

U.S. DEPARTMENT OF  
**ENERGY**

Office of  
**ENERGY EFFICIENCY &  
RENEWABLE ENERGY**

# Green Energy Can Save You Greenbacks

## Federal Green Challenge Webinar on the Affordable Power Infrastructure Partnership (APIP)



# Federal Green Challenge and APIP

The APIP team is offering to partner with your agency to get you cost savings and other benefits using on-site renewable energy.



[Photo](#) by DOE/FEMP – APIP Team Inspecting National Archives Array + Battery

# Agenda

- **Affordable Power Infrastructure Partnership (APIP)**
  - The time is ripe for federal on-site renewables
  - APIP wants to support your agency's projects
- **The Customer Perspective – US Forest Service R5 Headquarters**
- **Questions and Answers**



[Photo](#) by GSA - USFS Region 5 Headquarters

# APIP Team



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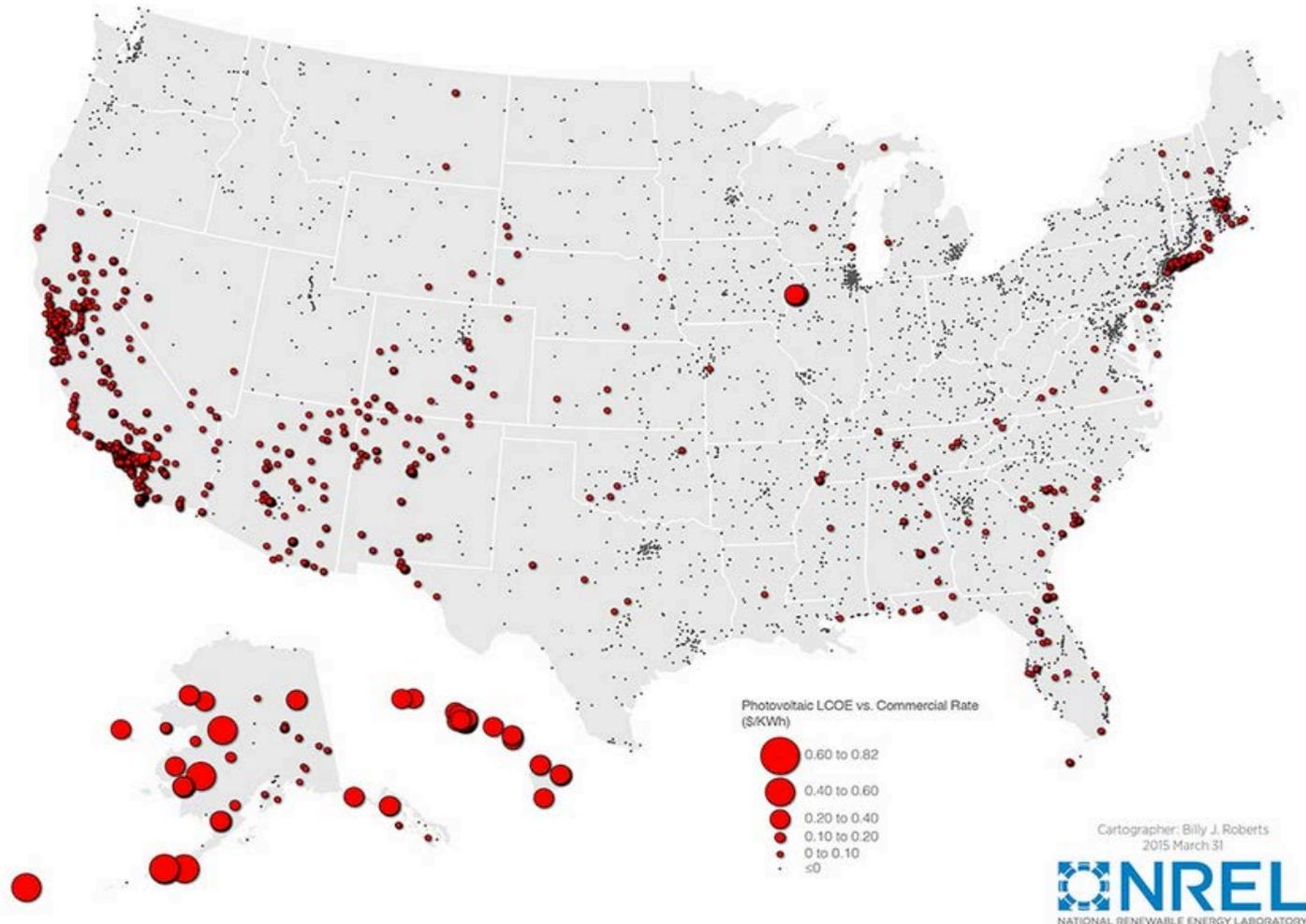
**Ben Machol**  
EPA Region 9



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EPA Region 9

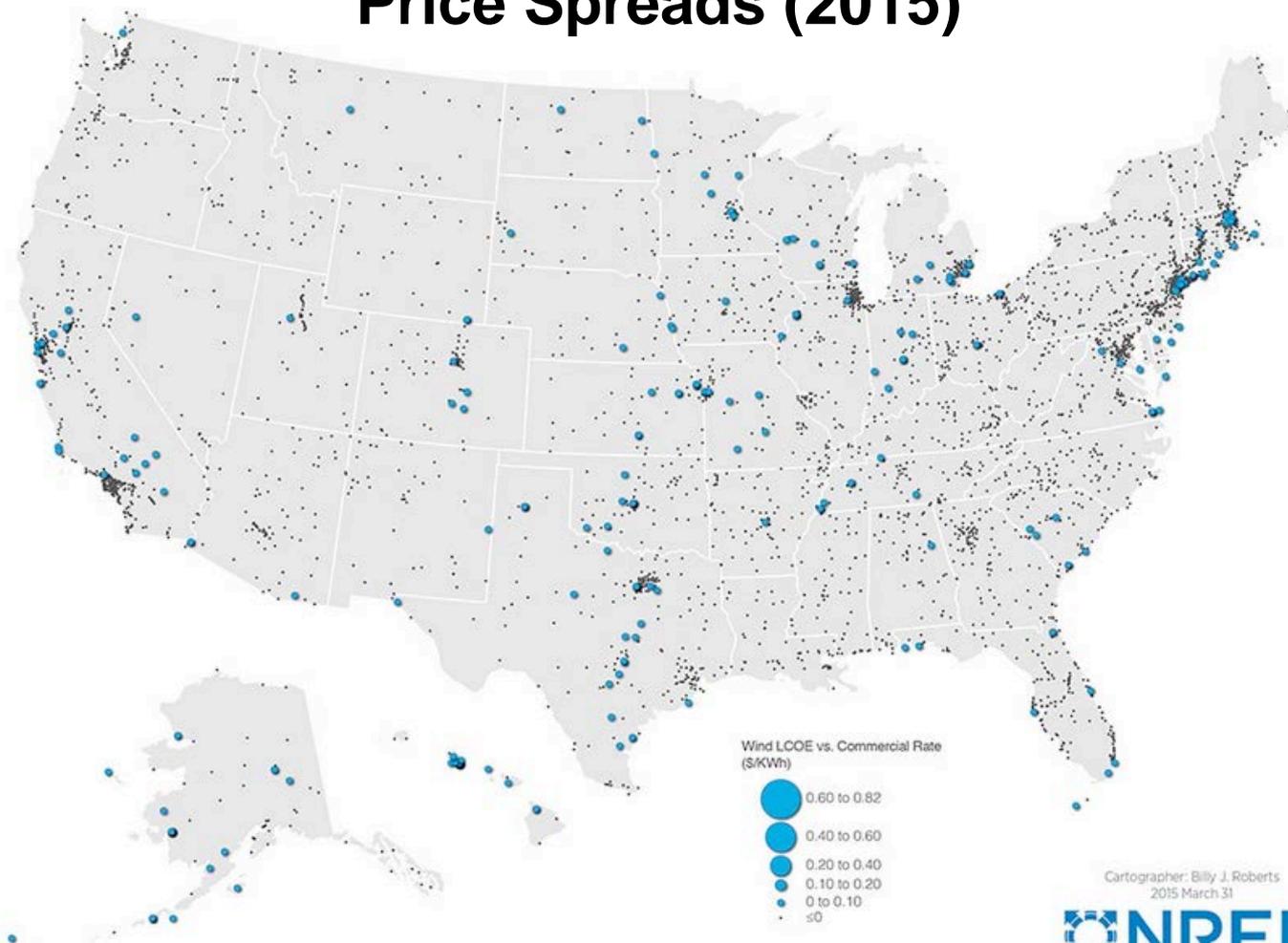
# Renewable Energy Potential Is Tremendous!

## Geographic Distribution of Solar Photovoltaic Levelized Cost of Energy–Price Spreads (2015)



# Renewable Energy Potential Is Tremendous!

## Geographic Distribution of Wind Levelized Cost of Energy— Price Spreads (2015)



Cartographer: Billy J. Roberts  
2015 March 31

**NREL**  
NATIONAL RENEWABLE ENERGY LABORATORY

# Dramatic Cost Decreases

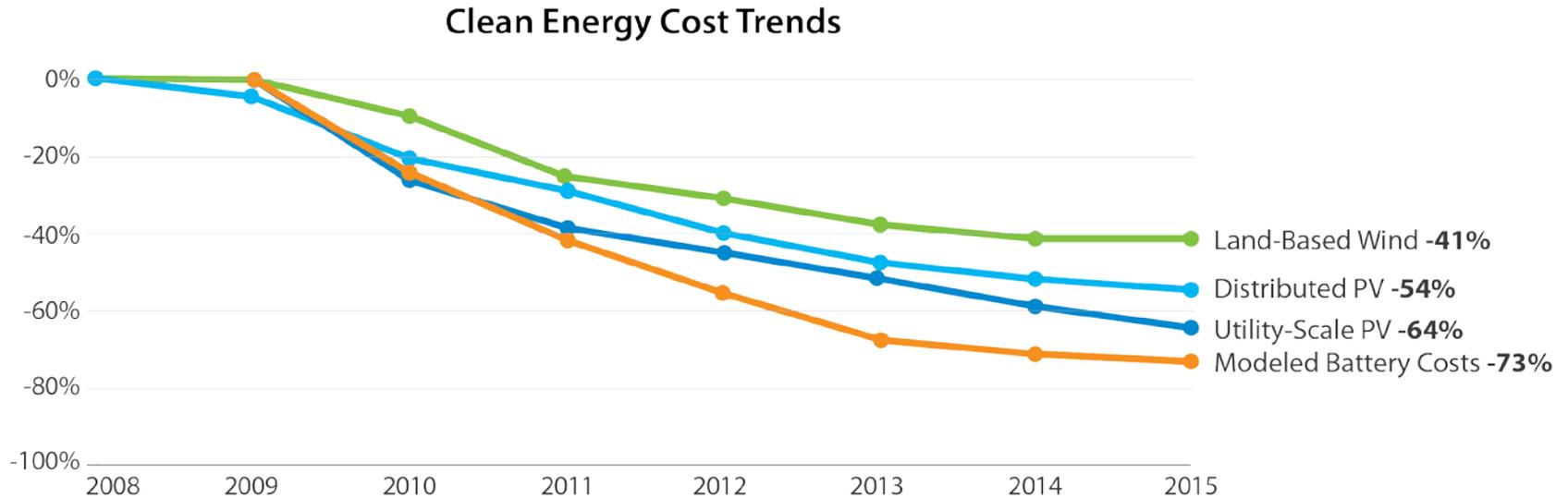


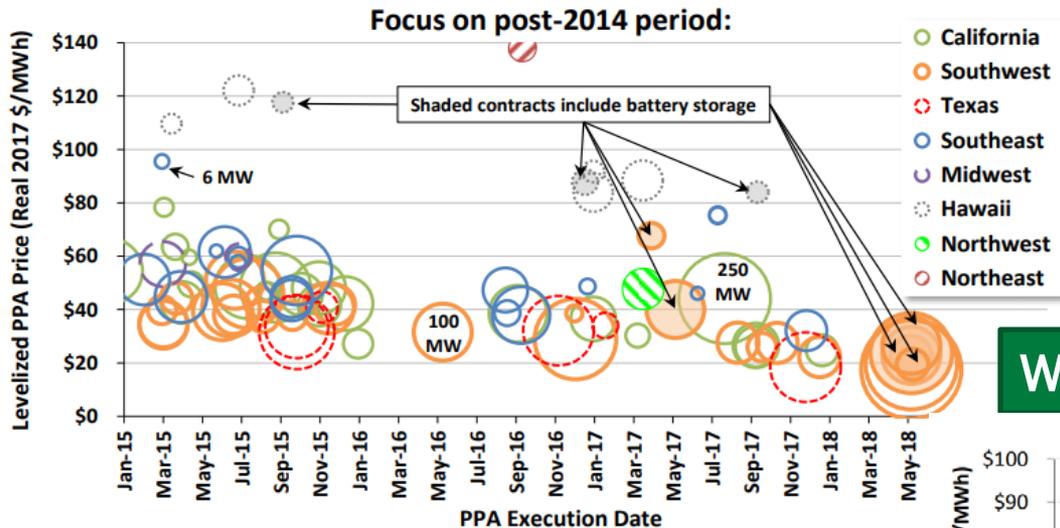
Image credit: [energy.gov/revolution-now](http://energy.gov/revolution-now)

Along with renewable energy technologies, battery storage costs have decreased significantly over the past 10 years

U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, *Revolution Now – Accelerating Clean Energy Deployment*. DOE/EE-1478, September 2016. <https://energy.gov/eere/downloads/revolutionnow-2016-update>.

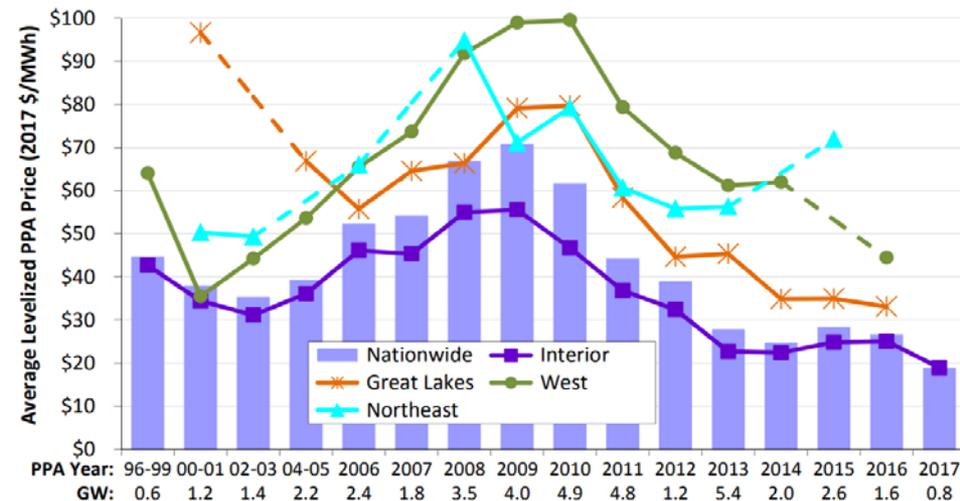
# Lower Contract Prices: More Economic Potential

## Solar Contract Prices Decreasing (even with storage)



Lawrence Berkeley National Laboratory, *Utility Scale Solar: Empirical Trends in Project Technology, Cost, Performance, and PPA Pricing in the United States - 2018 Edition*. LBNL and U.S. Department of Energy Solar Energy Technologies Office, September 2018.  
[https://emp.lbl.gov/sites/default/files/lbnl\\_utility\\_scale\\_solar\\_2018\\_edition\\_report.pdf](https://emp.lbl.gov/sites/default/files/lbnl_utility_scale_solar_2018_edition_report.pdf)

## Wind Contract Prices at All-Time Low

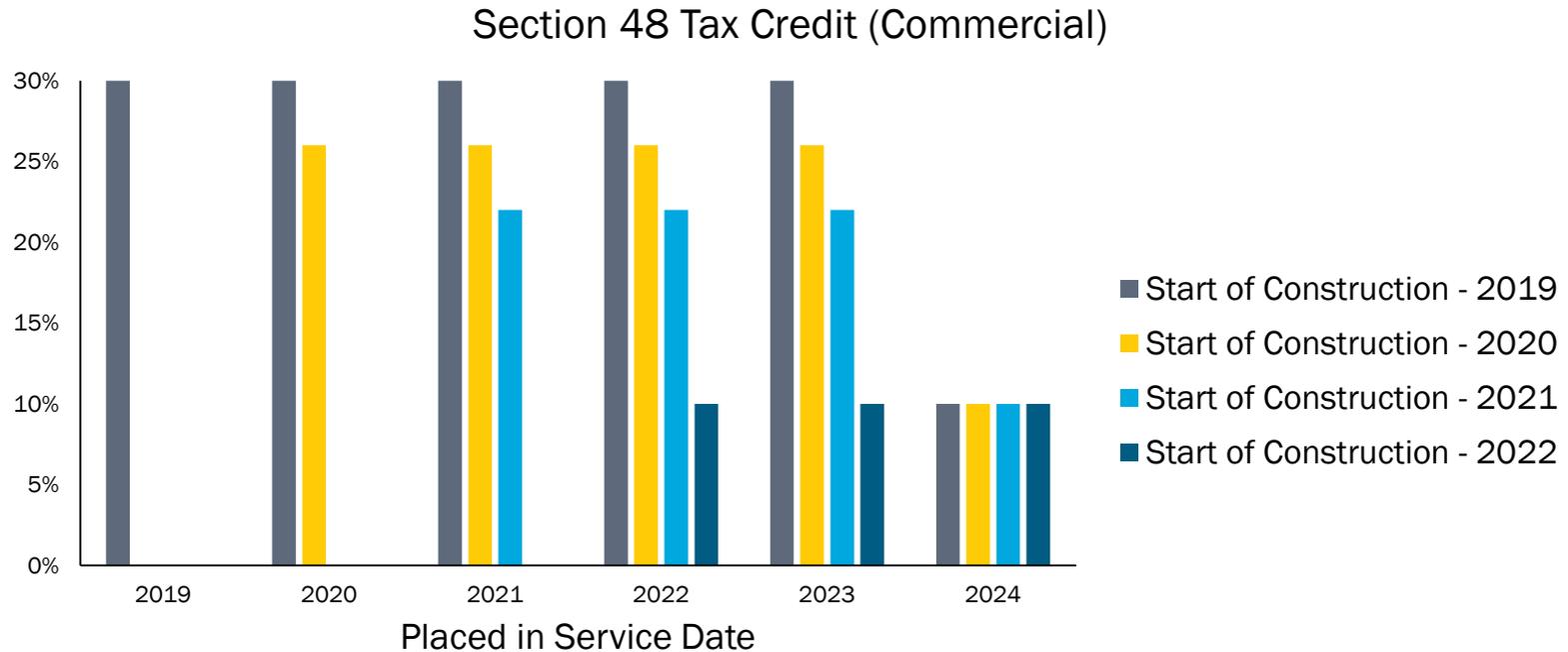


U.S. Department of Energy, *2017 Wind Technologies Market Report*. LBNL and U.S. Department of Energy Wind Energy Technologies Office, August 2018.

[https://www.energy.gov/sites/prod/files/2018/08/f54/2017\\_wind\\_technologies\\_market\\_report\\_8.15.18.v2.pdf](https://www.energy.gov/sites/prod/files/2018/08/f54/2017_wind_technologies_market_report_8.15.18.v2.pdf)

# Act Quickly to Maximize Savings

- Solar Tax Credit for developers declines
- Commercial tax credit reverts to 10% if projects not complete by year end 2023



Modified from: National Renewable Energy Laboratory, *Q1/Q2 2018 Solar Industry Update*. NREL/PR-6A20-72036, August 2018.  
<https://www.nrel.gov/docs/fy18osti/72036.pdf>

# Benefits of On-site Renewable Energy

<b>Direct Cost Savings</b>	<b>Other Benefits</b>
Private ownership for greater savings (e.g. tax incentives, SREC sales)	System performance risk is on third party, including operation and maintenance
No up-front capital investment	Complexity of project development is handled by third party
Long term utility cost stabilization	Increased industry interest from replicable solutions
Economies of scale from site aggregation, where applicable	Aggregation can maximize savings and increase bidder interest
Avoided premium cost of unbundled RECs to meet federal mandates	Support of domestic energy independence

# Other Potential Benefits of On-site RE

- **Site Resilience**
  - Micro-grid ready
  - Extending the survivability of grid outages
- **Local utility grid reliability**
- **EV charger ready**
- **Shading and protection (carport only)**
  - for employee vehicles
  - for government vehicles and equipment
- **Habitat protection for pollinators (ground mount only)**



[Photo](#) by GSA – Clifton Young Federal Building

# APIP Overview

APIP partners your federal energy with DOE FEMP experts using a programmatic approach to implement cost effective, on-site energy generation projects through public-private partnerships.



Programmatic  
Approach



Cost Savings



Partnerships

# APIP's Programmatic Approach

APIP's programmatic approach achieves the best possible outcome for an agency pursuing on-site energy generation projects with the least staff-time investment by applying the following:

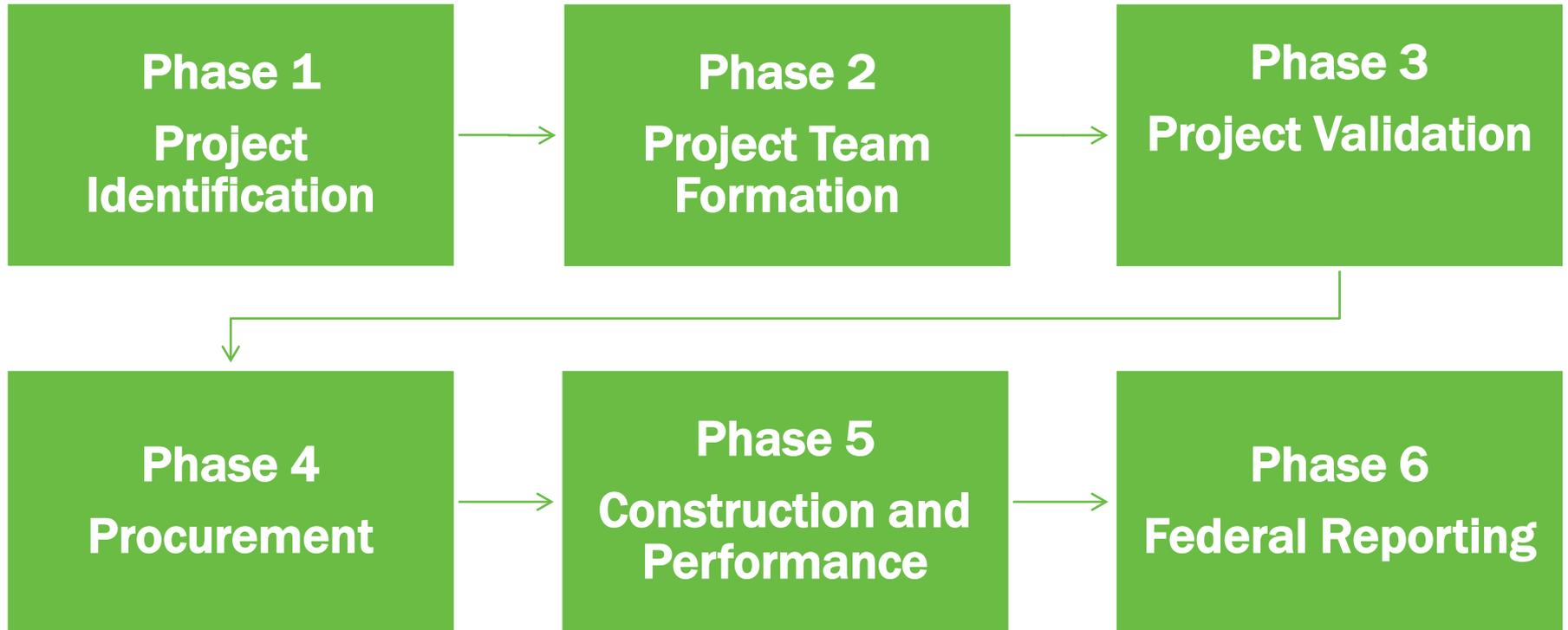
1. An established process using tools and resources
2. Project assistance from subject matter experts
3. Lessons learned and government best practices



# Roles and Responsibilities

Team Member	Central Roles
Agency	<ul style="list-style-type: none"><li>• Sets requirements and goals</li><li>• Provides agency specific policies, requirements, and data</li><li>• Convenes a strong project team (energy champion, contracting officer, support staff, etc.)</li></ul>
FEMP & EPA	<ul style="list-style-type: none"><li>• Provides subject matter experts that help avoid “reinventing the wheel”</li><li>• Provides technical and procurement resources ( tools, examples, templates, guidance, etc.)</li><li>• Offers project specific assistance including project development coordination</li></ul>

# Project Implementation Process



# FEMP No-Cost Assistance Package\*



VALUED AT  
\$100K

- **Desktop screening of potential projects**
- **Time-saving resources & references**
  - ESPC ESA Toolkit and templates
  - Technical Specifications with templated language and project considerations
  - Agency-specific procurement package
- **Project development support:**
  - Assisting project champion with internal approvals
  - Conducting project validation
  - Procurement document development from FEMP and retired contracting officer\*\*

\* Other services can be provided upon request or as additional funding becomes available

\*\* With approval and under the guidance of the project CO

# Lessons Learned & Government Best Practices

A FEMP partnership brings lessons learned and government best practices, so that an agency:

- Realizes the greatest savings possible
- Reduces burdens on CO and agency staff
- Reduces project risk and time invested
- Focuses on projects with the most technical and economic viability
- Capitalizes on other critical non-energy benefits like resilience, where applicable



[Photo](#) by GSA – National Archives San Bruno, CA

# Successful Projects with Site Aggregation

## Federal Aggregated Solar Procurement Pilot

Contract awarded by GSA R9 to Solar City (now Tesla) in December 2015

5.5 MW, 8 locations (7 GSA, 1 USFS)

Estimated \$5 million savings over contract term. PPA price varies by location but does not escalate

## Capital Solar Challenge

Contract awarded by GSA National Capital Region to WGL in December 2015

2.7 MW, 18 DC buildings included in the RFP

One contractor and one PPA price for all buildings (\$0.04 per kWh, 1.5% escalation rate)



# Contact Information

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