GOOD PRACTICE EXAMPLES - APPENDIX B
ELENA FUNDS FACT SHEETS
# ELENA Project Factsheet

## Central Denmark Energy Planning and Investment (CeDEPI)

<table>
<thead>
<tr>
<th>Location</th>
<th>Central Denmark Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beneficiary</td>
<td>Central Denmark Region</td>
</tr>
<tr>
<td>CoM signatory</td>
<td>Out of the associated 11 municipalities, 9 have signed the CoM</td>
</tr>
<tr>
<td>Sector</td>
<td>Energy efficiency in buildings and in street lighting, RE in related to buildings</td>
</tr>
<tr>
<td>Total PDS cost</td>
<td>EUR 2,567,000</td>
</tr>
<tr>
<td>Elena contribution</td>
<td>EUR 2,310,000</td>
</tr>
</tbody>
</table>

### Project development services (PDS) financed by ELENA
The creation of a project department (support unit) assisted by external consultants for specific assignments, which will support 11 municipalities and the Region itself in preparing the planned investment programme. The Project Department will consist of a Programme Manager and 9 technical experts. It will deliver technical assistance to the partners through procurement of external expertise according to the partners’ needs, and through the technical experts, part of whom will be seconded to several municipalities.

### Description of ELENA operation
The work programme consists of three phases:
1. Project-start: set up of the project department and tendering of external consultancy, final choice of buildings
2. Preparation of tender: building energy audits, PV design, street lighting audits, tender preparation and evaluation
3. Implementation of investment programme: contract signature and commissioning of works

### Timeframe
June 2014 till May 2017

### Basis for investment identification
Preliminary study and a data collection concerning potential investment projects in cooperation with the interested municipalities to prepare ELENA application

### Investment programme description
- Building refurbishment (building shell improvement, upgrade of energy building equipment’s): around 100 buildings identified
- RE electricity generation: installation of PV plants on foreseen 17 buildings
- Street lighting upgrade and replacement: approx. 5,700 lighting columns, 20,000 fixtures
- Purchase of electrical vehicles and charging stations: 2 municipalities

### Investment to be mobilized

<table>
<thead>
<tr>
<th>Sectors</th>
<th>Investments (mEUR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building refurbishment (envelope and equipment)</td>
<td>32.4</td>
</tr>
<tr>
<td>PV plants on roof tops</td>
<td>4.5</td>
</tr>
<tr>
<td>Street Lighting</td>
<td>20.5</td>
</tr>
<tr>
<td>Electrical vehicles</td>
<td>0.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>57.8</strong></td>
</tr>
</tbody>
</table>

### Expected results
- Energy Efficiency – Annual total energy saved 30,680 GWh.
- Renewable Energy – Annual renewable electricity generation 1,600 GWh.
- CO₂ reductions – Annual total reductions of CO₂ emissions 7,040 CO₂ eq t.

### Leverage factor (Minimum 20)
25

### Market replication potential
The delivery of attractive packages of energy efficiency and renewable energy investments to municipally owned buildings is one of the key elements under the SEAPs and for municipalities. Its concrete application by a regional authority in bundling projects and supporting smaller municipalities might encourage others to adopt similar approaches.

### Project status
Contract signed in June 2014

### Contact Person at Beneficiary
Martin Petersen, Programme manager

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January 2016
## Electrobus: Energy Efficient Bus Network for Barcelona

<table>
<thead>
<tr>
<th>Location</th>
<th>City of Barcelona, Spain.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beneficiary</td>
<td>Transports de Barcelona, S.A (TB)</td>
</tr>
<tr>
<td>CoM signatory</td>
<td>YES (November 2008)</td>
</tr>
<tr>
<td>Sector</td>
<td>Urban Public Transport EE. (Bus network and operation)</td>
</tr>
<tr>
<td>Total PDS cost</td>
<td>EUR 2 260 000</td>
</tr>
<tr>
<td>ELENA contribution</td>
<td>EUR 1 921 000 (85%)</td>
</tr>
<tr>
<td>Project development services (PDS) financed by ELENA</td>
<td>The ELENA assistance will support the first large scale investment programme in Europe to retrofit existing diesel and GNC buses into hybrids, with:</td>
</tr>
<tr>
<td></td>
<td>• Technological studies on electric and hybrid buses (including retrofitting)</td>
</tr>
<tr>
<td></td>
<td>• Support in the definition of tailored financial instruments to finance the bus fleet renewal</td>
</tr>
<tr>
<td></td>
<td>• Studies for a new Bus Network (including Traffic engineering)</td>
</tr>
<tr>
<td></td>
<td>• Studies on new signals network and LED technology</td>
</tr>
<tr>
<td>Description of ELENA operation</td>
<td>The tasks will be carried out through the creation of an implementation unit, made up by representatives of both entities Transports de Barcelona and Mobility Department of the Municipality of Barcelona (TB and MD). This new unit will incorporate internal staff from the two entities and additional staff (TB) hired exclusively for this project (one technical senior expert and three technical staff). ELECTROBUS will also receive support from external consultants.</td>
</tr>
<tr>
<td>Timeframe</td>
<td>2011-2014</td>
</tr>
<tr>
<td>Basis for investment identification</td>
<td>• Energy efficiency action plan 2000-2010</td>
</tr>
<tr>
<td></td>
<td>• New energy efficiency, climate change and air quality action plan 2010-2020, including the objectives of the Covenant of Majors (under preparation by the Barcelona City Council)</td>
</tr>
<tr>
<td></td>
<td>• The ELECTROBUS umbrella program (TB)</td>
</tr>
<tr>
<td>Investment programme description</td>
<td>• New Bus Network and Bus Rapid Transport-BUS)</td>
</tr>
<tr>
<td></td>
<td>• Technology to implement LED technology into the traffic signaling system</td>
</tr>
<tr>
<td></td>
<td>• Bus fleet renewal: The plan foresees to retrofit 220 existing buses into hybrid buses and to integrate electric and hybrid vehicles</td>
</tr>
<tr>
<td>Investment to be mobilized</td>
<td>EUR 163.88 m.</td>
</tr>
<tr>
<td>Expected results</td>
<td>Energy savings: 61.4 GWh by the end of the three year project period</td>
</tr>
<tr>
<td></td>
<td>CO₂ reduced: 16 400 CO₂-eq [t] by the end of the three year project period</td>
</tr>
<tr>
<td></td>
<td>Jobs created/sustained: No data regarding employment is currently available.</td>
</tr>
<tr>
<td>Leverage factor</td>
<td>85</td>
</tr>
<tr>
<td>Market replication potential</td>
<td>There is a high replication potential for other municipalities, notably in the Spanish market, but not only.</td>
</tr>
<tr>
<td>Project status</td>
<td>Approved</td>
</tr>
<tr>
<td>Contact person at Beneficiary</td>
<td>Francisco González Balmas</td>
</tr>
<tr>
<td></td>
<td><a href="mailto:fagonzalez@tmb.cat">fagonzalez@tmb.cat</a></td>
</tr>
</tbody>
</table>

**January 2016**

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**Appendix B - Elena Funds Fact Sheet**

**Location**

**City of Barcelona, Spain.**

**Beneficiary**

Transports de Barcelona, S.A (TB)

**CoM signatory**

YES (November 2008)

**Sector**

Urban Public Transport EE. (Bus network and operation)

**Total PDS cost**

EUR 2 260 000

**ELENA contribution**

EUR 1 921 000 (85%)

**Project development services (PDS) financed by ELENA**

The ELENA assistance will support the first large scale investment programme in Europe to retrofit existing diesel and GNC buses into hybrids, with:

- Technological studies on electric and hybrid buses (including retrofitting)
- Support in the definition of tailored financial instruments to finance the bus fleet renewal
- Studies for a new Bus Network (including Traffic engineering)
- Studies on new signals network and LED technology

**Description of ELENA operation**

The tasks will be carried out through the creation of an implementation unit, made up by representatives of both entities Transports de Barcelona and Mobility Department of the Municipality of Barcelona (TB and MD). This new unit will incorporate internal staff from the two entities and additional staff (TB) hired exclusively for this project (one technical senior expert and three technical staff). ELECTROBUS will also receive support from external consultants.

**Timeframe**

2011-2014

**Basis for investment identification**

- Energy efficiency action plan 2000-2010
- New energy efficiency, climate change and air quality action plan 2010-2020, including the objectives of the Covenant of Majors (under preparation by the Barcelona City Council)
- The ELECTROBUS umbrella program (TB)

**Investment programme description**

- New Bus Network and Bus Rapid Transport-BUS
- Technology to implement LED technology into the traffic signaling system
- Bus fleet renewal: The plan foresees to retrofit 220 existing buses into hybrid buses and to integrate electric and hybrid vehicles

**Investment to be mobilized**

EUR 163.88 m.

**Expected results**

Energy savings: 61.4 GWh by the end of the three year project period

CO₂ reduced: 16 400 CO₂-eq [t] by the end of the three year project period

Jobs created/sustained: No data regarding employment is currently available.

**Leverage factor**

85

**Market replication potential**

There is a high replication potential for other municipalities, notably in the Spanish market, but not only.

**Project status**

Approved

**Contact person at Beneficiary**

Francisco González Balmas

fagonzalez@tmb.cat
### ELENA Project Factsheet

**Global Roadmap for Energy Efficiency and New Energy Resources in Extremadura (GREENER-EX)**

<table>
<thead>
<tr>
<th>Location</th>
<th>Extremadura Region, Spain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beneficiary</td>
<td>Extremadura Energy Agency (AGENEX)</td>
</tr>
<tr>
<td>CoM signatory</td>
<td>No</td>
</tr>
<tr>
<td>Sector</td>
<td>EE and RES in Buildings, Street lighting, e-Mobility</td>
</tr>
<tr>
<td>Total PDS cost</td>
<td>EUR 1 397 144</td>
</tr>
<tr>
<td>Elena contribution</td>
<td>EUR 1 257 430 (90%)</td>
</tr>
</tbody>
</table>

**Project development services (PDS) financed by ELENA**

The project development services will support a large investment programme to improve the energy efficiency in street lighting and public buildings, as well as electrical transport to be implemented predominantly by ESCOs. The final beneficiaries include 163 municipalities, two county councils and the regional government. These entities will benefit from lower energy costs and new or renovated installations.

**Description of ELENA operation**

AGENEX will develop an investment programme focused on public buildings, biomass, street lighting and electric vehicles. The ELENA operation will support AGENEX in the first stages of project development. AGENEX will, in close cooperation with regional and local authorities, develop and bundle investment projects and support public procurement. The final beneficiaries are public entities that will benefit from lower energy costs and new installations. AGENEX will recruit 20 new members of staff to support the implementation of the project and in addition external legal, financial and technical expertise.

**Timeframe**

2014-2017

**Basis for investment identification**

The investment programme has been prepared on the basis of information provided by local and regional authorities.

**Investment programme description**

- Measures to improve EE and increase RES generation in 326 public buildings
- Realisation of three regional biomass collection centres
- Energy efficient street lighting systems in three municipalities
- Investments in e-mobility, including 26 charging points and 49 electric vehicles

**Investment to be mobilized**

46.5 MEUR

**Expected results**

- Renewable energy production: 23.5 GWh/year
- Energy-efficient street lighting: 23.0 GWh (saved)/year
- Energy-efficiency in buildings: 1.6 GWh (saved)/year
- Energy savings mobility: 4.3 GWh (saved)/year

**Leverage factor (Minimum 20)**

37

**Market replication potential**

The market replication potential for other Spanish regions is considered high, notably for street lighting projects, the use of biomass for heating, and the innovative bundling approach.

**Project status**

Contract signed 17.12.2014

**Contact person at Beneficiary**

Javier Ordóñez Muñoz

January 2016
## MADEV (MADrid Electric Vehicles)

<table>
<thead>
<tr>
<th>Location</th>
<th>City of Madrid, Spain</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Beneficiary</strong></td>
<td>Empresa Municipal de Transportes de Madrid S.A. (EMT) Public Transport company owned by Madrid City Council.</td>
</tr>
<tr>
<td><strong>CoM signatory</strong></td>
<td>YES (28th November 2008)</td>
</tr>
<tr>
<td><strong>Sector</strong></td>
<td>Urban Public Transport EE. Electromobility</td>
</tr>
<tr>
<td><strong>Total PDS cost</strong></td>
<td>EUR 1 304 640</td>
</tr>
<tr>
<td><strong>ELENA contribution</strong></td>
<td>EUR 1 148 083 (88%)</td>
</tr>
</tbody>
</table>

### Project development services (PDS) financed by ELENA
- The ELENA assistance will support the first large scale investment programme for electric vehicles in Spain.
- Assessment and support for the selection of the best business models
- Support for the legal implications of the project
- Support the identification of administrative requirements
- Implementation of management and monitoring tools to ensure a proper coordination
- Support on the development of public charging network

### Description of ELENA operation
- A Project Implementation Unit will be established within the EMT to manage the investment programme. This unit will coordinate, promote and analyse the proposals from the sector stakeholders (energy companies, vehicle and charging station manufacturers, etc.) and from the Municipality of Madrid. It will also support them technically in the implementation. The unit will be made up of existing staff and additional staff working at EMT and will receive support from external consultants.

### Timeframe
- 2011-2013

### Basis for investment identification
- SEAP developed in the framework of the Covenant of Mayors: Plan de Uso Sostenible y Prevención del Cambio Climático de la Ciudad de Madrid 2008.
- Project MOVELE (2009-2010).
- Integrated Strategy for Electric Vehicles Promotion in Spain, presented on 06 April 2010

### Investment programme description
- Acquisition of 1 400 Electric Vehicles (EV)
- Acquisition of 1 870 charging points (CP)

### Investment to be mobilized
- The expected investments amount to EUR 53,4 million

### Expected results
- Energy savings: 4160 MWh/year
- CO2 reduced: 1800 CO2-eq [t]/year

### Leverage factor
- 47

### Market replication potential
- The market replication potential for other municipalities, notably in the Spanish market, is considered high.

### Project status
- ELENA contract signed on 25 November 2010.

### Contact Person at Beneficiary
- Sergio Fernández Balaguer
  - Sergio.fernandez@emtmadrid.es

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*January 2016*
# The Zero Emission Buses in Netherlands

<table>
<thead>
<tr>
<th>Location</th>
<th>Dutch southern provinces North Brabant and Limburg.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CoM signatory</td>
<td>The cities of Helmond, Eindhoven, Breda, ’s-Hertogenbosch and Tilburg in the province of North Brabant have signed the Covenant of Mayors in February 2009.</td>
</tr>
<tr>
<td>Sector</td>
<td>Public Transport</td>
</tr>
<tr>
<td>Total PDS cost</td>
<td>EUR 2,733,250</td>
</tr>
<tr>
<td>Elena contribution</td>
<td>EUR 2,459,925 (90%)</td>
</tr>
</tbody>
</table>

## Project development services (PDS) financed by ELENA

The ELENA support will include external experts to focus in the following activities:

- Programme Coordination
- Decision Support for Investments: business and financial models
- Investment validation: energy infrastructure
- Investment validation: available zero emission bus concepts
- Legal implications, tax system and finance
- Preparation for Procurement and Implementation

## Description of ELENA operation

The ZEB Foundation will hire specialist consultants to support them to organise, coordinate, procure and facilitate all relevant actions and expertise in order to realise all investments in the provinces of North Brabant and Limburg implementing successful tenders for Public Transport concessions featuring large-scale zero emission investments.

## Timeframe

2012-2015

## Basis for investment identification

In the previous research phases, all partners and stakeholders of the ZEB Foundation are contributing to the proof of principle of the proposed TCO, business and service provider models, and have proven the economic feasibility and bankability of the envisaged new business models within Zero Emission concessions, through representatives of the Dutch Association of Banks (NVB).

Representatives from PTO’s, automotive supply chains and OEM’s have confirmed the feasibility of the proposed production of series of electrical bus configurations for The Netherlands. Main other technical issues have been solved i.e. available power trains, battery stacks, and (fast) charging systems. The main types stakeholders that have been contributing to the ZEB.

## Investment programme description

The objective of the project is to replace the complete fleet of diesel buses currently used in the province of North-Brabant and Limburg by Zero Emission Buses.

A total of 626 zero emission buses and related charging infrastructure is included in the investment programme.

## Investment to be mobilized

EUR 587 million
### Expected results

The planned investment programme is expected to reduce energy consumption by a total of 72.7 GWh per year. Energy savings will reduce CO2 emissions by an estimated 26.9 k-ton per year, if the average energy mix of the Netherlands is assumed. The reduction of CO2 emissions would roughly double (to 53.9 kton per year), if the energy were sourced from green alternative sources.

Other impacts are related to noise levels and PM reduction.

<table>
<thead>
<tr>
<th>Leverage factor (Minimum 20)</th>
<th>238</th>
</tr>
</thead>
</table>

### Market replication potential

The market replication potential is considered high, notably the development and implementation of new (tenders for) concession contracts, based on a novel business model that enables public transport operators to purchase and operate Zero Emission buses. Unique feature of this business model is the mix of public and private financing in order accelerate implementation of zero emission bus fleets within current boundaries of public funding.

**Project status**

Contract signed on 28.11.2012

**Contact person at Beneficiary**

Zero Emission Bus Transport Foundation (ZEB)
Mrs. Maria H.H Van Haaren – Koopman, Chairwoman

[info@zero-emissiebusvervoer.nl](mailto:info@zero-emissiebusvervoer.nl)