



Corporate Presentation

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ENVAC GROUP

Development, design, installation
and operation of underground waste
transport systems



ENVAC

World leader in Automated Waste Collection

Subsidiaries and Branch Offices

- Over 600 installations in 30 countries
 - First installation in 1961 - still in operation
 - Over 40 installations worldwide with a running time over 30 years
 - Closer to 40 offices in over 20 countries
 - 5 regions and 18 fully controlled sales companies
- 
- A light blue world map with numerous green circular markers indicating the locations of installations and branch offices. A label "Head office" with a line points to a marker in Europe. The markers are distributed across North America, Europe, Africa, Asia, and Australia.

ENVAC'S OWNER - THE STENA SPHERE 2009

- Seven business areas
- Turnover 2008 €5,5 billion
- 18 380 employees

Ferry lines



Finance



Shipping



Adactum



Offshore dr.



Recycling,
Environmental
services & trading



Property



Traditional Waste Handling

...is labour intensive with often poor working conditions



How the system works



Envac Applications



City Centres/ Residential



Airport



Hospital



Kitchen

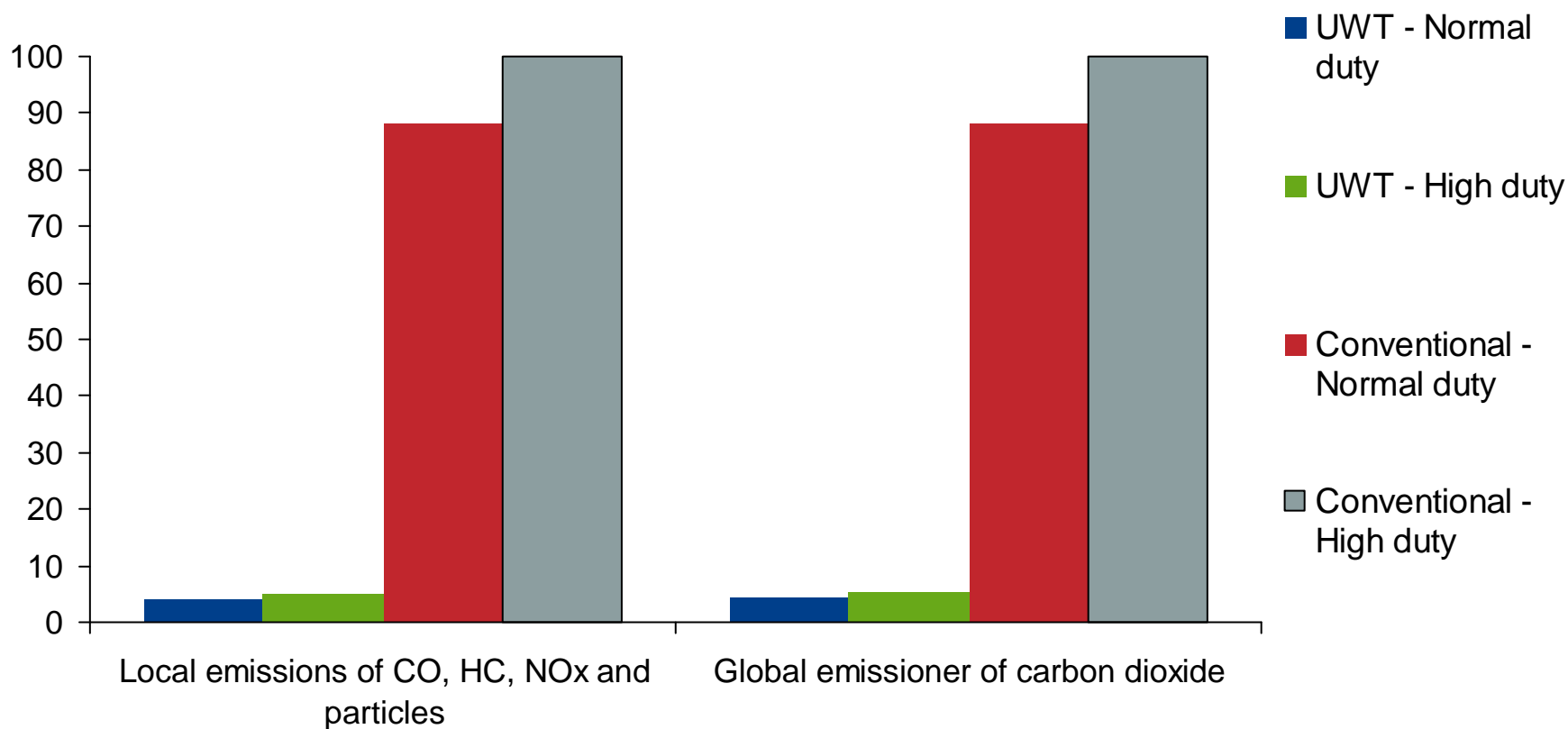
Two systems compared

- Environmental impact comparison between a manual collection and the Envac System, done for the project of Hammarby (Sweden).



Emissions to air through waste trucks in area

Relative comparison



Consequences for the living environment

Conventional collection				
outdoor noise for the whole area Västra Hammarby Sjöstad				
Type of noise source	Duration of the noise event [time]	Noise level [dBA]	Noise sources [No. of]	Number of noise events [per source & week]
By collection point for rear loader truck	4 min	75-88	228	3
Vehicle movements in area	38 min	75 ?	The whole area	3
Total noise impact for the whole area per week	17 h	75-88		

Stationary vacuum system				
outdoor noise for the whole area Västra Hammarby Sjöstad				
Type of noise source	Duration of the noise event [time]	Noise level [dBA]	Noise sources [No. of]	Number of noise events [per source & week]
Air inlet valve (1 m distance)	10 sek	55-72	20	280
Outdoor inlet (1 m distance)	5 sek	55-72	135	1890
Total noise impact for the whole area per week	4 h	55-72		

Environmental impact from waste handling traffic – heavy duty

per year (normal duty in brackets)	Conventional	UWT
Driving distance	2 881 km (2 828 km)	250 km (208 km)
No. of inter- sections needed to be crossed	19 188 st (19 084 st)	1 972 st (1 560 st)
No of hours in the area	4 238 h (3 718 h)	213 t (177 h)

*1



Slide 11

*1 * 2006-03-20
Konventionellt
Tömningar =81,0h
14 turer => $16*2*0,4/30 = 0,43h$
Totalt 81,5h
Sopsug
Tömningar 12 st á 0,33h = 3,96h
12 turer => 4,8 km => 0,16h
Totalt 4,12h
*, 2006-Mar-20

Comparison between Low & High densities areas

- Comparing 2 pneumatic collection projects of different densities:
 - Low density area.
 - 1500 Rue Ottawa + Griffintown + Lachine Canal: High density.

	LOW DENSITY AREA	HIGH DENSITY AREA
Ha	250	46
Units	10.000	7.000
Ha. Commercial & Offices	8	10
Equivalent dwellings	12.600	8.000
€ installation	31.119.711	10.663.630
€/Eq. Dwelling	2.470	1.333

Envac systems are resistant to hard weather conditions

Inlets on the street / snow



Tromso, Norway



Located 250 km north of the Polar Circle, Trömso with its 62,000 inhabitants is one of the world's northernmost cities

Other Facilities

Disney World Orlando

USA

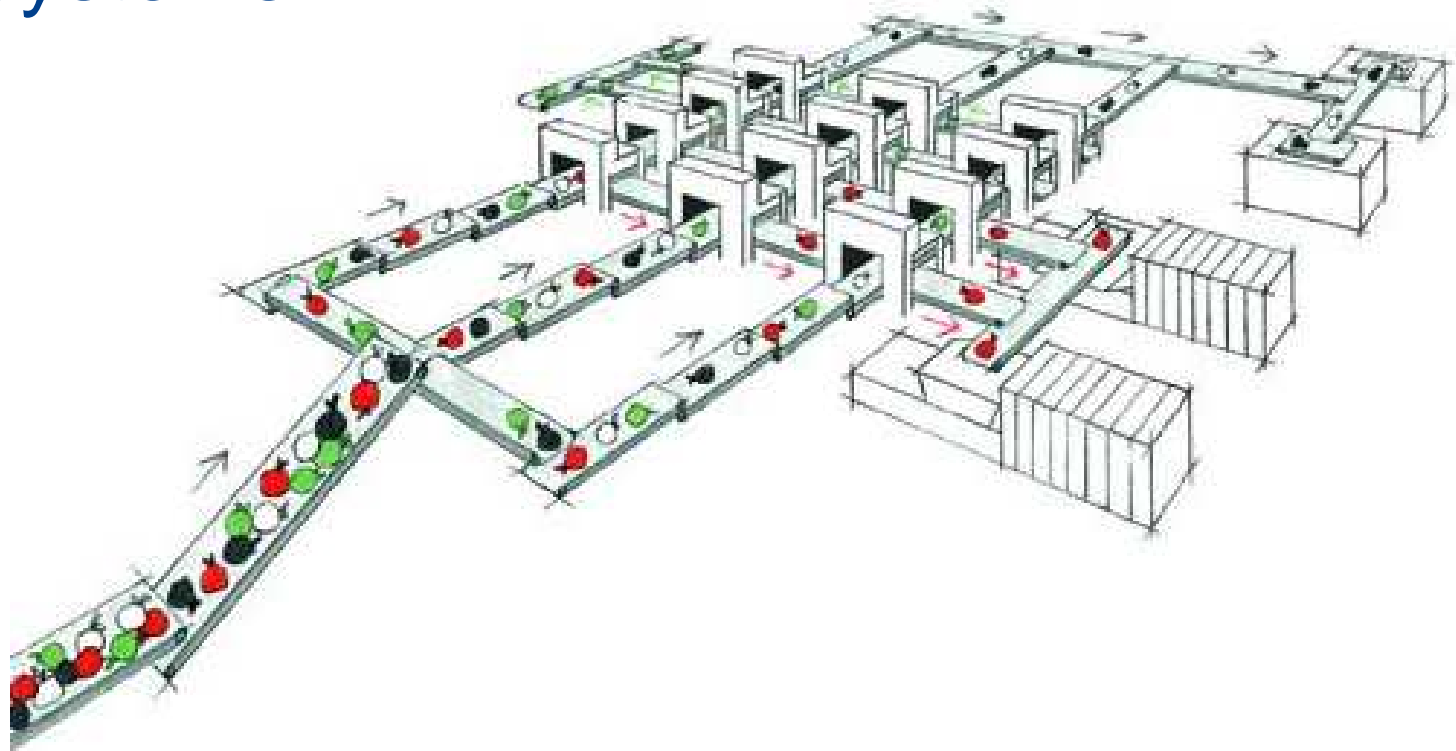
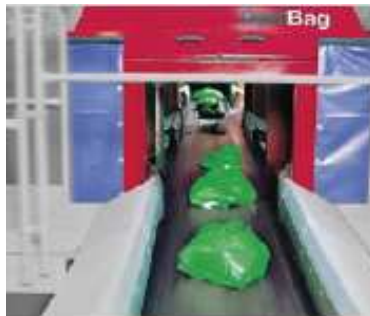


Type of system:	SVS 500
Start up operation:	1974
Capacity:	11 tn / dia
Fraction:	1

Eriksberg, Gothenburg, Sweden



Optibag Systems



How does it work?

1

The refuse lorry deposits its load in the receiving hopper. It is then transferred for sorting via a sheet conveyor belt. The material is divided between a suitable number of sorting lines. The number of lines is determined by the capacity requirement.

2

The bags are placed on a conveyor belt to the ejectors, which detect the colour. An ejector arm pushes the relevant bags onto a conveyor belt underneath. Each line sorts around 5 tons per hour.

3

The sorted bags are delivered to containers or direct via conveyors for further checks and final processing. This may involve opening the bags, sifting, fine screening, baling, etc.

THANK YOU
FOR YOUR ATTENTION!



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