

NS-220 - Sustainable and energy efficient building of Faculty of Architecture, Civil Engineering and Geodesy in Banja Luka

Bosnia and Herzegovina

NAMA Seeking Support for Implementation

A Overview

A.1 Party	Bosnia and Herzegovina														
A.2 Title of Mitigation Action	Sustainable and energy efficient building of Faculty of Architecture, Civil Engineering and Geodesy in Banja Luka														
A.3 Description of mitigation action	<p>The main objective of the project is to reduce GHG emissions from building sector and at the same time set a prototypical example for solving the problem of spatial and technological capacity for teaching and scientific research by designing and construction of environmentally friendly and energy efficient building of FACEG. The goal is to establish sustainable instrument for managing energy of the building which will result in reduction of CO2 emission for over 50% in relation to the CO2 emission of buildings of educational purpose with the typical spatial configuration and materialization in Banja Luka.</p>														
A.4 Sector	<table border="1"> <tr> <td><input type="checkbox"/> Energy supply</td> <td><input type="checkbox"/> Transport and its Infrastructure</td> </tr> <tr> <td><input checked="" type="checkbox"/> Residential and Commercial buildings</td> <td><input type="checkbox"/> Industry</td> </tr> <tr> <td><input type="checkbox"/> Agriculture</td> <td><input type="checkbox"/> Forestry</td> </tr> <tr> <td><input type="checkbox"/> Waste management</td> <td></td> </tr> <tr> <td colspan="2"><input type="checkbox"/> Other <input type="text"/></td> </tr> </table>	<input type="checkbox"/> Energy supply	<input type="checkbox"/> Transport and its Infrastructure	<input checked="" type="checkbox"/> Residential and Commercial buildings	<input type="checkbox"/> Industry	<input type="checkbox"/> Agriculture	<input type="checkbox"/> Forestry	<input type="checkbox"/> Waste management		<input type="checkbox"/> Other <input type="text"/>					
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A.5 Technology	<table border="1"> <tr> <td><input type="checkbox"/> Bioenergy</td> <td><input type="checkbox"/> Cleaner Fuels</td> </tr> <tr> <td><input checked="" type="checkbox"/> Energy Efficiency</td> <td><input type="checkbox"/> Geothermal energy</td> </tr> <tr> <td><input type="checkbox"/> Hydropower</td> <td><input type="checkbox"/> Solar energy</td> </tr> <tr> <td><input type="checkbox"/> Wind energy</td> <td><input type="checkbox"/> Ocean energy</td> </tr> <tr> <td><input type="checkbox"/> Carbon Capture and Storage</td> <td><input type="checkbox"/> Low till / No till</td> </tr> <tr> <td><input type="checkbox"/> Land fill gas collection</td> <td></td> </tr> <tr> <td colspan="2"><input type="checkbox"/> Other <input type="text"/></td> </tr> </table>	<input type="checkbox"/> Bioenergy	<input type="checkbox"/> Cleaner Fuels	<input checked="" type="checkbox"/> Energy Efficiency	<input type="checkbox"/> Geothermal energy	<input type="checkbox"/> Hydropower	<input type="checkbox"/> Solar energy	<input type="checkbox"/> Wind energy	<input type="checkbox"/> Ocean energy	<input type="checkbox"/> Carbon Capture and Storage	<input type="checkbox"/> Low till / No till	<input type="checkbox"/> Land fill gas collection		<input type="checkbox"/> Other <input type="text"/>	
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A.6 Type of action	<table border="1"> <tr> <td><input checked="" type="checkbox"/> National/ Sectoral goal</td> <td><input type="checkbox"/> Project: Investment in machinery</td> </tr> <tr> <td><input type="checkbox"/> Strategy</td> <td><input checked="" type="checkbox"/> Project: Investment in infrastructure</td> </tr> <tr> <td><input type="checkbox"/> National/Sectoral policy or program</td> <td><input type="checkbox"/> Project: Other</td> </tr> <tr> <td colspan="2"><input type="checkbox"/> Other <input type="text"/></td> </tr> </table>	<input checked="" type="checkbox"/> National/ Sectoral goal	<input type="checkbox"/> Project: Investment in machinery	<input type="checkbox"/> Strategy	<input checked="" type="checkbox"/> Project: Investment in infrastructure	<input type="checkbox"/> National/Sectoral policy or program	<input type="checkbox"/> Project: Other	<input type="checkbox"/> Other <input type="text"/>							
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A.7 Greenhouse gases covered by the action	<input checked="" type="checkbox"/> CO2	<input type="checkbox"/> CH4
	<input type="checkbox"/> N2O	<input type="checkbox"/> HFCs
	<input type="checkbox"/> PFCs	<input type="checkbox"/> SF6
	<input type="checkbox"/> Other <input type="text"/>	

B National Implementing Entity

B.1.0 Name	University of Banja Luka, Faculty of Architecture, Civil Engineering and Geodesy
B.1.1 Contact Person 1	Milenko Stankovic, Dean
B.1.2 Address	Vojvode Stepe Stepanovica 77/III, 78 000 Banja Luka, Bosnia and Herzegovina
B.1.3 Phone	+387 51 462 543
B.1.4 Email	mstankovic@agfbl.org
B.1.5 Contact Person 2	Nevena Novakovic, Vice Dean for Scientific Research
B.1.6 Address	Vojvode Stepe Stepanovica 77/III, 78 000 Banja Luka, Bosnia and Herzegovina
B.1.7 Phone	+387 65 945 068
B.1.8 Email	nnovakovic@agfbl.org
B.1.9 Contact Person 3	
B.1.10 Address	
B.1.11 Phone	
B.1.12 Email	
B.1.13 Comments	

C Expected timeframe for the implementation of the mitigation action

C.1	Number of years for completion	2
C.2	Expected start year of implementation	2016

D Currency

D.1	Used Currency	<input type="text" value="AED"/>
		Conversion to USD: 1

E Cost

E.1.1 Estimated full cost of implementation	11946550
E.1.2 Comments on full cost of implementation	The first phase of the construction works are already finished and total cost were 2 926 549,68 EUR provided by University of Banja Luka and Government of Republic of Srpska.
E.2.1 Estimated incremental cost of implementation	3564150
E.2.2 Comments on estimated incremental cost of implementation	Estimated incremental costs are calculated according to the average value of the investment (already invested + estimated costs) which is around 1 788, 50 EUR/m2, and average value of investment in building of typical construction and materialization on B&H market which is 1 226,50 EUR/m2.

F Support required for the implementation the mitigation action

F.1.1 Amount of Financial support	9020000
F.1.2 Type of required Financial support	<input checked="" type="checkbox"/> Grant <input type="checkbox"/> Loan (sovereign) <input type="checkbox"/> Loan (Private) <input type="checkbox"/> Concessional loan <input type="checkbox"/> Guarantee <input type="checkbox"/> Equity <input type="checkbox"/> Carbon finance
	<input type="checkbox"/> Other <input type="text"/>

F.1.3 Comments on Financial support

The first phase of the construction works are already finished and total cost were 2 926 549,68 EURO provided by University of Banja Luka and Government of Republic of Srpska.

F.2.1 Amount of Technological support

0

F.2.2 Comments on Technological support

Since the architectural project of the building is already finished, along with the *Study on the feasibility, energy efficiency and transfer of knowledge and technology, Elaborate on geomechanical investigations and Elaborate on harmful ionizing radiation*, there is no need for technological support.

F.3.1 Amount of capacity building support

20000

F.3.2 Type of required capacity building support

<input checked="" type="checkbox"/> Individual level
<input type="checkbox"/> Institutional level
<input checked="" type="checkbox"/> Systemic level
<input type="checkbox"/> Other <input type="text"/>

F.3.3 Comments on Capacity Building support

Capacity Building Support will be used for implementation of educational programs for students and other interested individuals about the problems of energy efficiency and climate change, such as seminars and workshops.

F.4 Financial support for implementation required

F.5 Technological support for implementation required

F.6 Capacity Building support for implementation required

G Estimated emission reductions

G.1 Amount

228 metric tonne CO₂/y

G.2 Unit

MtCO₂e/yr

G.3 Additional information (e.g. if available, information on the methodological approach followed)

Energetic, economic and environmental analysis was conducted on representative samples of existing buildings at the University town in Banja Luka to estimate emission reductions. In this sense, apart from the new building of FACEG, the Rectorate building and the building of Faculty of Philology were chosen for comparative analysis of general, energetic and ecological parameters according to architectural characteristics and years of construction and reconstruction.

H Other indicators

H.1

Other indicators of implementation

I Other relevant information

I.1 Other relevant information including co-benefits for local sustainable development

- Improvement of the quality of the environment through the reduction of water pollution, maintenance and preservation of existing green structure and through the use of renewable energy sources for heating and cooling of air and water in the building;

- Transfer of knowledge and new technologies through application of the recently developed principles and infrastructure on energy efficiency in buildings;
- Significant improvement of spatial and technological capacity for teaching and scientific research at FACEG and University of Banja Luka;
- Initiation of the conceptualization and realization of a larger project of regeneration of the University campus and the waterside, according to BlueGreenDream principles, as a measure to adaptation to climate change in urban systems by exploiting the synergies of water and green structures. FACEG building would be defined as the focal point of the project.
- Increase of citizens' awareness on their responsibility towards the environmental protection and sustainable use of energy, by applying energy efficiency measures in educational facilities and creation of role-model building;
- Long-term effect on knowledge transfer since the new build is educational facility for students of architecture and civil engineering as future experts on energy efficiency of buildings. The building would serve as a tool box for the future generations of students in the field of energy efficiency of buildings.

J Relevant National Policies strategies, plans and programmes and/or other mitigation action

J.1 Relevant National Policies

- Strategy for Climate Change Adaptation and Low-emission Development for Bosnia and Herzegovina (2014),
- Draft of the National Action Plan for Energy Efficiency (NEEAP, 2012),
- Energy Development Strategy of the Republic of Srpska (2010),
- Law on Energy Efficiency (2013),
- Law on Spatial Planning and Construction (2013),
- Strategy for Development of Banja Luka in the period from 2007-2015 (revised in 2012),
- Sustainable Energy Action Plan of the City of Banja Luka (SEAP, 2009).

J.2 Link to other NAMAs

K Attachments

K Attachments

Title	Description
1_NAMA_AGGF_seeking-support-for-implementation_form.doc	NAMA seeking support for implementation form
1_NAMA_AGGF_seeking-support-for-implementation_form.pdf	

<p>K.1 Attachment description</p> <p>K.2 File</p>	<table border="1"> <tr> <td data-bbox="699 35 1177 557"> <p>2_NAMA_AGGF_short description_en.docx</p> <p>2_NAMA_AGGF_short description_en.pdf</p> <p>3_NAMA_AGGF_Makao_2015.pdf</p> </td> <td data-bbox="1177 35 1560 557"> <p>NAMA short description</p> <p>Presentation material from Carbon Forum Asia 2015 in Macao (China) where the NAMA project was presented in session called NAMA market.</p> </td> </tr> </table> <p><input type="text"/> <input type="button" value="Browse..."/></p>	<p>2_NAMA_AGGF_short description_en.docx</p> <p>2_NAMA_AGGF_short description_en.pdf</p> <p>3_NAMA_AGGF_Makao_2015.pdf</p>	<p>NAMA short description</p> <p>Presentation material from Carbon Forum Asia 2015 in Macao (China) where the NAMA project was presented in session called NAMA market.</p>
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L Support received

<p>L.1 Outside the Registry</p> <p>L.2 Within the Registry</p>	<p>The first phase of the construction works are already finished and total cost were 2 926 549, 68 EURO provided by University of Banja Luka and Government of Republic of Srpska.</p> <table border="1"> <thead> <tr> <th>Support provided</th> <th>SupportType</th> <th>Amount</th> <th>Comment</th> <th>Date</th> </tr> </thead> </table>	Support provided	SupportType	Amount	Comment	Date
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