



*biogasmax*

A DRIVING FORCE



# Review of Achievements in Göteborg site

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## ■ WP2

- D2.1 rev: Collection strategies (M18) - BRG
  - Finalised
- Task 2.1.1.5 Study on integration of agriculture and urban areas for increased production of biogas – Falköping
  - Swedish version ready. English summary under development
- D2.3: Conceptualisation strategy (M22) – BRG
  - Input from Gbg to Lille ready and sent
- D2.4: Potential study (M18) - BRG
  - Last input early January





A guide to local strategies for increased biogas production urban-rural co-operation

Falköping



- WP3
  - Upgrading unit in Falköping: **built**



## ■ WP4




- Filling stations being built
  - Vänersborg Aug 06
  - Mariestad Aug 06
  - Lidköping Dec 06
  - Falköping March 07
  - Skara May 07
  - Göteborg Högsbo June 07
  - Göteborg West/Majorna July 07
  - Jönköping Elmia Oct 07
  - Göteborg Central/Kallebäck II Feb 08
- Grid injection launched **May 2007**

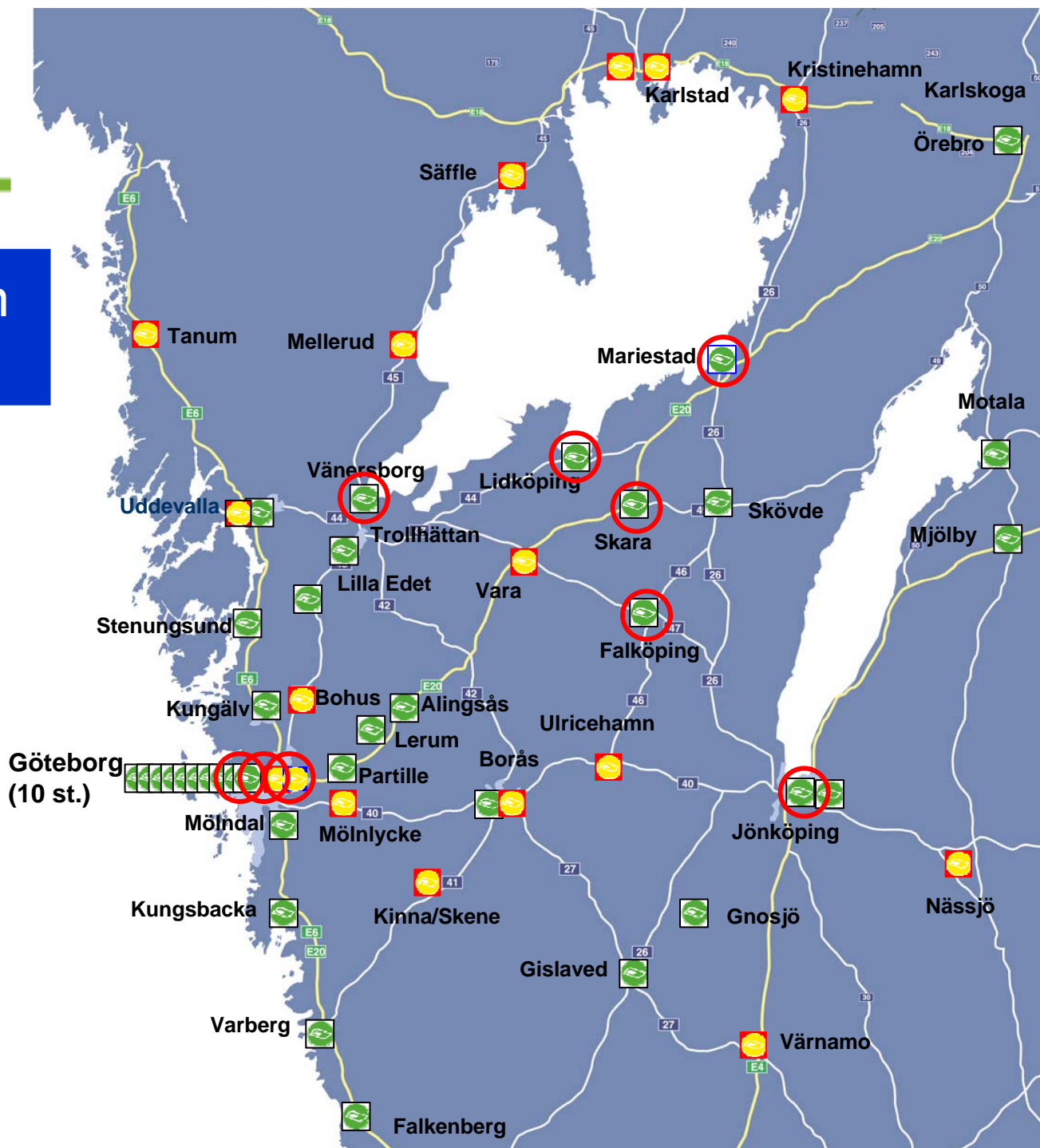




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# Filling stations in west Sweden

-  Existing
-  Under construction
-  Planned





## Göteborg

- Arendal production unit:
  - In operation (60 GWh/år, CH<sub>4</sub> slip < 0,1%)
- Grid injection launched May 2007





## Falköping

- In operation since January 2008
- Aiming at delivering operational data before May 2008
- Aiming at increasing from 3 GWh - > 5 to 10 GWh



## ■ WP5

- Light-duty vehicles  
Objective: 100 vehicles  
**Status: 150 vehicles**
- 5.1.1.1 Study on experience of wider policy to expand vehicle fleets  
**Finalised May 2007**



## ■ WP6 / WP7

- Inputs.... Where requested

## ■ WP8

- Conference Göteborg November 2007 including the Energy Commission of California (Jim Boyd)
- Presentation at Biogas Market Summit in Brussels, November 2007
- Other information activities



# Progress in site investments

- Upgrading unit Falköping
  - Investments so far: **1 100 000 Euro**
    - Commissioning date: **January 2008**
- Filling stations
  - Investments so far: **4 800 000 Euro**
    - Commissioning dates: **Aug 2006 to Feb 2008**
- Grid injection
  - Investments so far: **360 000 Euro**
    - Commissioning date: **May 2007**

- Related to WP3
  - Upgrading Falköping (GE)
  
- Related to WP4
  - Filling stations (FG)
    - All 9 stations in operation by Feb 2008
  - Grid injection (GE)
    - 3 km dedicated pipe to filling station

- All plants/demonstrations:
  - Input to evaluation schemes

- **WP3:**
  - After change in upgrading technology we do not see any risk in this process now
  
- **WP4:**
  - possibly delays in commissioning of filling stations

# Dissemination & promotion

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**Business Region Göteborg AB — winner of the American environment prize Blue Sky Award**

**“...for creating Biogas Väst, the first regional biogas project in Sweden. ”**

**BRG has inspired the many foreign visitors to Sweden to take advantage of Swedish expertise in developing biogas for vehicles in their own countries, says John Boesel, CEO of Calstart**



- Organisation of events since project start
  - 25 events
- Participation to events as a site
  - Approximately 2000
- Major articles /promotions
  - Biogas seminar in connection with the Göteborg Award for Sustainable Development (Al Gore), Jan 08
  - Biogas brochure inclusion in Newspaper for 350 000 households, Jan 08
  - Biogas brochure, Feb 08
  - Nordic Biogas Conference, March 08
  - Gasskonferansen, Bergen (NO), April 08
  - Advertising in four papers

- Major articles /promotions
  - New York times, May 08
  - Herald Tribune, May 08
  - Three Seminar on Waste, Energy & Transport, Shanghai, May 08
  - World Bio Energy 2008, May 08, Conference & Exhibition

- Contribution to regulations and initiatives on local, regional, national and EU-level



*Contributions for the establishment of*

- *Free street parking*
- *Subsidies for clean vehicles*
- *Purchasing of taxi fleets*
- *National Clean vehicle definition*
- *Managing national funding for biogas investments in the region*
- *National program for Swedish Climate Politic*



# Next actions & expected results

- **WP2:**
  - Guide to municipalities on rural-urban strategies for biogas production and upgrading
    - Use the tool....
    - Transfer to other municipalities (already in Alingsås)
    - Translation into English?



# Next actions & expected results

- **WP3:**
  - Follow up of methane slip from upgrading unit in Göteborg
  - Finalise and follow up of upgrading unit in Falköping
  
- **WP4:**
  - Building the last filling station
  - Follow up on grid injection



# Next actions & expected results

## ■ WP5:

- Continue to promote the use of biogas in vehicles
- D5.6: Report on market opportunities for introduction of large scale biogas for vehicle use, based on regional fleet assessments, resource potentials and upgrading possibilities (M29)



## ■ WP6:

- Evaluation feedback...
- **M6.5 Biogas cluster evaluation at Göteborg site (M30)**





## ■ Buses:

- Co-operation with Västtrafik (Head for public transport in County of Västra Götaland) for replacing fossil fuels with biogas in coming purchasing.
- 660 buses can be driven on biogas by 2012.
- By 2020 shall 90 % of all 1500 buses use biofuels. Biogas can meet this target!



## ■ Biomethane in hd vehicles

- Co-operation between DHL, FordonsGas & BRG for pushing dual fuel development
- Co-operation with Volvo Truck & Volvo Powertrain for tests
- Co-operation with the Swedish gas supplier (E.ON, AGA, FordonsGas) for infrastructure of liquified metangas

# Next actions & expected results



- BRG has got 6 million € from the Climate Investment Program
  - Production of liquified biomethane in Lidköping, 30 GWh
  - Fueling station of liquified biomethane for buses, FordonGas
  - Expanding existing plant in Skövde, 28 GWh
  - Agriculture biogas production with local/regional grids
  - 20 dual fuel trucks

# Next actions & expected results



**ECO-TECH  
SCANDINAVIA**

7-9 OCTOBER 2008  
The Swedish Exhibition Centre  
Göteborg, [www.miljoteknik.com](http://www.miljoteknik.com)

PARALLEL WITH  
**7 PROCESSTEKNIK**  
[processteknik.info](http://processteknik.info)

FOR VISITORS    FOR EXHIBITORS    PRESS

- Biogas Highway 7-9 October 2008
  - International b2b fair for biogas production, distribution and vehicles
  - International seminar
  - Study visits
  - Matchmaking
  - Evening get-together activities



# Next actions & expected results



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- Seminar: Biomethane fueling the future
  - Calstart (US) – Methane gas for trucks & buses
  - Volvo Powertrain (S) – Dual fuel for hd vehicles
  - Rolande LNG (NL) – LNG fueling stations
  - Terracastus (S) – Production liquified biomethane
  - Göteborg Energi (S) – Gasification R&D plant
  - Gibgas (D) – A new generation bi fuel cars



# Next actions & expected results

- **WP7:**
  - Input to TTR
  - Arrange training action in Oslo together with TTR & Stockholm
  
- **WP8:**
  - Dissemination activities...
  - Workshop, trade fair and study tour in connection with Biogas Highway Conference in Göteborg (see next page)



## Dissemination 2008

- E-mail news
- Newsletter 4/year
- Brochure B2B
- Advertising & articles
- Biogas Highway at Environmental Technology Fair in Göteborg 5-7 October 2008

