An Introduction to the SEforALL Building Efficiency Accelerator

Shannon Hilsey, World Resources Institute

June 2019
1. Introduction to the Building Efficiency Accelerator – Shannon Hilsey, World Resources Institute

2. Locking in Energy Savings through Building Codes – Meredydd Evans and Sha Yu, Pacific Northwest National Laboratory

3. Case Study: BEA Program in Bogotá, Colombia – Sarah Arboleda, Colombia Green Building Council

4. Question & Answer
One Goal:

Achieving Sustainable Energy for All by 2030

Three Objectives:

ENSURING universal access TO MODERN ENERGY SERVICES.

DOUBLING THE GLOBAL RATE OF IMPROVEMENT IN energy efficiency.

DOUBLING THE SHARE OF renewable energy IN THE GLOBAL ENERGY MIX.
**SEforALL Energy Efficiency Accelerators**

The **Global Energy Efficiency Accelerator Platform** was established to support specific sector-based energy efficiency accelerators.

<table>
<thead>
<tr>
<th>Lighting</th>
<th>Appliances &amp; Equipment</th>
<th>Vehicle Fuel Efficiency</th>
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<tbody>
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<td>Global market transformation to efficient lighting</td>
<td>Global market transformation to efficient appliances &amp; equipment</td>
<td>Improve the fuel economy capacity of the global car fleet</td>
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<th>Buildings</th>
<th>District Energy</th>
<th>Industry</th>
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<td>Promote sustainable building policies &amp; practices worldwide</td>
<td>Support national &amp; municipal governments to develop or scale-up district energy systems</td>
<td>Implementing Energy Management Systems, technologies &amp; practices</td>
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Power Sector Accelerator is under development.
Why is building efficiency important?

### Large impact:
- Buildings consume one third of energy demand and account for about one quarter of GHG emissions globally.

### Large potential:
- Global building energy demand can be reduced by one third by 2050.
- In emerging economies investment potential is US$ 16 trillion.

### Long-lasting implications:
- Buildings last for 40-100 years or more. Poor choices today can lock-in high costs, carbon emissions, and poor urban services.

### Multiple benefits:
- **Economic**
  - Construction represents 16% of GDP
  - Each $1 spent on EE avoids more than $2 in energy supply spending
- **Social**
  - Energy access
  - Reliability
  - Energy security
  - Public health & productivity
  - Job creation
- **Environmental**
  - GHG emissions reduction
  - Sustainable building materials
  - Water conservation
  - Climate resilience
New partnerships, built around public-private collaboration, address barriers to action, enable implementation of ambitious policies and projects and avoid lock-in of inefficient buildings.
Building Efficiency Accelerator (BEA) Global Partners

**Coordinating partner:** WORLD RESOURCES INSTITUTE | WRI ROSS CENTER FOR SUSTAINABLE CITIES

**NGOs/Associations/Multilaterals:**
- UN Environment
- I.C.E.I. (Local Governments for Sustainability)
- World Business Council for Sustainable Development
- GBNP
- CARBON TRUST
- International Energy Agency
- IEA
- UNDP
- IFC
- International Finance Corporation
- WORLD BANK GROUP
- ESMAP
- INVESTOR CONFIDENCE PROJECT
- BPIE
- BUILDINGS PERFORMANCE INSTITUTE EUROPE
- CLEAN ENERGY SOLUTIONS CENTER
- ALLIANCE TO SAVE ENERGY
- WORLD GREEN BUILDING COUNCIL
- USGBC
- UNITED NATIONS FOUNDATION
- Global Green Growth Forum
- NRDC
- Global Cool Cities
- C40 CITIES
- CLIMATE LEADERSHIP GROUP
- The Business Council for Sustainable Energy

**Service Providers/Companies:**
- Johnson Controls
- Danfoss
- Signify
- Schneider Electric
- tecnalia
- ALSTOM
- Accenture
- ECONOLER
- DEXMA
- SAINT-GOBAIN
- Ingersoll Rand
-ingress
- P4G
- The Business Council for Sustainable Energy
- China Energy Conservation and Environmental Protection Group

[Images of logos and partners]
Welcome to our newest city partners:

**Curridabat, Costa Rica**

**San Salvador, El Salvador**

**State of Yucatán, Mexico**
What are cities signing up to do?

Global vision
By 2030, all new buildings are highly-efficient and zero-carbon.
By 2050, all buildings are highly-efficient and zero-carbon.

1. Policy
Adopt and Implement an enabling policy

2. Pilot Program
Implement a pilot program designed to be scaled to additional buildings

3. Tracking and communication
Set goals, track and report progress.
Share experiences with other governments.
Example: City Actions on Codes

Aburrá/Medellín, Colombia

Guidelines for sustainable retrofit of existing buildings, in support of the Public Policy for Sustainable Construction for the Aburrá Valley.

Santa Rosa, Philippines

A mandatory adoption of the Green Building Code at the City of Santa Rosa by 2019.

Eskisehir, Turkey

Design and implement a local above-code program to promote, incentivize, and encourage building practices that go above the base National Building Energy Performance Regulation. Develop an enabling Energy Performance Contracting (EPC) model for retrofitting municipal buildings.
What does the BEA provide?

**Local action prioritization and tracking process**
Collaborative, multi-stakeholder assessments and workshops to define and prioritize policies and programs. Methods to track progress on selection actions.

**Tools, expertise and solutions**
Technical support through trainings, tools. Access to network of subject matter experts and service providers.

**Finance and funding opportunities**
Connect projects in need to financial partners who can provide finance and funding for efficiency actions.

**International recognition and collaboration**
Recognition of efficiency actions at international events. Knowledge sharing through a global network of peers.
Technical Assistance Offer

Types of Technical Assistance

- Playbooks
- Peer Learning
- Direct Assistance
- Deep Engagement

applied to

Key Topics

- Energy and Construction Codes
- Renovation and Finance
- Energy Targets
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BEA city action process

**Starting status:**
Limited building efficiency action in city

**BEA 2030 vision:**
Doubled energy efficiency improvement in city

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<th>Assessment</th>
<th>Development</th>
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<td>• Assess locally-appropriate building efficiency actions</td>
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<td>• Fund and staff BEA policy &amp; project</td>
<td>• Establish building efficiency performance baseline and track improvements.</td>
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<td>• Identify preliminary interest areas</td>
<td>• Engage with stakeholders to help prioritize actions</td>
<td>• Solicit financial assistance with BEA</td>
<td>• Implement BEA policy &amp; project</td>
<td>• Share best practices with other BEA cities</td>
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**Development**
- Access BEA Partners’ technical solutions and expertise
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**Implementation**
- Fund and staff BEA policy & project
- Implement BEA policy & project
- Develop an approach for continuous improvement

**Improvement**
- Establish building efficiency performance baseline and track improvements.
- Share best practices with other BEA cities

- **253 CITIES** reached with Building Efficiency Accelerator (BEA) resources
- **47 COMMITMENTS** on building efficiency action from **25 CITIES**

- **9 GLOBAL & REGIONAL EVENTS** with 300+ participants
- **18 LOCAL EVENTS** meetings and workshops with 500+ participants
- **21 WEBINARS** with 1,000+ participants from 121 countries

9 BEA cities engaged with potential funders at 2017 SEforALL Forum to discuss projects with investment potential of at least

- **8.3 MILLION TONS CO₂ EQUIVALENT**
  Avoided through 2030 based on BEA deep dive city actions under development, saving over $1B in energy costs

- **$1.5 BILLION USD**

Learn more at buildingefficiencyaccelerator.org
Thank You! We welcome new business, NGO, and government partners!

For more information or to join as a partner, contact:

World Resources Institute, WRI Ross Center for Sustainable Cities
Shannon Hilsey, Project Associate, shilsey@wri.org

BuildingEfficiencyAccelerator.org
ADDITIONAL SLIDES ON ACTIVITIES IN SELECT BEA CITIES
Belgrade, Serbia

Policy: Revolving EE fund and retrofit process guidance.

Project: Retrofit 1+ public school, as demo for city retrofit strategy.

**Oct - Dec 2016:** Launch workshop, initial coordinating group meetings, actions selected.

**May-June 2016:** Assessments made on 3 school buildings, 1 selected for project documentation and demonstration retrofit.

**April 2017:** 18-month workplan approved. City and utility share project and scale-up proposal at SEforALL Forum.

**June 2017:** Stakeholder engagement at Belgrade Energy Week.

- Workshop on EE Fund, with international examples
- EE Fund recommendation and retrofit guidebook delivered to city
- School retrofit documentation and installation completed

TODAY
Bogota, Colombia

**Policy:** Implement energy code in city regulation and district plans.

**Project:** Assist district redevelopment to achieve high efficiency.

### Oct - Dec 2016:
Launch workshop, working group meetings, actions selected.

### Feb 2017:
- Fenicia Triangle site selected and project advisory services begin

### April 2017:
- 18-month workplan approved.
- City departments approve inclusion of efficiency code in city master plan revision.
- City shares project and scale-up proposal at SEforALL Forum.

### June 2017:
- Draft code compliance guidance

### May 2018:
- Code localization study and draft M&V protocol complete

### TODAY
- Code adoption in city master plan
- First Fenicia building complete with EE features.
- Implementation of energy standards in district plans
- Code implementation and compliance training.
Da Nang, Vietnam

Policy: Energy code; Energy use transparency for large buildings.

Project: Provide assistance for retrofit of 1+ hotel.

Sep - Dec 2016:
Launch workshop, working group meetings, actions selected.

Jan-May 2017: Engagement of hotel owners on EE opportunities, assessment of buildings, detailed audit completed on 1 hotel.

April 2017: Draft directive on department coordination to implement code and transparency.

May 2017:
- City presents BEA work to national government and international partners
- Hosted first in a series of trainings on energy codes and building efficiency for officials and builders.
- Retrofit scope finalized, measures installed and verified.
- Potential next phase: Development of efficiency assistance program.

TODAY
- Directive adopted, specific actions identified, responsible parties act.
- Participation in code training and study visit to Singapore
- Implement energy code
- Implement annual energy use reporting
Eskisehir, Turkey

Policy: Incentives and assistance for "B" or better new buildings.

Project: New “A” class energy education building in science center.

Oct - Dec 2016: Launch workshop, working group formed, actions selected.

Feb - June 2016: City joins BEA; Mayor discusses BEA opportunity at Global Green Growth Forum

April 2017: 18-month workplan approved.

May 2017: First design concept for demonstration project

June 2017: First monthly training seminar hosted. First awareness campaign event.

• Public buildings benchmarked
• Energy inspection strengthened
• Incentive program designed and implemented
• Design complete and funding obtained for construction of energy education building

TODAY
**Policy:** Adopt and implement energy code for private buildings

**Project:** Retrofit of 4+ municipal buildings

**March - August 2015:** Launch and technical workshops of local BEA partnership; working groups formed.

**Sept 2016:** Bids requested on audits of 4 public buildings.

**Jan 2017:** Audits on buildings completed.

**October 2015:** Working group recommendations delivered to City.

**June 2016:** Revised construction regulations adopted, referencing technical norm with energy code for first time.

**April 2017:** Funds committed for retrofits of 4 buildings and audits of 15 additional buildings. Target set to audit 30% of city’s 2400 municipal buildings.

**Today:**
- Launch of city-wide energy saving challenge for large buildings
- Training programs for implementation of building energy code.
- Refinement of funding model for public building retrofits.
Rajkot, India

**Policy:** Green building incentive policy

**Project:** Retrofits of two municipal buildings

- **November 2016:** Kick-off workshop; policy and project options identified
- **March 2017:** 18-month workplan approved.
- **October 2017:** Energy audits started in 2 existing buildings of RMC
- **April-June 2016:** Rajkot (RMC) signs partnership agreement and MoU with implementing partners
- **September 2017:**
  - First draft of green building policy, Prakruti, circulated for stakeholder comments
  - Akshay Urja Rajkot website/Rajkot Smart Energy Lab launched
- **Today:**
  - Econoler, assisting Rajkot in identification of financing mechanisms for building retrofit projects based on audit recommendations
  - Draft green building policy under circulation