Power Purchase Agreements

Chandra Shah, NREL
303-384-7557
chandra.shah@nrel.gov

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Overview

- Customer-sited power purchase agreement (PPA) definition
- Project process
- Project examples
- Utility Renewable Energy Services Contract (URESC)
- Enhanced use lease (EUL)
- PPA support, resources and key points
Customer-Sited Power Purchase Agreement

• Private entity purchases, installs, owns, operates and maintains customer-sited renewable equipment

• Site purchases electricity through power purchase agreement (PPA)

• Pros
  – Renewable developer (or partner) eligible for tax incentives, accelerated depreciation
  – No agency up-front capital required
  – Renewable developer provides O&M
  – Minimal risk to government
  – Known long term electricity price for portion of site load
  – On-site projects are encouraged for meeting federal renewable goal and are eligible for double bonus
    • Good alternative to purchasing renewable energy certificates (RECs)
  – Can help with energy security goals

• Cons
  – Transaction costs
  – Fairly limited federal sector experience
1. Formerly Defense Energy Support Center (DESC)
2. Western = Western Area Power Administration
Contracts/Agreements Associated with PPA Projects

- **PPA**: Federal agency, DLA Energy (formerly DESC) or Western Area Power Administration (Western), and Renewable Developer

- **Land Use Agreement**: Federal agency and Renewable Developer

- **Interconnection/Net Metering Agreement**: Utility and Renewable Developer (and/or federal agency)

Possible Additional Agreements

- **Interagency Agreement (IA)**: Western and federal agency

- **Support Agreement or MOA**: DLA Energy and federal agency

- **REC Contract**: Renewable Developer and Utility (or other REC purchaser)

- **Excess Electricity Contract**: Developer and Power Purchaser
PPA Project Process Guidelines*

• Step 1: Go/No Go Considerations
• Step 2a: Gather utility bill information/research incentives and local market
• Step 2b: Renewable screening/feasibility study/business case analysis
• Step 3a: Form team and develop a plan
• Step 3b: Select contracting methodology
• Step 3c: Address key issues
• Step 3d: High level approval
• Step 4: Procurement
• Step 5: Project construction, publicity and operation

*These are guidelines only. Steps may be done concurrently or in a different order. It is assumed that the renewable project(s) has been selected and that evaluation of contracting options has already occurred with selection of the PPA option.

Contact FEMP for assistance.
Step 1: Go/No Go Considerations

• PPA legality and Public Utility Commission oversight
  – Is the PPA model legal in the state?
    See http://www.dsireusa.org/summarymaps/index.cfm?ee=1&RE=1
  – Does your utility allow PPAs (especially important for public utilities that have their own governing structure)?
  – Is the renewable developer subject to Commission oversight?
  – Are there Commission approval requirements (for REC sale or other)?
  – 40 USC 591: Electricity purchases must abide by state law

• Who owns the land and/or building(s)? Is there a management company involved?
  – Who pays the utility bill?
  – If your agency does not own the land/buildings, do you have the owners approval?
  – Who will sign the contract(s)?

• Future site plans – is there any chance of building/site shut-down?
At least 19 states + PR authorize or allow 3rd-party solar PV PPAs

Note: This map is intended to serve as an unofficial guide; it does not constitute legal advice. Seek qualified legal expertise before making binding financial decisions related to a 3rd-party PPA. See following slide for authority references.
Authority/References for 3rd-Party Solar PPAs

Note: Authorization for 3rd-party solar PV PPAs usually lies in the definition of a “utility” in state statutes, regulations or case law; in state regulatory commission decisions or orders; and/or in rules and guidelines for state incentive programs. This information is provided as a public service and does not constitute legal advice. Seek qualified legal expertise before making binding financial decisions related to a 3rd-party PPA.

These slides will be updated quarterly. Please send comments to Amanda Vanega at amanda_vanega@ncsu.edu.

- Arizona: ACC Decision 71795, Docket E-20690A-09-0346
- Colorado: S.B. 09-051; PUC Decision C09-0990
- Connecticut: Connecticut Clean Energy Fund
- Hawaii: PUC Order 20633
- Massachusetts: 220 CMR 18.00
- Maryland: H.B. 1057 (2009)
- New Jersey: N.J. Stat. 48:3-51; N.J.A.C. §14:8-4.1 et seq.
- Nevada: S.B. 395 (2009); PUC Orders 07-06024 and 07-06027
- New York: NYCLS 2.13
- Ohio: PUC Order 06-653-EL-ORD
- Oregon: PUC Order, Docket 08-388
- Pennsylvania: PUC Order, Docket M-00051865
- Puerto Rico: No policy reference available; based on news reports and articles
- Virginia: VA Code § 56-232 and 20VAC5-315-20

DSIRE acknowledges IREC and Keyes & Fox, LLP, for their support in creating and maintaining this resource.
Step 2: Gather information

• Gather utility bills and other applicable information such as sub-meter data, utility tariff information (peak/non-peak, TOU, seasonal rates; demand charge), competitive electric supply contract information (if applicable), etc.
  – Will the project impact rates?
  – Are there applicable standby charges or other pertinent utility policies that will impact the utility bill?

• Compare energy usage information to renewable generation (project will be simpler if the site will use all of the electricity)

• Research renewable energy certificate (REC) markets, applicable incentives (rebates, tax incentives, etc) and renewable policies (net metering, feed-in tariff, community solar, etc.)
  – See http://www.dsireusa.org/

• Renewable screening, feasibility study and/or business case analysis
RPS Policies with Solar/DG Provisions

www.dsireusa.org / February 2011

WA: double credit for DG

NV: 1.5% solar x 2025; 2.4 - 2.45 multiplier for PV

CO: 3.0% DG x 2020
1.5% customer-sited x 2020

UT: 2.4 multiplier for solar-electric

AZ: 4.5% DG x 2025

NM: 4% solar-electric x 2020
0.6% DG x 2020

OH: 0.5% solar-electric x 2025

MI: triple credit for solar-electric

IL: 1.5% PV x 2025

WV: various multipliers

MO: 0.3% solar-electric x 2021

NC: 0.2% solar x 2018

TX: double credit for non-wind
(non-wind goal: 500 MW)

NH: 0.3% solar-electric x 2014

MA: 400 MW PV x 2020

NY: 0.4788% customer-sited x 2015

NJ: 5,316 GWh solar-electric x 2026

PA: 0.5% PV x 2021

DE: 3.5% PV x 2026; triple credit for PV

MD: 2% solar-electric x 2022

DC: 0.4% solar x 2020

OR: 20 MW solar PV x 2020;
double credit for DG

16 states + DC have an RPS with solar/ DG provisions

Renewable portfolio standard with solar / distributed generation (DG) provision

Renewable portfolio goal with solar / distributed generation provision

Solar water heating counts toward solar provision
Net Metering

www.dsireusa.org / February 2011

State policy applies to certain utility types only (e.g., investor-owned utilities)

Note: Numbers indicate individual system capacity limit in kW. Some limits vary by customer type, technology and/or application. Other limits might also apply.

This map generally does not address statutory changes until administrative rules have been adopted to implement such changes.

43 states +
DC & PR have adopted a net metering policy
Step 3a: Form team and develop plan

- Form project team – *champion*, decision-maker, energy manager, facilities, contracting officer, attorney, renewable expert, electrical engineer, budget, real estate, environmental, sustainability, safety, other

- Determine if there are non-federal stakeholders (other than the utility) that will have an interest in the project

- Investigate and fully understand approval process
  - Discuss when to get upper management buy-in

- Establish roles and responsibilities

- Develop a timeline

- Schedule periodic meetings to keep project on track
Step 3b: Select contracting methodology

• Site or other agency contracting staff

• DLA Energy (formerly Defense Energy Support Center) Renewable Team lead by:
  – Andrea Kincaid, DLA Energy - andrea.kincaid@dla.mil, 703-767-8669
  – John Nelson, DLA Energy - john.nelson@dla.mil, 703-767-8523

• Western Area Power Administration (Western)
  – Federal sites in Western’s service territory only
  – Western negotiates and signs the PPA contract once renewable developer is selected by the federal site
  – Federal site must determine process for renewable developer selection
Step 3c: Address key issues

**Contract Length**

- **PPA contract length** - Long term best (at least 10 years, preferably 20)
  - FAR Part 41 Utility Services (10 year authority)
    - GSA authority, requires delegation for use (some agencies have permanent delegation)
  - FAR Part 12 Acquisition of Commercial Items (5 year authority)
  - Best to start contract when electricity starts flowing, so that the construction period is not included towards contract length limitation

- **Long term contract options**
  - DOD 10 USC 2922A – 30 year authority, requires Secretary of Defense approval (may be delegated to lower level)
  - Use Western Area Power Administration
Step 3c: Address key issues

Contract Length

- Western Area Power Administration (Western) Option
  - Long term contract authority - at least 20 years
  - Western can sign PPAs for Federal agencies in their service territory
  - Site selects renewable developer and brings to Western
  - Examples: NREL, Fort Carson
  - Nominal fee for Western’s services
  - Renewable Resources for Federal Agencies (RRFA) program
  Randy Manion, (720) 962-7423, manion@wapa.gov
  http://www.wapa.gov/powerm/pmtags.htm
  (See program brochure at bottom of web site)
Step 3c: Address key issues

**Contract Length**

- Additional long term contract options
  - DFARS Procedures, Guidance and Information (PGI) 241.2 Acquiring Utility Services*
  - Long term land use agreement, with developer giving federal agency right of first refusal to purchase power at a pre-determined price
  - FAR Part 41 ten year contract with 10 year option
    - Must be “true” option, requiring: 1) No assumption that the option will be exercised and 2) No penalties if the option is not exercised.
    - Could be combined with long term land use agreement
  - Congressional proposals for long term renewable contracting authority
  - ESPC Energy Services Agreement (see PPA Hybrid Options)

*Used for Nellis AFB indefinite term PPA contract, with one year termination notice http://farsite.hill.af.mil/reghtml/regs/far2afmcfars/fardfars/dfars/PGI%20241_2.htm#TopOfPage
Step 3c: Address key issues

Utility Coordination

• Coordinate with the local utility
  – VERY important to notify the utility early on in project development
  – Interconnection considerations: application, cost and study requirements; queue and timeframe, agreement terms & conditions
  – Utility bill impacts: possible tariff change, standby charges, etc.
  – Renewable system tie-in options
    • What is acceptable to the utility?
    • Does the site own their electrical lines or are they privatized?
    • If site does not own the electrical lines, the renewable developer may have to build separate lines
    • Will the utility allow interconnection on the utility side of the meter or does interconnection have to be on the customer side of the meter?
  – Net Metering rules
    • How do they measure renewable project capacity for net metering limit purposes (ex. ac, dc, based on inverter capacity)?
  – Other applicable policies (feed-in tariff, Community Solar, etc)
Step 3c: Address key issues

Environmental

- Investigate National Environmental Policy Act (NEPA), Endangered Species Act (ESA), National Historic Preservation Act (NHPA), and other applicable federal/state/local environmental and permitting requirements
  - Crucial to investigate requirements early in process and get required environmental studies started as soon as possible
    - Open for comments until March 17, 2011
  - DOE NEPA Implementing Procedures (10 CFR Part 1021), B5.1 Categorical Exclusions Applicable to Conservation, Fossil, and Renewable Energy Activities
Step 3c: Address key issues

Environmental

- Stormwater management – EISA Section 438 and other local requirements

- EPA Rule to control discharge of pollutants from construction sites (erosion and sediment control measure requirements)
  http://www.epa.gov/waterscience/guide/construction/

- Water availability (for most concentrated solar power and biomass)
  – May need to consider dry or hybrid cooling options
**Step 3c: Address key issues**

**Land Use Agreement**

- Determine if a separate land use agreement (LUA) is required
  - If yes, explore the best option for your site: lease, easement, license, right-of-way, other
  - Agreement will likely include site access, security, environment, safety, and/or health provisions. If an LUA is not required these provisions can be included in the PPA
  - Investigate options and approval requirements early in process
  - Contract length limitations are likely (agency authorities vary)
    - Include construction and decommissioning period within total LUA contract length
  - Long term land use agreement can help project viability if PPA has a short term contract length
Step 3c: Address key issues

Land Use Agreement

• Land use agreement resources
  – GSA revocable license, Form 1582 available at
    http://www.gsa.gov/Portal/gsa/ep/formslibrary.do?viewType=DETAIL&formId=171CF1BCDA983EA985256AA2004B7297
  – GAO Redbook, Volume 4, Chapter 16
  – Army Regulation 405.80

• Possible requirements
  – Land appraisal and/or legal survey
  – Environmental baseline study (to document conditions that must be met at end of contract if system removal and restoration is required)
Step 3c: Address key issues

**RECs**

- Renewable energy certificate (REC) ownership
  - RECs represent the environmental attributes of electricity produced from renewable sources
  - Ensure that PPA contract explicitly spells out REC ownership
  - If valuable RECs (usually solar) are sold, then must use “REC swap” option for credit towards EPACT 2005 renewable goal and on-site double bonus
    - REC Swap: sell valuable RECs, purchase cheaper national RECs
    - Best to retain RECs unless expected price is much higher than national REC price
  - No credit towards EO13514 greenhouse gas reduction goals if RECs are sold
  - Federal Trade Commission Proposed Revised Guidelines
    - Be careful how project is portrayed if RECs are sold
Step 3c: Address key issues

*Project Specific Considerations*

- **Roof PV Systems**
  - Roof information
    - Type
    - Age and roof replacement plans (new roofs are ideal)
    - Maximum load the roof can safely support (taking into account rain/snow and likely accumulation locations)
    - Has a roof structural analysis been completed?
  - Roof orientation
  - Roof warranty
  - Avoid shading (applies to all solar project types)
  - Locate roof obstructions such as HVAC equipment, vents, etc.
  - Potential roof leaks: may want to limit or prohibit roof penetrations
  - Fire protection: GSA and certain states such as California have setback requirements and other guidelines
Step 3c: Address key issues

Project Specific Considerations

• Ground-Mounted PV Systems
  – Land requirements vary depending on PV type and efficiency (crystalline vs. thin film) and system type (fixed vs. tracking)
  – Soil conditions
  – Land slope and direction

• Carport PV Systems
  • What is the available space (taking into account trees, grassy areas, etc.)?
  • Height requirements
  • Lighting
  • Storm water drainage requirements
  • Snow melt from the carport may refreeze. Consider using water resistant pavement and/or improve drainage by adding gutters
Step 3c: Address key issues
Project Specific Considerations

• Concentrated Solar Power (CSP) Projects
  – Is the available land flat enough? If not, is ground leveling acceptable?
  – Is there available water for cooling? At what cost? (Dry or hybrid cooling may need to be considered.)

• Wind Projects
  – Are there radar issues?
  – Are there height concerns?
  – Has FAA been notified, especially if the site is close to an airport/flight path?
  – Do you have wind data?
Step 3c: Address key issues

Project Specific Considerations

• Biomass Projects
  – What type of fuel and combustion technology will be used?
  – Will electricity and/or heat be used?
  – What is the fuel source and distance from federal site?
  – What is the cost of the fuel? Can a long term contract with a known price be secured?
  – What are the fuel delivery plans and frequency (truckloads/day)
  – What are fuel storage plans?
  – What are the state/local emission regulations, permitting and other applicable environmental requirements?
  – Is there available water for cooling? At what cost? (Dry or hybrid cooling may need to be considered.)
Step 3c: Address key issues

Project Specific Considerations

- Road, fence and other requirements
  - Determine who will incur cost

- Wind standards

- Electrical considerations
  - Who owns the site electric lines? Review privatization contract if applicable.
  - Gather electrical drawings and other pertinent site information
  - Tie-in options (best to choose renewable project size/location that is compatible with the site electrical system)
  - Any expected electrical upgrades required?
  - Inverter location options
  - Is your site tied to a network distribution system?
    - Include drawings and other information as part of RFP package
Step 3d: High level approval

• Understand all approval requirements
  – Some agencies require high level/headquarters approval
  – Incorporate expected approval time requirements into project plan

• Ensure that all necessary approvals are completed before moving forward

• Possible approval considerations
  – Project location
  – Compatibility with mission
  – Future site infrastructure plans
  – Contracting vehicle and methodology rationale
  – Other
Step 4: Procurement

- Optional step - Request for Information (RFI)

- Develop Request for Proposal (RFP), “Opportunity Notice,” or other procurement document
  - Renewable specifications:
    - Renewable project type and location(s)
    - Renewable developer’s responsibility for all O&M/repair and replacement (ensure there are no hidden costs such as inverter replacement)
  - Infrastructure requirements: roads, fence, electrical upgrades, etc.
  - Termination provisions
  - Proposal evaluation methodology options: best value, low price/technically acceptable (LPTA), low price
  - Evaluation criteria and submittal requirements, including financial capability
Step 4: Procurement

- Develop RFP/procurement document cont’
  - Allowable PPA Electricity Price Format
    - Fixed price (easiest to evaluate)
    - Escalation factor (usually 1-3%)
    - Other options such as de-escalation factor or tied to utility rate
    - No restrictions
  - End of contract options
    - System removal (with wear and tear accepted or with requirement to restore land and/or building to original condition).
    - System purchase at fair market value to meet IRS guidelines for tax incentive eligibility
    - Issue a new solicitation for a follow-on contract
    - Other
  - Metering requirements
    - Ensure compatibility with energy management system, site or agency metering protocol, REC purchaser and/or other applicable requirements
    - Real-time access to generation information
PV Output Metering Example

Site Details

Site Name: MCBCP BLDG 2251
System Size: 73.0 kW AC

System Status

Right Now

<table>
<thead>
<tr>
<th>No.</th>
<th>Devices</th>
<th>kWh</th>
<th>Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PV</td>
<td>72.2</td>
<td>✔️</td>
</tr>
<tr>
<td>2</td>
<td>RG PV</td>
<td>71.0</td>
<td>✔️</td>
</tr>
</tbody>
</table>

Irradiance/Insolation

Energy

AC Output
Power  Voltage  Current

DC Input
Voltage  Current

Data Download

Environments

Ambient Temp.  71.9 °F
Cell Temp.  119.0 °F
Irradiance  742.4 W/m²
Wind Speed  0.8 mph
Wind Direction  NW

Last Update
9:42 AM
Aug 3, 2009

Past 7 Days

Last Update
Version: 2.2.1 Copyright © 2009. All Rights Reserved.
Step 4: Procurement

• Issue RFP and distribute widely
  – FedBizOpps
  – Applicable renewable industry association (SEIA, AWEA, etc)
  – Other

• Site visit, tour and pre-proposal meeting
  – Review solicitation and answer questions
  – Tour potential renewable project location(s) and pertinent electric infrastructure
  – Considerations
    • Access requirements
    • Safety plan (especially if roofs involved)
    • Method to ensure everyone has access to the same information (especially for Q&A during site tour)
Step 4: Procurement

• Proposal Evaluation
  – Evaluate price and escalation factors carefully
  – Consider other potential electric bill changes:
    • Standby charges
    • Possible utility tariff changes
    • Impacts due to time-of-use, peak/non-peak and/or seasonal rates
    • Demand charge savings (keep in mind that these savings will be minimal)
  – Compare price proposals to NIST/EIA rates and/or other rate forecast
    (http://www1.eere.energy.gov/femp/pdfs/ashb09.pdf)
Step 5: Project construction, publicity and operation

- **Project construction**
  - Coordinate with renewable developer to ensure that crucial deadlines are met, such as those associated with REC purchase and/or incentives
  - Assist with interconnection studies, interconnection/net metering contract negotiations, rebate/incentive applications and other applicable requirements
  - Single site point of contact helpful

- **Publicity**
  - **Be careful what you say if RECs are not retained by the site. Consider new proposed Federal Trade Commission Green Guide revisions**
    - [http://www.ftc.gov/bcp/edu/microsites/energy/about_guides.shtml](http://www.ftc.gov/bcp/edu/microsites/energy/about_guides.shtml)
  - Press conference
  - Press release
  - Web site stories (FEMP or other)
  - FEMP Focus stories

- **Operation**
  - Track actual production for annual reporting and to ensure system operation
  - Purchase replacement RECs if necessary
Other Information & Considerations

• Ensure building lease provisions allow for solar and other renewables

• Include solar-ready specifications for new buildings/roofs
    http://www.nrel.gov/docs/fy10osti/46078.pdf

• Community Solar/Virtual Net Metering/Solar Gardens

• Template PPA tool kit documents in development
  – Template RFP
  – List of questions to ask
  – Other
Example Federal PPA Projects
Nellis AFB PV Project in NV

- 14.2 MW single axis ground mounted PV on 140 acres including closed landfill
- PPA price – 2.2¢/kwh
- Estimated first year electricity savings = $1 million, after standby charges
- RECs sold to Nevada Power (for state RPS solar set-aside)
- FAR Part 41 utility service contract
- Indefinite term with one year termination notice (using FAR Part 41 PGI)*
- 20-year ground lease
- Ribbon cutting event December 2007
- Performance Monitoring web site http://mypowerlight.com/Commercial/kiosk.aspx?id=1dd14d57-7840-4b2d-af0a-0fe0fdd5c872

*http://farsite.hill.af.mil/reghtml/regs/far2afmcfars/fardfars/dfars/PGI%20241_2.htm#TopOfPage
NREL PV Project in CO

- 720 kW (1200 MWh) single-axis tracking, ~ 5 acres
- 20-year PPA contract (utilizing Western)
- 20-year easement
- RECs sold to Xcel Energy for RPS solar set-aside (20 year contract)
- PPA price competitive with utility electricity price forecasts (based on EIA projections) at time contract was signed
- Operational December 2008
- Additional PV projects
  - 1083 kW ground-mounted system
  - 449 kW and 94 kW roof-top systems
Fort Carson PV Project in CO

- 2 MW, 3200 MWh in first year (~2% of Ft. Carson’s load)
- Fixed, non-escalating energy rate
- 17-year contract, with 3 year option (utilizing Western)
- No cost 20 year lease (using 10 USC 2667 lease authority)
- RECs sold to Xcel Energy (20 year contract)
- Ground-mounted, fixed system covering 12 acre former landfill
- First Solar thin film, 25 year warranty
- Came on-line December 2007
GSA Sacramento PV Project in CA

- .5 MW roof-top PV (thin film)
- 10-year contract
- Price matched to utility energy rate, with price floor
- Utility rebate and federal incentives (30% tax credit & accelerated depreciation) - pay for approximately 1/2 cost
- License for use of roof
- Renewable developer retains RECs
- Came on-line March 2008
USCG Petaluma PV Project in CA

- 855 kW ground-mounted, fixed PV on slightly less than 4 acres
- PPA price is 13¢/kWh in the first year, with 3.5% annual escalation
- One year contract with 24 one year renewal options
- Irrevocable 25 year license
- Developer receives 22¢/kWh California Solar Initiative (CSI) performance based incentive (PBI) payments for first 5 years
- Site retains RECs
- Came on-line April 2010
<table>
<thead>
<tr>
<th></th>
<th>Nellis AFB, NV</th>
<th>Fort Carson, CO</th>
<th>NREL, CO</th>
<th>GSA Sacramento, CA</th>
<th>USCG Petaluma, CA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Size</strong></td>
<td>14.2 MW, 140 acres including closed landfill</td>
<td>2 MW on 12 acre closed landfill</td>
<td>2.3 MW total</td>
<td>.5 MW</td>
<td>855 kW on ~4 acres</td>
</tr>
<tr>
<td><strong>Type</strong></td>
<td>Ground Mounted, Single Axis Tracking PV</td>
<td>Ground Mounted, Fixed PV</td>
<td>Two Ground Mounted, Single Axis Tracking systems &amp; two roof-top PV systems</td>
<td>Roof-top PV</td>
<td>Ground Mounted, Fixed PV</td>
</tr>
<tr>
<td><strong>PPA Contract Length</strong></td>
<td>Indefinite with 1 year termination</td>
<td>17 with 3 yr option</td>
<td>20 years</td>
<td>10 years</td>
<td>1 yr with 24, 1 yr options</td>
</tr>
<tr>
<td><strong>Land Use Agreement</strong></td>
<td>Lease (20 yrs)</td>
<td>Lease (20 yrs)</td>
<td>Easement for ground systems, license for roof systems (20 yrs)</td>
<td>License (10 yrs, included in PPA)</td>
<td>Irrevocable License (25 years)</td>
</tr>
<tr>
<td><strong>Procurement and Contracting Agent</strong></td>
<td>Site</td>
<td>Site, in partnership with Western</td>
<td>Site, in partnership with Western</td>
<td>Site</td>
<td>Site</td>
</tr>
<tr>
<td><strong>RECs</strong></td>
<td>Sold to utility</td>
<td>Sold to utility</td>
<td>Sold to utility</td>
<td>Retained by renewable developer</td>
<td>Transferred to site</td>
</tr>
</tbody>
</table>
Utility Renewable Energy Services Contract (URESC)

- Utility Renewable Energy Services Contract (URESC) – PPA with utility
  - Contract with serving utility for the purchase of electricity from utility owned, utility operated on-site renewable generation
  - Utility/renewable partner own renewable project and take advantage of tax benefits
  - FAR Part 41.501c4 (FAR 52.241-5 Contractor’s Facilities) may apply
  - Public Utility Commission approval may be required
  - Draft template agreement developed through Energy Lawyers and Contracting Officer Working Group
  - Several projects in progress
  - Pursuing other URESC projects
Enhanced Use Lease (EUL)
Enhanced Use Lease (EUL)

- Only certain agencies have an EUL authority
- EUL is a real estate agreement
- The lease is competed (rather than the energy purchase, as in a PPA)
- Payment or in-kind consideration
- Usually for large projects where project size > site load

GovEnergy 2010 presentations
http://www.govenergy.com/2010/Workshop/SessionsByTrack/Track_Financing.aspx (Session 5)
http://www.govenergy.com/2010/Workshop/SessionsByTrack/Track_Contracting.aspx (Session 3)

GovEnergy 2009 presentations
http://www.govenergy.com/2009/presentations.html#finance (Session 5)

GovEnergy 2008 presentations (Session 5)
• Notice of Opportunity to Lease

• Up to 1000 MW at 5 Fort Irwin sites

• In-kind services equal to or greater than fair market value of land

• Developer selection made July 20, 2009 – Clark-Acciona Team
  – First phase: Up to 315 MW solar thermal/PV by 2016

• Partnership between NASA and Florida Power & Light
• EUL signed June 2008
• Phase 1 involves 60 acres, potential phase 2 for additional 40 acres
• 10 MW FPL-owned PV project
  – Output feeds into FPL transmission system
  – Substation expansion required
• In-Kind Consideration - 990 kW NASA-owned PV
  – FPL construction
  – Output feeds into NASA-owned distribution system
• 130 mph wind standard
• Both systems operational
• See
PPA Support/Resources & Key Points
Key Points

• Ensure that the PPA option is allowed

• Contact your serving utility early on for interconnection agreement and study requirements/timeframe/cost and other project considerations (net metering, tariff implications, standby charges, etc)

• Research applicable incentives and policies (http://www.dsireusa.org/)

• Review contract length options

• Determine NEPA and other environmental/permitting requirements and start the process early

• Discuss land use agreement options, approval process and develop draft agreement

• Consider renewable tie-in options (taking into account utility metering for your site)
PPA Support

- Renewable screening to identify cost effective renewable projects
  - Provide basic information using form available at http://www.eere.energy.gov/femp/financing/espcs_techplanning.html

- Limited funding available for detailed feasibility studies

- Assistance throughout PPA project process, such as:
  - Market research
    - Applicable incentives and/or solar REC market
    - Net metering and other applicable policies
    - Possible utility bill impacts (tariff/competitive electric supply changes, standby charges, etc.)
    - Interconnection requirements
  - Land use agreement
  - NEPA
  - Solicitation provisions
  - Proposal evaluation
• Chandra Shah, National Renewable Energy Laboratory (NREL)  
  chandra.shah@nrel.gov, 303-384-7557

• Gerald Robinson, Lawrence Berkeley National Laboratory (LBNL)  
  gtrobinson@lbl.gov, 510-486-5769

• Mike Warwick, Pacific Northwest National Laboratory (PNNL)  
  mike.warwick@pnl.gov, 503-417-7555 (for DOD sites)

• Andrea Kincaid, DLA Energy  
  andrea.kincaid@dla.mil, 703-767-8669

• John Nelson, DLA Energy  
  john.nelson@dla.mil, 703-767-8523

• Randy Manion, Western  
  manion@wapa.gov, 720-962-7423

• FEMP PPA Web Site:  
  http://www.eere.energy.gov/femp/financing/power_purchase_agreements.html  
  – PPA Presentation (updated on periodic basis)  
  – Sample Documents
Power Purchase Agreements

Power purchase agreements (PPAs) allow Federal agencies to finance on-site renewable energy projects with no up-front capital costs incurred.

With a PPA, a developer installs a renewable energy system on agency property under an agreement that the agency will purchase the power generated by the system. The agency pays for the system through these power payments over the life of the contract. After installation, the developer owns, operates, and maintains the system for the life of the contract.

FEMP developed an introductory guide to PPAs for Federal on-site renewable projects.

Project Information

FEMP outlines the power purchase agreement process in its Alternative Finance Options (AFO) webinar. An on-demand recording of the training is available. Dates and times of upcoming finance training sessions are posted to the FEMP events calendar.

An updated version of the PPA portion of this presentation is available, featuring typical PPA processes, benefits, challenges, and several case studies.

Several PPA sample documents are available. Available resources include sample requests for proposal, contracts, land use agreements, case studies, and more.

Project Assistance

FEMP offers technical assistance to Federal agencies interested in implementing PPA projects through renewable energy experts at the National Renewable Energy Laboratory (NREL) and other U.S. Department of Energy (DOE) national laboratories.

These experts often facilitate cooperation between a Federal agency and the Western Area Power Administration (Western) or DLA-Energy. DLA-Energy features a Renewable Energy Initiatives team, while Western has authority to sign longer-term contracts for Federal agencies in its service territory.
Federal Energy Management Program

Energy Savings
Performance Contracts
Utility Energy Service Contracts
Power Purchase Agreements

Sample Documents for Power Purchase Agreements

FEMP works with Federal agencies and partners to assemble sample documents from past power purchase agreement (PPA) projects. The intent of these documents is to provide sample resources to help streamline the PPA process for Federal agencies.

The following sample documents are organized into:

- Requests for Proposal and Contracts
- Land Use Agreements
- Completed Projects and Case Studies
- Other Documents

Requests for Proposal and Contracts

Sample documents are available for the following requests for proposal:

- [Photovoltaics at the Department of Energy’s (DOE) Princeton Plasma Physics Laboratory](#): PPA request for proposal issued by DLA Energy on behalf of Princeton Plasma Physics Laboratory.

- [National Renewable Energy Laboratory (NREL) Photovoltaics Opportunity Announcement](#): Opportunity announcement issued for the NREL Mesa Top photovoltaics (PV) power purchase agreement.

- [General Services Administration Photovoltaics Project in Sacramento, California](#): Request for proposal issued for the General Services Administration PV PPA project.


- [Photovoltaics at the Environmental Protection Agency (EPA) Edison Laboratory](#): Request for proposal issued by DLA Energy on behalf of the EPA Division of Environmental Science and Assessment Laboratory Branch located in Edison, New Jersey.

Contracts

A copy of the Western Area Power Administration’s Power Purchase Agreement Template is also available for Federal agencies. If interested, contact:
Resources

- Alternative Financing Options June 2010 webinar recording (covering PPA, UESC, ESPC)
  http://apps1.eere.energy.gov/femp/training/course_detail_ondemand.cfm/CourseId=44

  http://www1.eere.energy.gov/solar/federal_guide/

- FEMP Focus article (Fall 2007, p. 16-17)
  – FEMP Focus article with updated information planned for FY2011

- EPA Solar PPA web site and 7/28/09 webinar (for all sectors, not just federal)
  http://www.epa.gov/greenpower/buygp/solarpower.htm
  http://www.epa.gov/greenpower/events/july28_webinar.htm

  http://www.nrel.gov/docs/fy10osti/46078.pdf

- Solar Today article: “Solar Energy with No Money Down” by Jason Keyes, Joseph Wiedman, Christopher Cook and Tucker Cottingham (September/October 2010, p.44)
  http://www.solartoday-digital.org/solartoday/20100809#pg44