



Unlocking Energy Efficiency/Decarbonization Potentials in SMEs

Bo Shen

Lawrence Berkeley National Laboratory (LBNL)

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Small-to-Medium Enterprises (SMEs) in Indonesia and Lesson Learnt from Global Experience
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Barriers to EE/Decarbonization in SMEs



- Limited SMEs' understanding of EE/clean technologies' energy-saving potential.
- High upfront investment deters SMEs from pursuing EE (focus on equipment cost, not life-cycle savings).
- Limited investment capital and financing options (working capital 72% of SME loans, 18% for capital investment).
- High borrowing costs due to collateral shortage and higher credit risks.
- Lack of project scale (unbundled projects, no unified implementing entity).
- Missed deep saving opportunities (short-term payback prioritized, ESCOs focus on sales/installation and neglect follow-on business).
- Ineffective incentives (lack means to track SMEs' energy consumption).
- Information gaps (SMEs struggle to find reliable vendors and ESCOs, banks face challenges in identifying quality borrowers and bankable projects; ESCOs struggle with insufficient energy performance data and understanding of SMEs' needs).



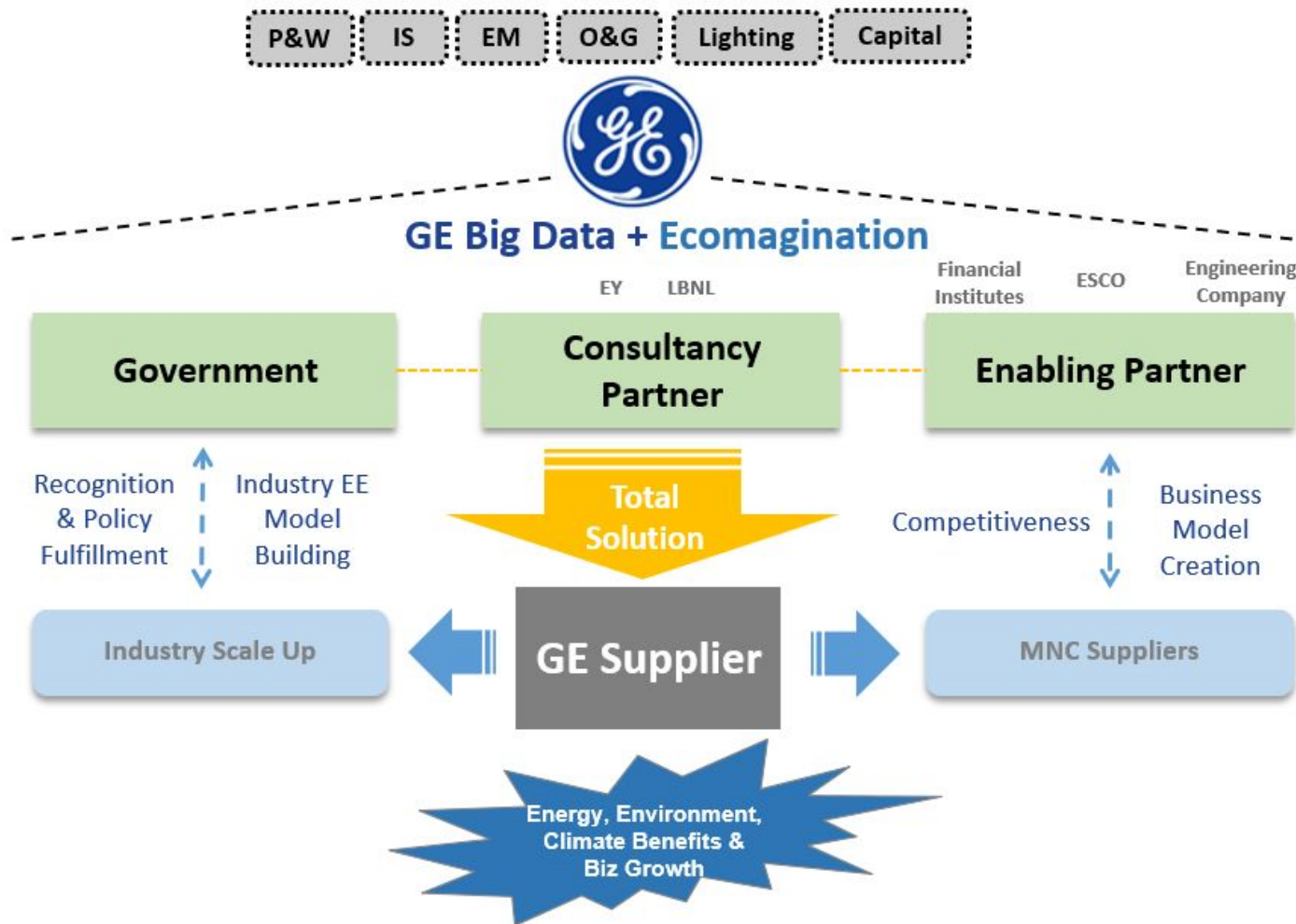
Boosting SME Sustainability through Performance Rating: “Energy Efficiency Star”



- A metrics-based SME performance benchmarking and evaluation system with five-star rating to drive SMEs' energy-saving actions.
- Use market pull and policy push to implement.
- Initiated in Suzhou with a success.
- Key takeaways:
 - An effective way to drive energy-savings in SMEs.
 - A standardized/transparent system for tracking, assessing, and communicating SME energy performance.
 - Government-endorsed evaluation scheme enhances brand image and business reputation.
 - Clear targeting for governments, MNCs, SMEs, and service providers:
 - ✓ Benchmarking helps identify performance gaps and areas for continuous improvement.
 - ✓ Supporting government in target-setting and offering targeted incentives and technical support.
 - ✓ MNCs avoids low-rated suppliers, promoting sustainability throughout their supply chains.
 - ✓ Insight into SME energy service demands for ESCOs.
 - Lack of energy service models limit large-scale implementation.
 - Manual scoring becomes very costly. An algorithm-enabled, scientifically based benchmarking/scoring tool aimed at solving this problem was later designed by LBNL.

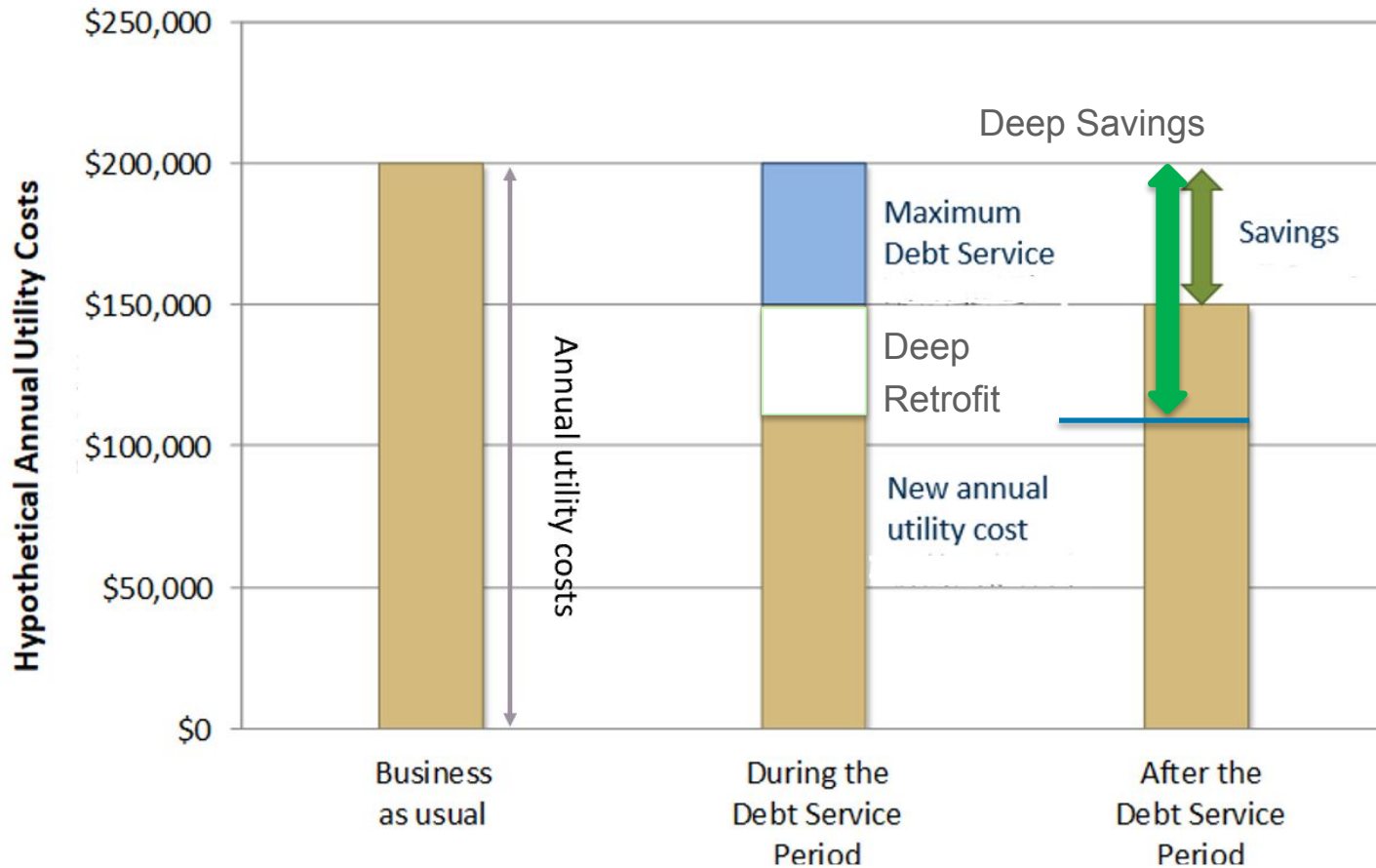


Decarbonizing SMEs through Supply Chain Partnership: “Green Growth Together”



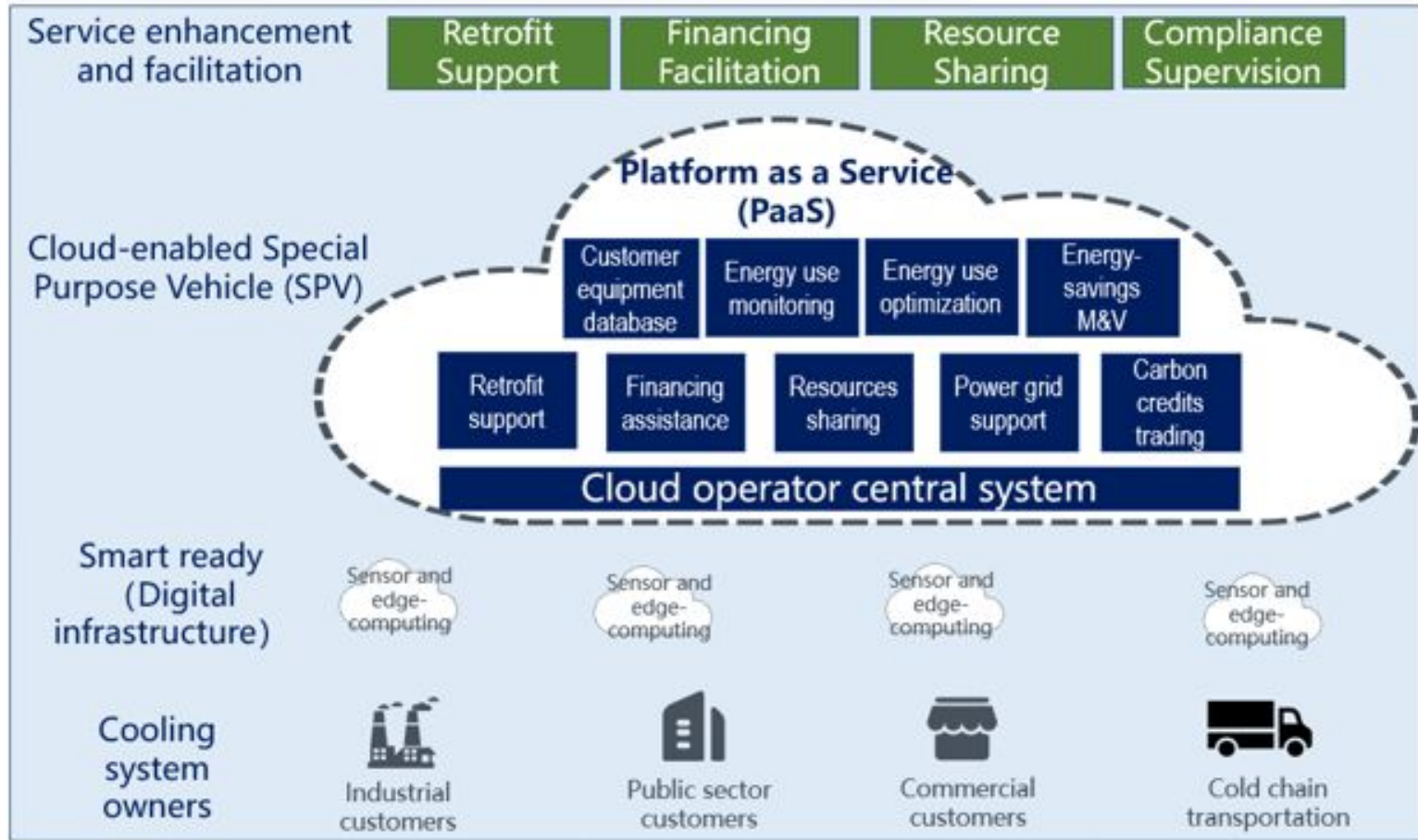
- The purchasing power of MNCs gives them significant influence over their suppliers’ business practices.
- GGT: An innovative initiative to transfer MNCs from pure buying relationships to green partnerships with SME suppliers.
- Transforming SMEs into customers of MNCs for green products and integrated solutions, creating a win-win for MNCs, SMEs, governments, and the climate.
- Supply chain finance leverages MNC’s strong credit ratings to lower SME’s financing cost.

Promoting SME Energy Efficiency through EPC, ESCO, and EE Financing



- SuperEPC: a large number of EPC projects using different EE technologies are packaged into a project portfolio with a high degree of standardization.
- Model contract: serve as the ground rules and reference point, simplifying contract drafting with best practices and industry standards, reducing complexities, streamlining negotiations, and minimizing uncertainties and risks.
- M&V: standardized M&V methods in consistent with international protocol.
- ESCO selection and certification: guidance and criteria are being established to assist in selecting and certifying ESCOs.

Scaling Up EE Implementation in SMEs through digitalization: “Platform-as-a-Service”



- Digitization innovates the way to implement EE efficiently and at scale.
- Platform-as-a-Service (PaaS) created in an ADB TA provides seamless virtual project aggregation and offers multiple functions such as performance optimization, retrofit support, financing facilitation, service matching and transaction, resource sharing, bulk procurement, DR, partnership building, and compliance supervision.
- PaaS streamlines implementation, reduce development/transaction costs, simplify access to financing and expertise, and allow flexible scaling.
- Blockchain-based PaaS ensures secure, reliable, and efficient services.

Creating and Materializing Efficiency Gains for SMEs: Industrial Assessment Centers



- Industrial assessment centers (IACs): university-led program funded by the U.S. DOE designed for dual purposes: 1) providing engineers-in-training to gain practical knowledge, 2) decarbonizing SMEs and optimizing their energy use. Win-win situation for manufacturers and universities.
- In-depth facility evaluations led by university engineering faculty/students with free energy audits and technical recommendations for SME manufacturers. Over 20,000 assessments so far (OSU 1,067 assessments/7,489 recommendations). IAC database.
- Benefits: Potential annual savings of over \$130,000 with significant portion implementable within the first year.
- Workforce development: trains future generation of energy-savvy engineers through industry-university collaboration. Over 500 engineering students gain hands-on experience annually. 60% of graduates pursue energy-related careers.



Thank you!

boshen@lbl.gov

