

Breakout Session 2: Sustainable Buildings Roadmap for Southeast Asia

6 April 2021

International Energy Agency

Introduction and Session Overview

AGENDA

- Overview of session
- Overview of the roadmaps
- · What we are trying to get out of the session
- Launch Menti polls
- Deep Dive Sessions
- Q&A Feedback
- ASEAN Building Roadmap Survey Launch
- Conclusions

Introduction and Session Overview

- Today marks the first of our stakeholder engagements to support the development of both the buildings and construction and cooling roadmaps.
- We'll be conducting further webinars from April to July 2021, with publication of the roadmap report expected late 2021, so please stay tuned for further opportunities to participate.

15 min Introduction and Session Overview Dr Ian Hamilton, UCL Energy Institute 50 min Deep dive on New and Existing Buildings, Systems and Operations Panel discussion Moderated by Dr Ian Hamilton, UCL Energy Institute ✓ Speaker interventions 50 min Deep dive on Materials, Urban Planning and Resilience, Clean ✓ Menti polls ✓ Panel discussion and Energy Q&A Panel discussion Moderated by Ms Maxine Jordan, IEA 5 min Summary and Next steps Ms Maxine Jordan, IEA

Who is in the "room":

- Which country are you representing?
- Which part of the sector do you operate in?





Which country are you representing today?





Which sector do you work in?



3 Sub-national government







0 Building designer







The path towards net-zero emission buildings



Decarbonising buildings requires reducing energy demand, embodied carbon, and decarbonising heat and electricity.

Building on the Regional Roadmap for Asia



GlobalABC Regional Roadmap for Buildings and Construction in Asia

2020-2050

Towards a zero-emission, efficient, and resilient buildings and construction sector



Regional Roadmap for Asia

- Provides a comprehensive framework
- · Contains info on "current status"
- Contains many examples and responses from ASEAN countries
- Network of key stakeholders (approx. 200 respondents/ participants/ reviewers)
- Highlights where the biggest data and ambition gaps are

Opportunity for ASEAN Roadmap

- More differentiation between member states or groups of member states
- Will be more specific in terms of which actions for which context, and about **how** to implement the recommended actions
- Integrate "enabling" actions on capacity building and finance with other actions
- More targeted and specific actions

Building on the Regional Roadmap for Asia

• ASEAN Roadmap builds on the Asia Regional Roadmap to focus on actions and strategies for supporting the transition to a zero-carbon, efficient and resilient building stock.

Asia Regional Roadmap

Current status (2020)

Recommended actions

Urban planning planning blanning cexisting major growth areas	Prioritise sustainable urban planning and development Use planning and development tools to support sustainable development and access to affordable housing, develop collaborative national and local urban plans
New buildings Most construction occuring in places with some codes and mandatory minimum energy performance	Prioritise new building energy codes and standards Develop passive and affordable construction strategies, implement mandatory building energy codes, adopt passive designs and reduce cooling need
Existing buildings Energy performance and quality of existing buildings low and few energy-driven retrofits	Accelerate action on building retrofits Develop and implement affordable low-energy decarbonisation strategies, increase renovation rates among high-density development, and encourage low-energy investment

The ASEAN Roadmap development process



In parallel: data collection, survey, stakeholder mapping, identification of best case studies

led

ASEAN Roadmap - Draft vision and strategies, per theme

NEW BUILDINGS New buildings are designed such that they enable higher levels of thermal comfort and energy efficiency, resulting in comfortable, affordable and low carbon buildings.	EXISTING BUILDINGS Existing buildings are retrofit to achieve an appropriately high level of energy performance to reduce fuel costs and improve thermal comfort.	SYSTEMS AND OPERATIONS To promote the adoption of energy efficient systems and modes of operations that reduce energy bills and emissions, and increase comfort	MATERIALS To mainstream the use of materials and construction techniques that lower embodied carbon and improve energy performance	RESILIENCE Cities are planned to limit construction in risk areas, ensuring critical urban infrastructure services, including vulnerable populations, and integrating resilience attributes in building materials.	URBAN PLANNING Cities are developed using integrated approaches and policies to be more sustainable, resource- efficient, compact, connected, and liveable.	INTEGRATION OF CLEAN ENERGY Cities are powered by clean, integrated energy systems enabling buildings to provide flexibility to the power system with the right policies and regulations.
Strengthen the adoption and compliance of mandatory building energy	Promote the uptake of high performance fabric systems	Improve quality, availability and efficiency of appliances and systems	Promote new design and construction practices for greater material efficiency	Improve adequacy and reliability of built environment resilience	Improve coordination and policy alignment for low-carbon development	Make commitments to net-zero carbon buildings over whole life-cycle
Boost market demand for efficient, low carbon buildings	Boost the rate of energy efficiency retrofits	Encourage uptake of clean, smart and efficient devices and systems	Decarbonise production of carbon intensive materials	Foster a whole-of- government approach to resilience	Boost low-carbon urban infrastructure and construction	Foster the uptake of clean and renewable energy
	Boost the quality of energy efficiency retrofits	Improve efficiency of building operation	Collect data and promote disclosure of embodied carbon	Integrate resilience in building codes and materials		Support clean and renewable energy through regulatory frameworks
Boost capacity in delivery of efficient, low carbon buildings	Promote the adoption of building performance standards and codes	Promote the recognition of good system and operational energy performance	Governments leading by example	Increase and monitor data and information on disaster risks	Expand capacity to deliver low- carbon urban development	Promote grid interactive efficient buildings

New buildings draft vision and strategy

NEW BUILDINGS

New buildings are designed such that they enable higher levels of thermal comfort and energy efficiency, resulting in comfortable, affordable and low carbon buildings.

> Strengthen the adoption and compliance of mandatory building energy codes

Boost market demand for efficient, low carbon buildings

Boost capacity in delivery of efficient, low carbon buildings



Key expert stakeholder questions

- What are current building construction practices, across the AMS?
 - State of the art
 - Mainstream
 - Worst
- Policy mapping: Which policies are in place, or are in development to address energy efficiency and whole life low carbon buildings? Which are the most successful policies, and how could they be replicated?
- Which areas need the most support for development:
 - Capacity building, including awareness and implementation capacity
 - Finance
 - Cross ministerial (horizontal) and cross governmental (vertical) coordination
- Data mapping: Where are the biggest data gaps, and how could these be bridged?
- What milestones could be defined for 2025, 2030, and for a long term goal of net zero carbon buildings, across the roadmap themes, and how to track progress towards these milestones?

What we want to get out of today's session

- Audience input on current conditions of key ASEAN Building Roadmap action areas
- Audience input on timing for when ASEA Building Roadmap action areas could become commonplace
- Audience and panel discussion on actions that can support action area implementation
- Network of stakeholders (you!) who will further contribute and share expert input into the Roadmap development
- Launch of the ASEAN Building Roadmap Survey

Have your say via Menti:

Go to <u>www.menti.com</u> and use the code 3174 7983

- We have compiled a series of two questions per Roadmap theme
- We will discuss the answers to these in the panel discussion and Q&A

1) In your country, **how common** are the following:

st of policies, technologies>

2) In your country, **by when** could the following be common? <same list of policies, technologies>

Example:

Existing buildings: in your country, how common are the following?

Energy codes for existing buildings	Skip
1 Uncommon	
1	5
Uncommon	Very common
Certification standards for existing buildings	Skip
1 Uncommon	
1	5
Uncommon	Very common
Building energy labelling	Skip
1 Uncommon	
1	5
Uncommon	Very common
Awareness of building energy performance	Skip
1 Uncommon	
1	5





Deep dive 1: New and Existing Buildings, Systems and Operations

Moderated by Dr Ian Hamilton

Deep dive 1: New and existing buildings, systems and operations







Joy Esther Gai Jiazi Pacific Programmes Head (Net Zero)

World Green Buildings Council

Vu Thi Kim Thoa Senior Expert GIZ

Programme for Energy Efficiency in Buildings, Vietnam

Moderator: Ian Hamilton, Associate Professor, UCL Energy Institute

Deep dive 1: New and existing buildings, systems and operations



Rio Jon Piter Silitonga Research Analyst ASEAN Centre for Energy



Ms. Ly Thi Phuong Trang

VISRAE's Vice President, Director General of Daikin Vietnam

VISRAE / Daikin Vietnam

Moderator: Ian Hamilton, Associate Professor, UCL Energy Institute



Jeswynn Yogaratnam Head of Policy Reform Global Buildings Performance Network



Breakout Session 2: Sustainable Buildings Roadmap for Southeast Asia POLICY REFORM

Focusing on <u>transitionary</u> policy strategies from a bottom-up approach to enable regulatory reform in building codes to meet National Zero Carbon Emission Goals

Create a reporting and data sharing platform.

Empower an independent assessor or a coalition of experts to assess the effectiveness of pilot projects.

Enable data-driven policy-making.



2



Joy Esther Gai Jiazi Pacific Programmes Head (Net Zero) World Green Buildings Council

lea



Vu Thi Kim Thoa Senior Expert GIZ Programme for Energy Efficiency in Buildings, Vietnam

lea



Research Analyst ASEAN Centre for Energy



Energy Efficient Building

ZEB

Energy Management

Category

Enerav

Promotion of ZEB Family Concept in ASEAN Region

Preliminary Approaches (for further research) :

Overview of ZEB current status

Gap analysis via stakeholder consultation (FGD, workshop)



• Voluntary/Mandatory • Labeling scheme

Energy consumption monitoring

• Standard and Building codes

Launched in 2000 **Annual Regional Award** Programme

Energy Excellence Highest **Rewards**

lea



Ms. Ly Thi Phuong Trang Vice President of VISRAE, Director General of Daikin Vietnam

XVIETNAM CASE STUDY: NATIONAL CHAIN STORES



Menti poll results and discussion <on Mentimeter.com>



New Buildings: in your country, how common are the following?





New buildings: by when could the following actions be common?



50

Existing buildings: in your country, how common are the following?





Existing buildings: in your country, by when could the following be common?



39

Systems & Operations: in your country, how common are the following?





Systems & Operations: in your country, by when could the following be common?







Deep dive 2: Materials, Urban Planning and Resilience, Clean Energy

Moderated by Ms Maxine Jordan, IEA

Deep dive 2: Materials, urban planning and resilience, clean energy





Vu Thi Kim Thoa Senior Expert GIZ

Progamme for Energy Efficiency in Buildings, Vietnam

Brendan Coleman

Green Finance and Investment, Centre on Green Finance and Investment

OECD





Dr Ian Hamilton Associate Professor UCL Energy Institute

Moderator: Maxine Jordan, Energy Analyst, International Energy Agency

lea



Vu Thi Kim Thoa Senior Expert GIZ Programme for Energy Efficiency in Buildings, Vietnam



Brendan Coleman Green Finance and Investment, Centre on Green Finance and Investment OECD



Brian Dean Head of Energy Efficiency and Cooling Sustainable Energy for All





Urban Planning and Heat action plans



lea



Dr lan Hamilton Associate Professor UCL Energy Institute

Digitalisation empowering systems thinking

Digitalisation connects and coordinates devices and equipment, leading to greater energy efficiency gains. Digitally-connected buildings communicate with the grid, providing new sources of flexible load. More intermittent renewables are able to be used when they are available, making the system more efficient and stable.



Digitalisation, with the right policies, enables a progression to optimising the efficiency of the whole system and enabling optimum distributed energy systems.

Menti poll results and discussion <on Mentimeter.com>



Materials: in your country, how common are the following?



Very common



Materials: in your country, by when could the following be common?





Urban Planning: in your country, how common are the following?



Very common



Urban Planning: in your country, by when could the following low carbon and sustainable urban planning become common?







Resilience: in your country, how common are the following?





Resilience: in your country, by when could the following be common?







Clean Energy: in your country, how common are the following?





Clean Energy: in your country, by when could the following be common?







Next steps – have your say, and keep in touch!

ASEAN Roadmaps collaboration website: access <u>here</u>



The questionnaire contains a total of 8 sections, and each should take around 15 to answer

Please prioritise the sections you are the most familiar with.

Cooling and Buildings Roadmaps – next steps

- Complete and submit our first draft of both Roadmaps by the end of April 2021.
- Seek feedback and input from AMS on policy mapping and available data sources to inform the roadmap.
- Continue analysis and research to inform and improve next drafts of roadmap alongside feedback from ASEAN.
- Continue to plan and deliver the webinar and workshop series with ACE
- if you have good case studies, reports, or datasets to support our roadmap on zero-emission, efficient and resilient buildings and construction in Southeast Asia, please get in touch!

Project timeline:



Thank you for your contributions!

Keep in touch at maxine.jordan@iea.org

See you back in the plenary for the closing session

