

Macro-level Conditions Impacting EERE Sector

- EE Subcommittee
 - EE is a rather broad terminology
 - Two major components – EE and DR
- Definitions
 - EE refers to end-use efficiency, i.e. where a building, device or process is made to use less energy to provide the same benefit.
 - DR refers to the provision of price and/or information signals that allow reductions in energy use to be dynamic, controllable, dispatchable and precisely measurable on a time-differentiated basis.

Macro-level Conditions: Energy Efficiency

		Export Markets	Domestic Markets
Products	Software & controls	<p>Effective in middle-income and developed economies</p> <p>Effective solutions in consumer engagement, modern commercial buildings, and industrial processes</p> <p>Comparative advantage for US technology providers</p>	<p>Patchwork of state-specific policies create state markets</p> <p>Lack of policy consistency and stability limits EE investment</p>
Products	Manufactured (Intermediate products for housing, buildings, and industry)	<p>Consumer market barriers prevalent globally</p> <p>Barriers especially high in developing countries: information, finance, qualified workforce, etc.</p>	<p>See above</p> <p>Chronic underinvestment in CHP</p>
Services	Labor	N/A	See above

Macro-level Conditions: Demand Response

		Export Markets	Domestic Markets
Products	Software & controls	<p>Effective for grid reliability and economic dispatch</p> <p>Modern and stable grid institutions required to define DR markets</p> <p>Comparative advantage for US technology providers</p>	<p>Patchwork of policies create statewide and regional markets</p> <p>DOE's SGIG program has accelerated smart grid innovations and investments</p>
Services	<p>Reliability & price response</p> <p>Ancillary services</p>	<p>Enabling markets not well established</p>	<p>See above</p> <p>Increasing interests in context of RE grid integration</p>

Priority Export Markets

- Further work needed to define attributes that characterize priority export markets, for example:
 - Local EE market characteristics (e.g., size, consumer awareness, delivery capability, peak demand growth, reliability constraints, etc.)
 - Policy/regulatory conditions, including IP rights
 - Other

	Developed Economies	Developing Markets
EE Software & controls	OECD	BRICS
EE Manufactured Products		BRICS, Sub-Saharan Africa
EE Services	NA	(Advisory)
DR Software & Controls	OECD	BRICS
DR Aggregation Services	OECD	BRICS

Key Challenges for Energy Efficiency

- Utility Sector
 - Utilities are a critical channel for energy efficiency, but the “throughput incentive” remains in place for most utilities.
 - Policy makers are often unaware of best practices, despite the fact that many jurisdictions, like the EU, are moving forward.
 - Opportunity: Promote best practices from US policy, in particular to the EU.
 - Opportunity: Align utility business and policy with energy efficient outcomes.
 - Institutional infrastructure s are frequently weak
- Commercial and Industrial
 - Lack of information, expertise on energy efficiency to implement improvements
 - Policy/regulatory framework that does not promote/incentivize actions
 - Access to capital for energy efficiency improvements
 - Infrastructure barriers – poorly developed electric grid
- Housing Sector
 - Access to capital for energy efficiency improvements remains a barrier both in the US and abroad.
 - Many protectionist policies remain in place.
 - Zero net energy building (ZNEB) solutions require intelligent EE/DR/RE integration

Priority Areas for USG Support

- Engage Internationally
 - Promote transparent, rules based trade and investment systems approach
 - Promote market based systems
- Identify areas (e.g., DR and EE technology solutions) where U.S. providers have comparative advantages
- Foster innovation – promotion of cost effective technologies with potential to increase consumptive and systems operational efficiencies
- Promote planning and optimized management of intelligent grid systems
- Promote awareness through sharing of best practices
 - Technical assistance programs
- Promote the effective use of standards
 - Minimum efficiency standards
 - Voluntary management standards
 - Interoperability and data standards