

# “Trolley”

## A Project for valueable Future!

**StadtBus**  
SAUBER. LEISE. OBUS.

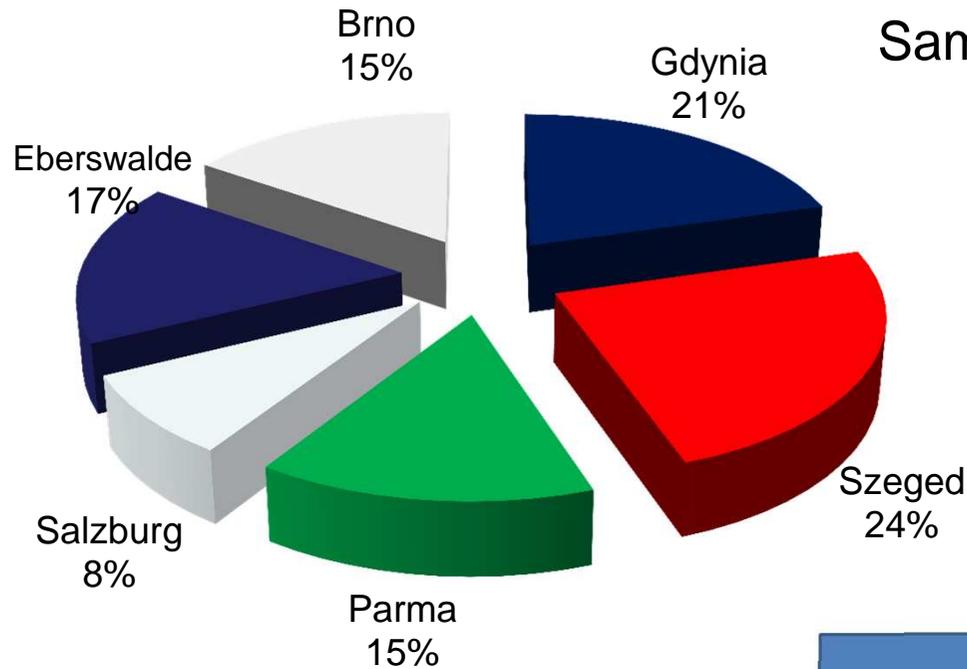


# Agenda

- ▶ Facts Trolleybuses
- ▶ Introducing Trolleyproject
- ▶ Trolleybuses are reality



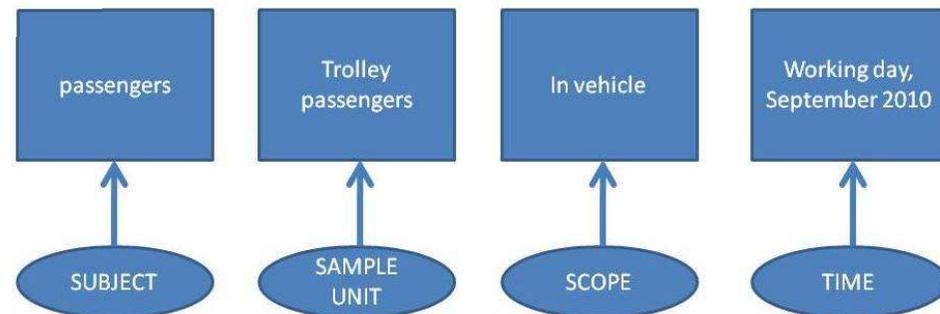
# Trolley Survey



Sample structure

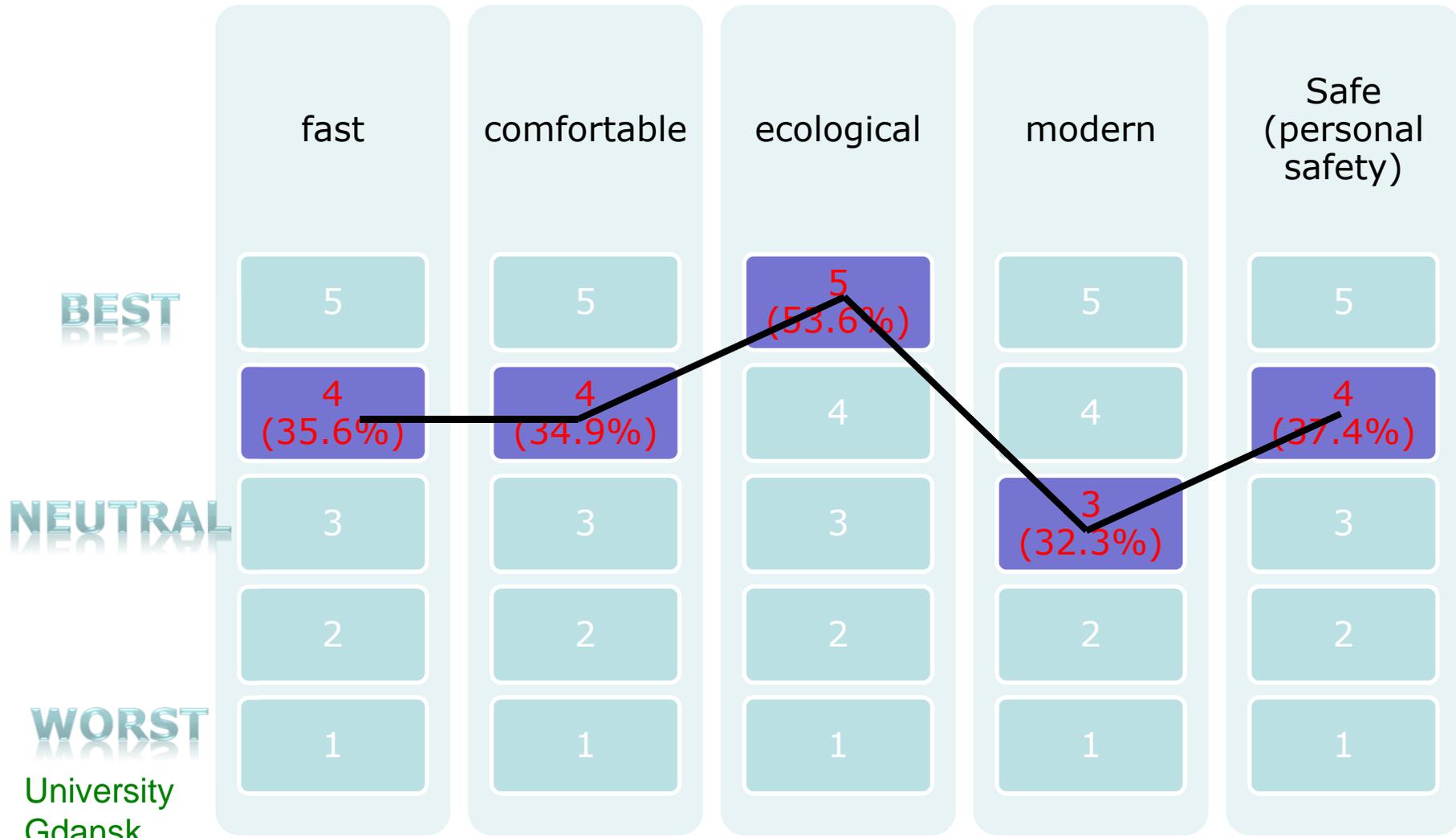
**1.049 Interviews**

Scheme of sampling



University  
Gdansk

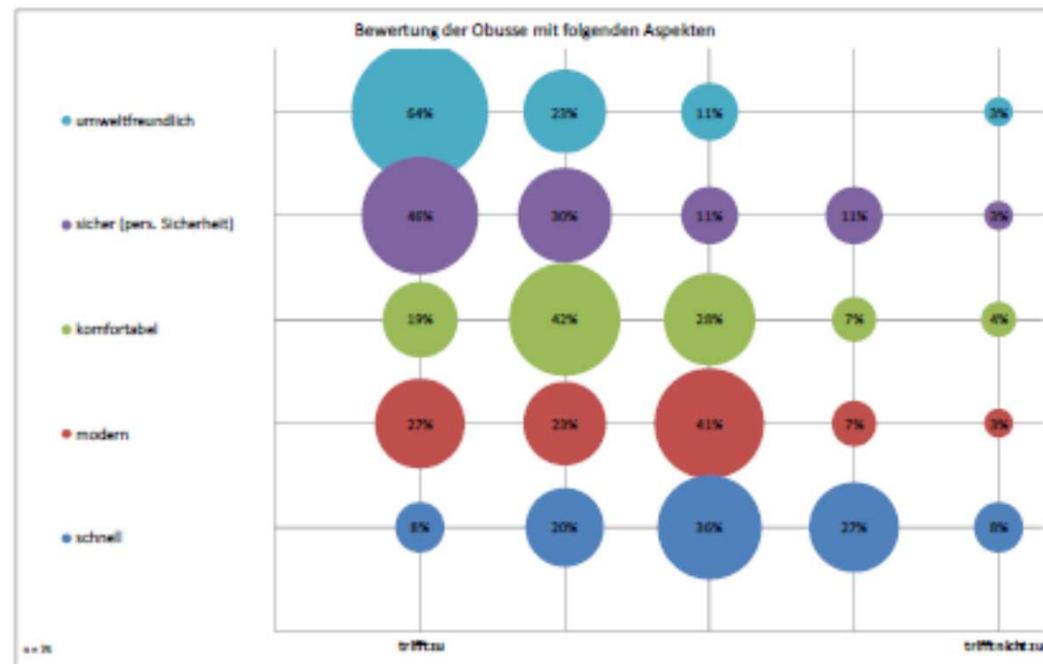
# Trolley Survey: Semantic profiles of all cities being researched



University Gdansk

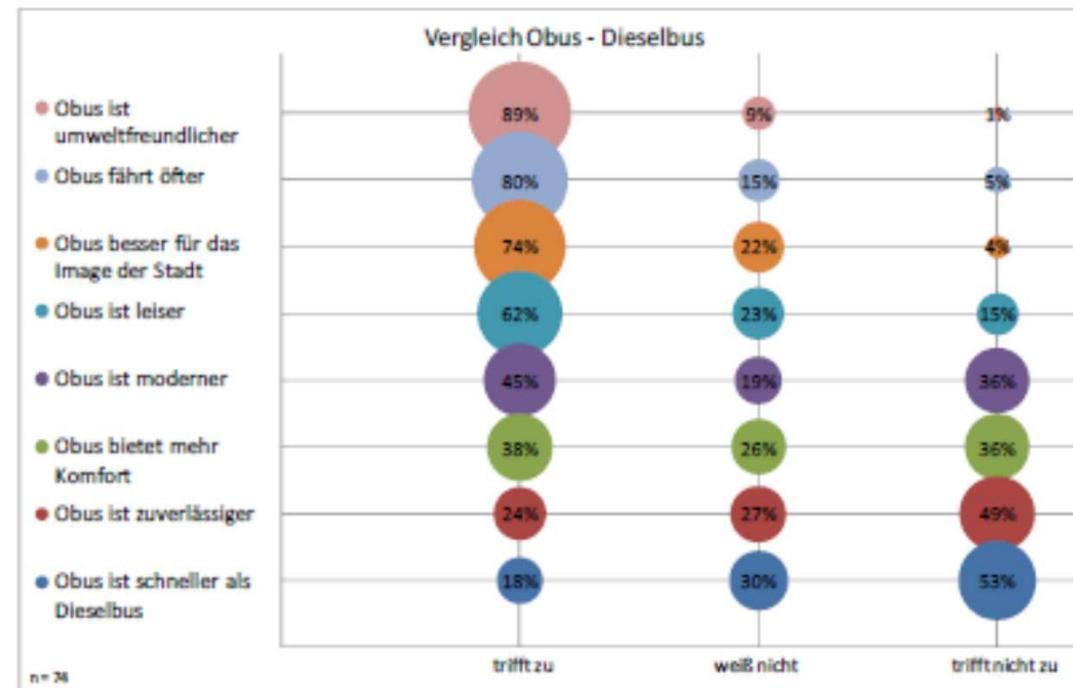
# Salzburg Survey

- ▶ Trolleys are seen
  - ▶ environmentally friendly (90%)
  - ▶ safe (76%)
  - ▶ comfortable (61%)
  - ▶ but not so modern
  - ▶ not so quick



# Salzburg Survey

- ▶ Trolleybusse are compared to Dieselbusses
  - ▶ environmentally friendly
  - ▶ go more frequently
  - ▶ better for the image of the city
  - ▶ more quiet
- ▶ but modernity and comfort are similar
- ▶ Trolleybusses do not have higher reliability / speed than Dieselbusses



## Policy Challenges in Central Europe

- ▶ **Climate change** is leading to high economic costs
- ▶ **Oil dependency** and **costs of oil** are growing
- ▶ Growth rate of cars and **congestion** is still increasing, in particular Central European Countries face this challenge
- ▶ **Noise and air pollution** is decreasing the quality of life
- ▶ **Demographic change** will reduce public transport use (as the “car generation” is aging)
- ▶ **Urban areas** are again becoming focal points of economic growth, but also suffer from congestion and low environmental quality.

**Trolley buses are an intelligent, clean and efficient answer to these challenges!**

## Qualities of Trolley Buses

- ▶ Well established and **effective** answer to current challenges
- ▶ **Zero local emissions** → no air pollution in the city
- ▶ **Environmentally** friendly if using renewable resources for power generation
- ▶ Lowest possible **energy** consumption of non renewable resources (50 % less compared to diesel buses)
- ▶ Recovery of **braking energy**
- ▶ **No energy loss and noise** when the trolley bus stops



## Qualities of Trolley Buses

- ▶ Better acceleration and hill climbing **performance**
- ▶ Smallest possible **noise level** in public transport
- ▶ Less vibrations and thus more **comfort** for passenger
- ▶ **Wires mean visibility**, visibility means certainty, safety and reliability for passengers
- ▶ Trolley buses are less involved in **accidents**
- ▶ Lower **infrastructure** costs compared to trams



## Objectives of the Project

The project **TROLLEY** will:

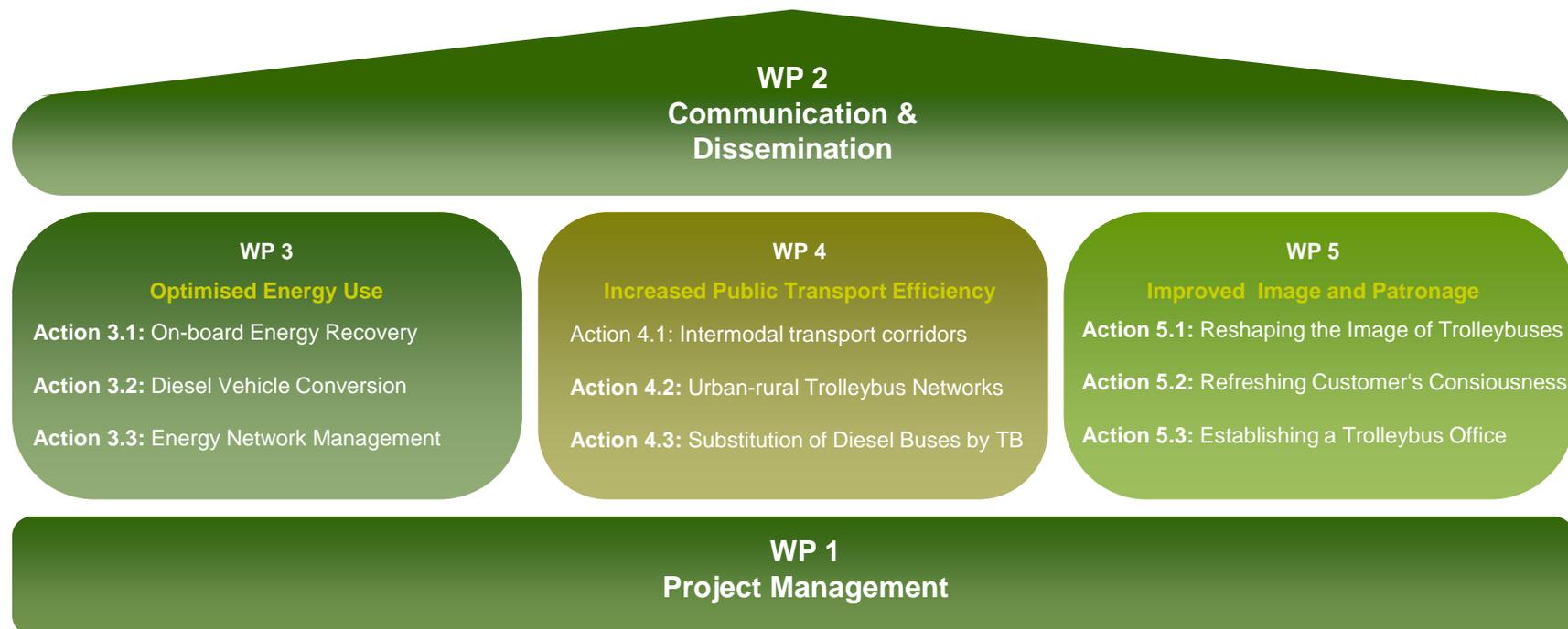
- ▶ deliver **transferable strategies** for implementation of trolleybus systems
- ▶ develop **innovative ways of promoting** trolleybus systems as environmentally friendly transport mode and thereby
- ▶ “reshape” and update the **image of trolleybuses in Central Europe**

## 9 Project Partners

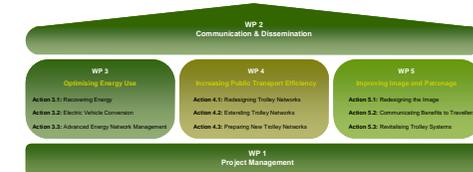
- ▶ Salzburg AG, Public transport operator of Salzburg, Austria
- ▶ City of Brno, Czech Republic
- ▶ Barnim Bus GmbH, Bus operator of Eberswalde, Germany
- ▶ TEP S.p.A.: Public transport operator of Parma, Italy
- ▶ Leipziger Verkehrsbetriebe (LVB) GmbH: Public transport operator of Leipzig, Germany
- ▶ City of Gdynia, Poland
- ▶ University of Gdansk, Poland
- ▶ SZKT, Public transport operator of Szeged, Hungary
- ▶ Trolleymotion Action Group, Salzburg, Austria



# Workpackage Structure

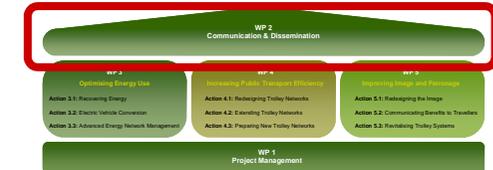


# Workpackages



- ▶ WP 1: Project Management (Salzburg AG/Rupprecht Consult)
- ▶ WP 2: Project Communication and Dissemination (Salzburg AG/ Rupprecht Consult)
- ▶ WP 3: Optimize Energy Use (Barnim Bus GmbH)
- ▶ WP 4: Increase Efficiency of the Public Transport (City of Bruno)
- ▶ WP 5: Improve Image and Patronage of Trolleybuses (University of Gdansk)

## Work Package 2: (Salzburg AG/Rupprecht Consult)



### Aims:

- ▶ Ensuring project communication, dissemination and knowledge management within TROLLEY consortium and on European, national, regional and local level to promote project outputs and results

### Core Outputs

- ▶ Joint Trolleybus Declaration: It will be a commitment for the cooperation between the relevant trolleybus stakeholders
- ▶ E-learning Module set

### Involved Partners:

- ▶ All 9 Project partners

# Work Package 3:

(Barnim Bus GmbH)



## Aims:

- ▶ Optimisation of energy use both on the vehicle and in the energy network itself by 1) recovering energy, 2) converting regular buses into trolleybuses and 3) management of new energy networks

## Core Outputs

- ▶ **Transnational manual on advanced energy storage** – Part 1 (super caps), Part 2 (network-based energy recovery of trolleybus network)
- ▶ Handbook on detailed diesel to trolleybus conversion principles

## Involved Partners:

- ▶ Eberswalde, Leipzig, Brno, Gdynia, Szeged and Parma

# Work Package 4:

(City of Brno)



## Aims:

- ▶ Increasing the efficiency of public transport by
  - ▶ redesigning and extending of existing trolleybus systems and/or preparation of new trolleybus network
  - ▶ Includes studies and pilot measures on the replacement of diesel buses or on the improvement of multimodality

## Core Outputs

- ▶ Transnational take-up guide on diesel bus replacement (knowledge gained on the study for the replacement of diesel bus lines with trolleybuses)

## Involved Partners:

- ▶ Brno, Gdansk, Leipzig, Salzburg AG, Eberswalde and Szeged

# Work Package 5:

(University of Gdansk)



## Aims:

- ▶ Improving the image of trolleybuses and the overall patronage to citizens and to politicians

## Core Outputs

- ▶ Establishment of central european trolleybus knowledge office (Trolleymotion)

## Involved Partners:

- ▶ Salzburg AG, Gdynia, Eberswalde and Gdansk

# Offer for Cooperation



- ▶ Newsletter
- ▶ Sign the „Trolley Declaration“
- ▶ use the E-Learning modules (under construction)
- ▶ use the Imagecampaigne (Summer 2011)
- ▶ use the Trolleybus Knowledgecenter (under construction)
  - ▶ Library
  - ▶ Pool of experts
- ▶ Visit the yearly „Industry Summits“
- ▶ International Marketing Symposium Lviv/Lemberg – Ukraine in Juni 2011 (Trolley Marketing Award !!!)
- ▶ Invitation to the „Final Conference in Szeged“ Jan. 2013

No noise?  
Sounds great!

smart



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Salzburg AG

trolley

StadtBus  
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# Worldwide Pro Trolleybus Trend

- ▶ **in the last 5 years in the EU and CH more than 1.300 new trolleybuses have been built**
- ▶ **New or under construction or already built**
  - ▶ **Avellino, Bari, Bologna, Chieti, Lecce, Pescara, Rom (Italy)**
  - ▶ **Landskrona, Stockholm (Swede)**
  - ▶ **Leeds (England)**
  - ▶ **Castellon (Spain)**
  - ▶ **Philadelphia (USA)**
  - ▶ **Kertsch (Ukraine)**
  - ▶ **Merdia, Barquisimeto (Venzuela)**
  - ▶ **Amadora (Portugal)**
- ▶ **(Re-) construction in z.B. London, Edinburgh, Jelena Gora, Helsinik various cities in Spain**



# Examples for Pro Trolleybuses Trend

- ▶ over 400 new Trolleybuses and 5 Lines in **Athen**
- ▶ 320 new Trolleybuses and a new Depot in **Vancouver**
- ▶ 25 new Trolleybuses, a new line and some line extensions in **Salzburg**



# Examples for Pro Trolleybuses Trend

- ▶ 9 new Trolleybuses and Reactivation of two Trolleylines, 1 new line in **Arnhem**
- ▶ 9 new Trolleybuses plus Planning and Modernisation of 10 Trolleybuses in **Cordoba**
- ▶ **Montreal** – electric! Overall Concept and buying of 100 Trolleybuses are planned





**Trolleybusses are ready to use –  
they are not a dream!  
They are reality**



## Thank you very much for your attention

[www.trolley-project.eu](http://www.trolley-project.eu)