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# **BOSNIA-HERZEGOVINA**

**UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT  
Enterprise Energy Efficiency (3E)**

**IQC Contract # EPP-I-00-03-00004-00  
Task Order # 12**

**USAID 3E Presentation for Thomas Rojas visit  
Authors: Project Team  
September 27, 2013**

**Implemented by:  
Advanced Engineering Associates International, Inc. (AEAI)**



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**USAID 3E Presentation for Thomas  
Rojas visit, September 27, 2013**



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# ***USAID Enterprise Energy Efficiency – 3E***

*September 27, 2013*

USAID 3E Presentation for Thomas  
Rojas visit, September 27, 2013



## USAID 3E task objectives

- Implementation of more than 10 pilot projects throughout BiH
- Increase public and private sector capacity to implement EE projects
- Raise public awareness of EE potential



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## **USAID 3E pilot projects:**

**Approved projects (17 projects in total):**

- 1. Sarajevo, Mechanical Engineering Faculty**
- 2. Tuzla, Primary School „Pazar“**
- 3. Mostar, Gimnazija**
- 4. Sarajevo and Tuzla region, 20 private houses**
- 5. Gračanica , SOS Kinderdorf**
- 6. Livno, Sports Hall**
- 7. Trebinje, LED street lighting**
- 8. Prijedor, Primary School „Branko Ćopić“**
- 9. Gradiška, Kindergarten „Lepa Radić“**



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## **USAID 3E pilot projects:**

**Approved projects (17 projects in total):**

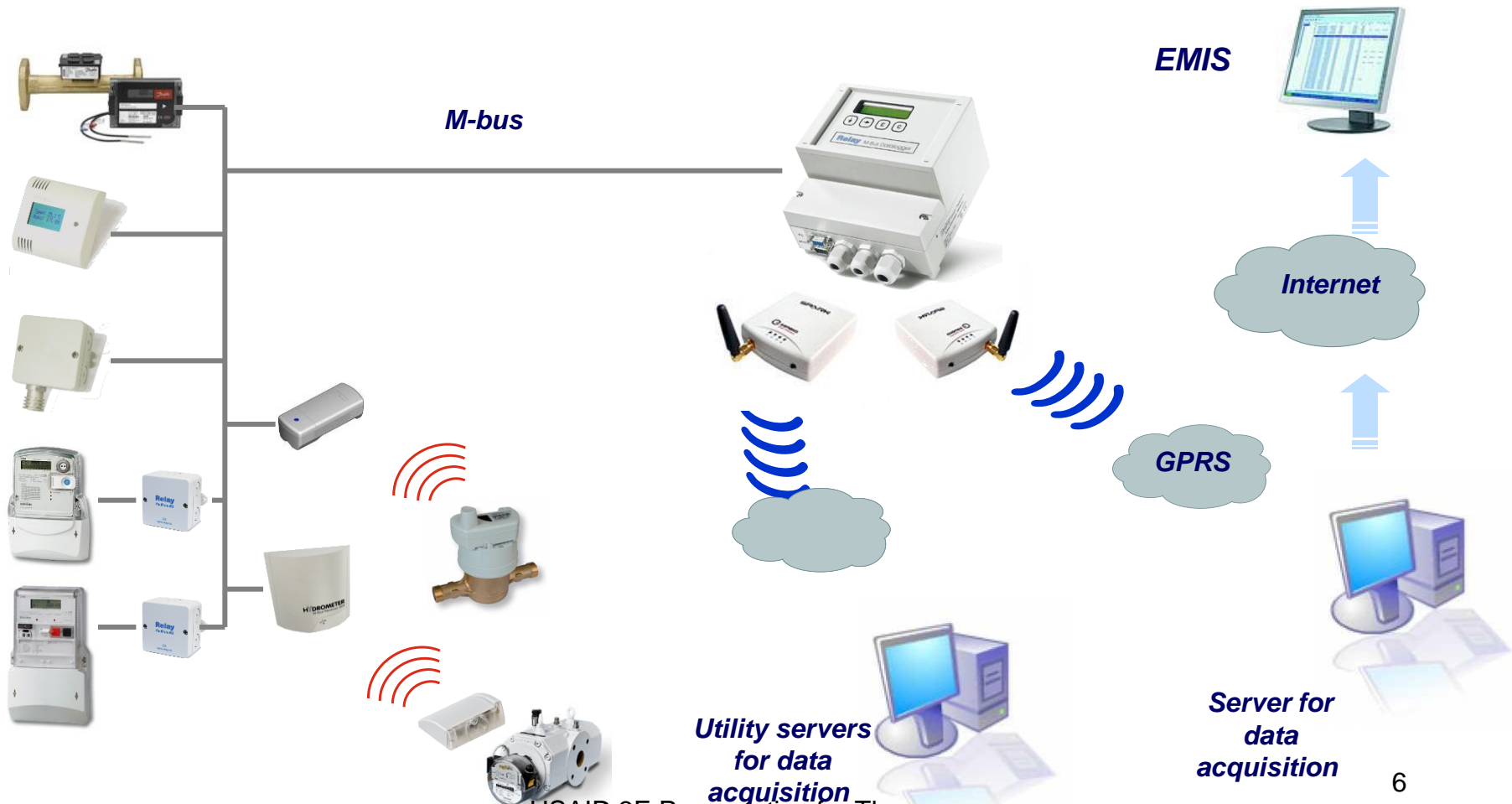
- 10. Foča, homes for returnees (3 buildings)**
- 11. Rogatica, homes for returnees**
- 12. Bihac, Cultural Centre**
- 13. Olovo, Primary School „Olovo“ and Secondary School „Musa Ćazim Ćatić“**
- 14. Travnik, Municipality building**
- 15. Bijeljina, LED street lighting**
- 16. Srebrenica, LED street lighting**
- 17. Banja Luka, Student centre “Nikola Tesla”**



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## MONITORING AND VERIFICATION SYSTEM





# PILOT PROJECT – Mechanical Engineering Faculty Sarajevo (MEF)

- Partners on project:
  - UNDP BiH, MEF
- Implemented EE measures :
  - New gas condensing boiler
  - Replacement of windows
  - Thermal insulation of the facade
  - Monitoring and verification system

<b>Pilot Project Value:</b>	<b>400,000 USD</b>
UNDP	270,000 USD
MEF	40,000 USD
USAID 3E	90,000 USD

<b>Energy savings:</b>	<b>50% or 412 MWh/year</b>
<b>Cost savings:</b>	<b>40,000 USD/year</b>
<b>Payback period:</b>	<b>10 Years</b>



MEF building *before* and *after* implementation of EE measures



## PILOT PROJECT – Primary School “Pazar” in Tuzla

- **Partners on project:**
  - **UNDP BiH, Municipality of Tuzla**
- **Implemented EE measures:**
  - **Windows replacement**
  - **Heating system repair and expansion**
  - **New heating substation**
  - **Monitoring and verification system**



*Old heating substation*



*New heating substation*

<b>Pilot Project Value:</b>	<b>121,000 USD</b>
<b>Municipality of Tuzla</b>	<b>46,000 USD</b>
<b>USAID 3E</b>	<b>75,000 USD</b>

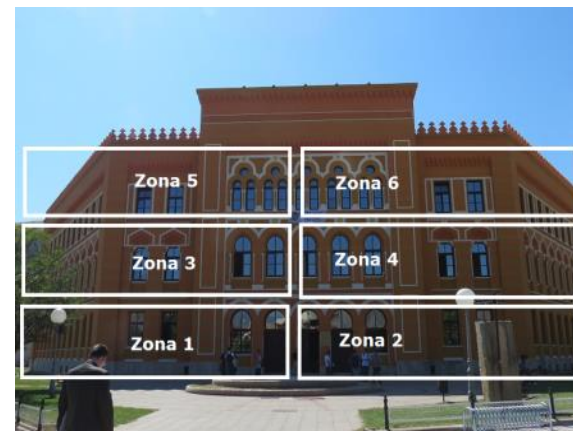
<b>Energy savings:</b>	<b>30% or 99 MWh/year</b>
<b>Cost savings:</b>	<b>5,150 USD/year</b>
<b>Payback period:</b>	<b>23,5 Years</b>





## PILOT PROJECT – Old High School in Mostar

- **Partners on Project**
  - **UNDP BiH**
- **Implemented Measures**
  - **Heating system divided in zones**
  - **Automatic control of heating water temperature**
  - **Monitoring and verification system**



*Zonal heating scheme*

<b>Pilot Project Value:</b>	<b>40,000 USD</b>
<b>UNDP</b>	<b>19,000 USD</b>
<b>USAID 3E</b>	<b>21,000 USD</b>
<b>City of Mostar*</b>	<b>250,000 USD</b>
<b>Energy savings:</b>	<b>20% or 50 MWh/year</b>
<b>Cost savings:</b>	<b>7,000 USD/year</b>
<b>Payback period:</b>	<b>6 Years</b>



# PILOT PROJECT – 20 private houses Sarajevo and Tuzla regions

- **Partners in Project**
  - **Homeowners and Suisse Caritas**
- **Implemented EE Measures**
  - **Thermal insulation of façade (10 cm EPS)**

<b>Pilot Project Value:</b>	<b>130,000 USD</b>
Home owners	<b>105,000 USD</b>
Suisse Caritas	<b>in kind</b>
USAID 3E	<b>25,000 USD</b>

<b>Energy savings:</b>	<b>45% or 550 MWh/year</b>
<b>Cost savings:</b>	<b>16,000 USD/year</b>
<b>Payback period:</b>	<b>8 Years</b>



*Before and after implementation of EE measures*



## PILOT PROJECT – SOS Kinderdorf in Gračanica

- **Partners on project:**
  - **SOS Kinderdorf**
- **Measures to be implemented (2 of 12 houses):**
  - **Window repair**
  - **Installation of solar thermal collectors for PTV preparation**
  - **Installation of Monitoring and Verification System**



<b>Pilot Project Value:</b>	<b>20,000 USD</b>
<b>SOS Kinderdorf</b>	<b>6,000 USD</b>
<b>USAID 3E</b>	<b>14,000 USD</b>
<b>Energy savings:</b>	<b>25% or 25 MWh/year</b>
<b>Cost savings:</b>	<b>2,600 USD/year</b>
<b>Payback period:</b>	<b>8 Years</b>



## PILOT PROJECT – Sports Hall in Livno

- **Partners on project:**
  - **Municipality Livno, Esco Eco Energija d.o.o, UNDP and GIZ**
- **Measures to be implemented:**
  - **Replacement of windows and part of the roof/facade cover**
  - **Connection to remote district heating**
  - **Reconstruction of the heating and ventilation system**
  - **Monitoring and Verification System**

<b>Pilot Project Value:</b>	<b>235,000 USD</b>
<b>Municipality of Livno</b>	<b>104,000 USD</b>
<b>GIZ</b>	<b>4,000 USD</b>
<b>UNDP</b>	<b>5,000 USD</b>
<b>USAID 3E</b>	<b>122,000 USD</b>

<b>Energy savings:</b>	<b>40% or 80 MWh/year</b>
<b>Cost savings:</b>	<b>21,000 USD/year</b>
<b>Payback period:</b>	<b>11 Years</b>





## PILOT PROJECT – LED street lighting in Trebinje

- **Partners on project:**
  - **UNDP and municipality of Trebinje**
- **Measures to be implemented:**
  - **Replacement of existing mercury vapour bulbs with LED bulbs**

<b>Pilot Project Value:</b>	<b>79,000 USD</b>
<b>City of Trebinje</b>	<b>22,000 USD</b>
<b>UNDP</b>	<b>28,500 USD</b>
<b>USAID 3E</b>	<b>28,500 USD</b>

<b>Energy savings:</b>	<b>70% or 158 MWh/year</b>
<b>Cost savings:</b>	<b>20,000 USD/year</b>
<b>Payback period:</b>	<b>4 Years</b>



Existing street lighting





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## CAPACITY BUILDING – Courses on Energy Management in Buildings and Green Office Practices

- **5** Locations around the country (Banja Luka, Bihać, Mostar, Sarajevo and Tuzla)
- More than **270** attendees overall

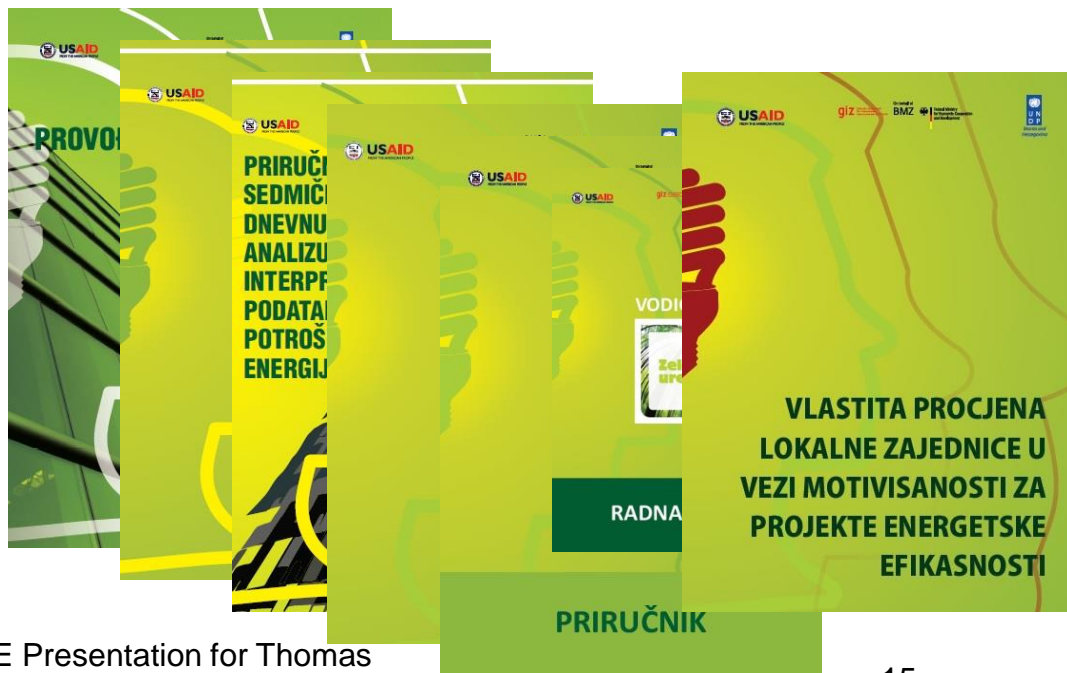


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## CAPACITY BUILDING – EE Library

- **7** booklets on different energy efficiency topics
- Jointly published by USAID 3E, UNDP and GIZ
- Created for interested citizens and EE professionals
- Presented at all **9** American Corners in BiH

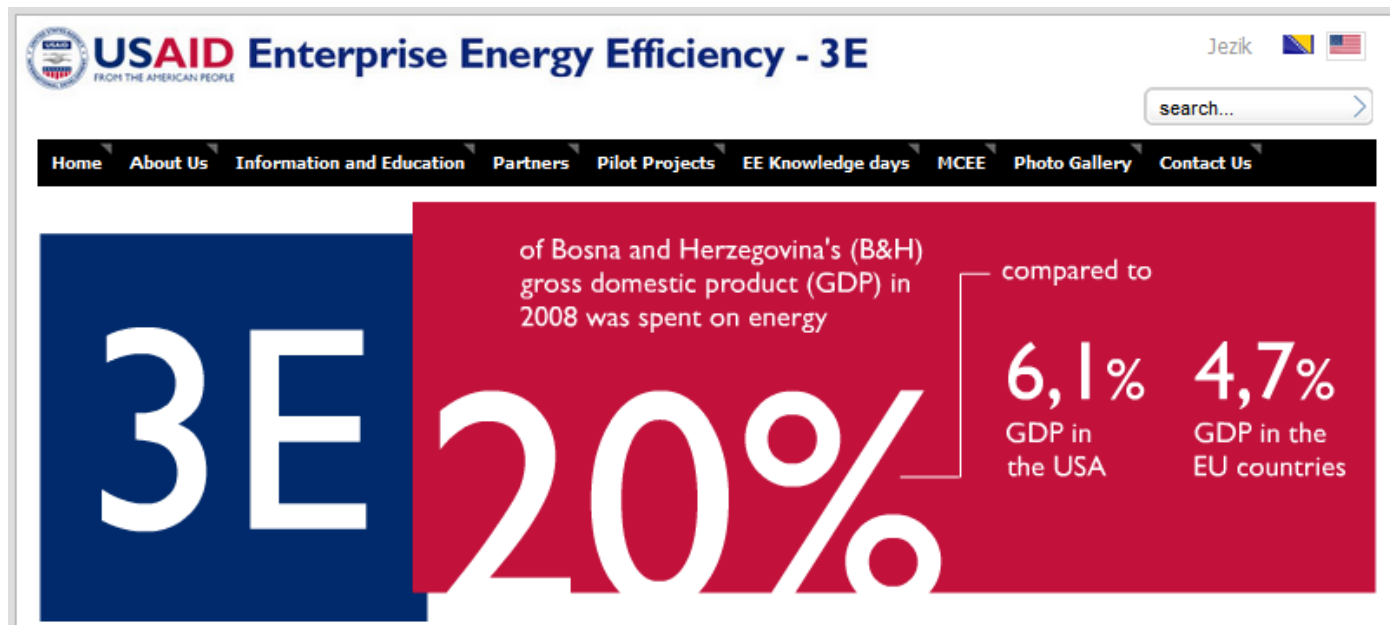


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## PUBLIC AWARENESS – 3E Website

- The 3E website was activated in October 2010
- **More than 52,000 hits to date**



[www.eee.ba](http://www.eee.ba)





## PUBLIC AWARENESS and CAPACITY BUILDING Sarajevo Energy Efficiency Knowledge Days

- Developed and organized by 3E and supported by UNDP and GTZ (December 2010)
  - **10** Locations around the city
  - **48** presentations
  - More than **200** students attended
  - More than **800** attendees overall
  - **23** Media Outlets covered the story
  - Brochure “20 EE Tips” inserted in **120,000** copies in three daily newspapers (Oslobođenje, Avaz and Glas Srpske)





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# Enterprise Energy Efficiency (3E)

## PUBLIC AWARENESS and CAPACITY BUILDING Sarajevo Energy Efficiency Knowledge Days

### Faculties involved:

- Faculty of Mechanical Engineering, **40 students**
- Faculty of Economics, **30 students**
- Faculty of Architecture and Civil Engineering, **15 students**
- Faculty of Electrical Engineering, **65 students**
- Faculty of Philosophy, **60 students**





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## **PUBLIC AWARENESS – Sarajevo Energy Efficiency Festival**

- **6** day Festival
- **14** events around the city (cultural and entertaining events, concerts, street fairs, sport events, art exhibitions and movies) that promoted energy efficiency
- More than **20,000** people visited various events







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# PUBLIC AWARENESS – Sarajevo Energy Efficiency Festival

# UKLJUČI SE!

FESTIVAL ENERGETSKE EFIKASNOSTI  
5. – 10. JUNI, 2012. GODINE.  
[www.eee.ba](http://www.eee.ba)



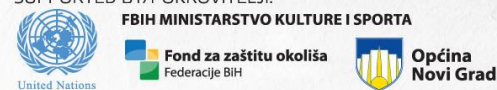
ORGANIZER/ORGANIZATOR:



SPONSORS/SPONZORI:



SUPPORTED BY/POKROVITELJI:

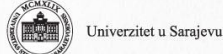
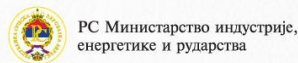


PARTNERS/PARTNERI:



UNDER THE AUSPICES OF/ POČASNI POKROVITELJI:

FBiH MINISTARSTVO NAUKE I OBRAZOVANJA  
FBiH MINISTARSTVO RAZVOJA, PODUZETNIŠTVA I OBRTA  
FBiH MINISTARSTVO PROSTORNOG UREĐENJA



MEDIA SPONSOR/MEDIJSKI POKROVITELJI:





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## CANTON TUZLA ENERGY EFFICIENCY YEAR

- Signing of the Energy Charter by the **13 Municipality Mayors and Tuzla Canton Prime Minister**
- **Technical Assistance for the Municipalities and Tuzla Canton**
- **Public Awareness Activities**



*Energetska Povelja*

Mi, načelnici općina Kantona Tuzla i premijer Kantona Tuzla, duboko smo zabrinuti zbog porasta potrošnje energije, povećanih troškova za energiju, povećane ovisnosti Bosne i Hercegovine o uvozu fosilnih goriva, te njihovim uticajima na okoliš i privredu.

Prepoznajemo i razumijemo bitnu ulogu energije u kvaliteti življenja i stanju okoliša, te prednosti održive proizvodnje i održivog korištenja energije koji doprinose ekonomskom razvoju i očuvanju životne sredine.

Svjjesni smo da su energetska efikasnost i obnovljivi izvori energije jedan od najvažnijih faktora održivog razvoja. Stoga ćemo kontinuirano povećavati energetska efikasnost, koristiti obnovljive izvore energije, te sistematski upravljati energijom u našim općinama i Kantonu. Time ćemo poticati otvaranje novih radnih mjesta, regionalni ekonomski razvoj, te povećavati sigurnost snabdjevanja energijom.

Aktivno ćemo promovirati energetska efikasnost, obnovljive izvore energije i upravljanje energijom, kako u našim zgradama i komunalnim sistemima, tako i u domovima svih građana, te u poslovnom sektoru.

Potpisivanjem ove povelje želimo sva naša nastojanja usmjeriti ka boljoj i održivoj energetskoj budućnosti u našim općinama i Kantonu, a na dobrobit svih naših građana.

 Vlada Tuzlanskog Kantona <i>Sead Čaušević</i> Sead Čaušević	 Banovići <i>Bego Biračić</i> Bego Biračić	 Čelik <i>Sead Munčinović</i> Sead Munčinović	 Doboj Istok <i>Rajko Bračić</i> Rajko Bračić	 Gatačina <i>Nazret Heć</i> Nazret Heć	 Gradačac <i>Edis Dervišević</i> Edis Dervišević	 Kalesija <i>Rasim Džerić</i> Rasim Džerić
 Kladanj <i>Josef Čabrković</i> Josef Čabrković	 Lukavac <i>Dževad Mujkić</i> Dževad Mujkić	 Sapna <i>Imet Džerić</i> Imet Džerić	 Srebrenik <i>Sanel Baljubić</i> Sanel Baljubić	 Teočak <i>Rajko Munčinović</i> Rajko Munčinović	 Tuzla <i>Jasmin Imamović</i> Jasmin Imamović	 Živinice <i>Rasim Muratović</i> Rasim Muratović

Tuzla, 19.06.2013.

UZ PDORSKU



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# CANTON TUZLA ENERGY EFFICIENCY YEAR

## Technical Assistance

- Baseline Energy Consumption and costs for municipal public buildings
- Systematic Energy Management approach in Municipalities
- Energy Audits and Feasibility Studies for Municipalities
- Installation of LED lighting and M&V systems
- **10** Workshops and Trainings







## CANTON TUZLA ENERGY EFFICIENCY YEAR Public Awareness

- Public Awareness events such as “EE on Our Lakes”
- Student Energy Club in Tuzla
- “Think of Tomorrow” Primary School Classes
- EE Info Points at Municipalities
- EE Info Center in Tuzla



### Tuzla Canton



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Rojas visit, September 27, 2013



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# Enterprise Energy Efficiency (3E)

**Thank you!**

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**info@eee.ba**

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