The Wind Financing

Robi Robichaud

National Renewable Energy Laboratory

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Wind 101

We Will Discuss:

- Purchasing equipment with internal agency funds
- Incentives
- Alternative Financing vehicles

Internal Agency Funding

Internal Agency Funding

Advantages

- Familiar
- The funding represents the lowest “cost of money.”
- The government retains all the savings.
- Expenditures on renewable energy can also address environmental requirements.
- E.O. 13123 Sec. 301 directs agencies to request funds to implement the E.O.

Internal Agency Funding

Disadvantages

- Agencies must identify and set aside adequate funds in future budgets (often is delayed).
- Energy program funds compete against other agency programs (energy is not core mission/line items sometimes cut).
- Funds may expire if not allocated during fiscal year.
- Available funds may not be sufficient to meet goals.
- May require lots of government contracting and systems integration effort, with no guaranteed outcome.

Incentives

Incentives

- Can help make a project cost-effective by reducing first cost or operating expenses.
  - Federal
  - State and local
  - Utility (net metering where applicable)
- The incentives probably won't pay for the whole project, but can be very important if bundled in a financial package.

Incentives

But be aware…

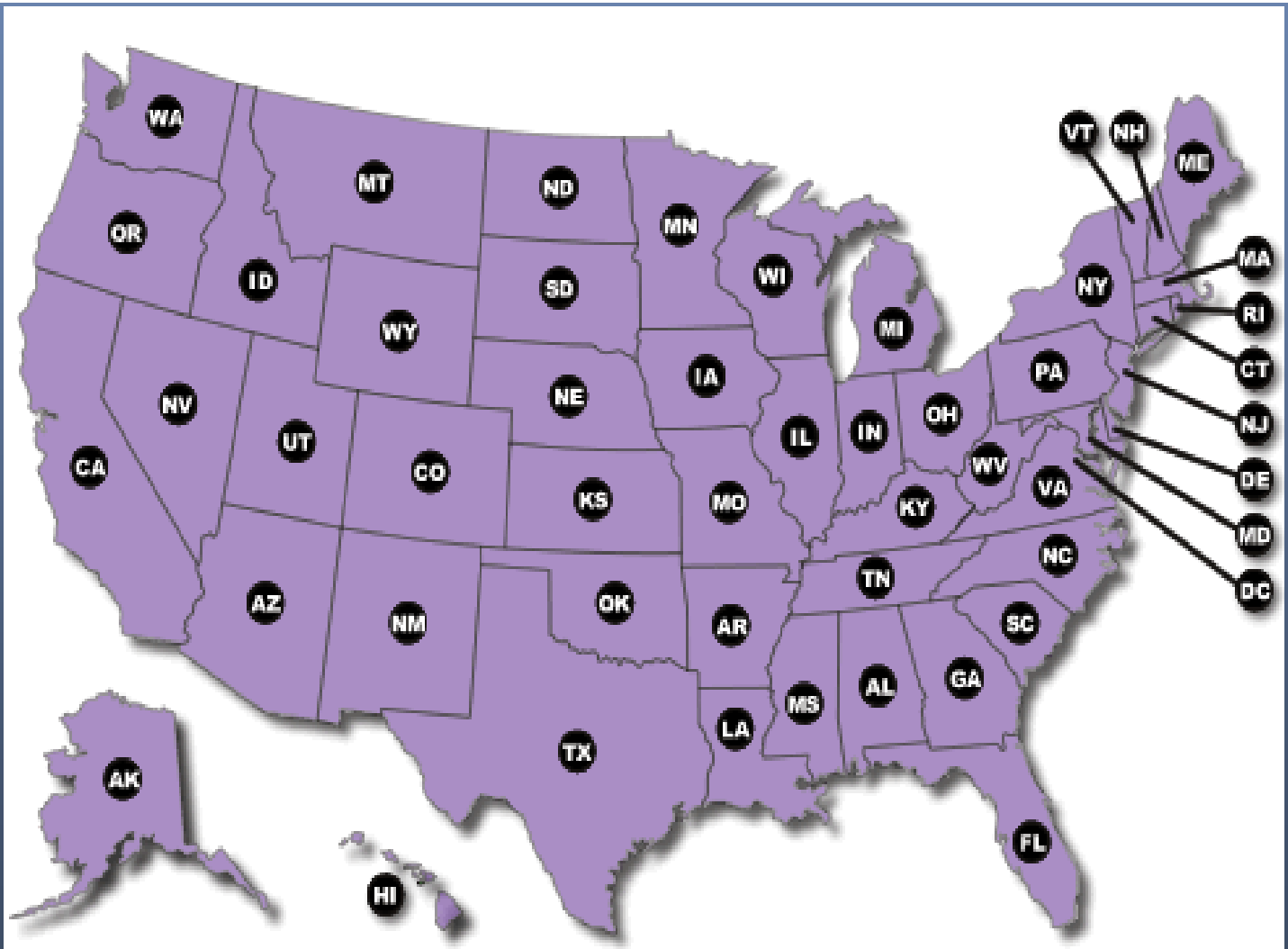
- Incentives often cannot be applied to projects not connected to the grid.
- Consider the time required to prepare application for funding.
- Incentive not paid until after the project is operating.

Incentives: Federal, State, Utility Rebates and Buy-downs

- See FEMP Distributed Energy Resources page - Sources of Financial Assistance: http://www.eere.energy.gov/femp/pdfs/navigating_deploy_spring04.pdf

- See http://www.dsireusa.org/

The Database of State Incentives for Renewable Energy (DSIRE) is a comprehensive source of information on state, local, utility, and selected federal incentives that promote renewable energy. To access information, use the menu to the left or click on the maps below.



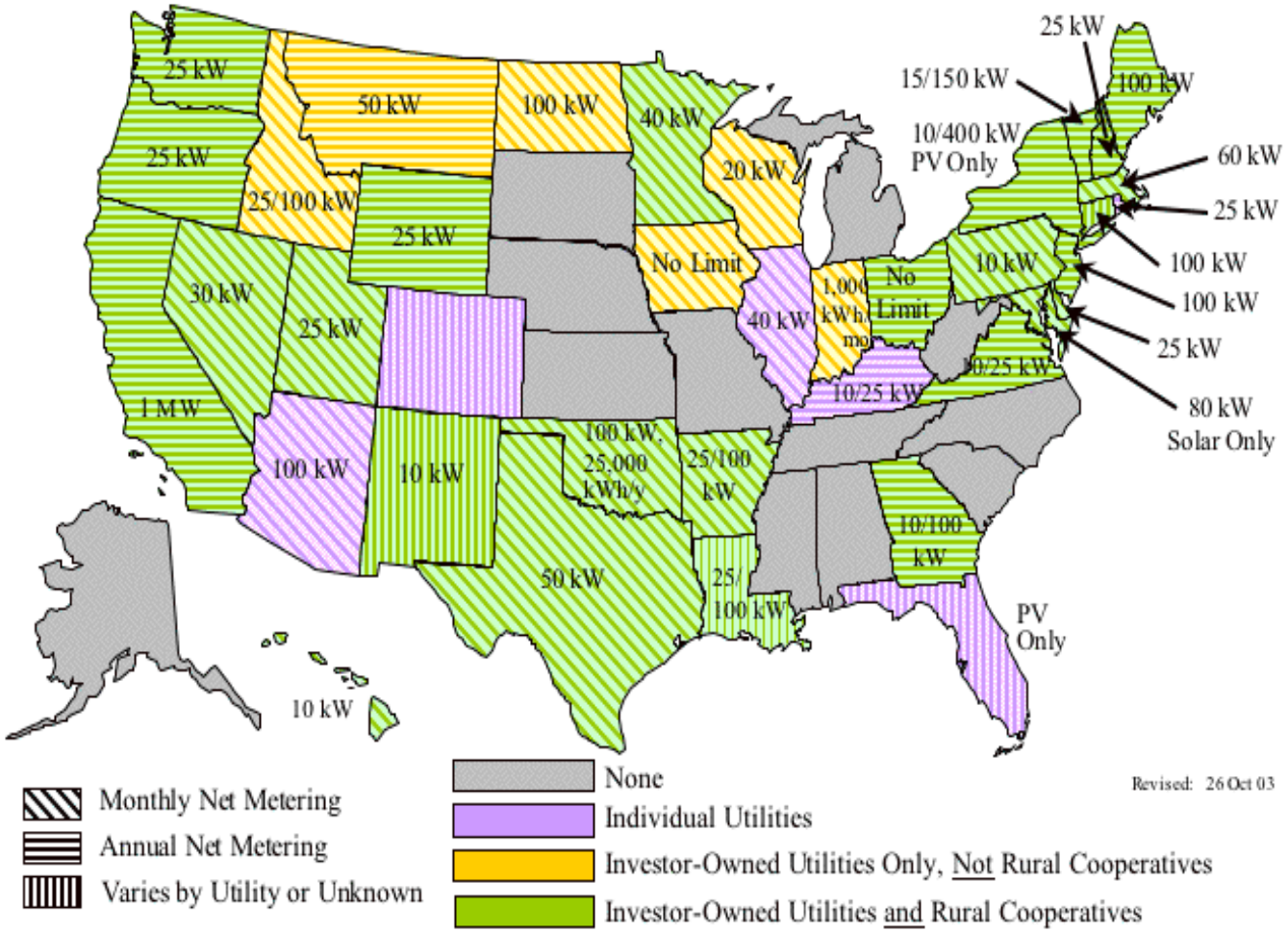
Example of Leveraging Incentive

- U.S. Postal Service Marina Processing & Distribution Center, Inglewood, CA
  - $680k Rebate from LADWP
  - Saves 300 MWh/yr, $25k/yr and expected to shave up to 120 kW (10% of 1.2-MW peak)

Incentive - Net Metering

- Excess PV/wind energy can be “stored” on the grid by running the electric meter backwards
- Reduces first cost (batteries) and operational cost
- Available in most states
- States differ on limits (size of system, class of service)

Net Metering By State



http://www.eere.energy.gov/greenpower

FEMP Renewables Project Assistance

- FEMP issues project “calls,” selects renewable projects for technical assistance and renewable projects.
- Can help reduce first cost.

Examples of Federal RE Projects

- Bureau of Land Management, Campground, Utah
- Bureau of Indian Affairs, Supai Village, Arizona
- Department of Commerce, Honolulu, Hawaii
- Department of Energy, Washington, DC
- Environmental Protection Agency
- Bureau of Prisons, Federal Correctional Institution, Phoenix, Arizona
- General Services Administration, Suitland, Maryland
- National Park Service, Chickasaw, Oklahoma
- National Science Foundation, Lake Hoare, Antarctica
- National Park Service, Lake Powell, Utah
- National Park Service, San Miguel Island, California
- U.S. Army, Fort Carson, Colorado
- U.S. Coast Guard, Honolulu, Hawaii
- U.S. Fish and Wildlife Service, Shepherdstown, West Virginia
- U.S. Navy, Moanalua Terrace, Hawaii
- U.S. Navy, San Clemente Island, California
- U.S. Postal Service, Rancho Mirage, California
- National Park Service, Yellowstone National Park, Wyoming

Alternative Financing

Alternative Financing

- Private-sector financing. Agencies using Alternative Financing are expected to ensure that the savings generated by the project are sufficient to pay for the expenses of the contract over its term.
- Provides a contracting method.
- A Federal and private-sector partnership.

Alternative Financing

- The private-sector contractor provides up-front funding for the cost of designing, purchasing and installing new renewable/energy-efficient equipment.
- The government repays the contactor from the energy savings over the life of the contract.
- Adds renewable energy through bundling of longer pay-back projects with shorter pay-back projects.
- Encouraged in EPAct ’92 and subsequent Executive Orders.

Alternative Financing Options

Utility Energy Service Contract (UESC)

- Single (established) source - the regulated utility that offers UESC.

Energy Savings Performance Contract (ESPC)

- Indefinite Delivery/Indefinite Quantity (IDIQ) contracts are pre-awarded, so single source is an option for agencies.

Agency Unique Authorities

- Enhanced Use Lease (EUL)
  - Limited to DoD (1), DOE (1) , VA (3), NASA (1)
- 10 USC 2394 – Energy or Fuel for Military Installations

Alternative Financing Services Offered

- Turnkey, Cradle to Grave
  - Audit/feasibility studies (no-risk proposal).
  - Engineering and design (detailed proposal).
  - Equipment purchase & installation (design/build).
  - Project management.
  - Financing.
  - Commissioning, measurement and verification.
  - Training.
  - Operations and maintenance.
  - Repair and replacement.

Energy Conservation Measures (ECM) Opportunities

- Demand & conservation measures
- Renewable energy
- Cogeneration and on-site generation
- Energy/utility distribution systems
- Water and sewer conservation systems
- Electrical peak shaving/load shifting
- Rate analysis and process improvements

How Can Alternative Finance Help Renewables?

- Renewables can be bundled into larger projects.
- Longer payback energy conservation measures (ECMs) can be included.
- Government encourages renewable technologies in ESPC.
- ESCOs will address O&M.
- Can identify repair & replacement strategies.
- Should include performance guarantee.

Renewables - Project Financing

ESPCs: About 20 RE projects out of 126 last year -

PV, Solar DHW, Wind, Biomass, GSHP

UESCs: Very few RE projects have been done

EUL: No RE projects that we know of

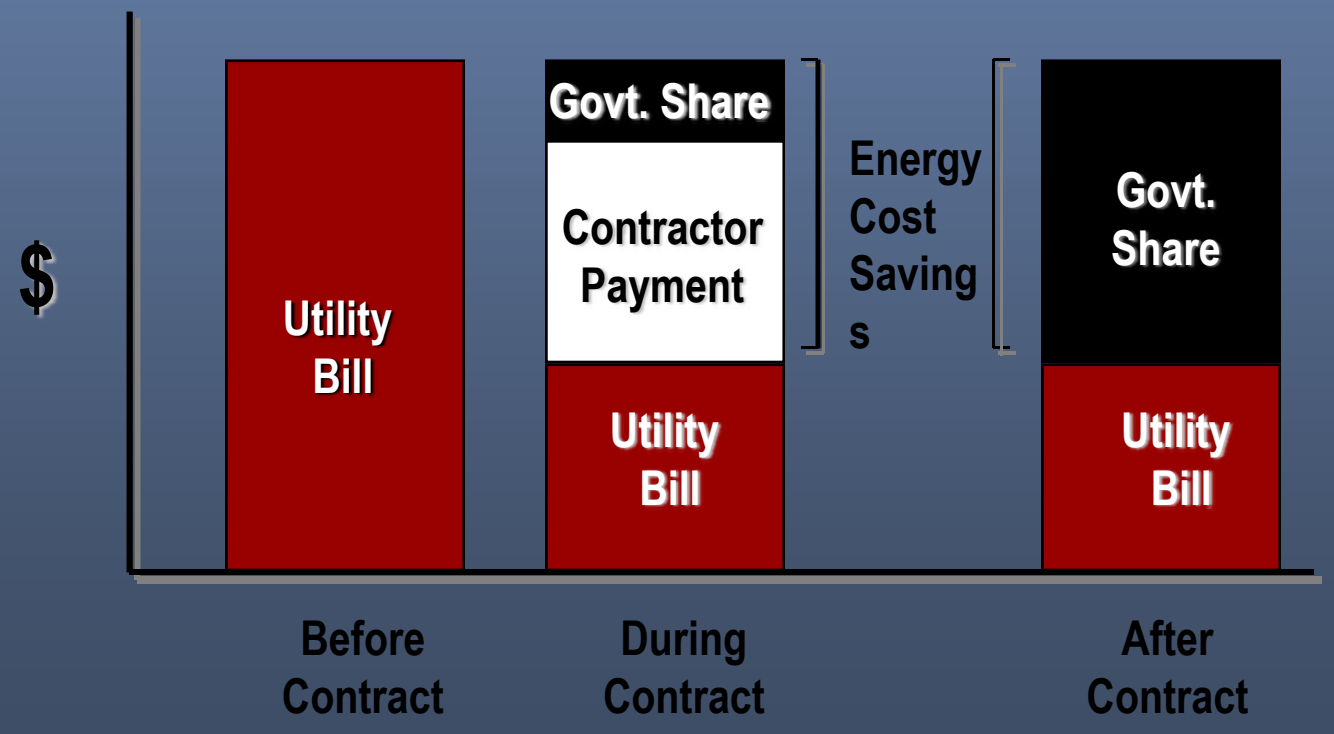
10 USC 2394: Large Navy Geothermal Steam Turbine

UESC and ESPC are the same in these aspects:

- Zero up-front capital costs.
  - *UESC can be used even if agency has funding – not all utilities offering financing*
- Open-book accounting.
- Competition in sub tier subcontracting.
- The ESCO/utility is responsible for design, and the agency performs a design review of the project proposal and has approval authority over design and installation.
- FEMP Services offers support to agencies for their energy projects in the form of technical assistance, contracting assistance, information, and tools.

Financing Reallocates the Agency's Utility Bill

- Pay a lower utility bill
- Pay the contractor
- Achieve cost savings for the government



Utility Contracting

PROS

- Established source
- Long-standing relationship with entity
- Flexibility - Guarantee & M&V not required
- No rules about source of payment to the utilities
- Payment through utility bill (if desired)

CONS

- Agency may not be served by a local investor-owned utility that offers UESCs.
- Procedures not defined in standard federal formal policy (but FEMP guidance and documents are available on the Web)
- Guarantee and M&V may not be offered by utility
- Relationship with the utility

Energy Savings Performance Contracts

PROS

- ESCOs are already competitively selected, agencies can sole source
- Guaranteed savings
- Up to 25 year term
- No-risk survey and proposal
- Pre-negotiated profit caps
- Can utilize state incentives

CONS

- Cannot directly apply federal grant monies
- Payments must be from energy and energy-related O&M cost savings
- Required guaranteed savings & M&V can add cost

Some Examples

- Twenty-Nine Palms ESPC
  - 7 MW CHP and 1 MW PV
  - CHP payback helped pay for PV
- Naval Base Coronado ESPC
  - 120 kW MT CHP and 750 kW PV
- NIH Louis Stokes Laboratories (UESC w/ PEPCO)
  - 23 MW cogen plant

Key Issues in Choosing a Financing Option

- Availability
- Contract Term
- Project size
- Guaranteed Savings
- O&M
- Measurement & Verification
- "Choosing A Financing Mechanism" 13 pp.

  www.eere.energy.gov/femp/financing/uescs_publications.cfm

What to Look for in an ESPC/UESC Contractor

- Shared business philosophy.
- Need to understand your goals & needs.
- Experience with renewable technologies.
  - Or have subcontractors who have experience.
- Financial credibility to back up guarantees.

Carpe Ventem

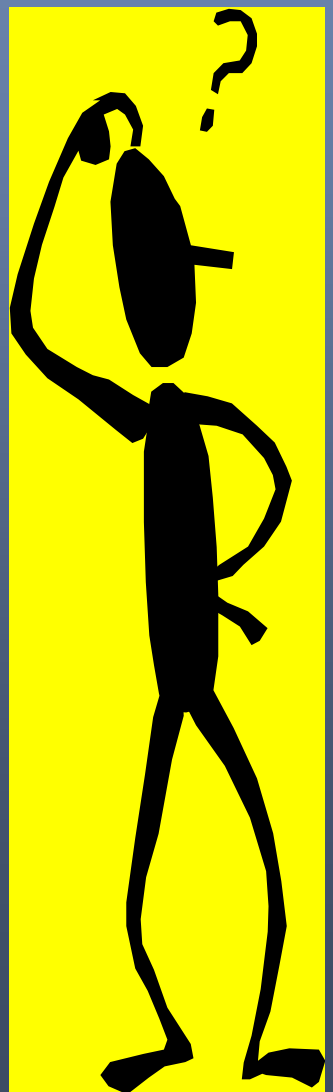
www.windpoweringamerica.gov

Questions?

For more info:

http://www.nrel.gov/wind/

http://www.awea.org/

http://rredc.nrel.gov/wind/pubs/atlas/

http://www.windpower.org/en/core.htm