

FOSTERING ENERGY SERVICE COMPANIES IN THE DEVELOPING WORLD

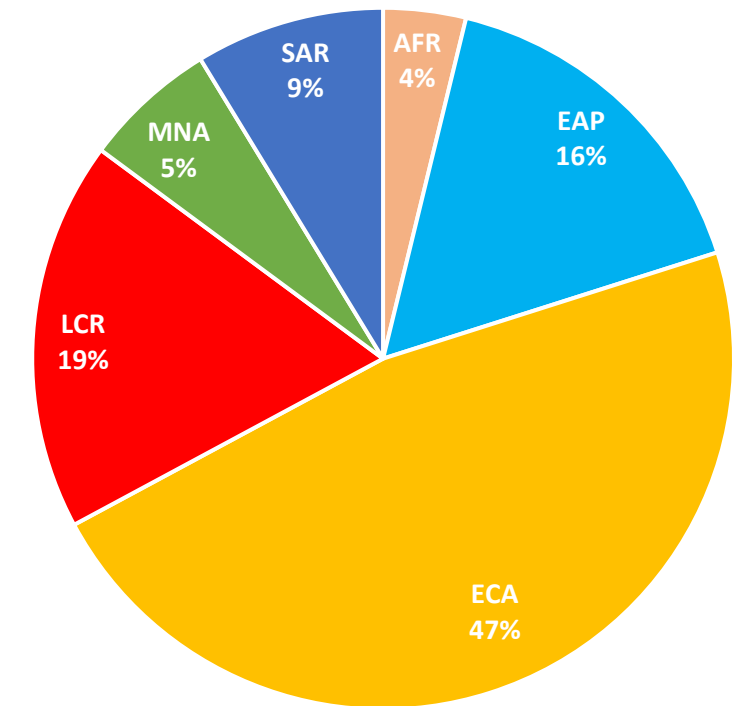
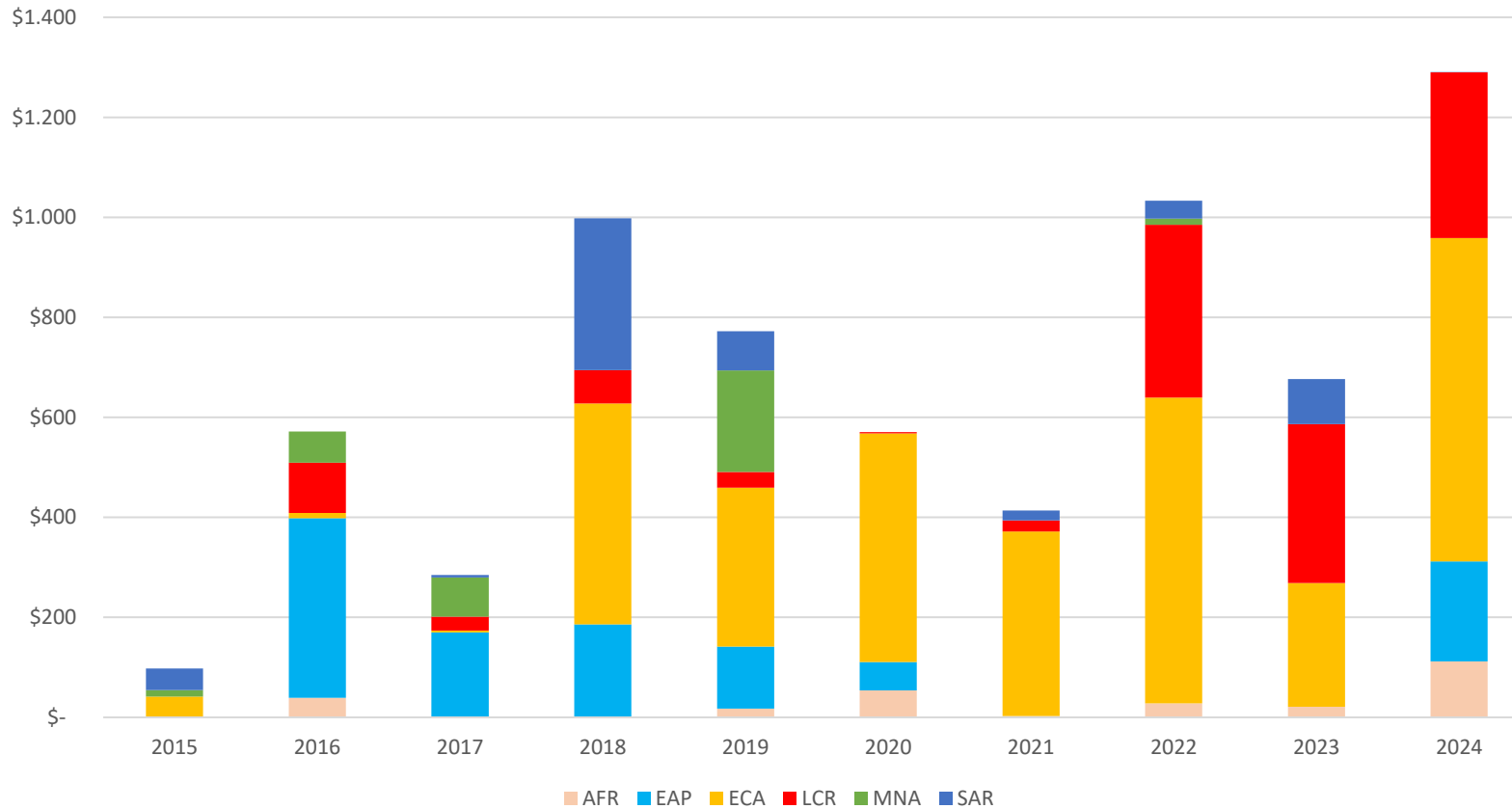
JAS SINGH, LEAD ENERGY SPECIALIST
GLOBAL KNOWLEDGE UNIT
ENERGY AND EXTRACTIVES GLOBAL PRACTICE

*Global ESCO Network webinar
December 4, 2024*



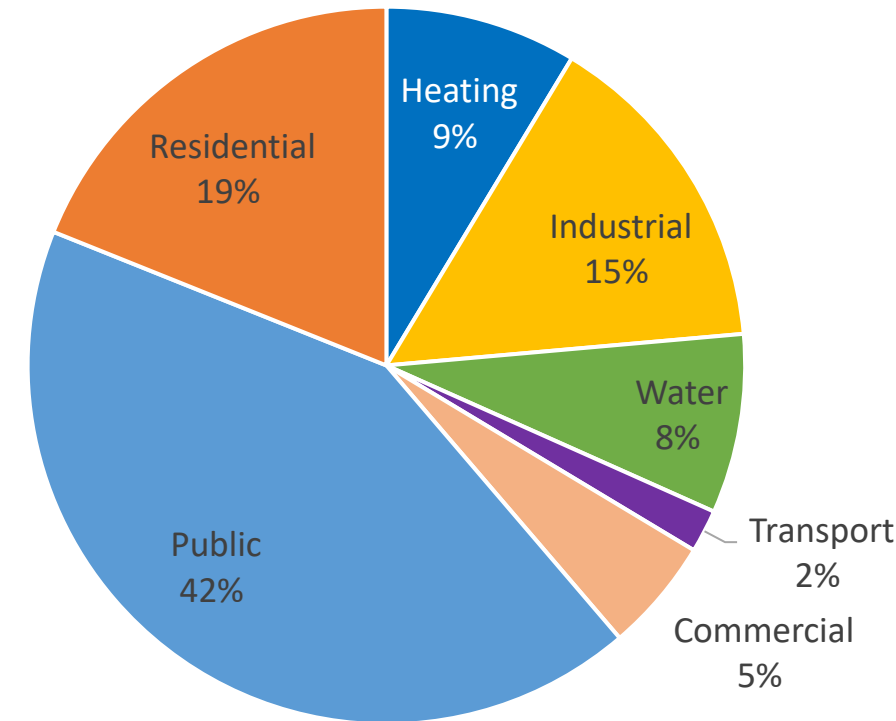
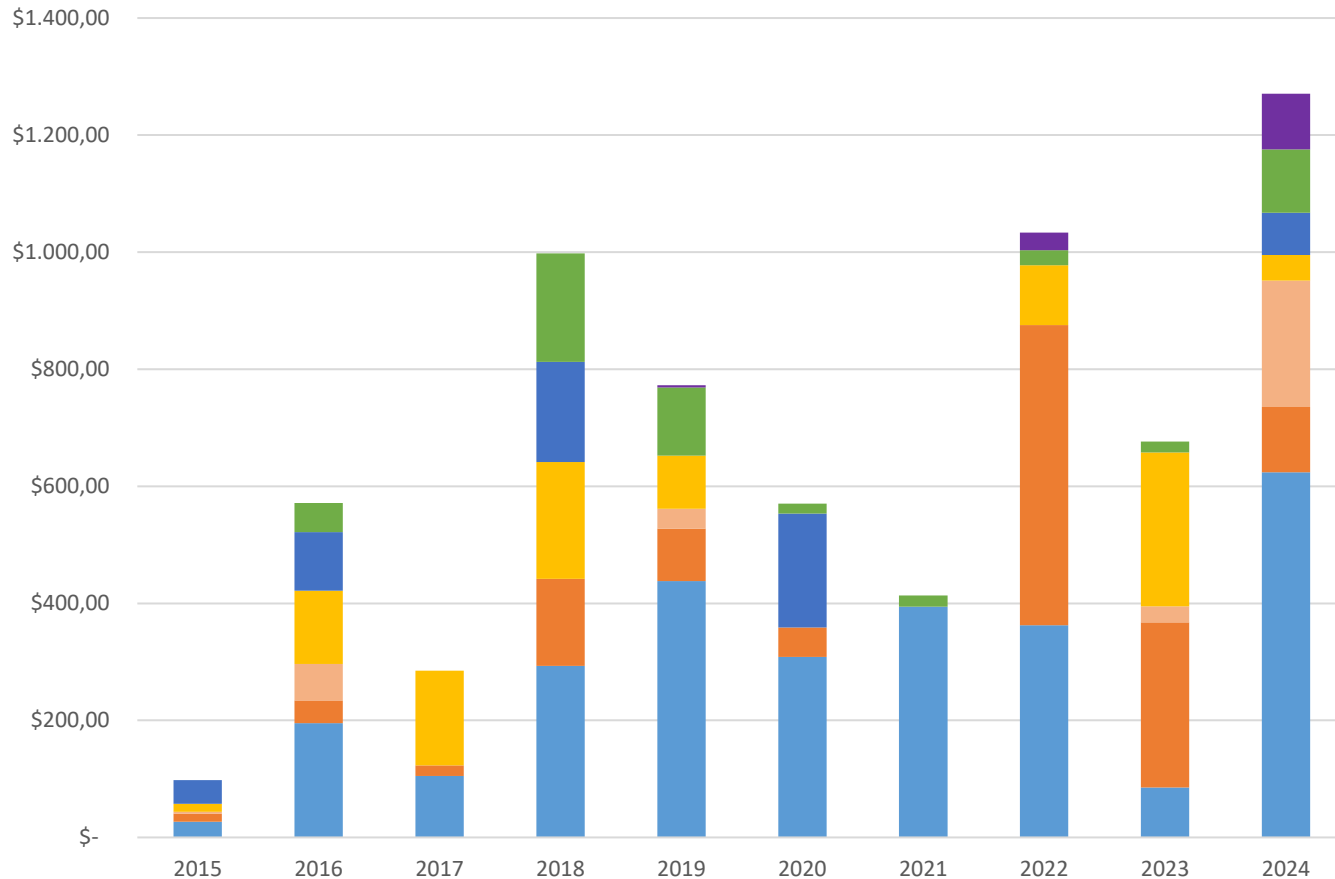
Demand-side Energy Efficiency – By Region (FY15-24)

- Demand-side lending has totaled \$6.67B in past 10 years, averaging \$667m annually.
- Europe & Central Asia (ECA) represents almost half of the demand-side EE lending (47.1%, \$3.4B) followed by Latin America & the Caribbean (LAC) (18.0%, \$1.2B) and East Asia & the Pacific (EAP) (16.3%, \$1.1B).
- ECA has had steady demand-side EE since FY18. LAC has shown significant growth in the past 3 years, while EAP has been declining since FY19.



Demand-side EE – By Subsector (FY15-24)

- The public sector drove demand-side EE lending (43.8%, \$2.92B), followed by the residential sector (18.7%, \$1.25B) and industry (15.1%, \$1.01B).
- Public sector lending has been strong since FY16. The residential sector has seen an increase since FY22 as countries begin to shift from public to residential buildings. Heating has significantly decreased since FY20 due to stalled reforms and concerns over fossil fuel-dominated systems.



Main challenges with EPCs in developing countries



Poor building conditions

- Many buildings, especially public buildings are dilapidated, and require structural or safety improvements
- Many buildings have suppressed demand – i.e., underheating, undercooling, poor lighting and poor maintenance budgets and practices



Lack of creditworthy customers

- Many customers, particularly public buildings and SMEs, do not typically take commercial loans, so have no borrowing history and poor bookkeeping
- Some are not creditworthy, with a history of late payments, or high levels of debt



Weak ESCO balance sheets

- Most local ESCOs are small consulting or service firms unable access long-term debt
- Weak balance sheets also render their performance guarantees not credible by lenders or customers



Weak measurement and verification

- A lack of agreed M&V protocols, poor access to data, lack of submetering make verification process riskier
- Poor M&V subjects projects to potential disputes on payment

Strategies to address prevailing barriers



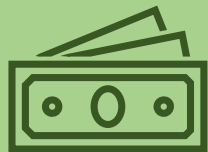
Start with simpler models

- Introduce single technology or 1-year contracts
- Develop flexible contracts (variable term, open book, ESAs)
- Use equipment leasing with simple verification plan (i.e., 2-4-week performance test)



Strengthen enabling systems

- Enact appropriate legislation to enable EPCs
- Enable ESCO tenders under public procurement
- Develop ESCO accreditation, M&V protocols, case studies, bidding/contract templates, arbitration
- Provide information and training



Facilitate ESCO financing

- Introduce financial products to ease access to financing (guarantees, forfaiting, credit lines)
- Use escrow accounts with 2-3-months of advanced payments
- Create a public, super ESCO, EE fund, etc. to finance ESCO projects



Build ESCO demand

- Create EE obligations for large consumers
- Promote, bundle public sector ESCO projects
- Offer incentives for early ESCO contracts
- Provide public support to structure and negotiate ESCO contracts

One-year EPC model

Energy audit

- Energy auditor prepares preliminary energy audit report and estimates energy savings potential

Design-build tender

- Design-build tender is prepared, specifying the minimum energy savings (e.g., 30%) and a mix of mandatory and optional RE/EE measures. Preliminary energy audit report is provided with bidding documents
- Bidders (ESCOs, construction/engineering firms, consortia) submit tenders with alternative ways to maximize energy savings cost-effectively
- Bid evaluation: Technical feasibility, minimum energy savings must be met or exceeded, highest NPV is selected

Payment

- Mix of fixed (input) payments and performance-based payments based on actual energy savings, e.g.:
 - 10% for detailed audit (client must approve)
 - 10% for detailed technical design (client must approve)
 - 50% if building renovation is completed based on approved technical design, specs
 - 20% based on 1-2 weeks performance test (verifying promised NPV in bid, $\pm 5\%$)
 - 10% after 6-12 months to ensure good performance, savings persistence

Assess financing options

Market
Maturity



Commercial
Financing

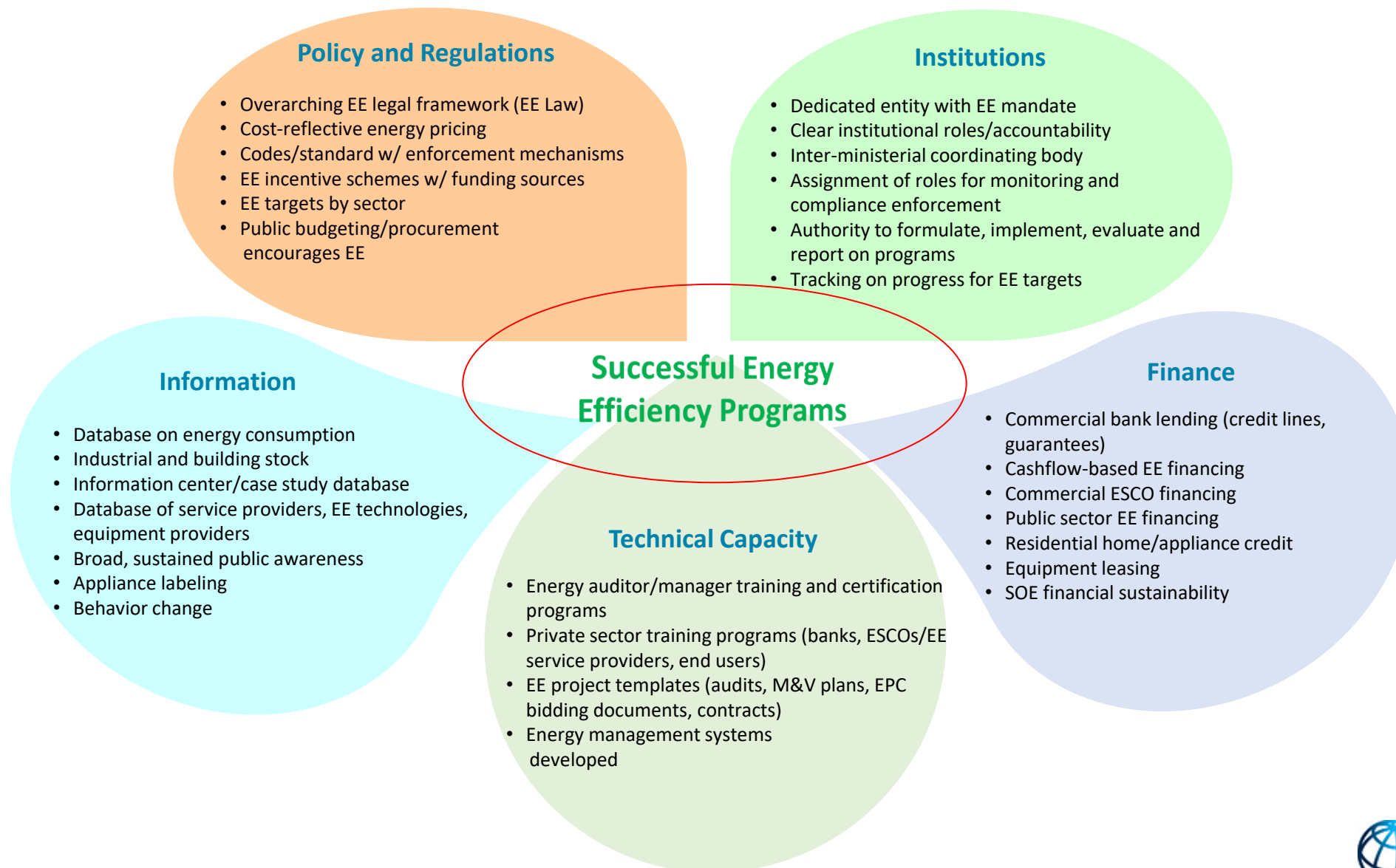


Public EE financing ladder



- Financing mechanisms should be selected based on stage of market development and financing gaps
- Public financing should be used judiciously to develop markets and crowd-in commercial financing
- Over time, programs should seek to climb the ladder to more sustainable and commercial models

Enabling activities are also needed for successful EE programs



Recommendations for ESCO development

- ✓ Need to ***understand the market*** – capacity, misaligned incentives, real financing barriers, why past efforts have failed and then ***develop tailored models*** to local markets
- ✓ ***Build off PPP precedents***, such as management contracts, outsourcing, concessions, BOOTs, etc.
- ✓ ***Formulate approaches to address all four areas*** – simpler EPC models, financing, demand and enabling environment
- ✓ ***Engage with market actors and other stakeholders early***, such as local auditors and ESCOs, banks, potential clients, government, etc. so they can buy into process
- ✓ ***Maintain flexibility*** so models can evolve as markets becomes more comfortable with ESCOs, capacity increases
- ✓ TA is necessary to ***lower transaction costs***, through standardization, templates, bundling, etc. – but don't standardize before you know what works
- ✓ ***Ensure lessons are captured and shared*** with other market actors (i.e., good case studies on financial performance to banks, business case to industry, public benefits to ministers/mayors, etc.)

Thank you!

Jas Singh

Lead Energy Specialist

jsingh3@worldbank.org