Summit Community Solar (SCS) was a community-driven and local government-supported initiative designed to increase the adoption of residential photovoltaic (PV) solar in Summit County and Park City, Utah between January and November 2013. SCS combined the financial incentives of bulk purchasing with a streamlined permitting process, contractor pre-selection, and a robust community outreach effort.

The program was inspired by Salt Lake Community Solar (SLCS), a similar effort that had been undertaken in neighboring Salt Lake County in 2012 and was led by Utah Clean Energy (UCE) and supported by a Rooftop Solar Challenge grant from the U.S. Department of Energy (DOE). That project, in turn, had been based on the highly successful Solarize Portland (Oregon) program implemented in 2009.

Planning for SCS began in January 2013; the program formally launched in May, and all installations were complete by November (see text box). At the conclusion of SCS more than 1,200 solar PV panels were installed on 60 homes, generating a cumulative 330 kilowatts (kW) of energy. The level of interest and participation was more than twice the 150 kW cut-off for bulk-purchase price discounts and exceeded the installed capacity of the SLCS program by 100 kW.

How Does it Work?

Bulk purchasing, which drives down the cost of solar panels, is the key to the success of SCS (see text box). Unlike other funding incentives, such as rebates or on-bill financing, bulk purchasing has the indirect benefit of increasing peer-to-peer marketing: since the volume discounts are tied to the number of participants, those enrolled in the program have an incentive to encourage friends and neighbors to go solar. This pattern was borne out in the Salt Lake Community Solar Project, where over half of participating households reported having learned about the program by word of mouth.

Tyler Poulson, environmental sustainability manager
for Park City Municipal Corporation, observed that “solar is contagious. SCS increases the visibility of solar in the community—which increases familiarity, acceptance, and adoption.”

The following is an overview of how SCS worked:

• Community members attended free workshops to learn about solar technologies and benefits.
• Residents interested in exploring solar were asked to answer an online questionnaire; their responses helped the installer determine whether the property was an appropriate candidate for solar.
• Alpenglow Solar, the SCS-approved contractor, conducted a site visit at the proposed location. If the property is suitable for solar, the contractor submitted a bid for the homeowner to review.
• If the bid was accepted, the homeowner signed a contract and provided Alpenglow Solar a $500 deposit.

Eliminating Barriers to Community Solar

A range of real and perceived barriers—not unlike those associated with efforts to increase household energy efficiency—often hinder adoption of residential PV solar. Despite high interest in solar energy among Summit County and Park City homeowners, installations remained low prior to SCS. Officials attribute the slow adoption rate to several factors, including lack of awareness of solar technology, financial barriers, and the complexity of identifying appropriate technologies and qualified contractors. SCS’s comprehensive approach to community solar effectively addressed these barriers, while also providing benefits. As Anne Reynolds, community member and SCS Education and Outreach Committee representative noted, “You need

Is Bulk Purchasing a Good Fit for Your Community?

Bulk purchasing is a great way to increase community awareness and adoption of residential photovoltaic solar. But can this strategy work in all communities? The following list summarizes the characteristics of communities that may be best suited for a bulk-purchasing approach, and recommends actions that can improve the chances of success.

• Grid Interconnection. If it is difficult to connect to the grid most homeowners will not install solar as the return on investment will not be as great. Local governments are encouraged to work with local utilities to allow net-metering and simplify interconnection standards.
• Streamlined Processes. Straightforward permitting and inspection processes, as well as fair permitting fees reduce complexity and time required for installations.
• Zoning. Codes should be reviewed and/or updated to ensure that solar will be permitted in residential areas.
• Identify Barriers. Local governments and community partners are encouraged to reach out to homeowners’ associations early in the process, to address any concerns and/or identify ways to remove restrictive policies.
• Community Support. The active engagement of community members can be catalytic for a bulk-purchasing program. Smaller communities may have an advantage, because established peer-to-peer networks can help with marketing, building trust, and encouraging participation.
• Experienced Partners. Local nonprofits can bring expertise and contribute to program management and administration.
to make it easy, convenient, and straightforward.” The accompanying sidebar summarizes the ways in which SCS did just that.

In addition to reducing the cost of solar and raising awareness of its benefits, SCS streamlined and simplified adoption. For example, a citizen-led committee engaged in a thorough vetting process before selecting a sole contractor for the program, thereby eliminating this step for homeowners. A second committee conducted communitywide outreach to familiarize residents with solar technology and the SCS program. Through the work of the two committees, SCS succeeded in providing information, building trust, and reducing the time and expense that installers would normally spend on outreach and marketing.

Building on a Legacy of Leadership

From the beginning, SCS has been supported by local government officials and staff, facilitated by nonprofit partners, and welcomed by the community.

Local officials from both Summit County and Park City have identified sustainability—and renewable energy, in particular—as priorities for their communities. This section outlines ways in which both the city and the county have provided a strong foundation for residential solar, especially the SCS program (see text box).

Local Government Roles and Contributions

- Contributed $6,000 to Utah Clean Energy for administrative support
- Reduced or waived solar permitting fees
- Provided staff time for exploration and planning stages
- Provided staff to serve as advisors to community committees and participate in weekly check-in meetings
- Provided staff time to coordinate with permitting departments and plan for a significant increase in requests for residential solar permits.

Summit County

Summit County, home to thirty-nine of the highest mountain peaks in the state, has a population of 36,324 and a land area of 1,871 square miles. The county oper-
ates under the council-manager form of government; county government has 276 full-time and 22 part-time employees, and an annual budget of $46,454,896.

In Summit County, leadership in sustainability and commitment to environmental stewardship can be traced back as far as 1974, when the county council adopted an energy conservation resolution. In 2010, the county formalized its commitment by creating the position of sustainability coordinator; the following year, it further solidified its intent by ranking sustainability as the second-highest priority within the county’s strategic plan, and by creating its first sustainability plan.

Renewable energy has been championed, in large part, by county manager Bob Jasper. A strong advocate for sustainability, Jasper has led the county in assessing its carbon footprint and ensuring that it is investing in a strong solar infrastructure that can expand to meet demand over time. The county has also made a point of installing solar on its own facilities: in addition to having partnered with Rocky Mountain Power to install a 70 kilowatt (kW) solar PV system on the health department building, the county is exploring a similarly sized installation on the Justice Center, the county’s largest energy consumer.6

At the community scale, SCS aligned with and exceeded the county’s goal “to encourage the community to generate an additional 100 kW of energy from solar thermal or solar photovoltaic by 2014.”7 To support the SCS program, the county has

Table 1: Cost decreases for a sample 4-kilowatt system as more homeowners join in on the bulk-purchase model.

<table>
<thead>
<tr>
<th>TIER NO.</th>
<th>TOTAL NUMBER OF KW INSTALLED BY PARTICIPANTS</th>
<th>NUMBER OF HOUSEHolds INSTALLING SOLAR**</th>
<th>COST† (Before tax incentives)</th>
<th>COST† AFTER 25% STATE TAX INCENTIVE (With a cap of $2,000)</th>
<th>COST† AFTER 30% FEDERAL TAX INCENTIVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>&lt; 50</td>
<td>0–12</td>
<td>$13,680–$14,000</td>
<td>$11,680–$12,000</td>
<td>$8,176–$8,400</td>
</tr>
<tr>
<td>2</td>
<td>51–75</td>
<td>13–18</td>
<td>$13,560–$13,920</td>
<td>$11,560–$11,920</td>
<td>$8,092–$8,344</td>
</tr>
<tr>
<td>3</td>
<td>76–100</td>
<td>18–25</td>
<td>$13,480–$13,800</td>
<td>$11,480–$11,800</td>
<td>$8,036–$8,260</td>
</tr>
<tr>
<td>4</td>
<td>101–125</td>
<td>26–37</td>
<td>$13,280–$13,720</td>
<td>$11,280–$11,720</td>
<td>$7,896–$8,204</td>
</tr>
<tr>
<td>5</td>
<td>126–150</td>
<td>38–37</td>
<td>$13,040–$13,600</td>
<td>$11,040–$11,600</td>
<td>$7,728–$8,120</td>
</tr>
<tr>
<td>6</td>
<td>&gt; 150</td>
<td>38 or more</td>
<td>$12,880–$13,520</td>
<td>$10,880–$11,520</td>
<td>$7,616–$8,064</td>
</tr>
</tbody>
</table>

* These prices are for installation of a standard 4 kilowatt system. Some homes may require additional customization subject to additional installation costs, and participants may choose to upgrade hardware for an additional fee. These prices do not include permitting fees.

** Approximation assuming a 4 kW installation per household.

† Cost range indicated correlates with prices for different system options available to participants.

Source: Utah Clean Energy

streamlined and expedited its permitting by adopting a standardized process developed by The Solar America Board for Codes and Standards (Solar ABCs)8,9

• provided detailed information about solar installations on the website of the building department10

• passed a temporary reduction in solar permitting fees (from $350 to $50) that lasted through the duration of the SCS program.

Such local leadership has proved instrumental to the success of SCS. As Assistant County Manager Anita Lewis noted, “It starts at the top. Having the county manager and council publically support this program from the beginning has been very impactful in securing public trust and community interest.”

Park City Municipal Corporation

Park City, the largest city in Summit County, is located about 30 miles southeast of Salt Lake City. Although the city’s 18 square miles of land are occupied by only 7,558 permanent residents, the number of tourists visiting at any given time yields a population that is at least twice that. Park City operates under a council-manager form of government, employs 448 staff members, and has a budget of nearly $160 million.

A consistent and comprehensive concern for quality of life—including sustainability—has made SCS a
natural fit for Park City Municipal Corporation (PCMC). Elected officials and community residents share a strong commitment to the environment: since 2007, the city has taken the lead in raising awareness of the local impacts of climate change, whose effects on the local ski and tourism industries, outdoor recreation, and air quality are of special concern.

The city’s 2009 environmental sustainability resolution includes several goals focused on reducing greenhouse gas emissions and increasing renewable energy use. Several of the objectives within these goals emphasize communitywide environmental education, community engagement, and ensuring that sustainability efforts directly benefit residents.

In addition to recognizing the importance of community engagement in achieving their sustainability goals, Park City elected officials and community leaders understand that in order to take action, citizens need access to easy-to-find and easy-to-use information. In 2009, in partnership with the Park City Community Foundation, the city launched www.parkcitygreen.org as a comprehensive community resource for environmental information. To facilitate awareness and adoption of community solar, Park City

- streamlined the permitting process through adoption of the Solar ABCs process for expedited permitting,
- created www.parkcity.org/solar, a website that consolidates information on permitting requirements, net metering, financial incentives, and general resources for residents and contractors,
- waived permitting fees (up to $1,000).

To increase the visibility and use of renewable energy in Park City, PCMC has also installed solar systems on six city-owned properties, including city hall (a historic building), an ice arena, and an affordable-housing project.

A Critical Partner: Utah Clean Energy

As noted earlier, SCS was based, in large part, on the success of a similar program in Salt Lake County led by UCE, a nonprofit whose mission is to advance renewable energy in Utah and across the West. UCE has been the backbone of SCS, providing administrative support and project management, and serving as a trusted advisor to the city, the county, and residents.

In 2011, while searching for a strategy that could ramp up solar installations in a relatively small solar market with limited state or utility incentives, UCE proposed a bulk-purchasing model to Salt Lake County based on the success of Solarize Portland. The appeal of the model was twofold: it did not require major policy changes, and it was relatively inexpensive to implement. Through a long-standing partnership with Salt Lake County, support from the DOE’s Rooftop Solar Challenge grant, staffing from AmeriCorps, and funding from Patagonia, UCE launched Salt Lake Community Solar (SLCS) in January 2012.

The SLCS program was a huge success, and resulted in 64 residential installations within six months, producing 232 kW of solar energy per year, on average.

Having become aware of the success of the bulk-purchasing strategy in Salt Lake County, Summit County and Park City approached UCE in December 2012 to determine the feasibility of developing a similar program for their communities. Given that increased adoption of residential solar was a goal for both the city and county the city, county, and UCE determined that with UCE’s support, a bulk-purchasing program could succeed.

UCE had been an active advisor throughout, sharing lessons and experiences from both the Salt Lake Community Solar and Solarize Portland programs. A UCE staff member from AmeriCorps managed the day-to-day needs of SCS, including developing a detailed database that tracks responses to questionnaires, site visits completed, contracts signed, and installations completed. UCE’s support was critical to the success of SCS— not only by providing residents with a road map to solar, but by reducing the time investment that would otherwise have been required of city and county staff.

Solar Energy, Community Powered

In determining whether a program such as SLCS could be replicated in Summit County, city and county officials recognized that in order to build trust and momentum, the effort would need to be citizen led. Given the history of public support for sustainability and an expressed desire to increase the use of renewable energy, city and county officials felt confident that the community would embrace and lead the effort. Tyler Poulson, environmental sustainability manager for PCMC, noted that the community’s appetite for solar was so great that as the city tried to identify ways to reduce energy consumption and greenhouse gas emissions, “we realized that our greatest source of local renewable energy were the citizens themselves.”
Residents were brought into the program from the very beginning (January 2013) to guide program development and prepare for implementation. Two committees were formed: the Contractor Selection Committee and the Education and Outreach Committee. Both committees were citizen-led and engaged staff from the city, county and UCE as advisors.

One of the first tasks was to select a contractor for the bulk purchasing and installation. The eight-person Contractor Selection Committee used the request for proposals (RFP) from SLCS as a template and adapted it to their needs. Two decisions were critical to this effort: determining what weights to assign to selection metrics, and developing the criteria to evaluate proposals. To reduce conflicts of interest, maintain transparency, and ensure that the final selection fully reflected community interests and values, these decisions were made solely by the citizen members of the committee with city, county and UCE staff abstaining from this process.

Stephanie Dolmat-Connell, a member of the Contractor Selection Committee, identified this as a key element of SCS’s success: “Community member support solidified the program. When community members are making the decisions and getting the word out, it’s no longer seen as a government program; it’s seen as a community program, and that generates community interest and support.”

Following the issue of the RFP, the committee reviewed the proposals, selected finalists, and conducted detailed interviews with contractors before making their final selection. Once the selection was made, the committee continued to work with the contractor to prepare for launch, developing the participant recruitment process, conducting site visits to existing installations, and setting time frames for final installation.

Meanwhile, the Committee for Education and Outreach worked with UCE to prepare materials and coordinate public workshops to introduce the program and raise awareness of solar technologies. Workshops held in May 2013 officially launched the program; the gatherings included speakers from UCE, Alpenglow Solar (the selected contractor), and residents who had participated in the SLCS program. Throughout the life of the program, the Education and Outreach Committee continued to raise the visibility of SCS through workshops, media coverage, social and professional networks, radio public service announcements, and a comprehensive website.

Education and Outreach Committee member Reynolds emphasized the value of having the program originate from within the community and indicated that although area residents were already predisposed to environmental protection measures, the motivations for adopting solar tended to vary. Many people were interested in knowing whether solar was a viable option, but lacked the time to research the technologies. Others were driven by economics: specifically, the return on investment afforded by net metering through Rocky Mountain Power.

Park City environmental sustainability manager Poulson emphasized it was important to the city to ensure that the program was “motivation neutral”; thus, instead of trying to find a single rationale that would persuade everyone to install solar, the city focused on presenting the facts objectively and allowing residents to make their decisions on the basis of what was important to them—be it climate change, air quality, energy bills, or other factors.
While SCS has received strong support from local government officials and expert guidance from UCE, all partners agree that the program owes much of its success to the dedication, enthusiasm, and involvement of the community. SCS is a great example of a community-driven effort that has achieved energy, environmental, and economic goals at the city, county, and community level.

Project Funding and Coordination

SCS was coordinated primarily by UCE. The total costs for operating the program have been estimated at $65,000, which accounts for staff time (1.25 full-time-equivalent employees, plus in-kind staff support from the city and the county), paid interns, website design and hosting, printing, travel, meeting supplies, and overhead costs. The primary sources of program funding were as follows:

- U.S. DOE SunShot Rooftop Challenge grant
- Summit County: $6,000 toward administrative support, plus in-kind staff time
- PCMC: $6,000 toward administrative support, plus in-kind staff time
- The Utah Conservation Corps funded an AmeriCorps staff member, representing one full-time equivalent employee
- Small grants and in-kind donations from local foundations.

Lessons Learned

The SCS strategy is an easy, effective, and replicable means of meeting local government sustainability goals while reducing financial and logistical barriers to residential solar. The program was made possible through the administrative support and coordination of UCE; an existing net metering program and power connections available through Rocky Mountain Power; and solar installer Alpenglow Solar.

Summit Community Solar: By the Numbers

- 280: Online questionnaires completed by residents interested in participating in the program
- 60: Contracts signed between homeowners and Alpenglow Solar
- 330: Kilowatts installed
- $1.37 million: Amount SCS participants are expected to save in electricity bills over the next 25 years.
- 500: Percent increase in kW generated by solar PV in 2013 (compared to 2012) as a result of SCS

Elements of Success

- Supportive local governments
- Engaged community members
- Bulk-purchasing model
- Streamlined permitting process
- Reduced permitting fees
- Partnership with Utah Clean Energy
- Support of Rocky Mountain Power utility.
Contacts

Sara Baldwin, senior policy and regulatory associate, Utah Clean Energy; 801-363-4046, ext. 103; sbaldwin@utahcleanenergy.org.

John Conde, designer, Alpenglow Solar; 801-262-5140; johnc@alpenglowsolar.com.

Anita Lewis, assistant county manager, Summit County; 435-336-3220; alewis@summitcounty.org.

Lisa Yoder, sustainability coordinator, Summit County; 435-336-3128; lyoder@summitcounty.org.

Endnotes

1. Unless otherwise noted, all information in this case study was obtained through interviews with the individuals listed under “Contacts.”

2  http://www.mycommunitysolar.org/saltlake/

3  http://www.portlandoregon.gov/bps/51902

4  Whereby utility companies or financial institutions cover upfront costs of a system that are repaid by customers based upon resulting energy savings.

5. State and federal tax incentives can further reduce the cost of the system.


8  The Solar ABCs is a U.S. Department of Energy funded collaborative dedicated to improve PV codes and standards to accelerate adoption throughout the U.S.


10  http://www.summitcounty.org/building/solar.php


12  As one of only two community foundations in the state of Utah, the Park City Community Foundation is supported by individual donors and seeks to build endowments to support long-term community needs. More information can be found at: http://www.theparkcityfoundation.org

13  Complete details on these and other city-supported installations can be found at www.parkcity.org/renewable.

14  http://www.mycommunitysolar.org/summit/calendar/project-timeline

Author

Tammy Zborel
What is Summit Community Solar?

Are you interested in going solar but don’t know where to start? Summit Community Solar is a community-led effort making it simple and affordable for Summit County residents to tap into clean, inexhaustible energy from the sun! This limited-time, community bulk-purchase solar program guides homeowners through the logistical and financial hurdles of going solar. With support from Summit County, Park City Municipal Corporation, and Utah Clean Energy, solar is coming soon to a rooftop near you!

Now through August 12th, Summit Community Solar participants will receive big benefits:

- **30-35% discounts for residential solar installations**, made possible by group purchasing power. As more participants commit, the price for all participants declines.

- **Simplified and streamlined solar installation process:**  
  We do the heavy lifting, so you don’t have to. You’ll have access to information and a community network to guide you through a simple solar process.

- **Quality projects from installers vetted by the Community Steering Committee:** A voluntary community-led Steering Committee used a competitive bid process to select a qualified solar contractor to provide quality residential solar PV installations across Summit County.

Solar Savings!

A 4 kilowatt solar PV system produces enough electricity to cut the average Utah home’s energy cost by more than half, saving the average Utah homeowner approximately **$720 per year**! An average 4 kilowatt solar system costs around $20,000 normally; Summit Community Solar provides a great discount from the normal price and incredible savings:

<table>
<thead>
<tr>
<th>Tier No.</th>
<th>Total Number of kW Installed by Participants</th>
<th>Number of Households Installing Solar**</th>
<th>Cost† (before tax incentives)</th>
<th>Cost‡ after 25% state tax incentive (with a cap of $2000)</th>
<th>Cost§ after 30% federal tax incentive</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>&lt; 50</td>
<td>0 - 12</td>
<td>$13,680 - $14,000</td>
<td>$11,680 - $12,000</td>
<td>$8,176 - $8,400</td>
</tr>
<tr>
<td>2</td>
<td>51 - 75</td>
<td>13 - 18</td>
<td>$13,560 - $13,920</td>
<td>$11,560 - $11,920</td>
<td>$8,092 - $8,344</td>
</tr>
<tr>
<td>3</td>
<td>76 - 100</td>
<td>18 - 25</td>
<td>$13,480 - $13,800</td>
<td>$11,480 - $11,800</td>
<td>$8,036 - $8,260</td>
</tr>
<tr>
<td>4</td>
<td>101 - 125</td>
<td>26 - 37</td>
<td>$13,280 - $13,720</td>
<td>$11,280 - $11,720</td>
<td>$7,896 - $8,204</td>
</tr>
<tr>
<td>5</td>
<td>126 - 150</td>
<td>38 - 37</td>
<td>$13,040 - $13,600</td>
<td>$11,040 - $11,600</td>
<td>$7,728 - $8,120</td>
</tr>
<tr>
<td>6</td>
<td>&gt; 150</td>
<td>38 or more</td>
<td>$12,880 - $13,520</td>
<td>$10,880 - $11,520</td>
<td>$7,616 - $8,064</td>
</tr>
</tbody>
</table>

* These prices are for installation of a standard 4 kilowatt system. Some homes may require additional customization subject to additional installation costs, and participants may choose to upgrade hardware for an additional fee. These prices do not include permitting fees.

** Approximation assuming a 4 kW installation per household.

† Cost range indicated correlates with prices for different system options available to participants.
How Does it Work?

- **Attend a workshop or an event** (or watch an online tutorial). Get answers to your questions and start thinking about your personal energy goals.

- **Complete a Solar Survey** so we can learn more about your solar needs. The Solar Survey will be available until August 12th at www.mycommunitysolar.org/summit.

- **Alpenglow Solar will contact you after you complete the survey**; be sure to respond in a timely fashion to set up a site visit.

- **Alpenglow Solar will visit each home** to discuss your individual goals and solar suitability.

- **Alpenglow Solar will provide you with a final quote** based on the current bulk-purchase price and customized to meet your needs. **Review the final quote** and explore financing options.

- **Go solar! Sign a contract and provide a $500 non-refundable deposit** to Alpenglow Solar to secure your participation. Alpenglow will schedule your installation in a timely manner and help you complete all required permits and paperwork.

- **Tell your friends, family and neighbors! Display your yard sign proudly!** As more participants commit, the price for all participants declines.

---

**Learn More**

Visit [www.mycommunitysolar.org/summit](http://www.mycommunitysolar.org/summit) to learn more and take the first step!

---

**Who Are We?**

Summit Community Solar is powered by the people of Summit County! A Steering Committee composed of Summit County community members is overseeing the project and is committed to providing a successful program for participating Summit County homeowners. A dedicated Contractor Selection Committee led the contractor selection process (through a highly competitive and rigorous Request for Proposals process), and a separate Outreach Committee is responsible for community outreach and recruitment efforts.

Non-profit organization Utah Clean Energy, Park City Municipal Corporation and Summit County are working together to support the Summit Community Solar effort. Additional support is provided by the U.S. Department of Energy SunShot Initiative, through the Wasatch Solar Challenge.
SunShot Solar Outreach Partnership Case Studies are based upon work supported by the U.S. Department of Energy under Award Number DE-EE0003526. The U.S. Department of Energy (DOE) SunShot Initiative is a collaborative national effort to dramatically reduce the cost of solar energy before the end of the decade. The SunShot Solar Outreach Partnership (SolarOPs) is a U.S. DOE program providing outreach, training, and technical assistance to local governments to help them address key barriers to installing solar energy systems in their communities. The International City/County Management Association (ICMA), American Planning Association (APA), and National Association of Regional Councils (NARC), along with ICLEI-Local Governments for Sustainability and its partners, were competitively selected by the U.S. DOE to conduct outreach to local governments across the United States, enabling them to replicate successful solar practices and quickly expand local adoption of solar energy. For more information visit the SolarOPs website (solaroutreach.org) or contact Emily Dodson (edodson@icma.org).

Disclaimer: This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.