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Technical Approaches to Achieve Low Carbon Growth in Cities

*COP23 Thailand Pavilion Side Event: Low Carbon
City Development in Thailand*

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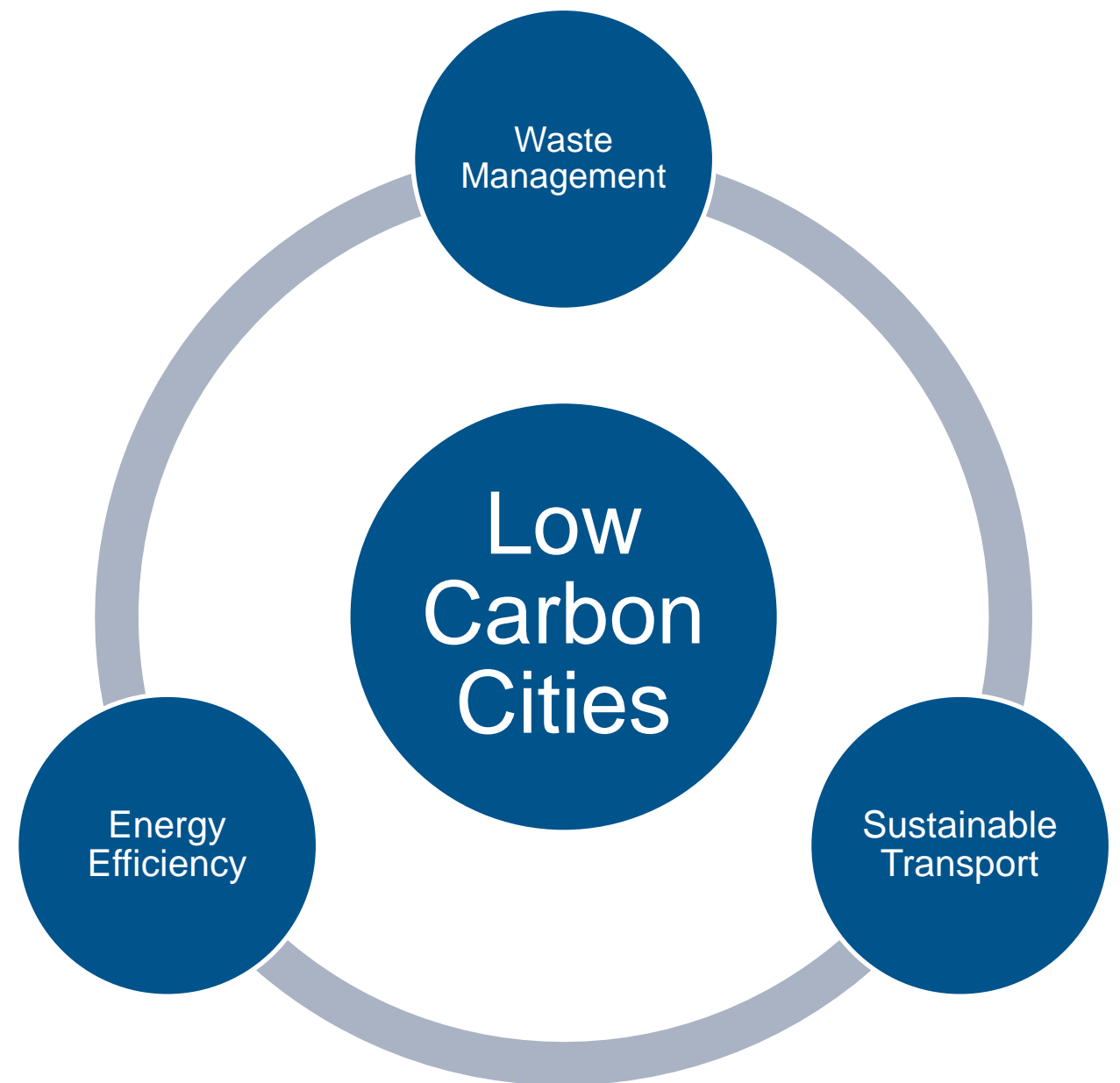


Agenda

1. Context
2. Aspirational vs Technical Feasible Goals
3. ICF's Approach for Achieving Low Carbon City Growth
4. ICF's Best Practices and Case Examples
 - Local GHG Inventories
 - European Union and South Korea
 - Los Angeles County
 - Philadelphia
5. Sample Resources

Context

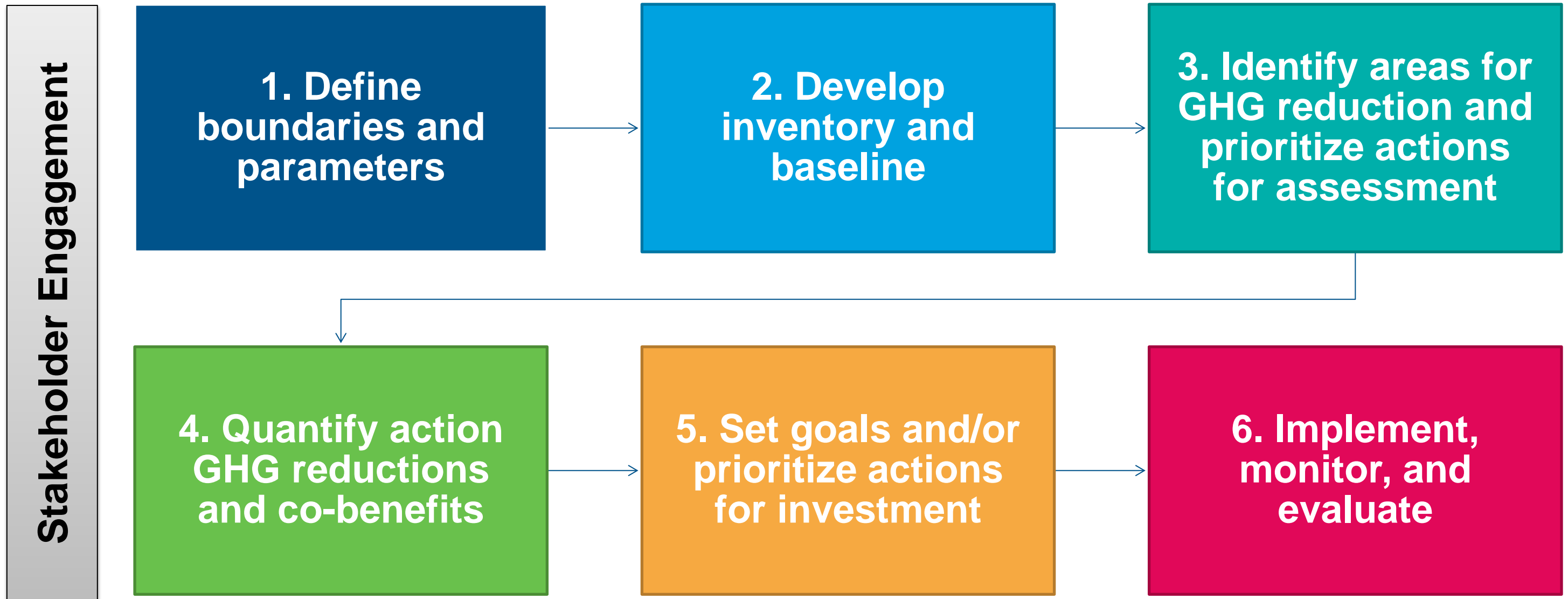
- Accelerate Thailand's implementation of low carbon cities
- Meet mitigation targets
- Remove barriers to adoption for low carbon development
 - Low carbon planning;
 - Low carbon investment; and
 - Financial incentives and institutional arrangement



Aspirational vs Technical Feasible Goals

- **Need to establish mitigation target(s)**
 - What is feasible?
 - Which sectors should be targeted?
 - What is the pathway for achievement?
- **Aspirational mitigation target(s) established nationally or sub nationally**
 - How far will existing programs and policies get to reaching targets?
 - What additional programs and policies should I implement to help meet targets?
 - Which sectors should these actions be implemented in?
 - What investments are needed & where will the financing come from?
 - How should these efforts be organized?

ICF's Approach for Achieving Low Carbon City Growth





1. Define boundaries and parameters

■ Methods

- Physical boundaries
- Emissions and activity boundaries (i.e., leakage considerations)
- Sectors
- Emission scopes
- Timeframe
- Performance metrics (e.g., GHG emissions, emissions intensity, co-benefits, etc.)

■ Lessons Learned

- ✓ Consider international, national, and regional requirements
- ✓ Start small, then add incrementally
- ✓ Recognize potential limitations based on available data

2. Develop inventory and baseline

■ Methods

- Data collection
- Consideration of existing policies and programs
- Use historical GHG inventory, if available
- Scaling of national or regional inventories
- Use of common protocols

■ Challenges

- Data access, availability, and integration
- Institutional knowledge
- Requires upfront investment in time and resources

Importance of Inventories

- + Provides understanding of largest opportunities for GHG reductions and trends
 - + Basis for policy decisions
- + Tool for monitoring and evaluating progress
 - + Critical for transparency and accountability
 - + Educates stakeholders

“Everything goes back to the inventory” (Deb Harris)

3. Identify areas for GHG reduction and prioritize actions for assessment

■ Methods

- Focus on sectors with largest opportunities for GHG reduction
- Seek input from stakeholders to maximize buy-in for later in the process
- Build on existing policies and programs without being redundant
- Consider what has worked for other similar cities

■ Challenges

- Balancing different stakeholder priorities
- Resource limitations

4. Quantify action GHG reductions and co-benefits

■ Methods

- Additional data collection
- Modeling of selected actions
- Layering of strategies to ensure potential reductions and co-benefits are not being double counted

■ Challenges

- Maximizing co-benefits (resilience, economic, health, etc.) and mitigation impacts
- Data limitations for quantifying co-benefits
- Data integration and consistency
- Working within resource limitations

5. Set goals and/or prioritize actions for investment

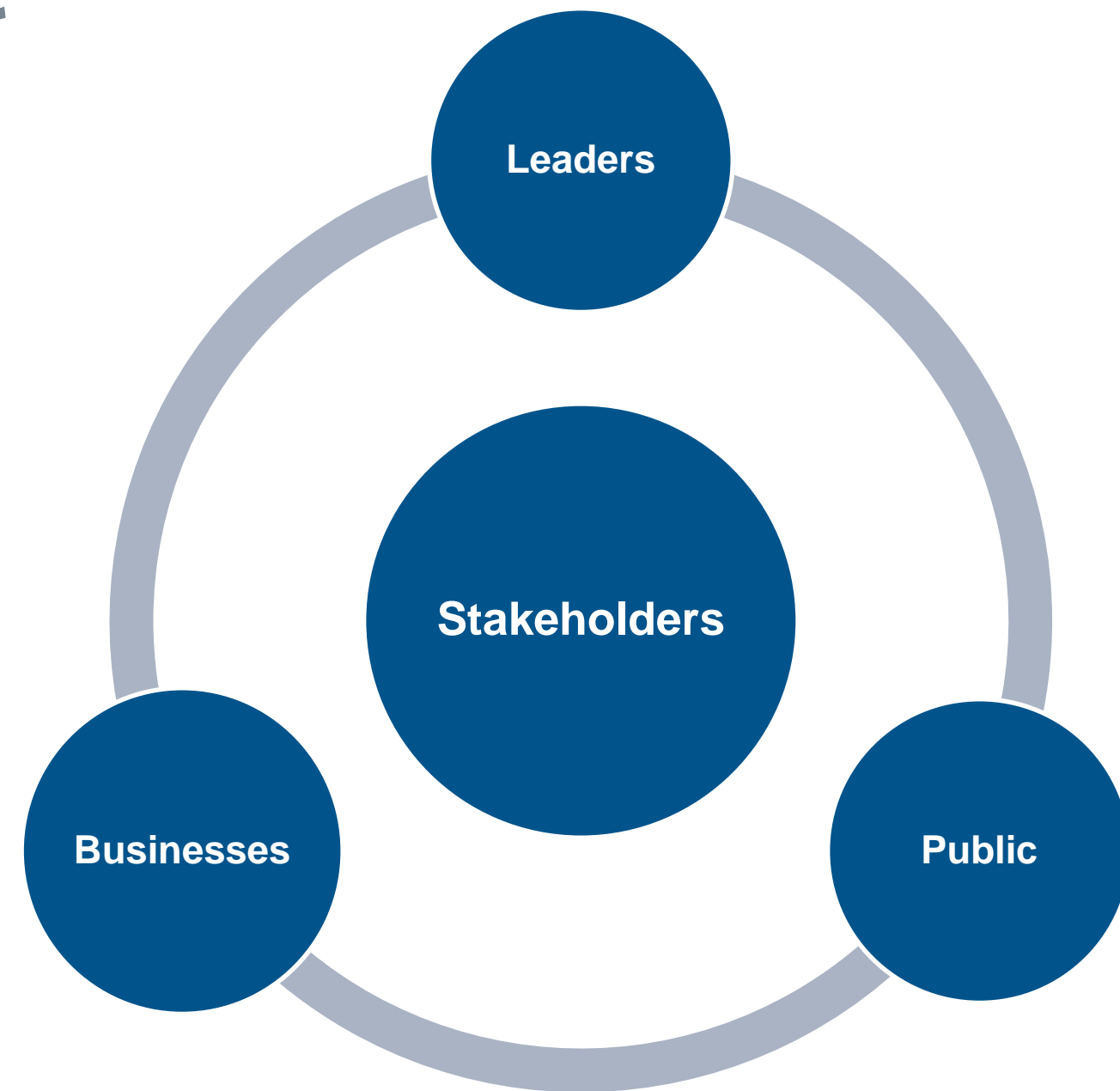
- **Methods**
 - Consider GHG reductions & project co-benefits as part of broader city planning processes
 - Select actions that maximize mitigation impacts & benefits and have support from stakeholders
 - Select sector goals that are data-driven and achievable
- **Challenges**
 - Integrating climate and resilience decision criteria into planning processes
 - Consensus building

6. Implement, monitor, and evaluate

- **Methods**
 - Secure partners & funding
 - Establish systems to monitor and evaluate
 - Continually reassess and evaluate
- **Challenges**
 - Data availability
 - Resource availability
 - Maintaining stakeholder involvement and interest

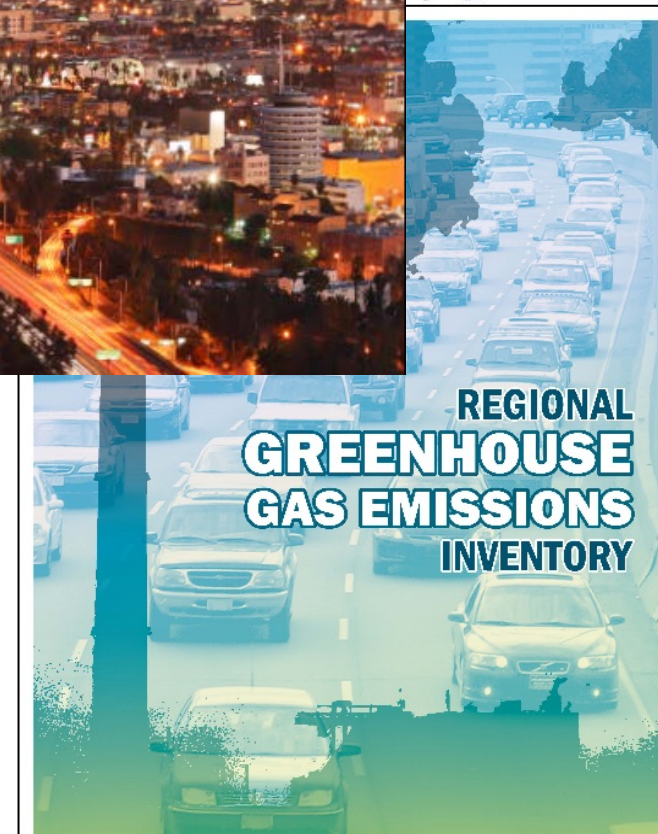
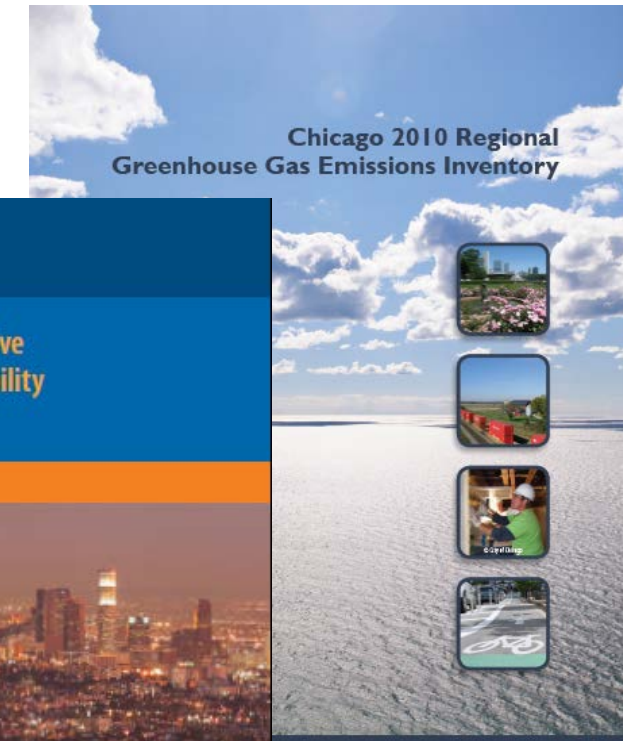
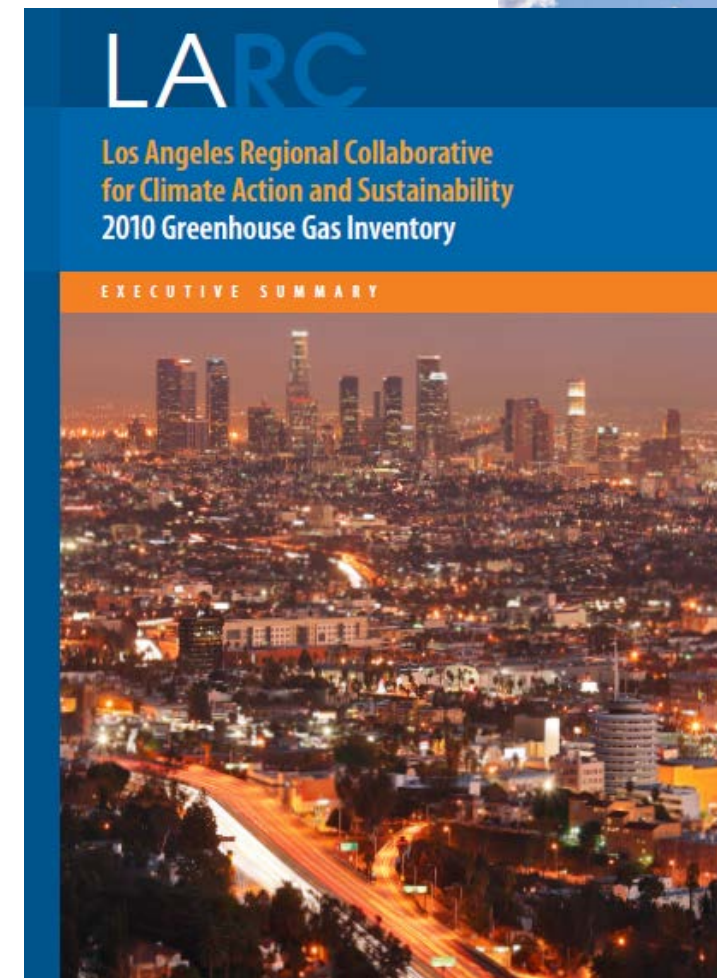
Stakeholder Engagement

- **Should be done throughout the process**
- **Relevant stakeholders may include:**
 - **Leaders:** City departments & organizations, government officials
 - **Businesses:** Local business community & associations
 - **Public:** Residents
- **Challenges**
 - Understanding roles of influencers & actors
 - Coordinating across municipal, regional, national, and international players
 - Encouraging & educating stakeholders (public and business community)



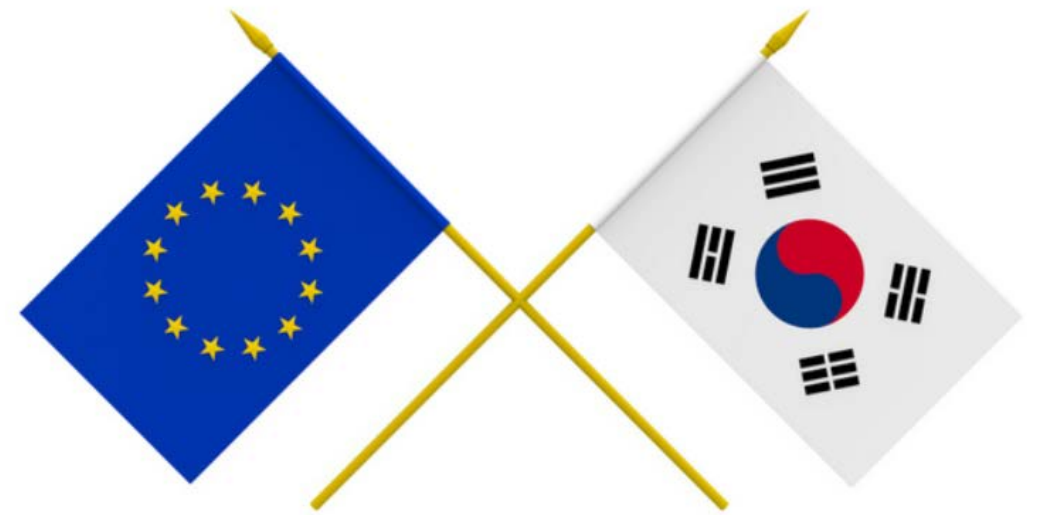
Case Example: GHG Inventories ICF Experience

- Prepared GHG Inventories for all scales
 - U.S. National Inventory for decades
 - State-Level inventories
 - Hundreds of local community jurisdictions
 - Multiple government operational jurisdictions
 - Corporate inventories for major firms
 - Lifecycle inventories for consumer products
- Intimate experience working with all major protocols
 - IPCC Protocols
 - Global Protocol for Community-Scale Inventories (GPC)
 - ICLEI Community Inventory Protocols
 - Local Government Operations Protocols
 - ISO 14064



Case Example: Low Carbon Action between EU Member States and Republic of Korea

- Strengthen EU-RoK networking, dialogue and multi-stakeholder cooperation
- Strengthen EU- RoK urban partnerships in low carbon development
- Facilitate knowledge and information sharing on climate change and low carbon development between EU and RoK stakeholders
- Raise level of awareness on low carbon actions among Korean stakeholders to better respond to climate change
- Establish a strong EU-RoK local authority cooperation on low carbon actions
- Build the capacity of EU-RoK local authorities to implement cooperation on low carbon initiatives and sustainable urban development



Case Example: Los Angeles County Metropolitan Transportation Authority

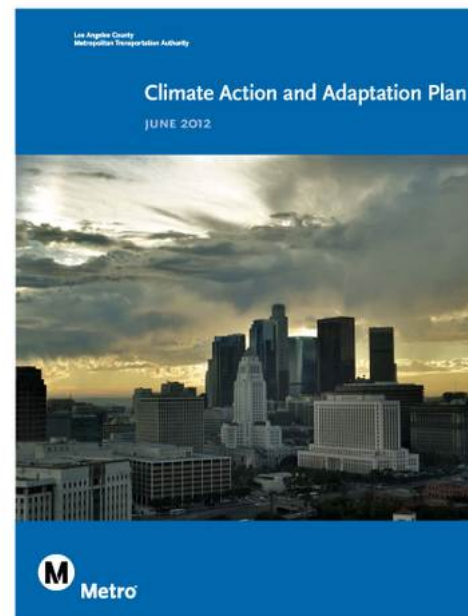
Bus Electrification Master Plan

- Second largest bus fleet in U.S.
- How to a transition to full zero emission bus fleet by 2030, maximizing cost effectiveness and minimizing service disruption?



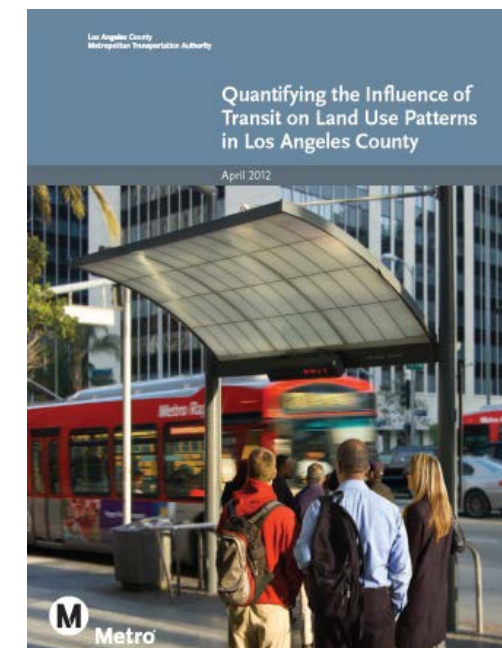
Climate Action and Adaptation Plan

- 17 measures to reduce operational GHG emissions
- First U.S. transit agency to consider potential impacts of and responses to climate change.



Regional Land Use Multiplier Study

- Analyze the potential for transit to foster low-carbon development patterns – allowing for bicycle and walking trips and shorter driving trips



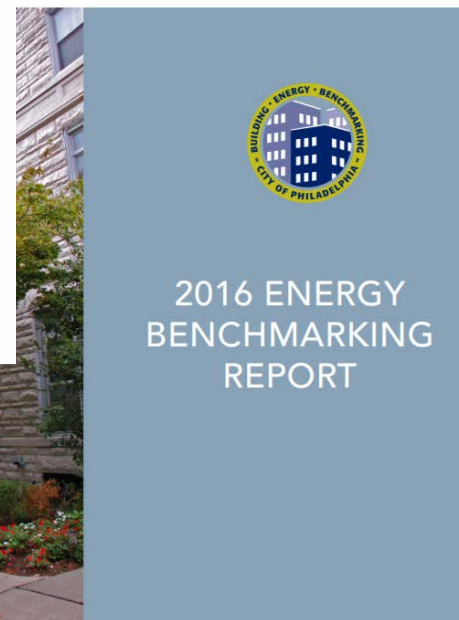
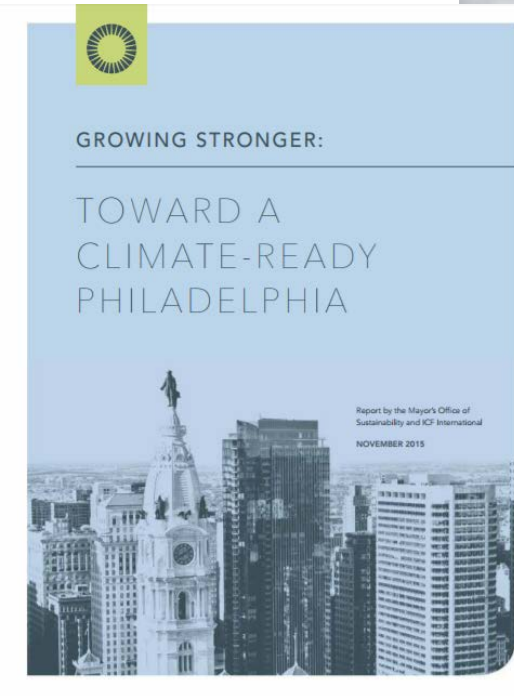
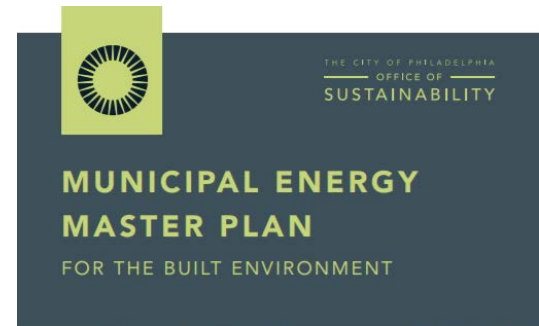
Case Example: City of Philadelphia

Planning Efforts

- GHG Inventories
- Benchmarking
- Greenworks: Vision for a Sustainable Philadelphia
- Municipal Energy Master Plan
- Citywide Energy Vision (to be released 2017)
- Growing Stronger: Towards a Climate Ready Philadelphia

Example Best Practices

- ✓ Streamlining permits for solar installations
- ✓ Energy performance contracts
- ✓ Accountability
- ✓ Workforce training
- ✓ Predictive maintenance and continuous commissioning
- ✓ Power purchase agreements
- ✓ LED Lighting
- ✓ Updated guidance documents and improved capital planning processes
- ✓ CHP/microgrids
- ✓ Increased renewables/grid decarbonization



Selected Resources

- [The Global Protocol for Community-Scale Greenhouse Gas Emission Inventories \(GPC\)](#)
- [Global Covenant of Mayors for Climate and Energy](#)
- [ICLEI – Local Governments for Sustainability](#)
- [C40](#)
- [Clean Energy Emission Reduction \(CLEER\) Tool](#)
- [More on ICF's Climate Change Work](#)

Thank You

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