



# Your Agency's First Solar Project

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# Overview



- ▶ Introduction/ DEA EPIC Solar
- ▶ Lessons Learned
- ▶ Identifying People and Projects
- ▶ Overcoming Barriers
- ▶ Building Support



# About DEA



- ▶ DEA's Environmental Management Section (separate from Facilities)
- ▶ 3 owned facilities
- ▶ No solar projects prior to 2013
- ▶ Motivated by Executive Orders, OMB Sustainability Scorecard, GHG Inventory



# The Birth of EPIC Solar 2013



- ▶ Onsite champion at EPIC
- ▶ Lots of interest in solar carports
- ▶ DOE AFFECT grant opportunity
- ▶ Met with Fort Bliss about Interconnection, regulatory context, required studies



# The Evolution of EPIC Solar



- ▶ 2014 Proposal:
  - ▶ New solar carports.
- ▶ 2015 Proposal:
  - ▶ 700 kW of ground-mounted solar and 88kW on 2 existing carports.
  - ▶ Would produce ~30% of EPIC's electricity use.
  - ▶ Estimated budget ~\$3 million, 24 year payback.  
Pays for itself in under 25 years.
  - ▶ Awarded \$720,000 DOE AFFECT grant in FY 2015.



# Expanded Project



- ▶ Changes based on Investment Grade Audit (IGA)
- ▶ Solar PV project size increased from 788 kW to **2.47 MW**
- ▶ Approved by EPIC Director, Ft. Bliss, Rio Grande Electric Coop, DEA Facilities
- ▶ Estimated to produce 80% or more of EPIC's electricity
- ▶ Also lighting and water Energy Conservation Measures (ECMs) included



# EPIC Solar's Performance Contract



- ▶ ESPC ENABLE for Lighting, Water Upgrades
  - ▶ LED lights save \$27,000 per year
  - ▶ Faucet aerators save \$1,200 per year
  - ▶ 21 year payback
- ▶ ESPC ESA for Solar PV
  - ▶ Allows ESCO to retain ownership of panels, take 30% Investment Tax Credit
  - ▶ Saved \$1 million over typical approach
  - ▶ ESCO provides O&M, addressing Agency O&M cost concerns



# Getting Started



- ▶ Fit with agency priorities and mission
  - ▶ Identify champions: Supportive onsite personnel and management with technical knowledge
  - ▶ Utility costs and savings
  - ▶ Site specific characteristics (shade, resource)
- ▶ What resources do you have
  - ▶ People in other offices
  - ▶ Funds/grants



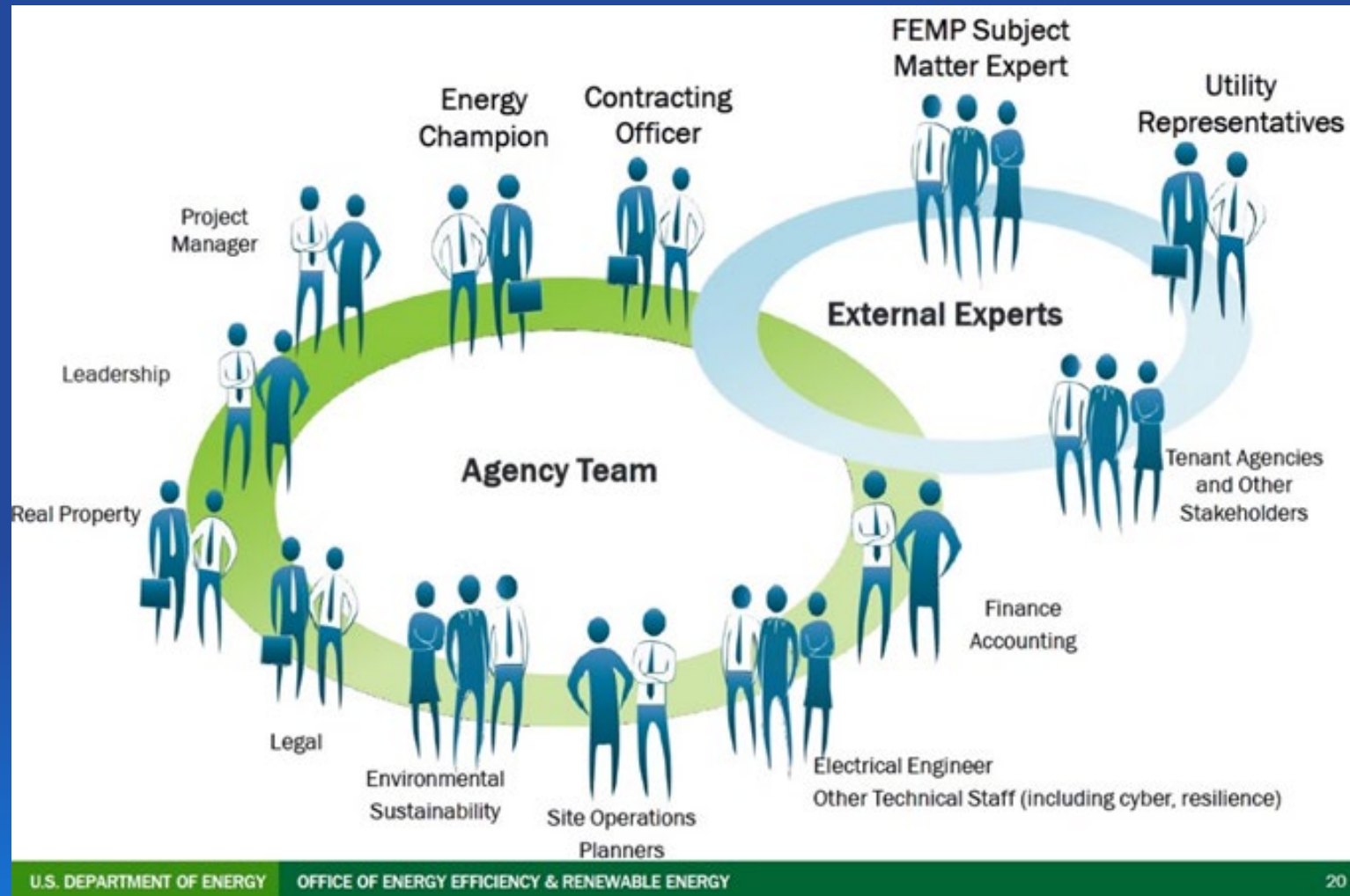
# Defining the Project



- ▶ Review potential properties where you pay the electricity bill
- ▶ Who owns the building?
- ▶ Cost of electricity (for payback); load profile of facility
- ▶ State laws and utility incentives (is electricity deregulated; rate structure/time of use pricing?)



# Assembling Stakeholders



# Forming Project Working Group



- ▶ Management
- ▶ Project Lead/ Program Office
- ▶ Site Facilities Manager
- ▶ DOE Support/ Project Facilitator
  
- ▶ Working Group Partners:
  - ▶ Contracting Office
  - ▶ Finance
  - ▶ HQ Facilities Office
  - ▶ Others as needed (Chief Counsel's Office, etc.)



# Issues for Contracting and Management



- ▶ Contracting
  - ▶ Explaining ESPCs, UESCs, ESAs
  - ▶ Invite them to a training
  - ▶ Need someone who is not already overloaded, and wants to try something different
- ▶ Management
  - ▶ Long term contracts (up 20-25 years) and paybacks. "I'll be retired by then."
  - ▶ Addressing risks, building and maintaining trust ("Yes, it carries risk. Let's talk about it.")



# Stakeholders' Concerns



- ▶ Onsite personnel
  - ▶ O&M concerns: Who is going to maintain the equipment?
  - ▶ Warranties, the roof, etc.
  - ▶ Existing equipment, building automation systems, contractors and their preferences
- ▶ Legal review
- ▶ Cybersecurity, will it compromise the mission
- ▶ Finance
  - ▶ Accounting for property in a performance contract
  - ▶ Multi-year planning, does it “fit in the box”



# Overcoming Barriers



## Technology

- ▶ Grid Interconnection (No, the lights will not go out on a cloudy day.)
- ▶ LED lights (Address complaints with dimmer switches, etc.)

## Operational

- ▶ How will the project affect the mission?
- ▶ What personnel are involved now and in the future? (Is this in their job description?)



# Generating Enthusiasm



- ▶ Awards
- ▶ News items
- ▶ Management recognition
- ▶ “Buzz” (marketing)



# During and After the Project



- ▶ Spread the word, go for momentum
- ▶ Peer pressure, aim for the “next first”
- ▶ Share the glory around (and up)
- ▶ DOE FEMP and NREL for Case Studies and Best Practices



# Thank you!



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