

NS-144 - Energy Efficient Public Buildings and Housing in Armenia

Armenia

NAMA Seeking Support for Implementation

A Overview

A.1 Party

Armenia

A.2 Title of Mitigation Action

Energy Efficient Public Buildings and Housing in Armenia

A.3 Description of mitigation action

Improving energy efficiency in the building sector has high priority in Armenia's climate, energy, and housing strategies. This NAMA will focus on new construction and capital renovation, as well as maintenance/management of those buildings, that are supported by public means and/or owned and managed by public institutions. Public means include: state budget, IFI loans/grants, municipal budget, public foundations and public-private partnerships. This sector is (partly) under governmental control (because (co-)financed) and often under public ownership and management, while the Ministry of Urban Development is the lead state agency in the field of housing construction and urban development. In case of government's involvement and oversight energy efficiency measures will be easier to implement. The public sector could set as a good example, in line with the EU energy efficiency policies. Energy efficiency would also reduce spending of scarce public budgets for this sector. Finally, addressing this sector could secure the necessary market transformation by creating new green job places, which will have an indirect impact on private buildings (housing and commercial buildings) as well. The NAMA program will address the main barriers for energy efficiency and provide support to financing, policy and strategies, regulatory framework, including enforcement, capacity building and awareness raising. All relevant practices, measures and technologies for energy efficiency will be considered, including energy efficient design with incorporation of passive solar, efficiency upgrades to building envelope, heating /ventilation/ cooling system, and renewable energy applications in the buildings. Also, energy efficient building operation and maintenance will be addressed. The NAMA has three components: 1) Investment grants to cover (initial) incremental investment costs for energy efficiency in new construction and rehabilitation (public buildings, social housing) for planned investment programs; 2) New investment program for energy efficient rehabilitation/construction of public buildings, additional to planned investment programs through leveraging low interest concessional loans, with higher energy efficiency requirements; 3) Technical support and capacity building, supporting component 1 and 2, including support to strengthening building management/maintenance. The NAMA

A.4 Sector	project document describes the mitigation action in more details (is attached).
	<input type="checkbox"/> Energy supply <input type="checkbox"/> Residential and Commercial buildings <input type="checkbox"/> Agriculture <input type="checkbox"/> Waste management <input type="checkbox"/> Transport and its Infrastructure <input type="checkbox"/> Industry <input type="checkbox"/> Forestry
A.5 Technology	<input checked="" type="checkbox"/> Other public buildings and soci
	<input type="checkbox"/> Bioenergy <input checked="" type="checkbox"/> Energy Efficiency <input type="checkbox"/> Hydropower <input type="checkbox"/> Wind energy <input type="checkbox"/> Carbon Capture and Storage <input type="checkbox"/> Land fill gas collection <input type="checkbox"/> Cleaner Fuels <input type="checkbox"/> Geothermal energy <input type="checkbox"/> Solar energy <input type="checkbox"/> Ocean energy <input type="checkbox"/> Low till / No till
A.6 Type of action	<input type="checkbox"/> Other
	<input type="checkbox"/> National/ Sectoral goal <input type="checkbox"/> Strategy <input checked="" type="checkbox"/> National/Sectoral policy or program <input type="checkbox"/> Project: Investment in machinery <input checked="" type="checkbox"/> Project: Investment in infrastructure <input type="checkbox"/> Project: Other
A.7 Greenhouse gases covered by the action	<input type="checkbox"/> Other
	<input checked="" type="checkbox"/> CO2 <input type="checkbox"/> N2O <input type="checkbox"/> PFCs <input type="checkbox"/> CH4 <input type="checkbox"/> HFCs <input type="checkbox"/> SF6
	<input type="checkbox"/> Other

B National Implementing Entity

B.1.0 Name	Ministry of Urban Development, Urban Development Projects Implementation Unit
B.1.1 Contact Person 1	Mrs. Eugenia Atayan
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B.1.4 Email	mud-housing@rambler.ru
B.1.5 Contact Person 2	Mrs. Diana Harutyunyan
B.1.6 Address	Government bld #3, Republican Square, Yerevan 0002, Armenia
B.1.7 Phone	0037491 24 00 82
B.1.8 Email	diana@nature.am
B.1.9 Contact Person 3	Mrs. Marina Sargsyan
B.1.10 Address	Government bld #3, Republican Square, Yerevan 0002, Armenia
B.1.11 Phone	+37491 40 65 15
B.1.12 Email	marinasargsyan@mail.ru
B.1.13 Comments	n/a

C Expected timeframe for the implementation of the mitigation action

C.1	Number of years for completion	6
C.2	Expected start year of implementation	2015

D Currency

D.1 Used Currency

AED

Conversion to USD: 1

E Cost

E.1.1 Estimated full cost of implementation

24500000

E.1.2 Comments on full cost of implementation

The full cost is related to the implementation period of 2015-2020. The full cost includes: 1) investment grants (range USD 2-4 million) to cover incremental energy efficiency costs of planned investment programs of new construction and renovation of public buildings and social housing (NAMA component 1); 2) Concessional loans for additional investment in energy efficient renovation of public buildings of USD 10 to 30 million (NAMA component 2); and 3) USD 1 to 2 million for technical assistance/support (NAMA component 3).

The full costs are additional to the national core financing of the planned investment programs addressed in NAMA component 1 in the period of 2015-2020 (about USD 200 million) and financing of new investment program addressed in NAMA component 2. The core financing is provided from state budget and sovereign loans. At this stage, the exact costs of implementation (and corresponding required support) have not been exactly estimated. Therefore, a range is presented.

E.2.1 Estimated incremental cost of implementation

E.2.2 Comments on estimated incremental cost of implementation n/a

F Support required for the implementation the mitigation action

F.1.1 Amount of Financial support

24500000

F.1.2 Type of required Financial support

- | | |
|---|---|
| <input checked="" type="checkbox"/> Grant | <input type="checkbox"/> Guarantee |
| <input type="checkbox"/> Loan (sovereign) | <input type="checkbox"/> Equity |
| <input type="checkbox"/> Loan (Private) | <input type="checkbox"/> Carbon finance |
| <input checked="" type="checkbox"/> Concessional loan | |
| <input type="checkbox"/> Other | |

F.1.3 Comments on Financial support

The financial support includes: 1) investment grants to cover incremental energy efficiency costs for planned investment grants of USD 2 to 4 million (1st NAMA component), 2) concessional loans for energy efficiency renovation of public buildings of USD 10 to 30 million (2nd NAMA component) , and 3) grants for technical assistance/capacity building USD 1 to 2 million (3rd NAMA component).

F.2.1 Amount of Technological support

F.2.2 Comments on Technological support

n/a

F.3.1 Amount of capacity building support

F.3.2 Type of required capacity building support

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

F.3.3 Comments on Capacity Building support

The capacity building support is closely linked to the NAMA component 1 (financial incentives to energy efficiency in planned investment programs in public buildings and social housing, and to

component 2 (new investment program for energy efficient rehabilitation/construction of public buildings, additional to planned investment programs).

On individual level, the technical skills of the personnel involved in planning of investment programs, design of buildings, contracting/ procurement, as well as auditing in mainstreaming energy efficiency should be addressed. On institutional level, the capacity of the sector Project Implementation Units (PIU) and other implementing organizations responsible for implementing investment programs should be addressed. On systemic level, the capacity building will support the implementation of energy efficiency policy and regulation, specifically addressing the needs for capacity building.

The capacity building includes strengthening enforcement/inspection of construction; training on energy efficient design and design evaluation (including for designers/architects); training on maintenance/operation of public buildings and social housing. Specific attention will be given to improving the management/ maintenance of buildings; measuring, reporting and verification of GHG emission reduction; implementation of energy efficiency procurement regulation and guidelines; measuring, reporting and verification of energy use/savings, and improving the statistics on the public building stock.

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

2

G.2 Unit

MtCO₂e

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

Three categories of NAMA impact are distinguished:

1. The impact of the 1st NAMA component: increased energy efficiency in new constructed and renovated public buildings and social housing under planned investment programs.

2. The impact of the 2nd component: new construction/renovation programs in public buildings, additional to existing planned investment programs, that are subject to higher energy efficiency requirements.

3. Finally, the indirect impact of the NAMA on other buildings sectors (private buildings) outside the direct scope of the NAMA. The indirect impact has not been evaluated yet.

The GHG emission reduction reported is expressed in MtCO₂eq and refers to the direct impact of NAMA component 1 and 2. During implementation of the NAMA, the annual emission reduction will increase to approximately 100 ktCO₂eq by 2020. Over the total average life time of the energy efficiency measures (20 years), this results in 2 MtCO₂eq in a conservative estimate. The impact

evaluation of component 1 and 2 is based on the baseline of the average specific final energy use in existing buildings and on the cost-effective potential of energy efficiency in new construction and renovation, as assessed for Armenian circumstances. The activity volumes for component 1 are based on an inventory of planned investment programs for new construction and renovation, implemented by different project implementation units and other entities. A total (public) investment volume of about \$ 200 million has been identified for the period 2015 - 2020 under component 1. The activity level for component 2 is assumed to be a finance volume of \$ 20 million for incremental energy efficiency costs in the same period. The estimation of GHG emission reduction is preliminary. The indirect impact of the NAMA on other sectors, in particular private sector buildings renovation and new construction, is not included, but is tentatively estimated in the project document, which is attached.

H Other indicators

H.1	Other indicators of implementation	to be developed
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I Other relevant information

I.1 Other relevant information including co-benefits for local sustainable development	The NAMA contributes to the following national development objectives: 1) Environmental: climate change mitigation, efficient utilisation of natural resources; 2) Economic: energy efficiency, sustainable technology transfer, employment generation, development of regional and local economies; 3) Social: services quality improvement, capacity development, reduction (energy) poverty.
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J Relevant National Policies strategies, plans and programmes and/or other mitigation action

J.1 Relevant National Policies	The key relevant national policies include: Armenia's association to the Copenhagen Accords and Action Plan on implementation of the UNFCCC commitments; Law on Energy Saving and Renewable Energy and the Law on Urban Development; National Strategy on Developing Social Housing Stock for a period of 2014-2025; Strategic Program for Sustainable Development for 2014-2025.
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J.2 Link to other NAMAs	.
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K Attachments

K Attachments	<table border="1"> <thead> <tr> <th>Title</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>NAMA housing Armenia project document.pdf</td> <td>UNDP support for preparation of this NAMA (2014) GIZ support for preparation of NAMA framework (2014-2015)</td> </tr> </tbody> </table>		Title	Description	NAMA housing Armenia project document.pdf	UNDP support for preparation of this NAMA (2014) GIZ support for preparation of NAMA framework (2014-2015)
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K.1 Attachment description						
K.2 File	<input type="text"/>	<input type="button" value="Browse..."/>				

L Support received

L.1 Outside the Registry	UNDP support for preparation of this NAMA (2014) GIZ support for preparation of NAMA framework (2014-2015)					
L.2 Within the Registry	<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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