Amman
Sustainable Urbanization and Resource Efficiency
Development Challenges (2008, ..., 2011, ..., 2018)

- Population growth.
- Successive influxes of refugees (2011)
- Jordan imports 96% of its oil and gas
- Water insecurity.

<table>
<thead>
<tr>
<th>Year</th>
<th>2007</th>
<th>2010</th>
<th>2012</th>
<th>2014</th>
<th>2015</th>
<th>Compound Annual Growth Rate, CAGR (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Units</td>
<td>GWh</td>
<td>%</td>
<td>GWh</td>
<td>%</td>
<td>GWh</td>
<td>%</td>
</tr>
<tr>
<td>Household</td>
<td>4,017</td>
<td>38</td>
<td>5,219</td>
<td>41</td>
<td>6,126</td>
<td>43</td>
</tr>
<tr>
<td>Industrial</td>
<td>2,918</td>
<td>28</td>
<td>3,258</td>
<td>25</td>
<td>3,461</td>
<td>24</td>
</tr>
<tr>
<td>Commercial</td>
<td>1,757</td>
<td>17</td>
<td>2,184</td>
<td>17</td>
<td>2,427</td>
<td>17</td>
</tr>
<tr>
<td>Water pumping</td>
<td>1,592</td>
<td>15</td>
<td>1,867</td>
<td>15</td>
<td>1,955</td>
<td>14</td>
</tr>
<tr>
<td>Street lighting</td>
<td>269</td>
<td>2</td>
<td>315</td>
<td>2</td>
<td>305</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>10,553</td>
<td>100</td>
<td>12,843</td>
<td>100</td>
<td>14,274</td>
<td>100</td>
</tr>
</tbody>
</table>
Regulatory Reforms for climate change

- the Renewable Energy and Energy Efficiency Law No (13).
- National Green Growth Plan 2016
- Jordan’s National Energy Efficiency Action Plan (NEEAP2) (15% reduction target across all sectors)
- establishes the (JREEEF) under the umbrella of (MEMR)
- By-law No (73) on Regulating Procedures and Means of Conserving Energy and Improving Its Efficiency
- Jordan’s Nationally Determined Contribution (NDC) (1.5% GHG Reduction by 2030 & 12.5% upon availability of International climate finance)
Amman’s 2025 Vision and Aspiration | In Action

Amman: A Green, Sustainable City

An Efficient, heritage and multicultural City

Amman’s Vision
<table>
<thead>
<tr>
<th>Develop Jordanian Green Building Guide</th>
<th>Delivering Incentives for Green Buildings <em>Like</em>: Density Bonus, Extra Floor</th>
<th>Awareness Campaigns</th>
</tr>
</thead>
</table>
## GAM’s Achievements - Mitigation plan

### Transportation And Waste

<table>
<thead>
<tr>
<th>Licensing Electric Car as Taxi, and charging Stations</th>
<th>Bus Rapid Transit (BRT), public Transportation</th>
<th>Bio Gas Project Waste to Energy Solar PV 80 MW</th>
<th>Replace Street Lights from high pressure sodium to LED</th>
</tr>
</thead>
</table>

SURE for GAM 2018

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Our Achievements: Green Building

FOR ANY GREEN BUILDING PROJECT Comply with Jordan Green Building Guide

Density Bonus: Additional Percentage to original Floor Area Ratio (FAR)

Objective:
Compensate the owner from Extra capital cost from the implementation of Green Building
Barriers

Barrier #1: Lack of assessment tools for optimized climate-resilient

Barrier #2: Lack of tools for enforcing and enhancing regulatory frameworks for EE in the GAM

Barrier #3: Information/Awareness

Barrier #4: Technical capacity barriers and absence of performance-based GHG monitoring frameworks

Barrier #5: Lack of fiscal incentives
A Systematic Approach to Sustainable Urbanization and Resource Efficient for City of Amman

Financing: $2.64 million GEF grant and ~$22 million of co-financing (from GAM, government institutions, private sector, CSOs and UNDP)

Project Duration = 60 months.
Executing Agency: UNDP CO- Jordan
Implementer Partner: Greater Amman Municipality (GAM)
Key Stakeholders: MoPIC, MEMR, MOEnv., JNBC, JSMO, NERC, JGBC, EU, USAID, GIZ, ESCOs and private Sector.
<table>
<thead>
<tr>
<th>Project Components</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Urban sustainability planning tools and benchmarks</strong></td>
</tr>
<tr>
<td>Strengthened GAM enabling framework for low-carbon buildings and street lighting</td>
</tr>
<tr>
<td>Performance-based GHG monitoring frameworks for low-carbon building and street lights.</td>
</tr>
<tr>
<td>Targeted proof-of-concept mitigation intervention s</td>
</tr>
</tbody>
</table>
COMPONENT 1: Urban sustainability planning tools and benchmarks

- Review and Update Amman Master Plan
- Sustainability Plan (SP) and Financing Strategy (FS) for GAM (USF methodology)
- Quantification of all energy, water and material flows in the GAM
- Strengthening data analysis and reporting (Amman Urban Observatory)
- Awareness programme for Sustainability Plan
COMPONENT 2: Enabling framework for low-carbon buildings strengthened

- Energy Unit for Technical Inspections
- Institutional strengthening of Energy Unit
- Update Energy Codes and develop ‘Retrofit Building Guidelines’
- Develop accreditation programme for ESCOs
- Accredit and capacitate ESCOs
- Online tool for comparative socio-economic and environmental analysis of buildings using LCA
- Energy rating and labeling scheme for buildings
COMPONENT 3: Performance-based GHG monitoring framework established

- MRV system for Building Energy Codes
- Develop a city-wide sectoral NAMA
- Assistance to the JREEEF to provide customized financial incentives to promote investments in Building Energy Codes
- Identification and quantification of the effectiveness of different policy and financial DE risking instruments for EE buildings using UNDP’s DE risking methodology (DEEI)
- Dissemination of lessons learned
COMPONENT 4: targeted proof-of-concept mitigation interventions

- 2 new private-sector residential buildings adopting resources efficiency interventions
- 2 existing public-sector buildings integrating best practice resource efficient/technology measures
- Updated EE Lighting Code and smart usage system in place for all GAM lights
Our Approach

Awareness  Regulation  Capacity  Partnerships  Incentives

Greater Amman Municipality, 2018
Page 15
Lessons Learnt
Experiences and Best Practices Related to the Project are Compiled and Disseminated in other Cities of Jordan

RE’s & EE  Water  Waste  Green Buildings
Thank You