UNEP FI PWG 2017 | Energy Efficiency Financing Solutions

	PROPERTY TYPE / SECTOR					
PRODUCT / SOLUTION	**MUSH**	**Federal/DOD**	**Single Family**	**Multifamily**	**Commercial**	**Corporate**
Large Single Project	Yes Detroit SL	Yes	N/A	Yes	Yes	Yes
Pooled Asset Deal	Yes Green Campus	Yes	Yes WHEEL; Spruce	Difficult HPET	Difficult	Yes
ESCO/ESA Two Factor	Yes	Yes	N/A	Difficult	Difficult	Yes Citi London
PACE	Yes	N/A	Yes Subordinated?	Yes	Yes	Yes
On-Bill (OBR)	Yes ~~Hawaii GEMS~~	N/A	Yes NYSERDA	Yes	Yes	Yes
Stranded Cost Tariff	Yes	N/A	Yes	Yes	Yes	Yes
Green Bond	Yes Massachusetts	N/A	N/A	N/A	N/A	Yes Unilever
Sustainable Energy Utility	Yes Delaware SEU	N/A	N/A	N/A	N/A	N/A
Microfinance	N/A	N/A	Yes Mongolia	N/A	Yes	N/A

Corporate Energy Efficiency Programs

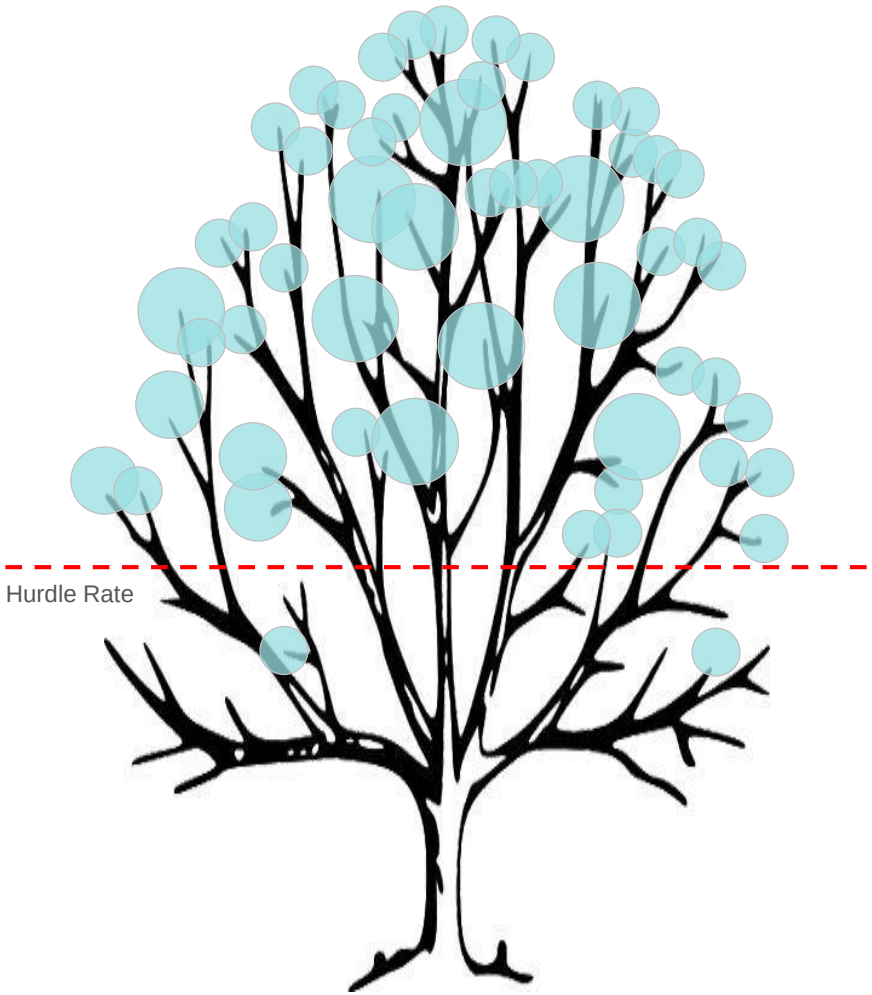
Corporates with advanced energy efficiency programs that have harvested most of the “low-hanging fruit” face three options: 1) curtail the program; 2) change internal hurdle rates; or, 3) pursue third party finance

Corporate Energy Efficiency Programs

- Driven by energy and cost savings, and to help meet greenhouse gas and other environmental goals.
- Developed and led by operations and corporate sustainability teams.
- Typically self-financed with internal hurdle (ROI/payback) rates no greater than 24 to 36 months.
- Becoming increasingly sophisticated with global energy management systems that elevate to senior management energy use, costs, and improvement opportunities.
- Advanced programs; programs that have been in place for 10+ years, have harvested most of the “low-hanging fruit” (the opportunities that meet internal hurdles).
- Programs in this position have three options going forward:

1) Curtail the program (contrary to cost-saving and environmental goals)
2) Change internal hurdle rates (challenging, given other competitive uses of capital)
3) Pursue third party finance (the genesis for Citi establishing, and utilizing for its own energy efficiency improvements, the Energy Services Agreement product)

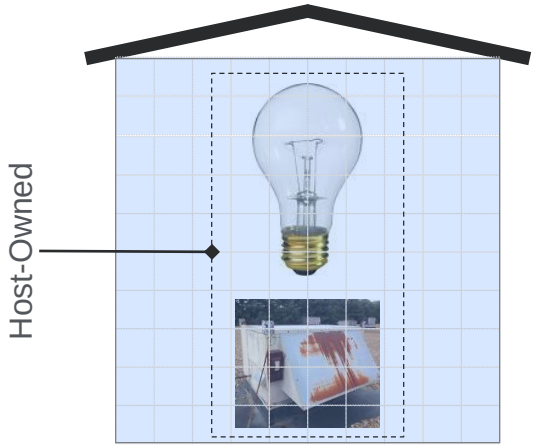
Challenge of Internal Hurdle Rates



Energy Services Agreement

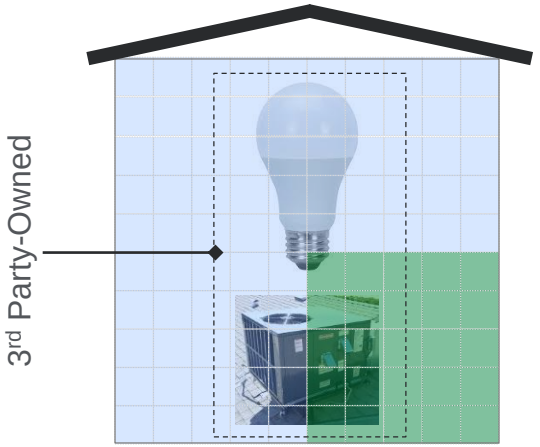
An Energy Services Agreement (ESA) is to energy efficiency what a Power Purchase Agreement (PPA) is to renewables; host or “off taker” pays a fixed price for units of energy NOT used

Existing Conditions



- Equipment: aged, costly to maintain, inefficient
- Services: lighting, heating, cooling and other services; poor quality
- Energy use: 100 units
- Cost/Payments: **$100**
  - $1/unit x 100 = $100
    Paid to Utility

Energy Services Agreement



- Equipment: new, upgraded by 3rd party, efficient
- Services: equivalent level of lighting, heating, cooling and other services; improved quality
- Energy use: 75 units
- Cost/Payments: **$97.50**
  - $1/unit x 75 units = $75
    Paid to Utility
  - $.90/unit NOT used x 25 units = $22.50
    Paid to ESA provider