  - a) Phase 1: determine best approach to curbside organics waste collection program using CNG waste trucks
  - b) Phase 2: establish an 80,000 metric tonne (88,000 US Ton) per year Surrey Organics Biogas Processing Facility

## Phase 1: Best approach to curbside organics waste collection program using CNG waste trucks:

- Cart based system with organic separation
- Weekly Organics Collection (kitchen & yard waste in same cart) with alternating biweekly Garbage & Recycling Collection
  - **Key Benefits: lower collection costs, less trucks & fuel usage & maximizes organic waste output**
- Waste Collection RFP awarded in Dec 2011 to BFI Canada (Progressive Waste) with Oct 1<sup>st</sup>, 2012 start date

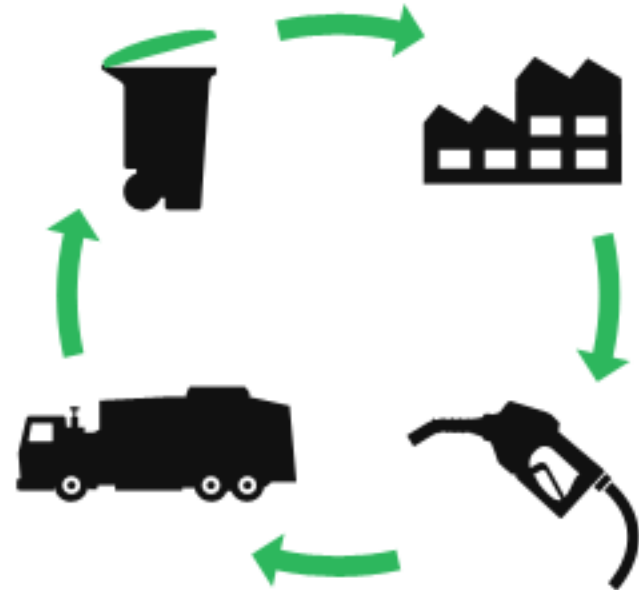


## Phase 2: Establish an 80,000 metric tonne (88,000 US Ton) per year Surrey Organics Biogas Processing Facility

- Review technical feasibility (2008/2009)
- Determine best approach (P3 model selected 2011)
- Application submission to P3 Canada Fund (June 2011)
- Development of business case/risk assessment (completed Jan 2012)
- P3 Canada Review Process (Jan to May 2012)
- Presentation to P3 Canada Board (early Jun 2012)

### Next Steps:

- Assemble Project Governance Team: Fall 2012
- Initiate Request For Qualifications: Q1 2013
- Invite Short Listed Proponents to RFP: Q2 2013
- Selection of Partner/Technology Provider: summer 2013
- Complete construction: 2015



# SYSTEM-WIDE BENEFITS

## Waste Collection

- Starting October 1<sup>st</sup>, Surrey's Annual Waste Collection Costs will be **\$3 million** lower than current contract price (fuel savings alone estimated at **\$1.3 million**)
- Waste tipping costs will drop: organic disposal is far cheaper than garbage disposal. Annual savings are estimated to be approx **\$2 million**

## Organics biogas Processing

- **80,000 MT (88,000 US tons)** of organic waste diverted from landfill annually
- Future facility will produce upwards of **460,000 gigajoules (GJ)** of biomethane = **10 million litres (2.6 million gallons)** of diesel litre/gallon equivalent (will fuel **6 times** our contractor's CNG waste collection fleet)
- CO<sub>2</sub>e/year reduction is estimated to be **46,000 tonnes** estimated to be worth **\$100K/year** in carbon credits
- Noted CO<sub>2</sub>e/year reduction will offset Surrey's corporate annual GHG's of 15,000 MT
- Sale of renewable gas to local utility estimated at **\$4 to \$5 million/year**
- Tipping rate revenues approximately **\$4.5 million/year**



# FUTURE SURREY ORGANICS BIOGAS PROCESSING SITE



# Thank You!

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