



NAMA Development **for the Building Sector**

**Realising the Potential for Mitigation
in the Building Sector**

UNFCCC-UN Environment Joint Workshop
31 July – 01 August 2017



Why NAMA for Buildings?

- Including indirect building emissions from power generation, buildings and construction represent nearly 40% of energy-related CO₂ emissions; Enormous potential for low-cost GHG emission reduction in the building sector
- Buildings and construction, including manufacturing of materials, account for more than one-third of global final energy consumption
- 60% of world's electricity consumed in residential and commercial buildings
- Energy used for heating, cooling, ventilation lighting, plug loads, water production, etc.
- Significant Opportunities for Co-benefits and Market Transformation
- Growth regions: Asia, Africa, Middle East, and Latin America



International Climate Initiative- NAMA Development for the Building Sector

UN Environment developed a five year project, funded by Germany's Federal Ministry for Environment, Nature Conservation, Building and Nuclear Safety (BMUB) to facilitate building sector mitigation actions in Asia, assisting Indonesia, The Philippines, Thailand and Viet Nam, and to develop a sector-specific MRV methodology based on UN Environment's Common Carbon Metric.

Project runs from 2013-2017

Supported by:



Federal Ministry for the
Environment, Nature Conservation,
Building and Nuclear Safety

based on a decision of the German Bundestag



*Opportunities in the Building Sector for driving energy
efficiency: Nationally Appropriate Mitigation Actions*

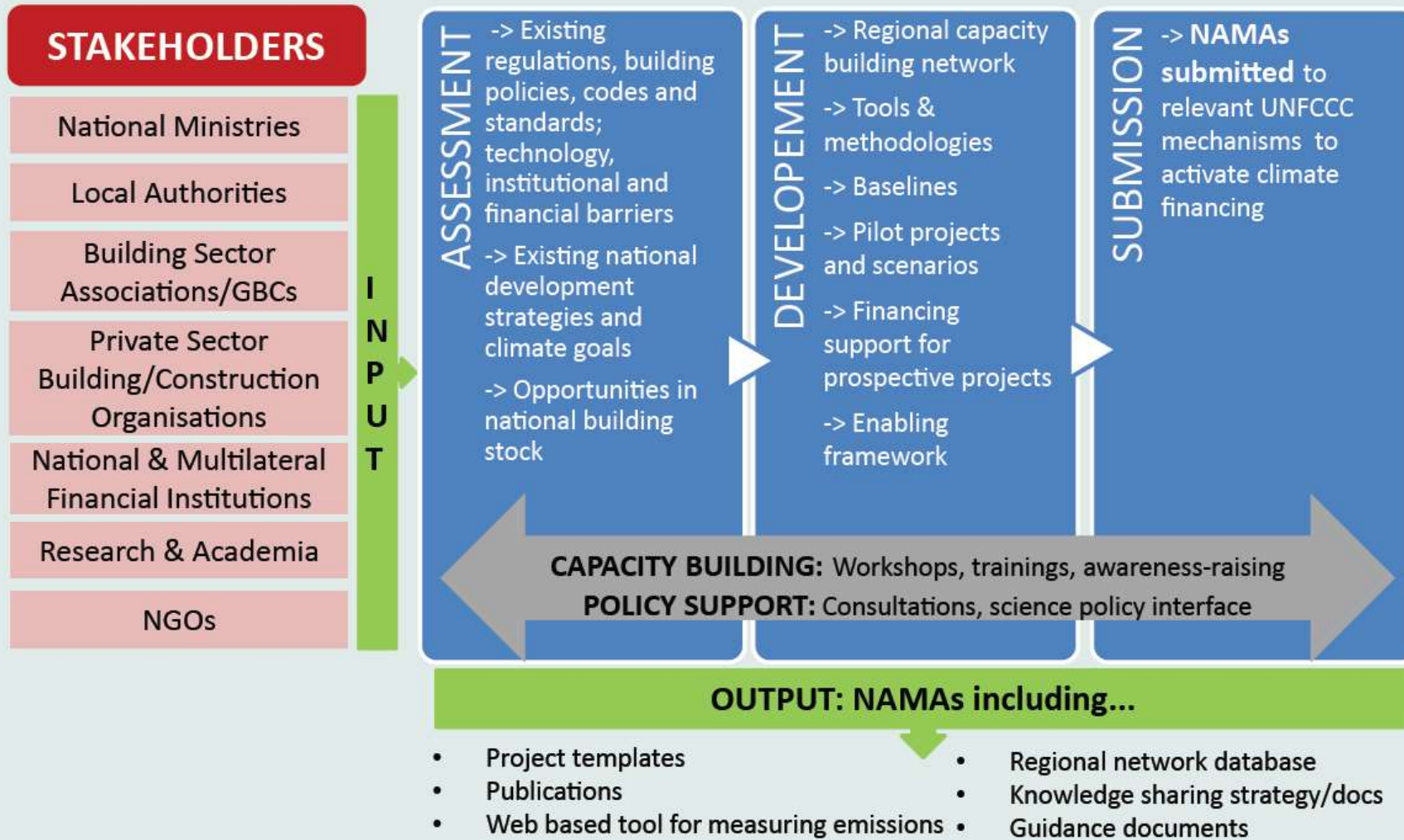


*NAMA—for mitigation actions in the context of sustainable
development: Policy, Technology, Finance and Capacity
Building in a Measurable, Reportable and Verifiable manner*

**NAMA Development for the
Building Sector: Driving
Energy Efficiency and Mitigation**



Project Approach





NAMA Development for the Building Sector

Key Issues:

- Reduce Energy Needs; Increase Efficiency
- Increase Share of Renewables;
- Incorporate in National Strategies (NDCs)
- Challenge of Post-Occupancy impacts

Barriers

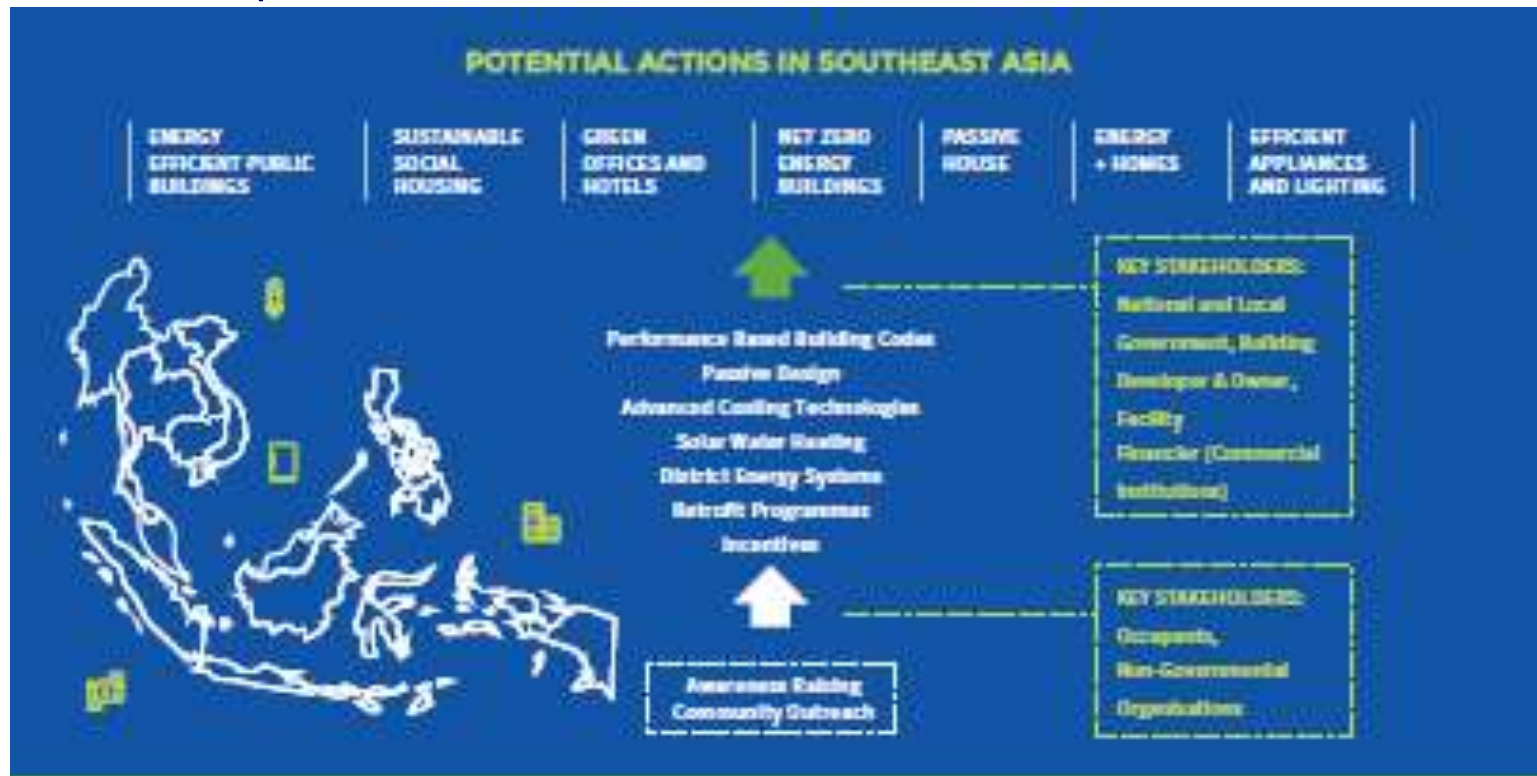
- Access and Availability of technologies
- Low Ambition levels (technological, financial, political feasibility)
- Affordability and Lack of financing
- Skills and operation
- Fragmentation/Lack of Coordination
- Clarity about NAMAs post-2020

Opportunities

- Building Energy Codes and Ambitious Targets
- Equipment Standards/Labeling
- Applications of appropriate technologies
- Housing and targeted sub-sector initiatives
- NDCs

Identified NAMA Priorities and Objectives

- Scaling up Solar Water Heating in Residential
- Promote market instruments and labeling to facilitate energy efficient equipment (Air Conditioning) in Residential and Commercial Buildings
- Supporting implementation of Building Energy Codes and market mechanisms for Building Energy Code +
- Low-carbon Hotel Development
- Resilient and low-carbon Residential and Social Housing developments





NAMA Guidebook

- Developed as part of the NAMA for Building Sector in Asia project
- Will serve as a primer and provide guidance to countries on NAMA for energy efficient buildings
- Builds on the experience of NAMA project partner countries
- Focused on Warm Climate interventions



GUIDEBOOK

FOR THE
DEVELOPMENT
OF NATIONALLY
APPROPRIATE
MITIGATION
ACTIONS (NAMAS)

A primer on
energy efficient
buildings in tropical
and subtropical
climates





INTRODUCTION

Background

Getting started

INTRODUCTION TO NATIONALLY APPROPRIATE MITIGATION ACTIONS (NAMAS)

Defining NAMAs

Benefits of developing NAMAs for Energy Efficient Housing

Singapore's Green Building Journey

OVERVIEW OF POSSIBLE INTERVENTION AREAS AND TECHNOLOGIES

Thermal comfort: space heating, cooling and ventilation

Passive measures

Active thermal comfort systems

Water heating

Lighting

Cooking

Appliances and equipment

NAMA Guidebook

- Includes overview of NAMAs, getting started, and possible interventions and technologies, as well as structuring a NAMA

STRUCTURING A NAMA FOR ENERGY EFFICIENT BUILDINGS IN TROPICAL CLIMATES

Assessment of market readiness for energy efficient buildings

Assessment of the institutional context for the building sector

Example of Institutional Arrangements for Climate Change Mitigation from Indonesia

Assessment of stakeholders' behaviour

The rebound effect

Implementation gap

Elements of a NAMA proposal

NAMA scope and objectives

NAMA components and timing

Expected Impacts

Financing Plan

Implementation plan

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MEASURING, REPORTING AND VERIFYING

Framework for Developing Country NAMAs

National tier

NAMA tier

Methodology for measuring, reporting and verifying

Measurement methodologies and procedures

What to measure in a NAMA

Types of indicators

Implementing the measurement, reporting and verification processes

Reporting

Verifying

Specific process requirements for measurement, reporting and Verification support

Estimating the Impact of a EE Building NAMA and Procedures for collecting DATA

Calculation of greenhouse gas impacts

Estimating GHG emissions

Setting the baseline

Monitoring NAMA scenario

Example of MRV system for Mexico's NAMA on energy efficient housing

FINANCING A NAMA FOR ENERGY EFFICIENT BUILDINGS

Calculating Incremental Costs

Structuring NAMA finance

New buildings

Existing buildings

Private buildings

Public buildings

Barriers

Identifying financial and economic instruments and vehicles

Identifying sources of financing

Domestic financing

International funding

Private sector financing

Other sources of financing

Meeting international financiers' requirements

CONCLUSIONS

REFERENCES

ANNEX A: SOME EXISTING PROGRAMMES FOR NAMA READINESS ACTIVITIES

ANNEX B: NAMA TEMPLATE / QUESTIONNAIRE FOR POLICY MAKERS

ANNEX C: SOME NAMA FUNDING ORGANIZATIONS



NAMA Guidebook

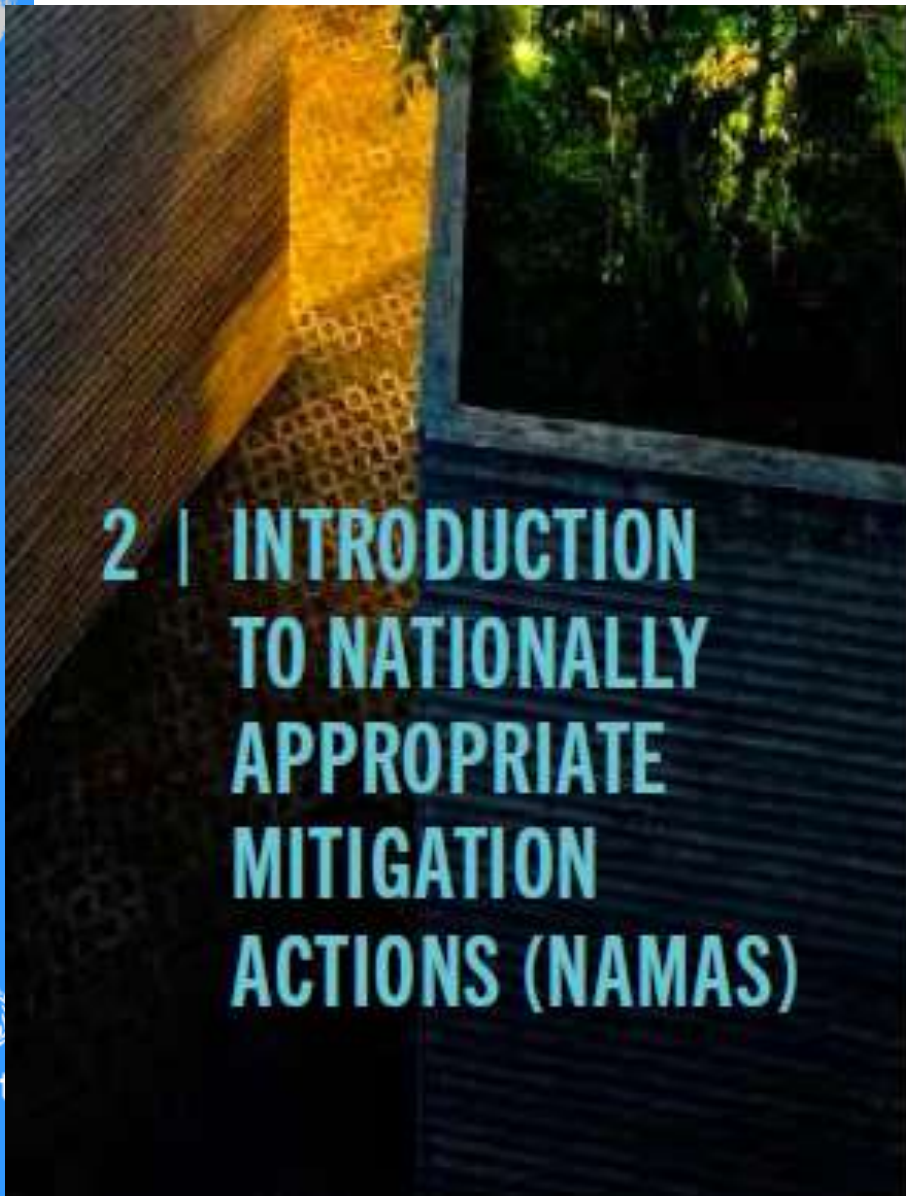
DEFINING NAMAS

In 2013, the UNFCCC Secretariat, together with UNDP and UNEP, published a non-prescriptive guidance for NAMA development (UNFCCC/UNEP/UNDP, 2013). Its definitions are used in the following. A number of elements of NAMAs have been negotiated, but ultimately the nature of NAMAs will emerge through implementation and sharing of best practices. The national basis for NAMAs allows host countries to interpret what a NAMA means in their own situations and contexts. A first differentiation of NAMAs, also in the NAMA Registry, is made according to the source of financing:

- Unilateral NAMA (for recognition): entirely financed by the host country;
- Supported NAMA: enabled in part by international technology, financing and/or capacity building.

Few, if any, internationally supported NAMAs for energy efficient buildings will be implemented solely on the basis of support from developed countries. The host country is expected to contribute to the NAMA financially or through other means, particularly by: setting minimum energy performance standards; establishing supporting policies for financing; adopting environmentally sound management practices; and, following through by monitoring, verifying and enforcing relevant standards related to energy efficient buildings equipment.

NAMA Guidebook – help to define NAMAs



2 | INTRODUCTION TO NATIONALLY APPROPRIATE MITIGATION ACTIONS (NAMAS)

Another differentiation is made between policy and programme NAMAs and project NAMAs:

- Policies and Programmes are interventions implemented by a government in order to promote or discourage technology options, impact economic activity or change consumer behaviour. Examples include: lending programmes for energy efficient buildings equipment, government subsidies for energy efficient buildings installations, performance standards for energy efficient buildings equipment; and mandatory use of energy efficient equipment and materials in new buildings.
- Projects are specific activities undertaken by private or public organizations. They are clearly limited in duration, scope and geography, but they are generally of a significant magnitude before they are relevant as NAMAs. Project NAMAs encompass defined activities which typically require technology investments. An example would be a large scale public building complex or a large scale city district development employing above standard energy efficiency equipment and materials with an aim to expand such approaches into further construction projects.



NAMA Guidebook – Steps to take

Table 2: Steps to develop, promote and implement a NAMA

<p>STEP 1 ENGAGE KEY STAKEHOLDERS</p>	<p>Engage key national stakeholders, promoters and implementers in a transparent consultation process:</p> <p>Ensure active stakeholder support and encourage their public endorsement of the NAMA</p> <p>Engage policy makers and secure the necessary support for carrying out implementation of the NAMA</p>
<p>STEP 2 DEVELOP THE NAMA PROPOSAL</p>	<p>Develop a structured NAMA proposal, using one of the detailed formats available (e.g. the NIND) based on the national strategy for energy efficient buildings, if such a strategy exists, and linked to other national priorities (energy, environment), describing and quantifying as accurately as possible:</p> <ul style="list-style-type: none"> The array of direct and indirect benefits to different stakeholders Existing policies and actions targeting these benefits National (financial or regulatory) contribution A measurement, reporting and verification system or the preparedness to develop it An estimate of the expected greenhouse gas emissions reduction
<p>STEP 3 PUBLISH THE NAMA</p>	<p>Develop a NAMA proposal in the NAMA Registry format:</p> <ul style="list-style-type: none"> Extract information from the structured NAMA proposal Make sure that key information from Step 2 is included Submit the proposal to the NAMA Registry, through the nation's NAMA focal point (if established)
<p>STEP 4 FINALIZE AND PROMOTE THE NAMA</p>	<p>Promotion and finalization:</p> <ul style="list-style-type: none"> Ensure that all supporting information has been published Circulate NAMA proposal to and meet with relevant donors Keep stakeholders engaged Further develop the proposal through interaction with donors

NAMA Guidebook – Identify co-benefits

BENEFITS OF DEVELOPING NAMAS FOR ENERGY EFFICIENT HOUSING

While NAMAs generally refer to 'mitigation action', it is a common understanding that in most policies that have emissions reduction effects other benefits are the prime motivations for the development of the NAMA. Thus, most often the emissions reduction is a co-benefit to other more central development objectives of the NAMA host country.

By any standards, the economically feasible potential for increased use of energy efficient building technologies and materials can be immense. As already mentioned, almost 60% of the world's electricity is consumed in residential and commercial buildings. Depending on local circumstances, most energy efficiency investments employ commercially viable and available technology. Only due to different market barriers, these technologies have not reached the market penetration rate that it ought to reach from simple profitability considerations. The market penetration rate for different energy efficiency technologies varies widely among countries worldwide, mainly influenced by the setting of energy efficiency standards and the price of energy.

manufacturing and enhanced employment opportunities may also be a motivation for the promotion of energy efficient buildings, particularly in programmes for rehabilitation of existing buildings, possibly combined with increased product quality through standard setting.

- Support of energy efficient buildings may be a strategy to reduce effects of a reduction of energy subsidies.

Thus, there are many possible benefits of policies and programmes that increase the energy efficiency of buildings. Framing them as NAMAs may have the added benefit of access to additional sources of financing, or it may serve as a contribution to national emissions reduction commitments, if any. Unilateral NAMAs for energy efficient buildings may also be used to make the case for international support for other, more capital intensive or less profitable NAMAs. Thus, promoting energy efficient buildings through NAMAs may bring the action into a larger international context, which may hold added benefits in the form of access to financial resources.

Common Carbon Metric- supporting MRV



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About

The Common Carbon Metric 2.0 (CCM2.0) is a tool for measuring building energy related greenhouse gas (GHG) emissions and energy savings potential of the stock of new and existing buildings in an investment portfolio, municipality, region or country.

CCM2.0 generates an energy demand and GHG emissions base-line and enables the development of energy saving and GHG mitigation scenarios that can be used to support applications for climate finance for mitigation actions in the buildings sector under UNFCCC mechanisms such as the Nationally Appropriate Mitigation Actions (NAMA) and the Green Climate Fund (GCF.)

The tool is based on a calculation methodology that conforms to 'measurable, reportable and verifiable (MRV)' data standards. It supports:

- Measurement of energy use and related GHG emissions from buildings & serves as the basis for assessing the potential for certain mitigation actions
- Reporting on the country's/city's GHG emissions and appropriate mitigation actions
- Verification of the compliance with mitigation commitments by enabling updating of energy use and emissions data over time.

- Migrated from Excel to web-based tool
- Baseline and Futureline
- Can validate operational savings
- Potential for robust methodology in conjunction with other tools (front-end/back end)



Thank You

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