

Asia Clean Energy Forum

Application of Cross-cutting Clean Energy Technologies

APUEA - An initiative for the promotion of Urban Energy Systems in the Asia Pacific Region

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Supported by



DBDH

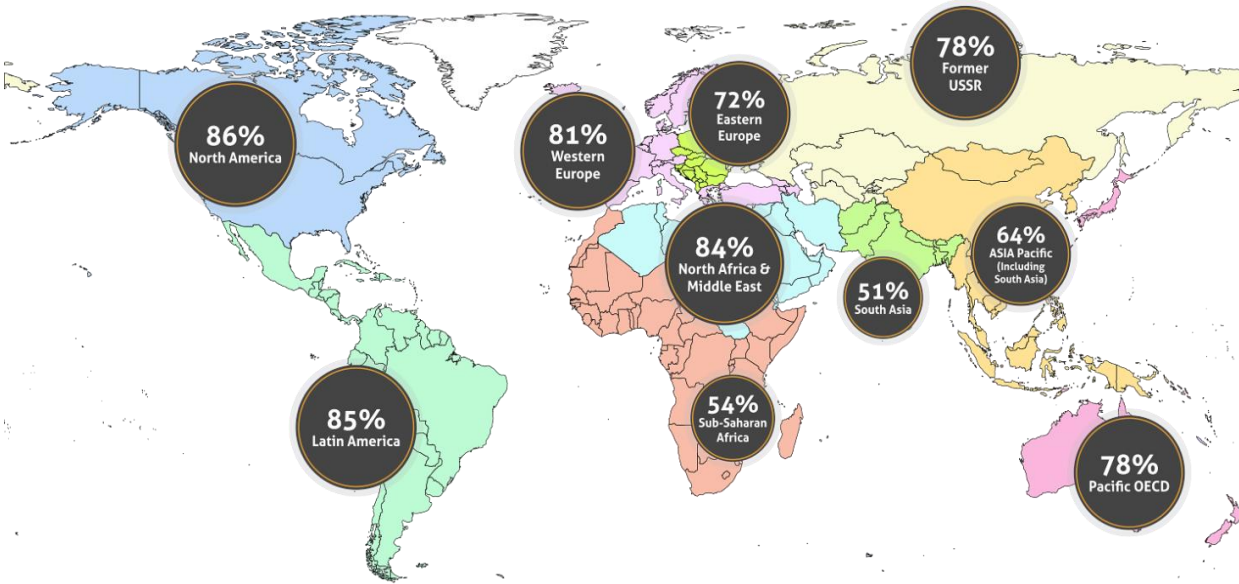


**EUROHEAT
& POWER**



IIEC
International Institute for Energy Conservation

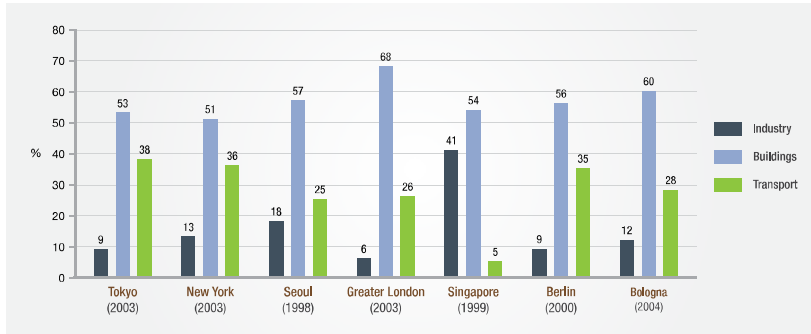
Urban Energy Use



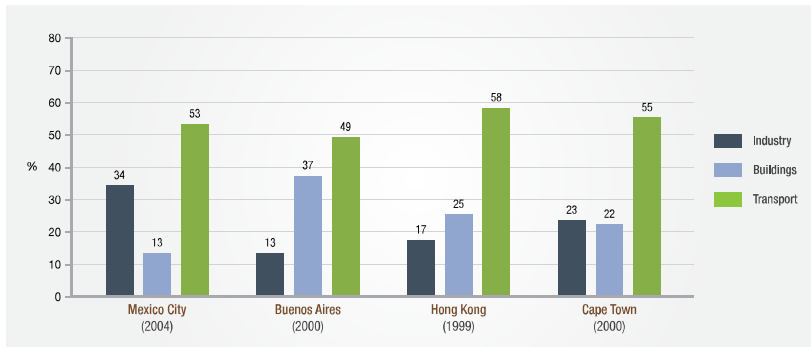
- Urban Share of Global energy consumption in 2005 ranged from:
 - 51% in South Asia
 - 86% in North America
- In Asia Pacific, the urban share is 64%
- As Urban populations continue to grow, the proportion of energy consumed in cities will also rise
- Hence, critical need to maximize sustainable expansion of urban energy systems

Sectoral Energy Consumption

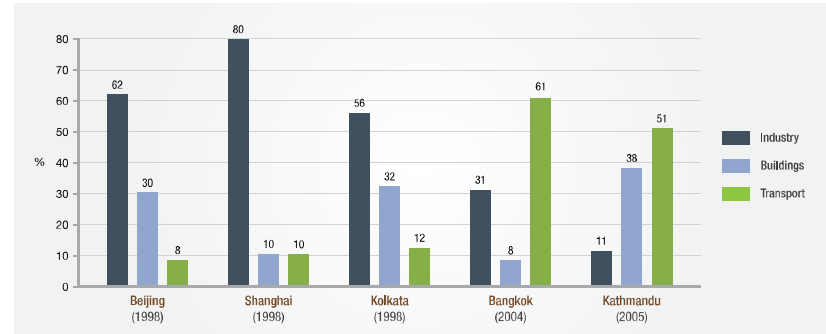
- High Income Economies



- Middle Income Economies



- Selected Asian Cities



- Observations

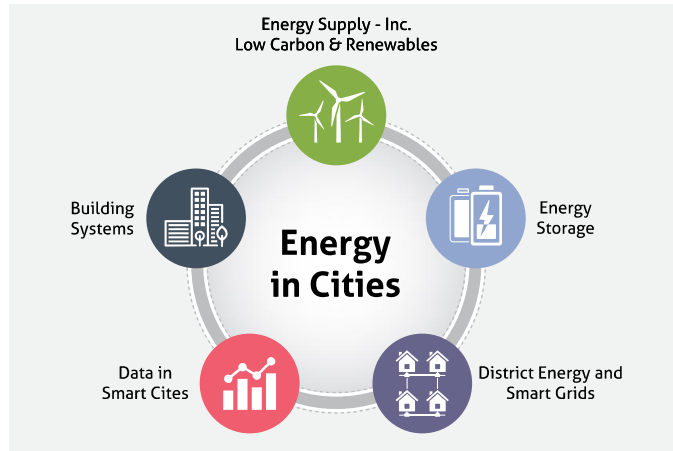
- Within cities – proportion of energy use by various sectors differ by economy (high, middle and low income)
- Cities in Asia Pacific region require different urban energy solutions depending on climate and dominant sectoral consumption –
 - Singapore : Buildings
 - Shanghai: Industry
 - Bangkok: Transport

The Burning Platform

- **Governments struggle** to keep pace with the growing demand for energy infrastructure while striving to meet the requirements for **livable cities**, including access to energy services and provision of healthy and safe environment.
- **Air pollution** is one of the highest risk factors for death globally, accounting for more than **5.5 million fatalities** each year. In many cities in the Asia Pacific region, the daily pollution levels can peak above **300 micrograms per cubic meter** – **twelve times** the recommended maximum in the World Health Organization (WHO)'s air quality guidelines.
- There are currently **17 megacities** in the Asia Pacific region (expected to reach 22 by 2030).
- Cities account for more than **70 percent** of global carbon dioxide (CO₂) emissions.
- There is no single solution to these challenges; sustainable urbanization in the Asia Pacific will **require cross-sectoral efforts**.

Urban Energy Systems

*“Integrated **Urban Multi-Fueled Energy Systems** enabling integration of Energy Efficiency, Renewable Energy and Demand Side Management”*



Sustainable urban energy systems include energy efficient buildings and transportation systems, district energy (both heating and cooling) systems, distributed energy systems, smart grids, and other measures.

Potential characteristics:

- Adaptability to changes in fuel availability;
- Integration and greater utilization of low-value surplus energy and renewable energy;
- Flexible integration of intermittent renewable energy (e.g., through energy storage and co-/tri-generation); and
- Reduction in peak loads.

Identified Challenges

- Regulations
 - Market-driven regulations – Enabling market competition with very little or no political influence (e.g. Sweden)
 - Economic regulations - Aiming at achieving reasonable costs and price transparency controlled by separate energy regulators (e.g. Denmark)
 - Social regulations - Influenced by political decisions. e.g. District heating sector in PRC is socially regulated with little incentives for EE measures and customer protection in terms of pricing.
- Incentives
 - Taxes and Subsidy schemes
- Financing and Business models
 - Range of models - Wholly Public, Hybrid public and private, Private Concession, Cooperative model and Private model
- Importance of well-founded planning and design basis for the different local conditions in Asia Pacific
- Cross-sectoral activities required
 - Building sector
 - Energy sector
 - Environmental sector
 - Infrastructure sector

Asia Pacific Urban Energy Association (APUEA)

The Asia Pacific Urban Energy Association (APUEA) is an initiative of International Institute for Energy Conservation (IIEC), supported by Euroheat & Power and Danish Board of District Heating (DBDH).

Rationale:

- Similar Associations in North America and Europe but none in Asia Pacific region
- IIEC approached by development agencies and industry stakeholders to host an Association

IIEC is a not-for-profit organization established in 1984 with a mission to promote sustainable energy in developing and emerging economies. The APUEA fits with IIEC's mission and propose to host the Association at its Asia Regional Office in Bangkok

Mission

To actively promote the development of sustainable urban energy systems in the Asia Pacific region.

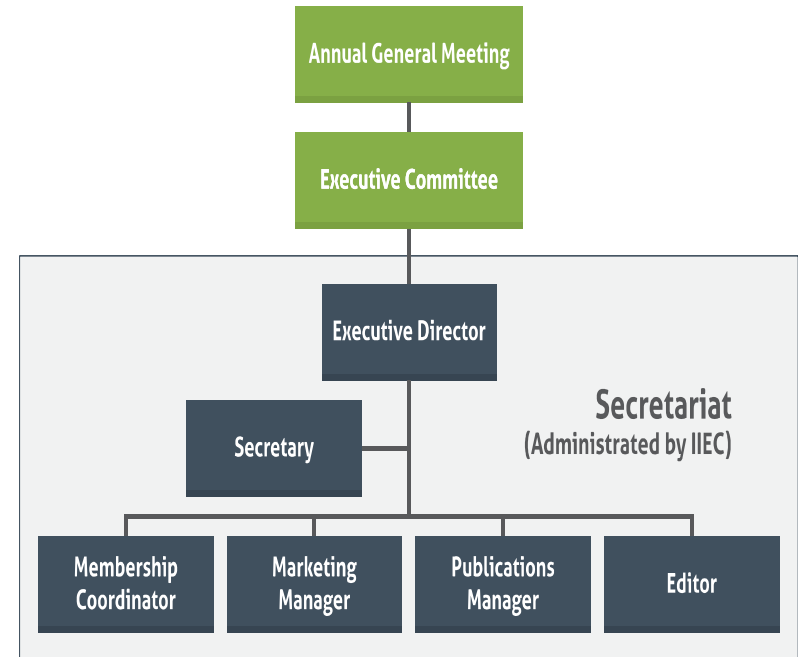
Objectives:

To be a platform that:

- Convenes cross-sectoral stakeholders focusing on sustainable urban energy;
- Promotes market development for sustainable urban energy systems;
- Shares global and regional experiences and best practices; and
- Support sustainable urban energy project alliances.

APUEA Activities and Governance

Benefits	Description
Regional Urban Energy Systems Database	Database on <ul style="list-style-type: none"> • Policies and regulations, • Responsible agencies and key contacts, • Implemented projects, and • Upcoming development activities
Online Portal (www.apuea.org)	The portal will include <ul style="list-style-type: none"> • Current news, • Best practices, • Publications and reports, statistics, and • Calendar of events.
Regular Newsletters	<ul style="list-style-type: none"> • Newsletters distributed on an as-needed basis highlighting the latest news and information.
APUEA Quarterly Magazine	The magazine will include <ul style="list-style-type: none"> • Articles on relevant technologies, • Case studies, • New products • APUEA’s activities, including membership updates and • Information on up-coming projects.
Annual Publication – “Asia Pacific Urban Energy Outlook”	<ul style="list-style-type: none"> • A summary of the past year including trends, policies, project highlights, events • Relevant statistics (e.g., energy demand, fuel-mix) and • Perspectives on the future of sustainable urban energy systems.
Annual General Meeting and Trade Exhibition	<ul style="list-style-type: none"> • Open to all members • Hosted in different member countries. • Include Conference and Trade exhibition
Direct Assistance	<ul style="list-style-type: none"> • Respond to direct requests from Members.



Membership

ACTIVE APAC MEMBER

Member that originates in an Asia Pacific economy, or has a registered legal entity in an Asia Pacific economy, and chooses to take an active role in the Association in terms of its governance and operation.

ALLIED APAC MEMBER

Member that originates in an Asia Pacific economy, or has a registered legal entity in an Asia Pacific economy, and chooses not to take an active role in the Association in terms of its governance and operation.

ALLIED NON-APAC MEMBER

Member that does not originate in an Asia Pacific economy, or has no registered legal entity in an Asia Pacific economy. An Allied non-APAC member does not to take an active role in the Association in terms of its governance and operation.

AFFILIATE MEMBER

Individual or agency invited by the Association to participate as an individual member; and entities such as regional NGOs, development agencies, and utility organizations. An Affiliate member does not have any voting rights and does not pay any membership fee.

THANK YOU

Asia Pacific Urban Energy Association

www.apuea.org