



DOE Solar Energy Technologies Program (SETP) Strategic Review

Presented to
2010 U.S. DOE Solar Program Annual Merit Review and
Peer Evaluation Meeting



May 26, 2010

NAVIGANT
CONSULTING

Navigant Consulting, Inc. is supporting the DOE's Solar Energy Technologies Program (SETP) in the development of its strategic plan.

Key Activities

- Workshops and interviews with DOE SETP staff
- Interviews with 15-20 external stakeholders
- Input from 2010 Annual Review Meeting

The input from all of these activities will be evaluated and integrated accordingly into the SETP strategic plan.

Questionnaire

Following this presentation, we will circulate a brief questionnaire to obtain your feedback on the SETP's mission, goals, and key focus areas.

1. Which best describes your affiliation?

- University/Academic
- National Lab (NREL, ORNL, etc.)
- DOE (non-Lab)
- Government (non-DOE)
- Utility
- Government (Other)
- Other _____

2. Which of the following best describes your primary interest in SETP?

- PV
- CSP
- Systems Integration
- Market Transformation

3. How familiar would you be with SETP?

- Not very familiar
- Somewhat familiar
- Very familiar

4. How long have you been affiliated with your organization?

- <1 year
- 1-2 years
- 3-5 years
- 5+ years

5. Please evaluate the SETP's focus on the following areas:

- Much too focused on individual system integration
- Somewhat too focused on individual system integration
- Well balanced
- Somewhat too focused on grid integration
- Much too focused on grid integration
- I don't have enough information to effectively evaluate this

6. Please evaluate the SETP's focus on integration efforts (individual system integration vs. grid integration):

- Much too focused on individual system integration
- Somewhat too focused on individual system integration
- Well balanced
- Somewhat too focused on grid integration
- Much too focused on grid integration
- I don't have enough information to effectively evaluate this

7. Please evaluate the SETP's focus on U.S. vs. International initiatives:

- Much too focused on U.S. initiatives
- Somewhat too focused on U.S. initiatives
- Well balanced
- Somewhat too focused on International initiatives
- Much too focused on International initiatives
- I don't have enough information to effectively evaluate this

8. Please evaluate the SETP's level of engagement with the affiliation group you identified in Question #1.

- Significantly less than needed
- Somewhat less than needed
- About right
- Somewhat more than needed
- Significantly more than needed

9. Please evaluate the SETP's level of effort dedicated to business model support (e.g. new financing models)

- Significantly less than needed
- Somewhat less than needed
- About right
- Somewhat more than needed
- Significantly more than needed
- I don't have enough information to effectively evaluate this

10. Please evaluate the SETP's focus on research (basic vs. applied):

- Much too focused on applied research
- Somewhat too focused on applied research
- About Right
- Somewhat too focused on basic research
- Much too focused on basic research

The SETP would greatly appreciate your thoughtful input to this process.

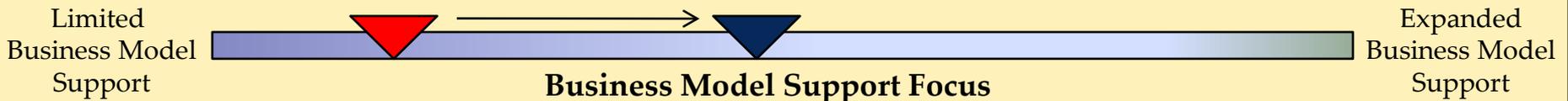
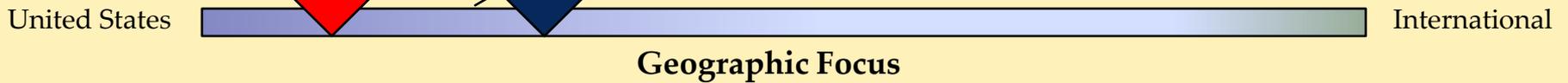
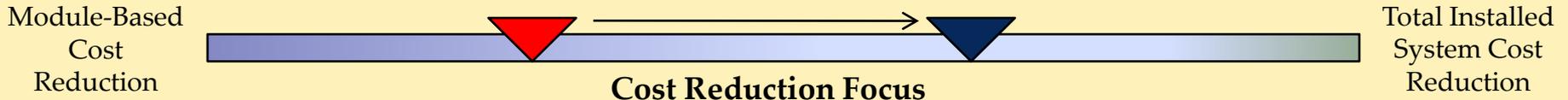
During a workshop in April, the SETP team members developed a program Mission Statement and Key Goals.

Program Mission Statement and Key Goals

The DOE Solar Energy Program will help accelerate the wide-spread adoption of solar electric technologies across the U.S. and internationally by focusing on a portfolio of RDD&D activities. The program will aim to:

1. achieve grid parity for residential markets by 2015; commercial/intermediate markets by 2017; and utility baseload power by 2022.
2. create a robust domestic solar industry, and
3. enable >10% penetration of solar energy nationally by 2030.

A brainstorm session during the strategic planning kickoff meeting in December resulted in six areas where the SETP should adjust its focus.

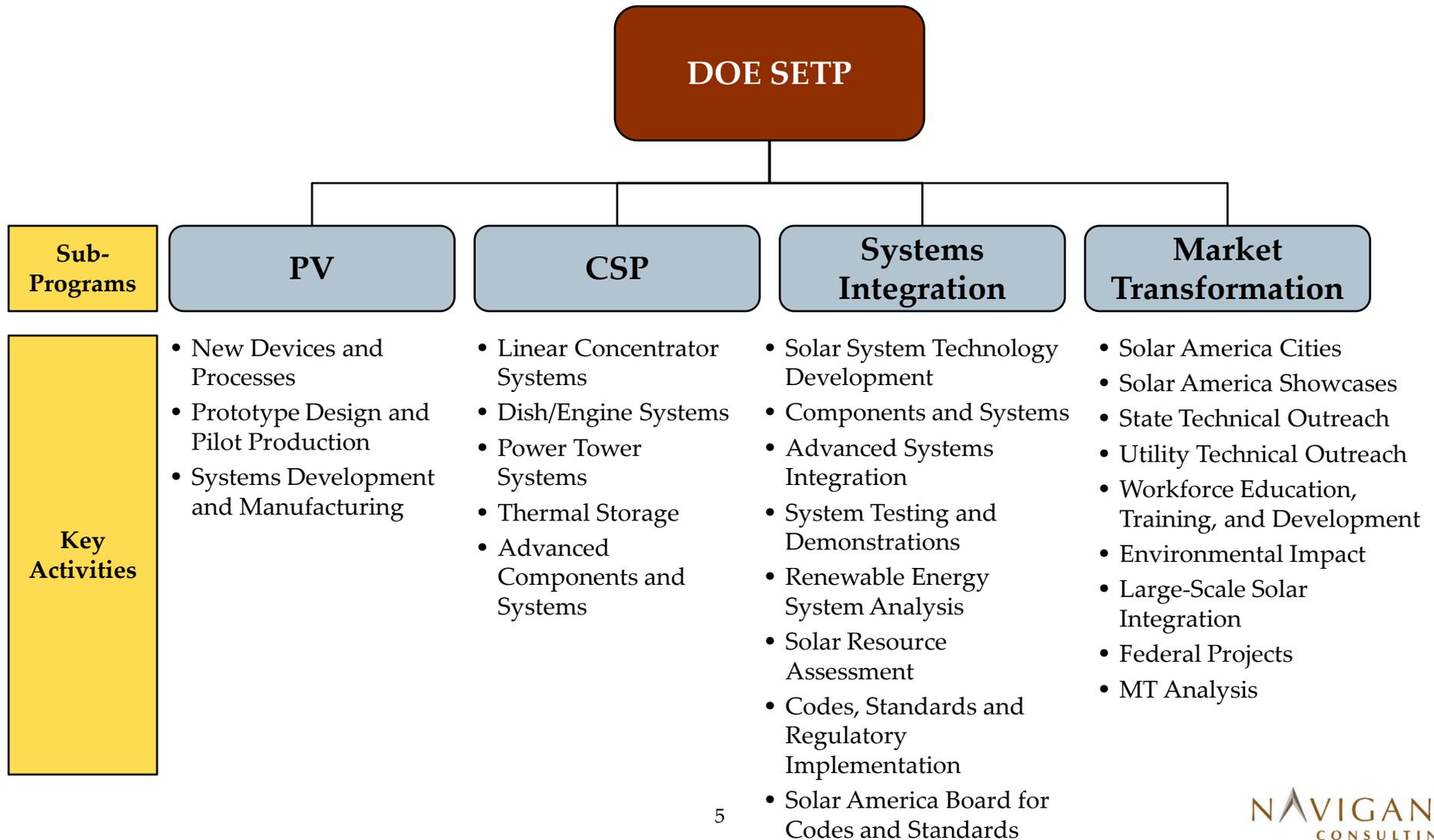


Current SETP Focus



Future SETP Focus

The SETP sub-programs are currently structured into the “key activities” below.



In an April workshop, the SETP PV team listed its key areas of focus.

Sub-Program	Key Areas of Focus
PV	<ul style="list-style-type: none">• Fundamental device-focused materials understanding of the limitations and opportunities of commercial and near-commercial semiconductors.
	<ul style="list-style-type: none">• Foster domestic PV manufacturing technology.
	<ul style="list-style-type: none">• Lead development in next-generation PV technologies.
	<ul style="list-style-type: none">• Ensure world class researchers in US universities and labs
	<ul style="list-style-type: none">• Ensure national labs are aligned with DOE goals--efficiently support industry and provide technical leadership.
	<ul style="list-style-type: none">• Accelerate commercially-promising PV systems technologies with lab technical support, funding, and DOE validation.
	<ul style="list-style-type: none">• Address levelized cost of electricity reduction opportunities along the PV value chain.

In an April workshop, the SETP CSP team listed its key areas of focus.

Sub-Program	Key Areas of Focus
CSP	• Address barriers to financing for large CSP plants
	• Work directly with utilities to quantify the value of storage and grid integration issues
	• Facilitate workforce development and cost reduction through university/industry partnerships.
	• Improve the CSP supply chain to increase cost reduction potential and availability.
	• Assess market potential, market entry points, and technology needs for alternative CSP systems.
	• Reduce cost of storage to meet intermediate and baseload market requirements.
	• Develop high-temperature systems to meet lower cost requirements of baseload power.
	• Establish collaboration with international partners to accelerate the US market.

In an April workshop, the SETP Systems Integration team listed its key areas of focus.

Sub-Program	Key Areas of Focus
Systems Integration	<ul style="list-style-type: none"> • Develop models and tools to evaluate commercial viability of new products/systems.
	<ul style="list-style-type: none"> • Develop technologies to support integration of 10-20% of CSP and PV energy on the distribution system (modeling, technology development, codes and standards).
	<ul style="list-style-type: none"> • Develop technologies to support 10-20% of CSP and PV energy into transmission by 2030.
	<ul style="list-style-type: none"> • Reduce inverter cost by 50% of 2009 costs and improve reliability to 30 years.
	<ul style="list-style-type: none"> • Collect solar radiation data to improve ability to site and forecast PV and CSP systems.
	<ul style="list-style-type: none"> • Develop codes and standards to reduce the barriers to bring products and installations to market.
	<ul style="list-style-type: none"> • Develop storage and grid control technologies that mitigate variability.
	<ul style="list-style-type: none"> • Address direct balance of system costs as part of levelized cost of electricity goals.

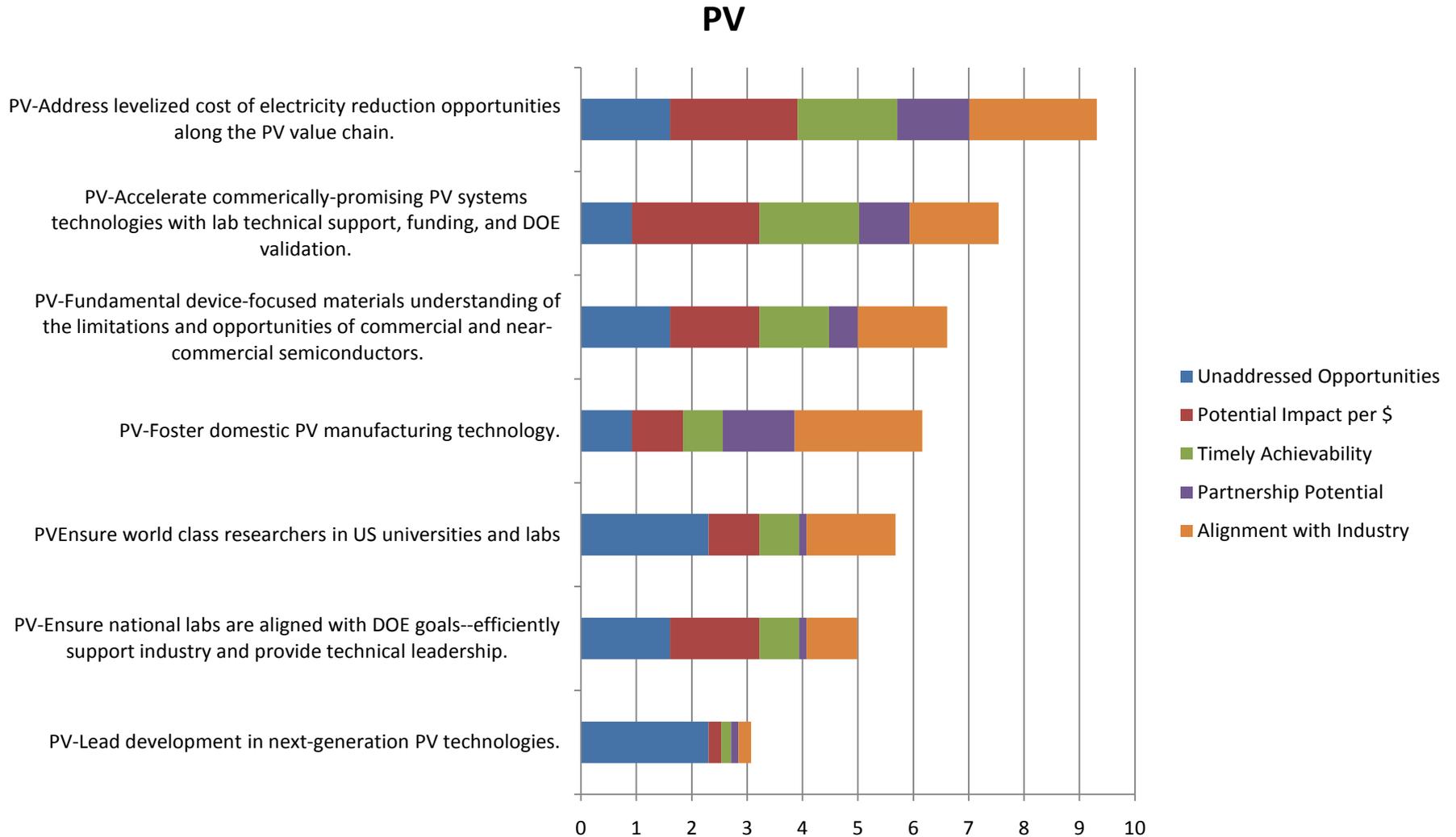
In an April workshop, the SETP Market Transformation team listed its key areas of focus.

Sub-Program	Key Areas of Focus
Market Transformation	<ul style="list-style-type: none"> • Improve and standardize policy and regulations (net metering, rate structures, interconnection, and incentives).
	<ul style="list-style-type: none"> • Support nationwide certification and training efforts to ensure industry level safety and quality.
	<ul style="list-style-type: none"> • Enable workforce growth across industries (solar, utility, etc).
	<ul style="list-style-type: none"> • Accelerate the environmental review process for solar installations.
	<ul style="list-style-type: none"> • Accelerate utility solar integration.
	<ul style="list-style-type: none"> • Reduce time and cost in DG permitting inspections.
	<ul style="list-style-type: none"> • Accelerate solar adoption by federal agencies.
	<ul style="list-style-type: none"> • Assess, provide outreach, and support demonstrations on innovative financing and business models for both hardware and electricity purchases.
	<ul style="list-style-type: none"> • Better identify market and geographic characteristics to inform and help prioritize activities.

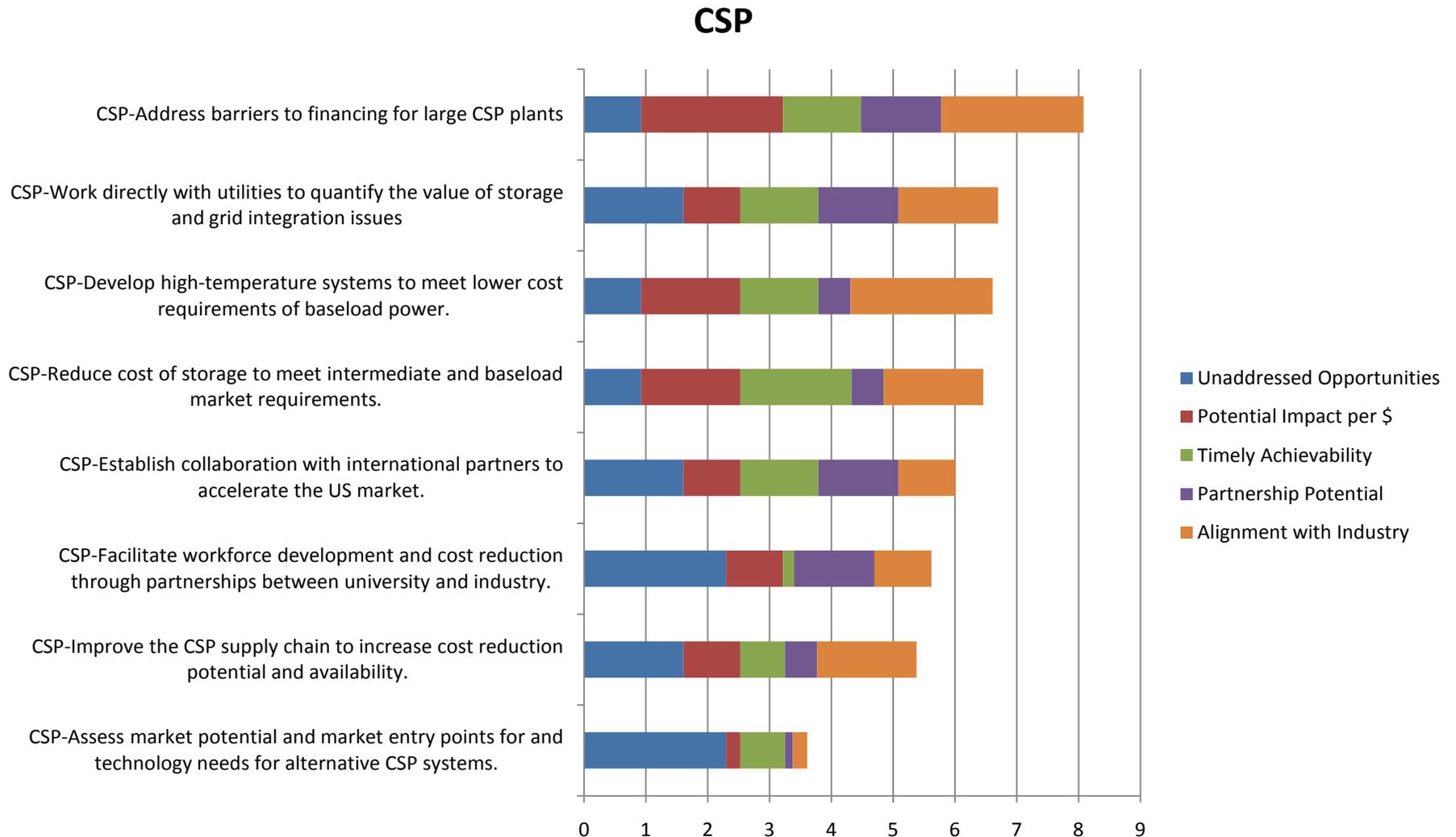
Each SETP sub-program prioritized its key focus areas using the criteria below.

	Proposed RD&D Target Areas Prioritization Criteria	Weighting	Description	Rating Note
1	Unaddressed Opportunities	23%	Degree to which research area is inadequately addressed by other institutions (breadth and depth)	10 = least addressed
2	Potential Impact per \$	23%	Potential impact DOE can have on research area given limited budget	10 = most efficient use of \$
3	Timely Achievability	18%	Probability of achieving the research areas' strategic objectives by 2015	10= most likely achieved
4	Partnership Potential	12%	Potential for partnership that leverage additional funding sources (e.g. states, universities, private sector)	10= most likely to partner
5	Alignment with Industry	23%	Degree to which DOE efforts align with industry needs and objectives	10=aligns with industry

Below are the prioritized areas of focus of the PV Program.

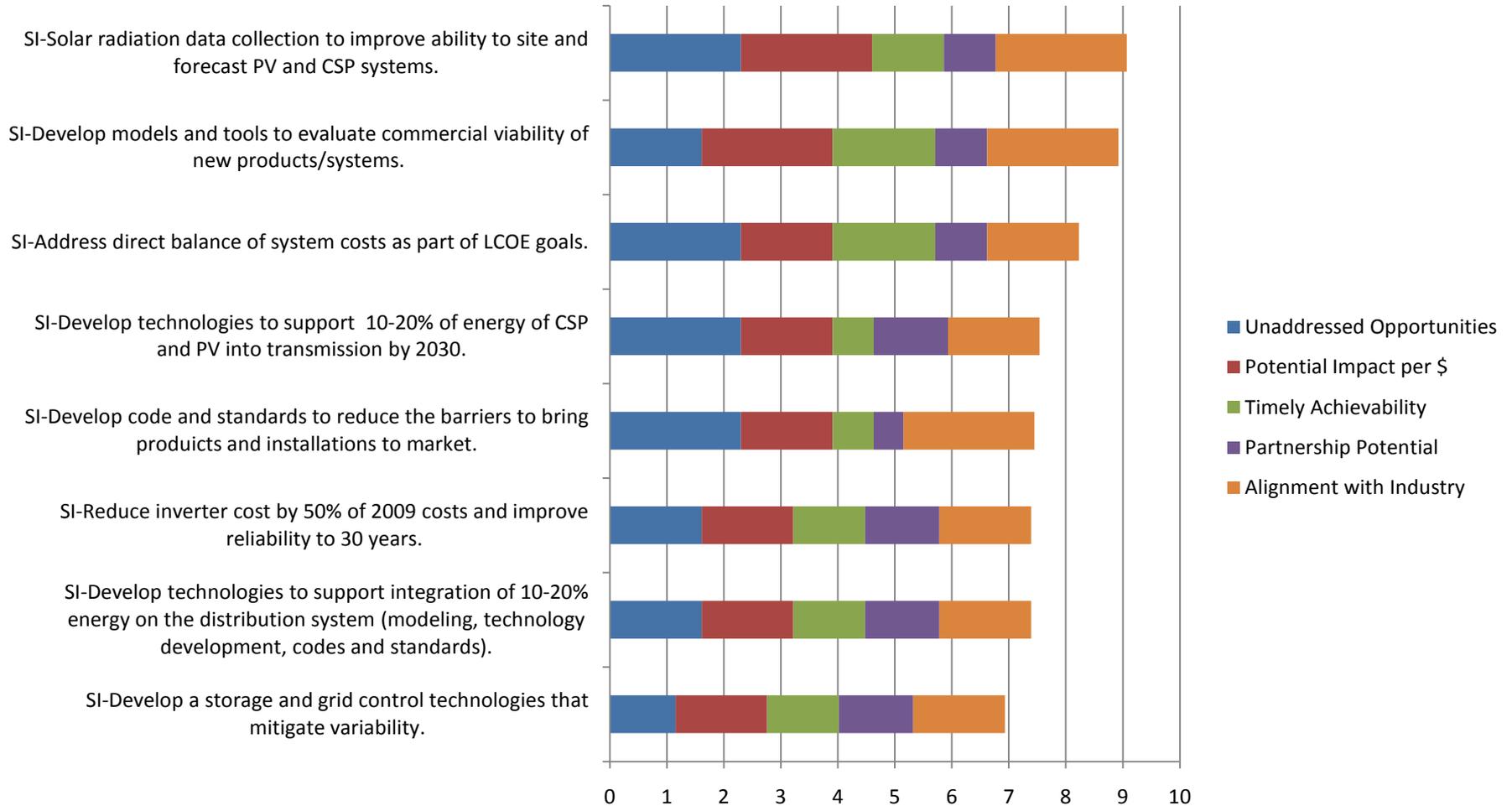


Below is the prioritization for the CSP program.



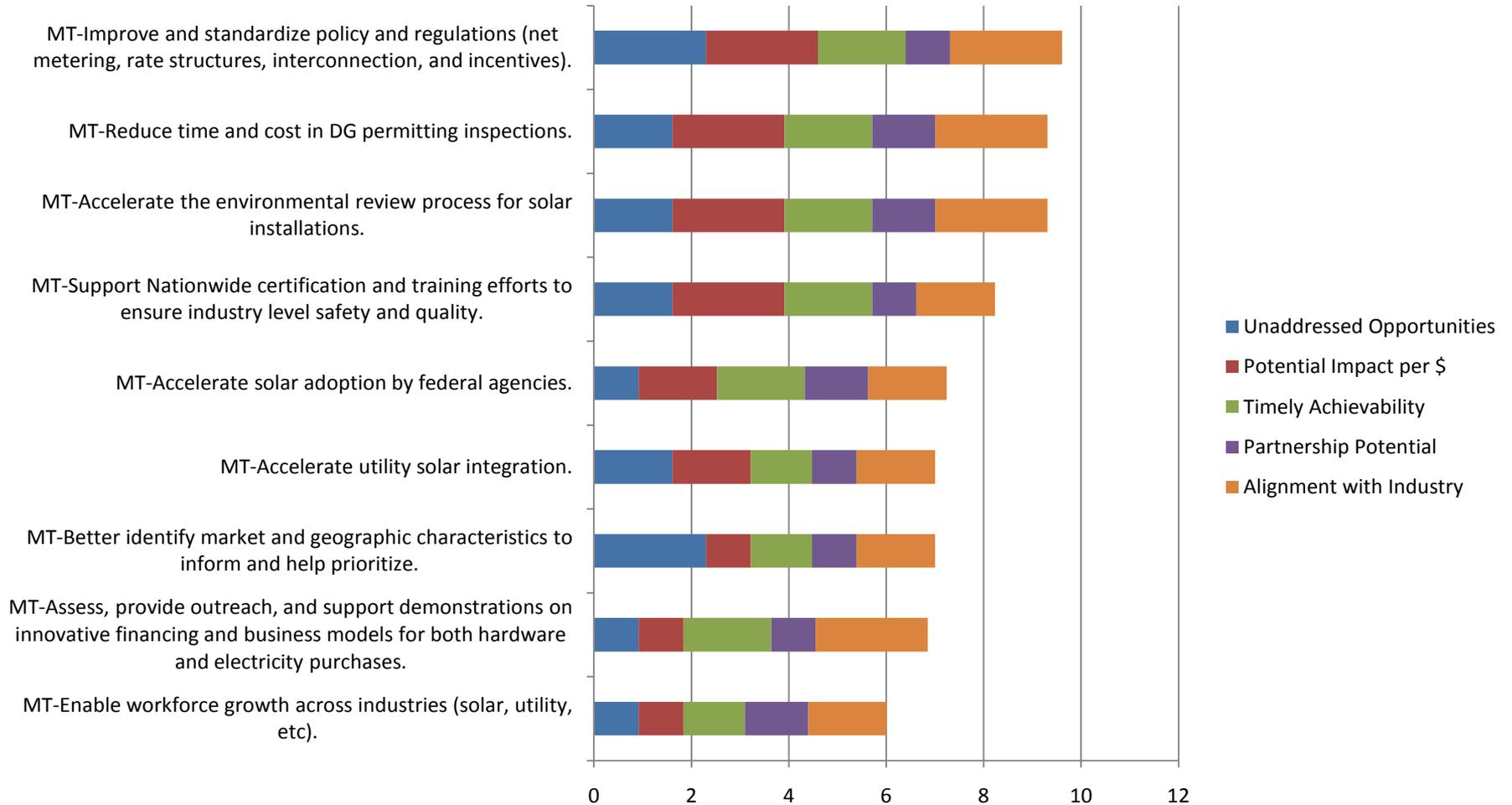
Below is the prioritization for the Systems Integration Program.

Systems Integration



Below is the prioritization for the Market Transformation program.

Market Transformation



We would now like you all to take 10 – 15 minutes filling out a brief questionnaire that focuses on the following questions.

Key Questions for Your Input

Mission Statement and Key Goals

- Is there anything you would change with the Mission Statement and Goals?
- Is it sufficiently: Clear, Ambitious and Focused?
- Are the right metrics presented (e.g. grid parity, domestic industry)?

Focus areas

- Are these the right focus areas?
- Should the sub-programs be focused on additional areas?
- Are there any focus areas that you think should not be part of each sub-program's scope?
- To what extent do you agree with the prioritization of focus areas completed by the SETP team?
- Would you change the rankings?
- In your mind, what is the most important focus area for each sub-program?

Questions?

For questions concerning this material please contact:

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