



Toolkit:

Enabling public energy efficiency investment

Municipal and Utility Services: Session 7

John Dulac

New Delhi 11 December 2018

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1. **Where to start:** Energy use in municipalities
2. **Where to start:** Energy efficiency potential in municipalities
3. **Toolkit:** Energy efficient municipal planning
4. **Toolkit:** Energy efficient technologies
Where do I get help? IEA's Technology Collaboration Programmes
5. **What are the steps:** Implementing energy efficiency programmes – target setting
6. **What are the steps :** Implementing energy efficiency programmes – implementation
7. **What are the steps:** Enable public energy efficiency investment
8. **What are the steps:** Enable private energy efficiency investment
Special session: Multiple benefits of energy efficiency for Municipalities
9. **Did it work:** Evaluation and energy efficiency indicators
Special session: International and regional initiatives that can help
10. **Energy Efficiency Quiz:** Understanding energy efficiency in municipal & utility services

7. What are the steps: Enabling public energy efficiency investment

Trainer(s): John Dulac

Purpose: To provide an overview of the public funding sources and mechanisms available for energy efficiency projects, and to understand the procurement options for your municipality

Scenario: There are ambitious targets set, but seemingly little funding available to realise energy efficiency projects.

Question: How can you mobilise public finance for your energy efficiency programmes and projects?

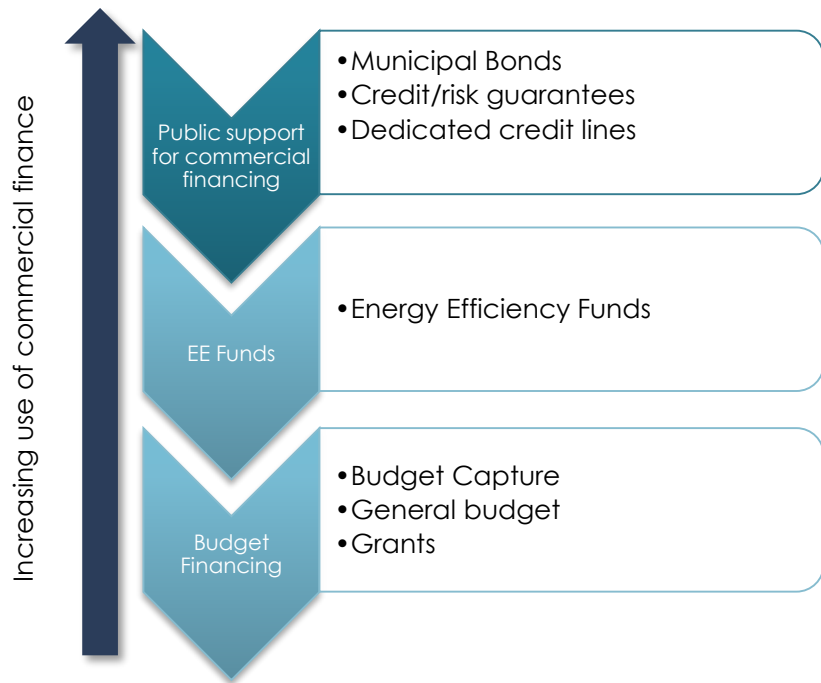
Public funding sources and financing mechanisms

What are the options?

Municipal bonds

Municipal revenue sources

The Financing Ladder



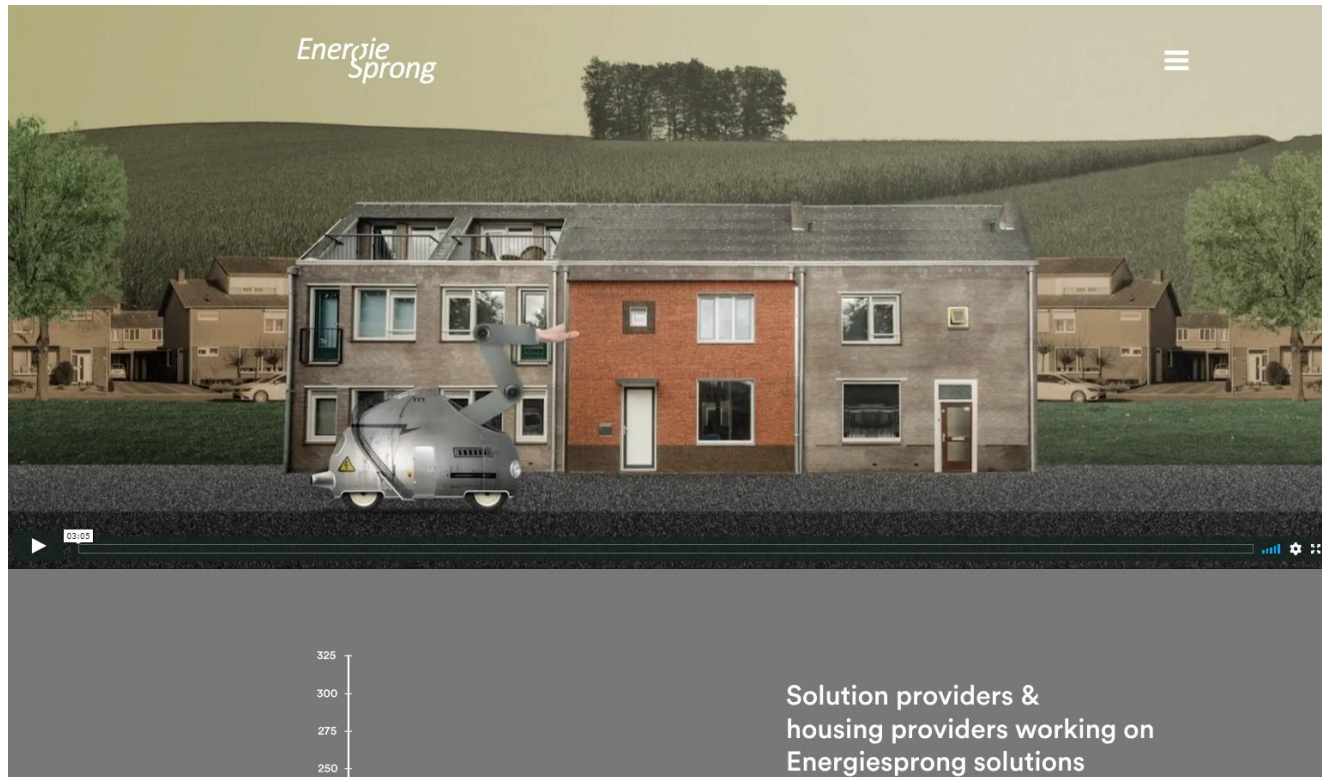
- Funding sources:

- Government → budget financing
- Funds developed for EE, which can become revolving funds
- External donors → grants
- Public support to leverage private finance
 - Credit/risk guarantees
 - Dedicated credit lines
- Municipal bonds

Smart Cities Mission and AMRUT

- Smart Cities Mission
 - Promotes **area-based** urban development initiatives
 - Financing from Government:
 - Ministry of Urban Development – Rs 100 crore per city/year
 - State and City Governments – required to provide Rs 100 crore per city/year
- Atal Mission for Rejuvenation and Urban Transformation
 - **Project-based** approach: aims to provide basic amenities of better services to citizens
 - Financing from Government:
 - Rs. 50,000 crore for 5 years from FY2015/16 to FY2019/20

Public funding sources and financing mechanisms: What are the options?

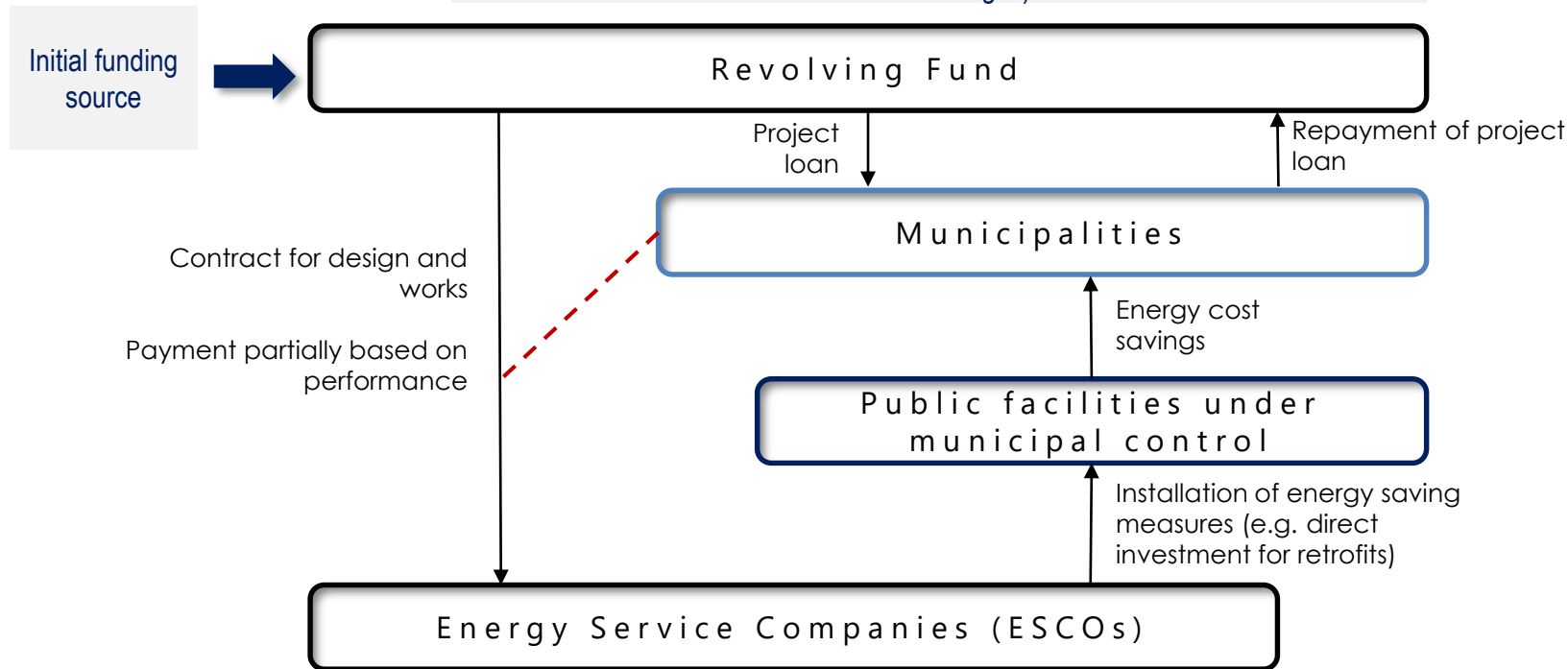


Energy Sprong - <https://energiesprong.eu>

Public funding sources and financing mechanisms: What are the options?

- Revolving funds:

Fund operation and management (financially supported by interest income and service charges)



Source: Adapted from ESMAP Financing Municipal Energy Efficiency Projects

<http://documents.worldbank.org/curated/en/858481468338366144/pdf/936740NWP0Box30inancing0KS180140web.pdf>

Municipal bonds:

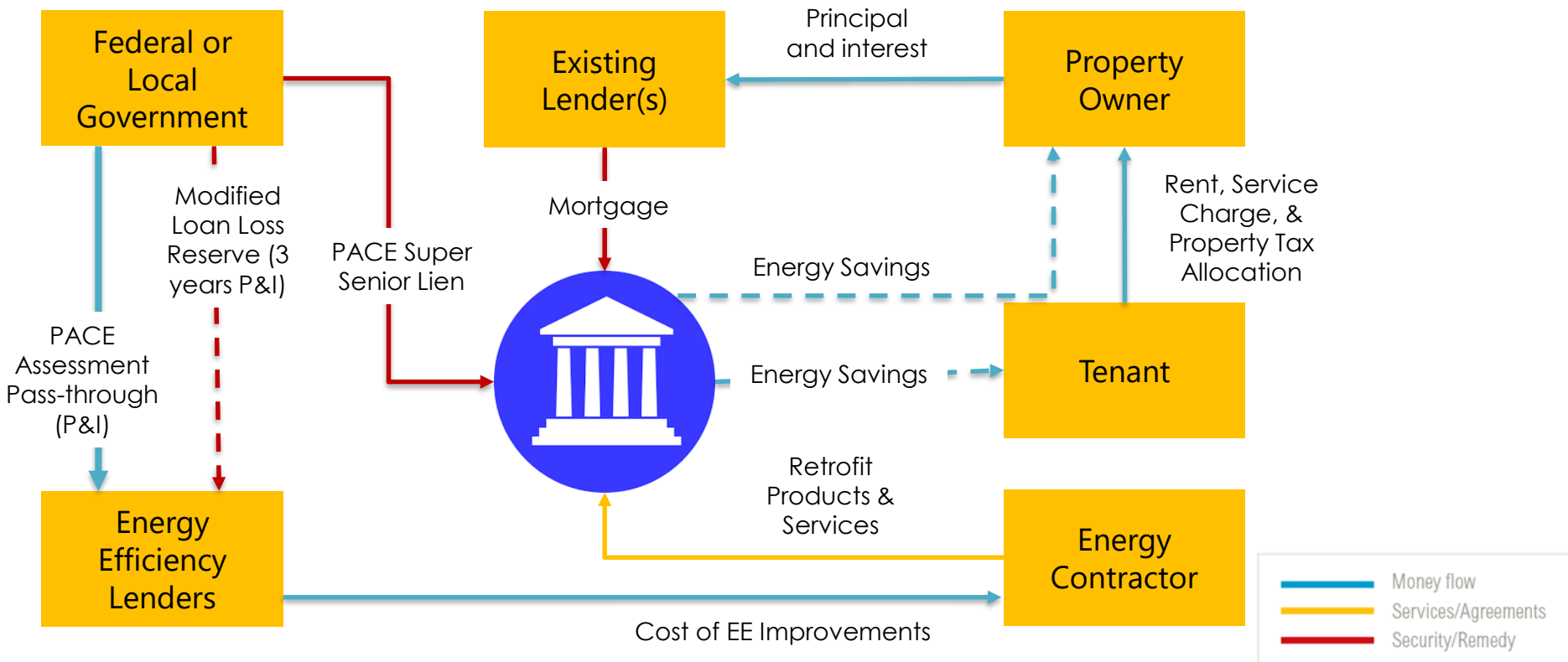
- Municipalities can issue bonds to enable funds for EE projects to the public
- Generally low risk in nature
- Interest rates can be low
- Interest paid is generally tax-free



Source: <https://psmag.com/environment/want-to-invest-in-your-city-try-the-new-kickstarter-for-municipal-bonds>

Public funding sources and financing mechanisms: Municipal bonds

Property Assessed Clean Energy (PACE) model:



Source: Adapted from WRI - <http://publications.wri.org/buildingefficiency/>

Revenue for municipalities come from:

- **Internal revenue generation**

- User charges
- Taxes, e.g. property tax

- **Assigned revenue**

- State or national government apportionments

- **Leveraging markets for financing**

- Cities need to ensure that internal revenue generation sources are healthy enough to suitably attract commercial funders



Challenges to public municipal funding

- **Insufficient revenue** base
- **Budget allotment limitations** on local governments
- **Poor capacity** to utilise funds even when made available
- Characteristics of municipalities
 - perception of **low creditworthiness**
 - **small revenue bases** (esp. smaller municipalities)

Procurement

Energy-efficient and sustainable procurement

Energy-efficient purchasing

Energy service performance contracts

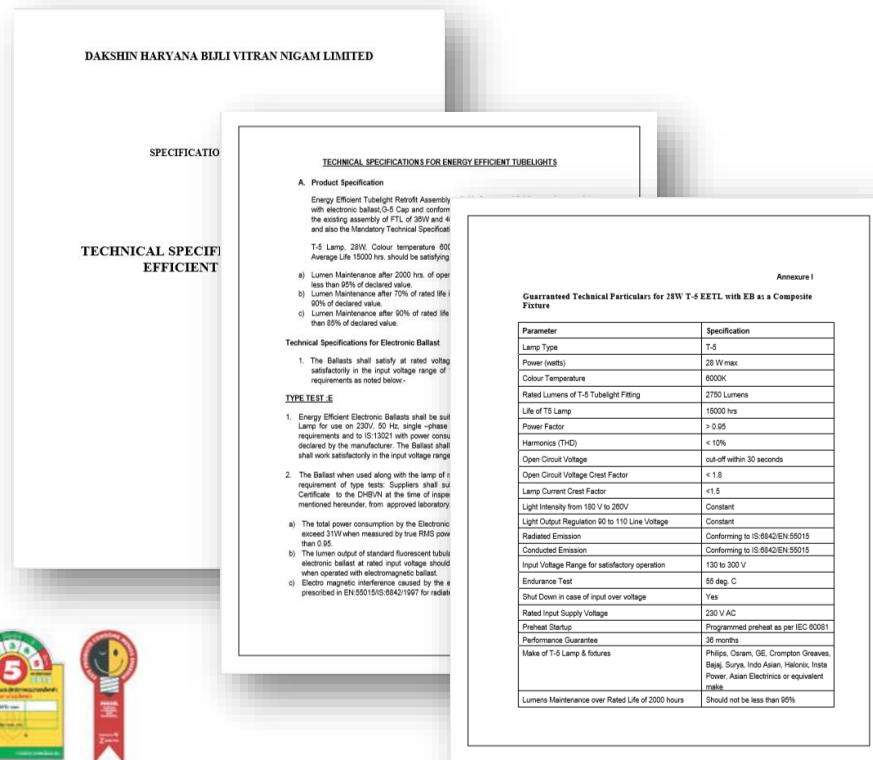
- **What?** The government purchasing efficient and sustainable products and services
- **Why?** Because governments spend more money and can influence the market for products and services
- **How?** Define minimum efficiency requirements into procurement specifications and enable purchases based on cost effectiveness and cost benefit analysis (and not first cost)
- **Result?** Efficient and sustainable product and service prices will go down, further improving the cost effectiveness of energy efficiency

Energy Efficient Purchasing (EEP)

- Purchasing energy-using products that meet certain energy-efficient criteria
- Approaches and strategies:
 - EE Labelling
 - Technical Specification Catalogue
 - LLC, Best Value Award
 - EE Preference
 - Qualifying Product List



From left to right: US ENERGY STAR, EU Energy label, China EE Label, India Bureau of EE Label, Korean EE Label, Mexico Sello FIDE, Thailand EGAT EE Label, Brazil Selo Procel



- **EESL's UJALA programme:**

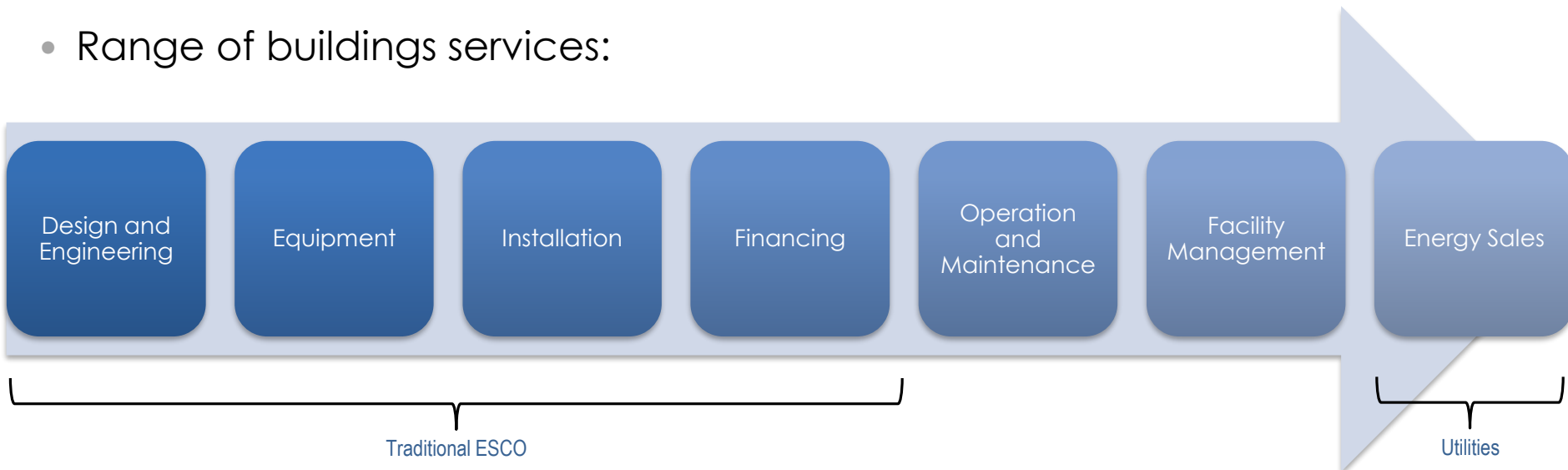
- the world's largest lighting replacement programme, which aims to replace 770 million old lamps with efficient LED lamps without government subsidies



- **Thanks to bulk purchase:**

- UJALA LED bulbs cost only 50 INR
- LED retail prices reduced from 800 INR in 2012 to 200 INR in 2016 and less today
- Leading to one of the fastest LED price reductions in the world
- Helped improve acceptance and availability of LEDs in India

- Energy service company (ESCO) often deliver on ESPCs:
 - Can provide financing for energy efficiency
 - Can provide energy efficiency services
 - Typically tasked with delivering/guaranteeing energy savings
- Range of buildings services:



Procurement

Barriers

Overcoming barriers

EEP procurement steps

ESPC procurement steps

EEPs:

- **Poor/no access to information** and institutional knowledge about EE opportunities
- **Restrictive policies** and **procedures**
- A **lack of incentives**
- **Limited financial resources** for upfront costs
- **Behavioural inertia** in public sector to EEP
- **Weak governance**

ESPCs:

- Lack or **uncertain government support**
- **Limited interest and capability** from financial institutions,
- **Low electricity prices**
- Limited availability/high cost of EEPs
- Lack of availability/awareness of ESCOs
- **Weak legal framework** for contract enforcement
- Public sector energy savings typically implies a **reduction in budget**

EEPs:

- Enact **EE procurement policies/programs**
- Create **tools** that can facilitate EEP efforts
- Provide **training and dissemination** plans
- Ensure **robustness of certification process**
– independent inspections
- Develop **incentives strategies** to counteract behavioural inertia
- Monitor **compliance**

ESPCs:

- Develop **credible and reputable ESCOs**
- Create **government Initiatives**
 - EE obligations and targets
 - Demonstration projects
 - Promotion and awareness; training
- Development of **local financing market** (e.g. ESCO funds)
- Development of **certification/insurance** for ESCO projects
- Super ESCO/ Utility ESCO/ Public ESCO
- **Bundling of small projects** for SMEs

Procurement: development and implementation steps



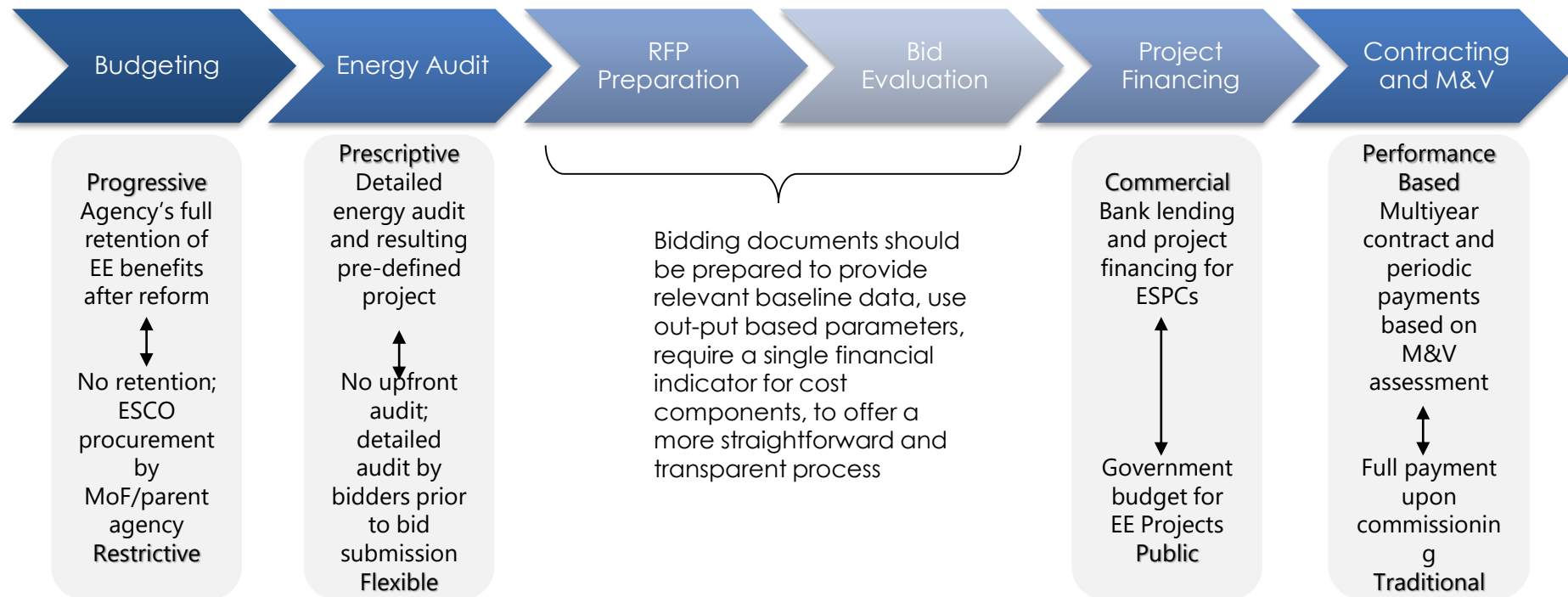


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Procurement: ESPC procurement steps

A variety of options under each of the different steps exists for countries



Case Study: The Gujarat Municipal ESPC Project

- 7 municipal corporations; 159 urban local bodies (ULBs)
- 2-phase approach (10 ULBs in Phase 1)

ESPC model:

- Gujarat Urban Development Corporation developed unique funding arrangement with the Power Trading Corporation to extend credit to ESPC projects
- Project management services being provided by ECOSMART (Infra. Leasing & Financing Services)
- ULBs and corporations create escrow accounts using revenue streams from the projects, to repay loan
- Project management cell of technical experts set up to support ESP selection, M&V process, payment mechanism

Model features:

- Multiyear contracts, which are feasible under GUDC
- ULBs/municipal corporations will retain 20% of savings achieved
- Initial energy audits funded by GUDC
- RFP was standardised format using modifications & enhancements to earlier municipal models
- Evaluation criteria
 - technical evaluation: ESCO experience; project management approach; quality of technical proposal
 - financial evaluation: % savings to ULBs; min. ESCO investment; financial capacity of ESCO
- M&V conducted by third-party contractor