



An Energy-Efficiency Workshop and Exposition
Orlando, Florida

Federal Distributed Generation (DG) and Combined Heat and Power (CHP)

Stakeholder Discussion

Agenda:

Welcome, Beth Shearer

Assessment

Discussion



An Energy-Efficiency Workshop and Exposition
Orlando, Florida

Federal Distributed Generation (DG) and Combined Heat and Power (CHP)

Keith Kline and Patrick Hughes
Oak Ridge National Laboratory
Tatiana Strajnic, FEMP
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Outline

- **Rationale for DG/CHP**
- **Options to facilitate DG/CHP**
- **Assessment Findings**
- **Conclusions**



*Why Federal DG/CHP?
(1) Energy Security*

Mandates:

- Executive Order on Critical Infrastructure Protection (10/2001)
- E.O. 12656 Emergency Preparedness Responsibilities (11/1988)

Bottom Line:

- *Installations* must ensure energy is available for all critical mission operations



Distributed generation (DG)

is a key component of security solutions

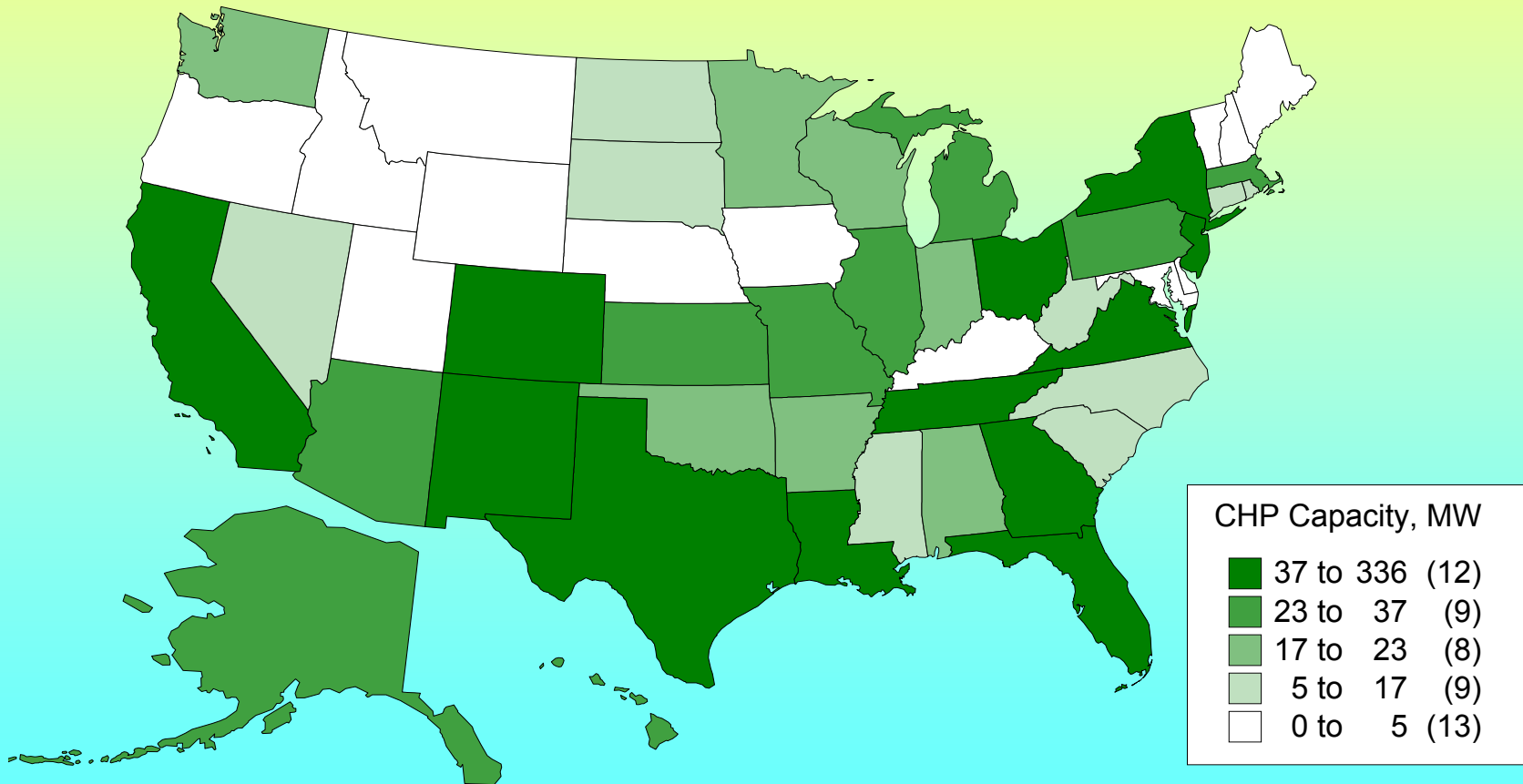
- Can provide dependable, on-site power when and where needed - independent of external influences
- More reliable if base-loaded or peak-shaving on daily basis

“You know it’s ready for an emergency if it operates every day.”



Why Federal CHP? (2) Market

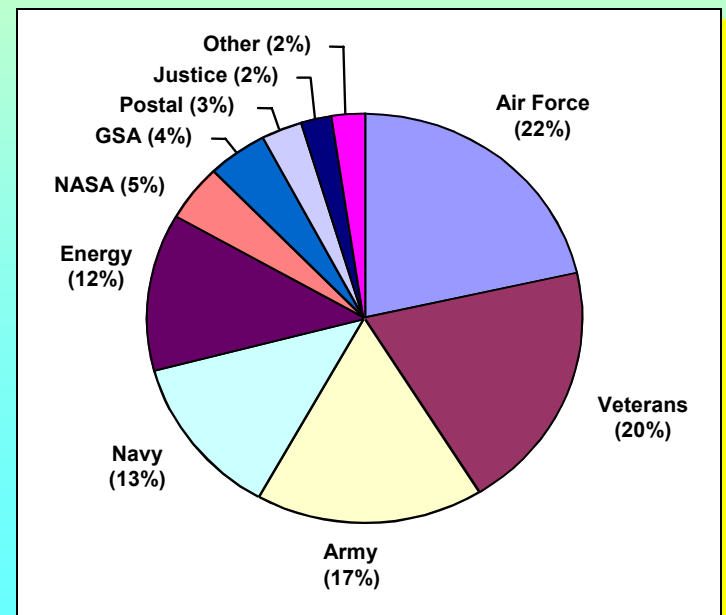
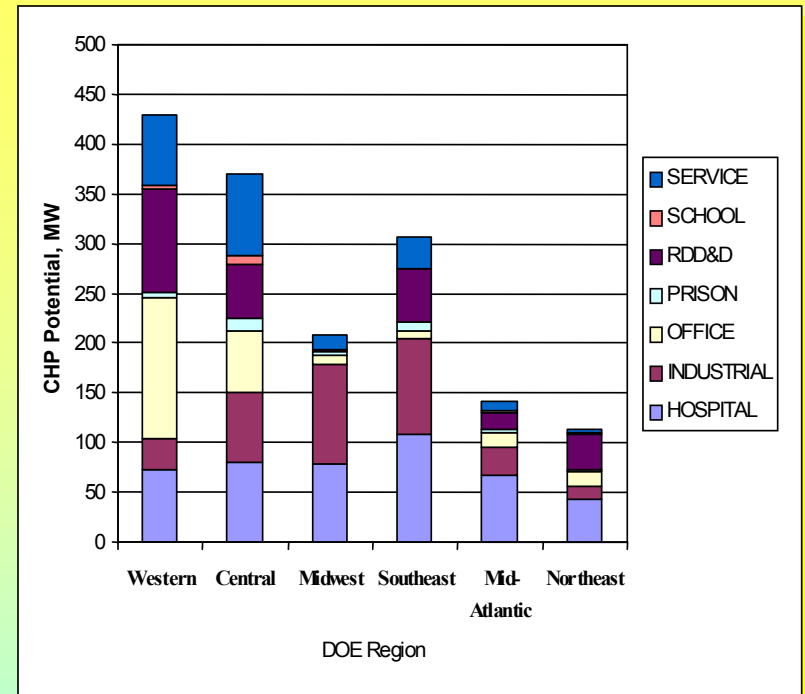
*Savings potential based on national market of federal projects with
payback <10 years: 1600 MW*





Notes on CHP Market Potential (1,600 MW)

- Large, energy intensive facilities dominate
- Over 50% in DoD
- VA + DoD represent approx. 500 projects, \$125 million/yr savings
- FEMP Market Assessment, 2002





Why? (3) CHP Savings

- ✓ **\$170 million/year in energy cost savings (1,600 MW w/avg. simple payback <8 years)**
- ✓ **50 trillion Btu/yr of source energy savings**
- ✓ **4 million metric tons/yr of avoided CO₂ emissions**
- ✓ **Increased reliability/security for 13% of federal power purchased (buildings, FY2000)**
- ✓ **Diversified fuels reduce vulnerability to price volatility in a single market**

CHP offers significant potential benefits

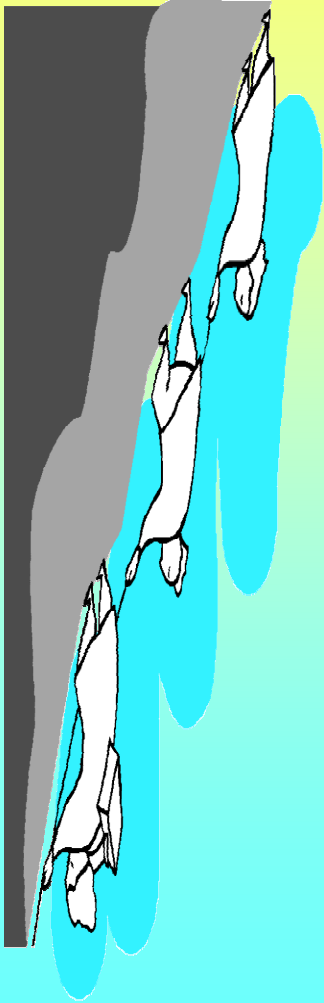


Summing Up—Rationale for DG/CHP

- **Meet energy goals**
- **Reduce emissions**
- **Large cost-savings**
- **Enhance energy security (multiple levels)**
- **Diversify fuels—reduce price vulnerability**
- **Lead by example—build foundation for future technologies/fuels**
- **Reduce/defer investments for new central plants and vulnerable electric distribution systems**
- **Technologies proven & commercially available...**

But---

Hurdles to Federal DG/CHP



- **Historic low utility electric rates**
- **Staff/budgets limit ability to develop large, long-term projects**
- **Prefer to avoid risks and hassles of power business--concerns about O&M, R&R, fuel costs**
- **Uncertainty about future mission**
- **Lack of funds for large capital investments...**



DG/CHP Assessment

- **Approach**
 - Past project experience
 - All financing options
 - Where to get value-added
- **Focus on hurdles we can address**
 - Support for project development
 - Financing
- **Ongoing**

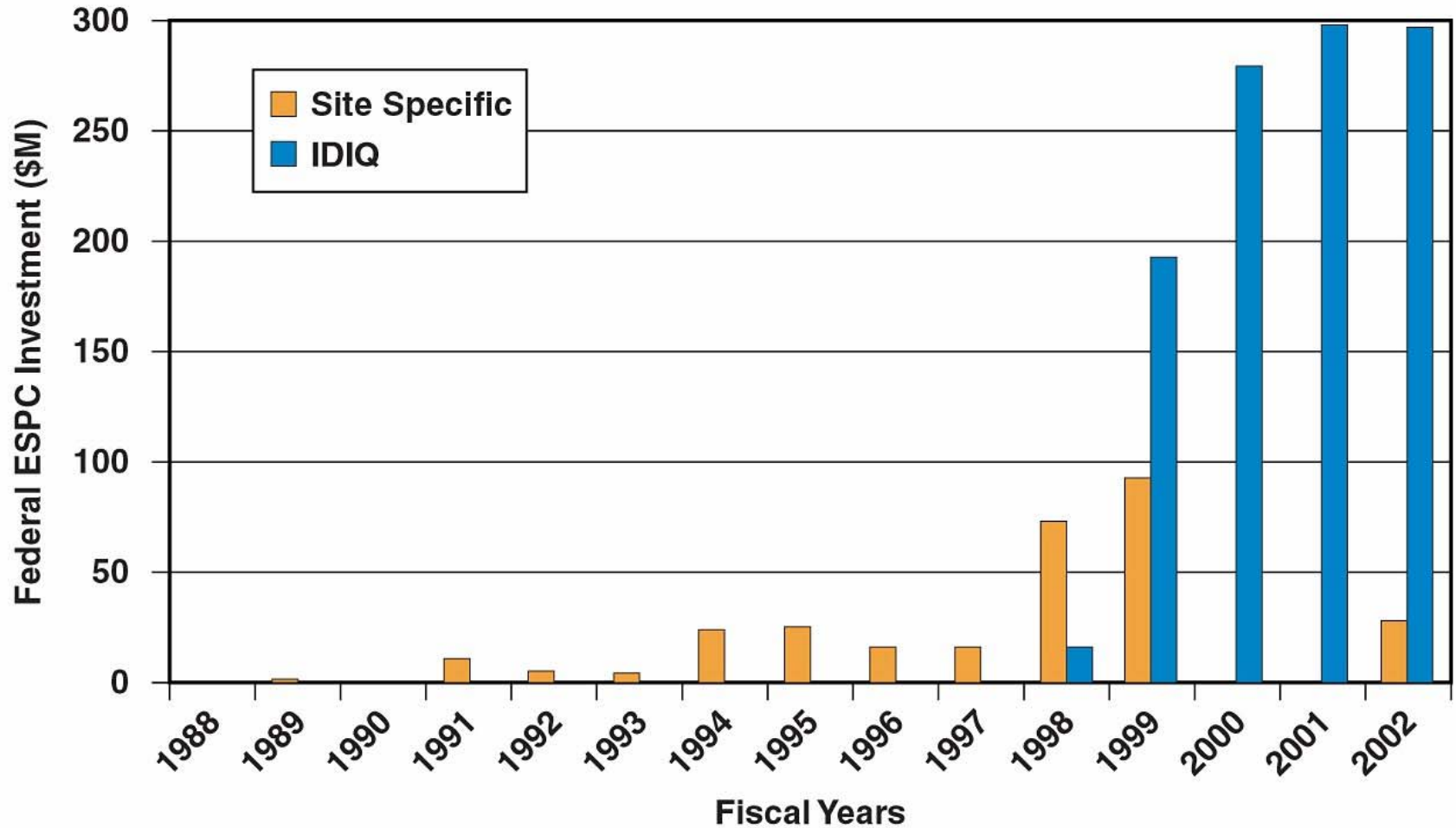


What if?

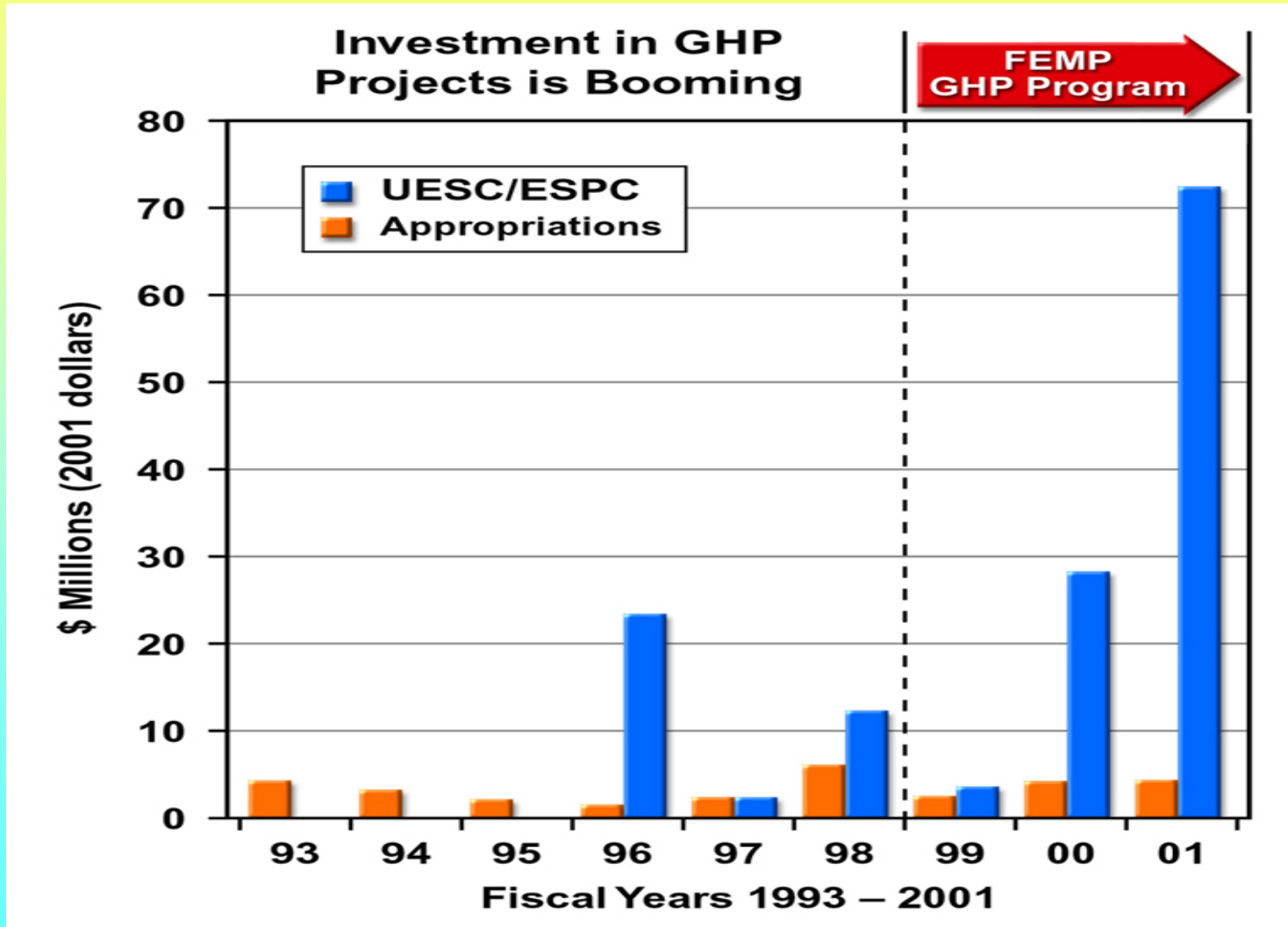
Would a DG/CHP tech-specific mechanism facilitate access?

- Path to answer
 - Would an umbrella mechanism reduce time/costs?
 - What kind of “tech-specific” would best address present hurdles?
 - Would private sector respond?
 - What is federal interest?

Umbrella approach?
— *Certainly helped ESPC*

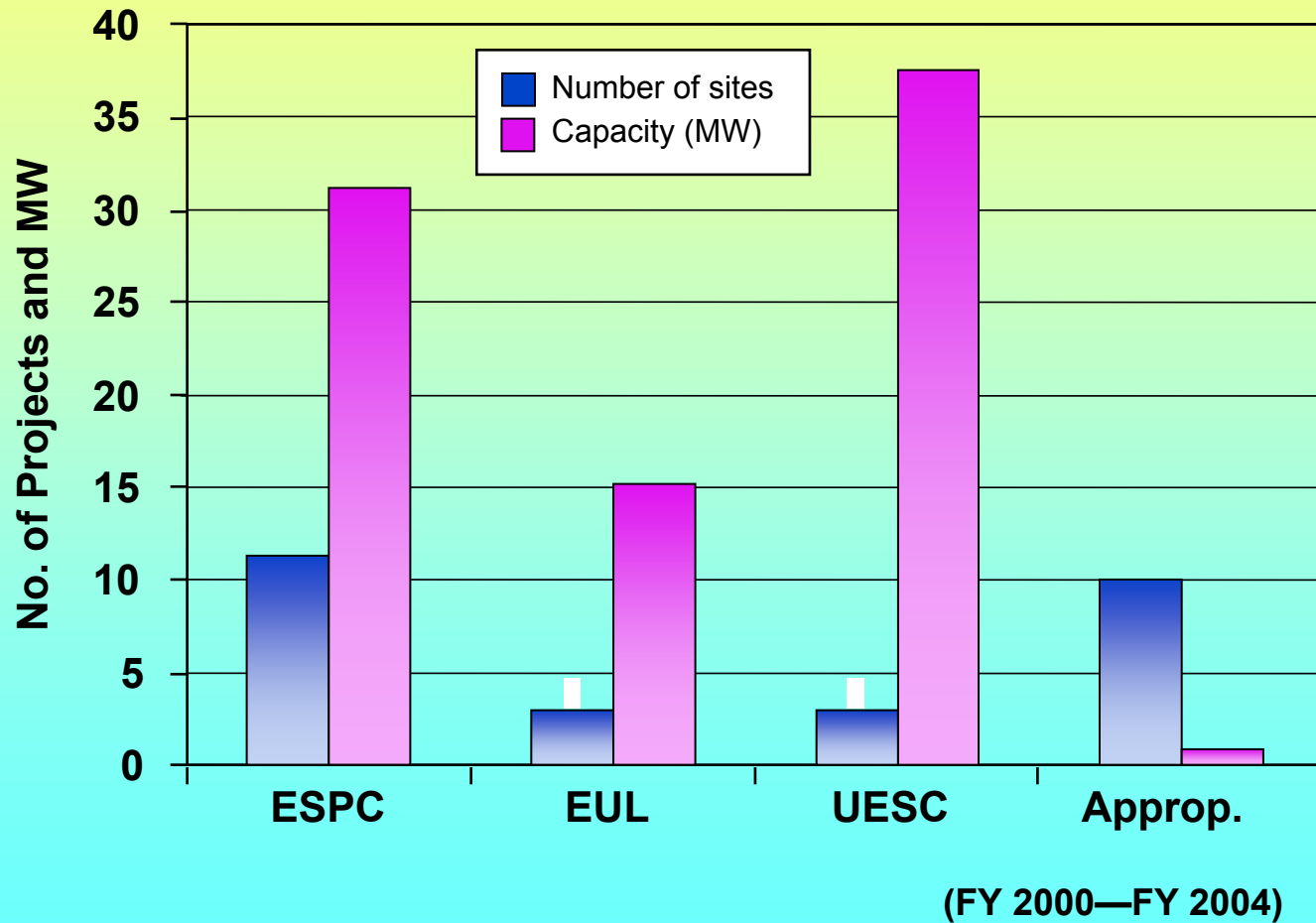


Tech-specific specialty Developers?
— *They clearly helped GHP*





Funding Mechanisms for CHP Being Installed





Many options considered

- No action
- Modify ESPC
- Tech-Specific Super-ESPC
- DoD authorities (public-private ventures, utility privatization)
- Enhanced use lease and similar
- Existing IDIQs such as CIPER
- Looked at advantages & disadvantages...



Assessment: Authorities Vary

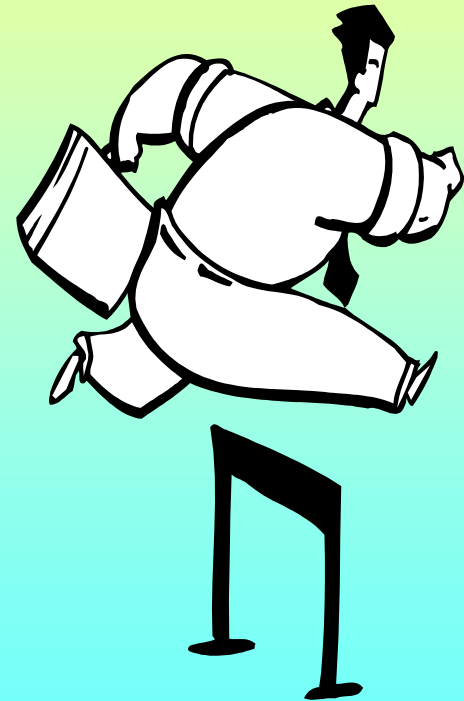
Authority	Legal Basis	Max. Term	Asset Owner	Risk if T for C
Appropriations	Congressional budget line item	NA	Govt.	Govt.
UESC	42 USC 8256 10 USC 2865	10	Govt.	Govt.
ESPC	42 USC 8287 10 USC 2865	25	Govt.	Govt.
Public -Private Venture	10 USC 2394 10 USC 2867	30	Private owner	Terms define
DOD Utility Privatization	10 USC 2688	50	Private owner	Terms define
Enhanced Use Lease (VA)	38 USC 8161	75	Private owner	N/A
Enhanced Lease (DoD)	10 USC 2667	Indef - inite	Private owner	Private owner



Yes, tech-specific umbrella could help...

- Ease access
- Save significant time
- Enhance marketing

**BUT, it must be responsive
to the needs of customers
and private partners**





Assessment findings

- **ESPC and UESC have worked due to**
 - **Ease of use (umbrella)**
 - **FEMP and private sector marketing (enablers)**
- **Some federal managers want a more privatized approach**
- **EUL is not procurement (IDIQ not for EUL, but something similar could work)**
- **Growing interest in EUL (but most energy managers have limited information and experience to help with this opportunity)**



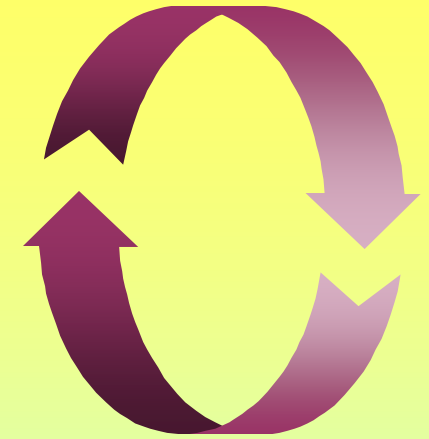
Procurement, legal, other show-stoppers/issues?

- **Legislation combining EUL with ESPC is non-starter**
- **Agency property management and energy folks live in different worlds**
- **Bundling two EUL authorities could work if...**
- **Agency participation in process from start & buy-in to templates and selection (would they use it?)**



Other Issues

- **Economics of site:**
 - Does it make sense as a private deal?
 - Is it big? (umbrella could relieve this)
 - Are there other customers?
 - Sufficient security to bring investment?
 - Local utility issues, regulations, rates, permits
- **Score Wars** — capital –vs- operational leases, commodity contracts

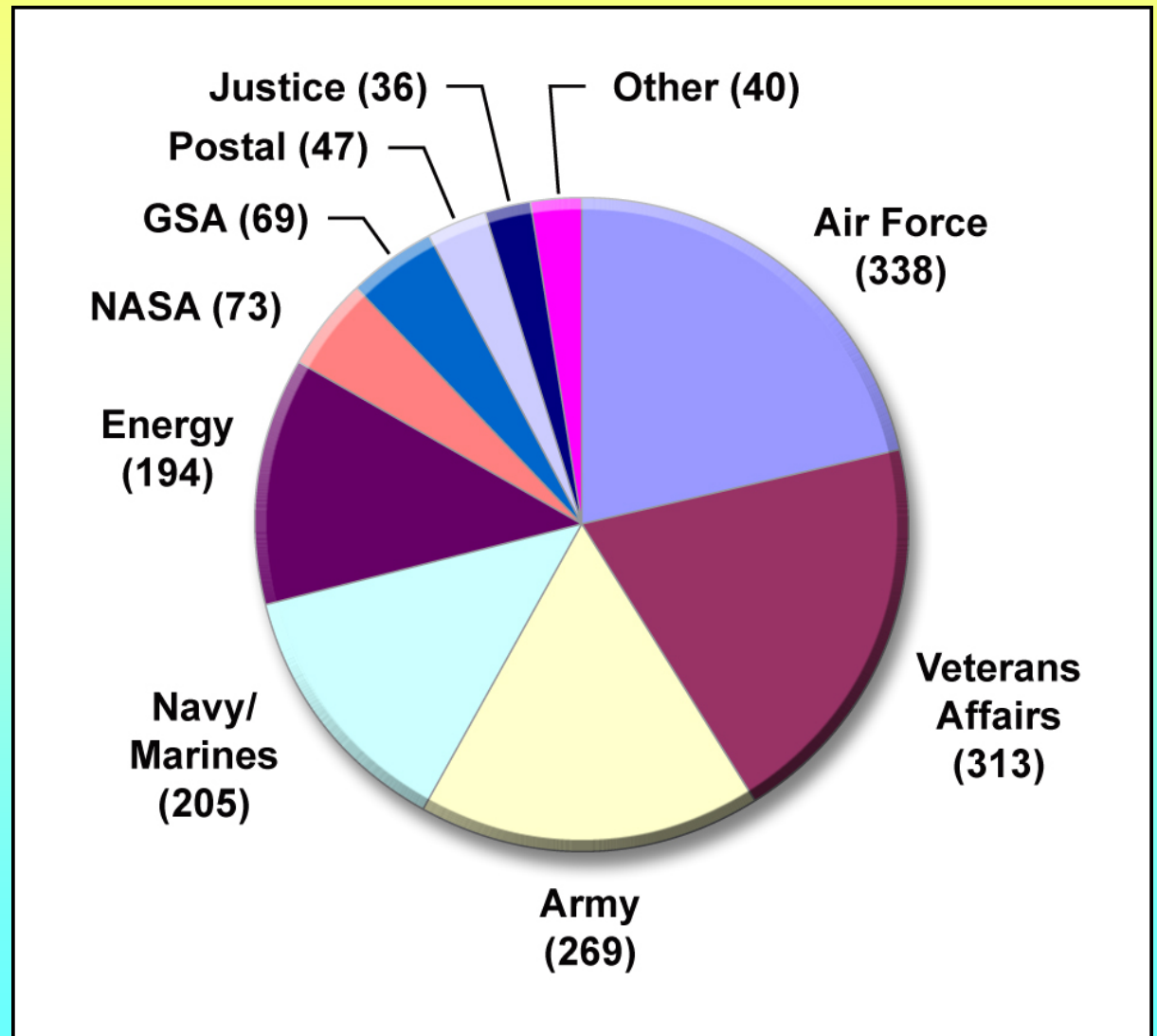


Private Sector?

- Yes—private sector interested
- Considerations:
 - Agency participation
 - Clear rules (lease, business plan, commodity agreement templates)
 - Will our business model work?
 - Local regulatory markets and incentives

Over 70% of federal CHP market is in agencies with EUL-like authorities, mostly DoD

Potential by agency, in MW — FEMP Market Assessment, 2002





Looking at EUL Process

“Umbrella” could save time to:

- ✓ • Identify potential
- Prepare property for lease
- ✓ • Market Property
- ✓ • Develop and negotiate business, management, and leasing plans and sign final lease
- Manage lease (ongoing)

And promote marketing & awareness



Back to ‘What if’ --DG/CHP tech-specific mechanism?

- Preliminary answers:
 - Would an umbrella mechanism reduce time/costs?
 - **Yes**
 - What kind of “tech-specific” would best address present hurdles?
 - **EUL (streamlined to reduce transaction costs)**
 - Would private sector respond?
 - **Yes**



Conclusions

- Process streamlining and multi-agency approach could save time and money:
 - A larger federal market
 - More projects, reduced costs
 - More providers, greater competition
 - Standard starting points, save time
 - Sharing of lessons learned



Conclusions, cont.

- Streamlined “Tech-specific” EUL process would require effort/resources
 - pre-select preferred developers
 - develop templates, standard agreements
 - delegation of authorities
 - support projects, etc.
- FEMP budget limited—focus on tech-transfer and multi-agency coordination for energy conservation
- FEMP has no congressional mandate to lead for EUL



DOE/FEMP role

- Continued support/improvement of ESPC, UESC based on congressional mandates
- Ongoing FEMP technical support for DG/CHP
- DOE/EERE technology advancements (packaged CHP systems, intelligent DG switch gear, renewables, load and power mgmt with CHP)
- Willing collaborator with other agencies



Federal DG/CHP

What else should be done to facilitate projects?

Questions and Suggestions welcome.

Thank you.

