

Making Waves for Justice: Adapting Federal Programs and Process for Evolving Public Values

Matthias Galan, Postdoctoral Research Fellow, ASU

matthias.galan@asu.edu

Darshan Karwat, Associate Professor, ASU

darshan.karwat@asu.edu

CSPO New Tools for Science Policy | May 10, 2024

How can we assess the social outcomes of science and technology programs beyond traditional, market-based outcomes?

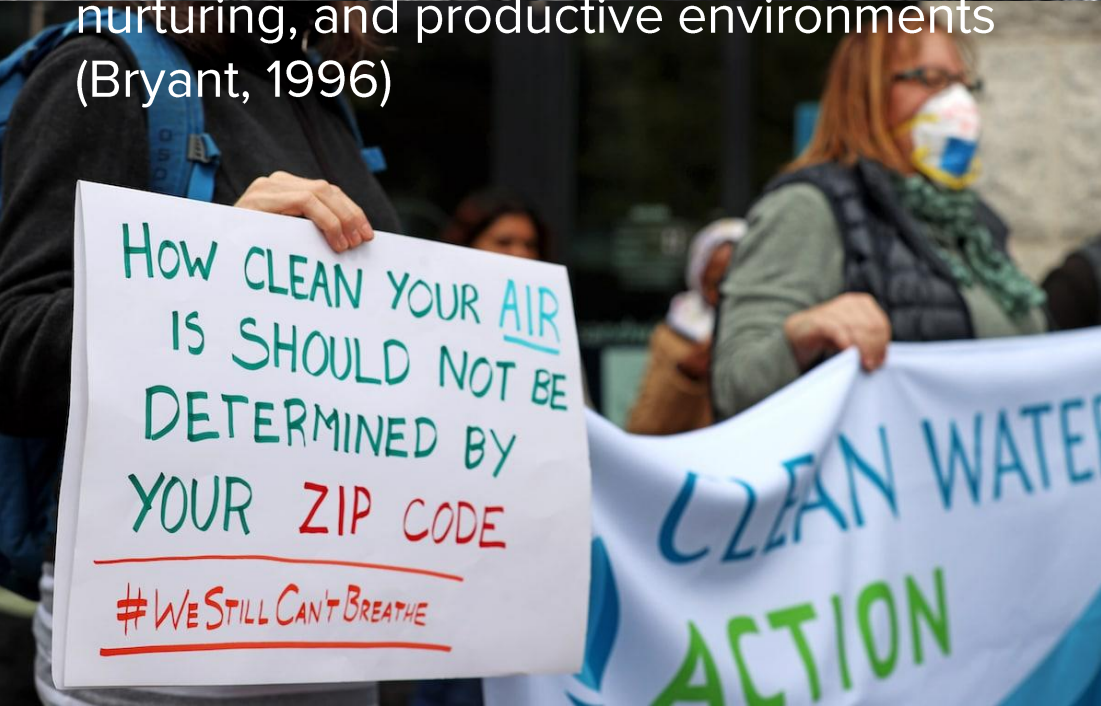
Ideas like “economic productivity” and easily collectable metrics like publications and patents do little to illustrate impact on social and public good

Public value mapping

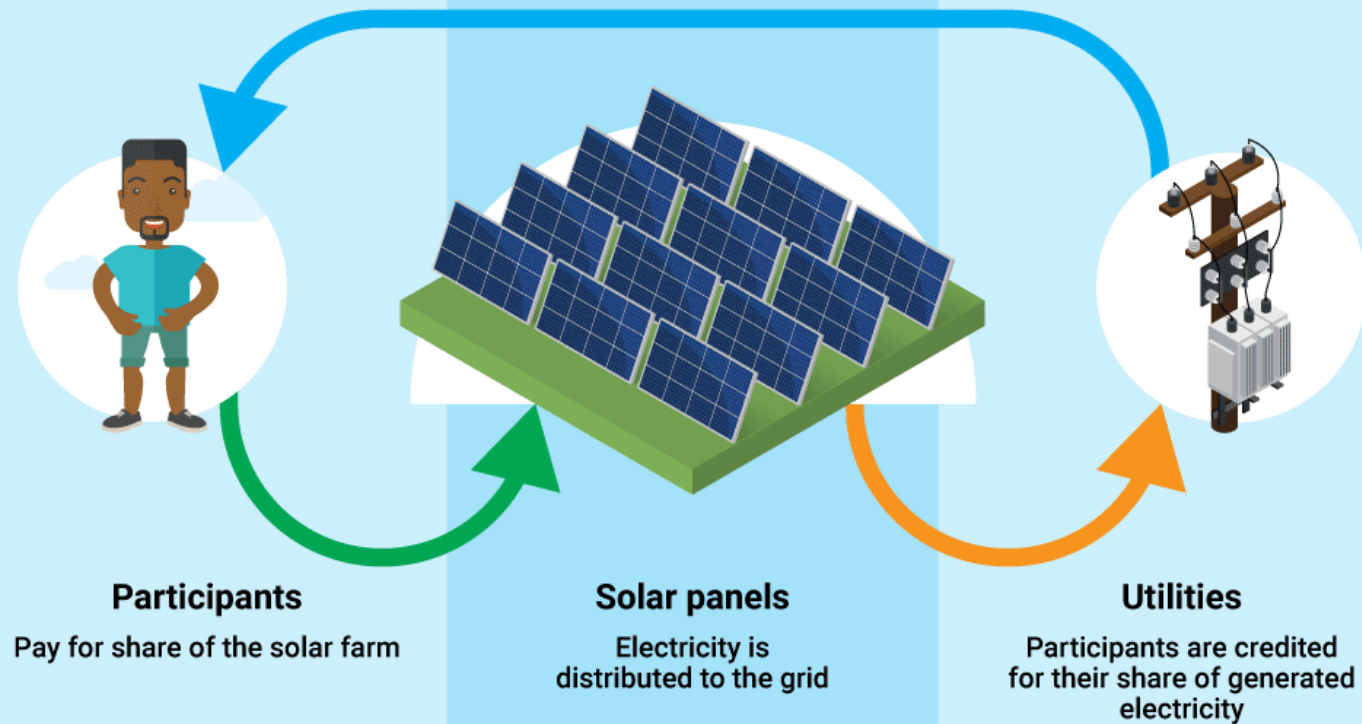
Public values are those that embody the prerogatives, normative standards, social supports, rights and procedural guarantees that a given society aspires to provide to all citizens
(Bozeman & Sarewitz, 2005)



Environmental Justice: cultural norms and values and related decisions to support sustainable communities to maintain safe, nurturing, and productive environments (Bryant, 1996)



Community solar



Energy Justice means all individuals should have access to energy that is affordable, safe, sustainable and be able to participate in and lead energy decision-making processes (Carley & Konisky, 2020)

Executive Order 13990: Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis

Executive Order 14008: Tackling the Climate Crisis at Home and Abroad



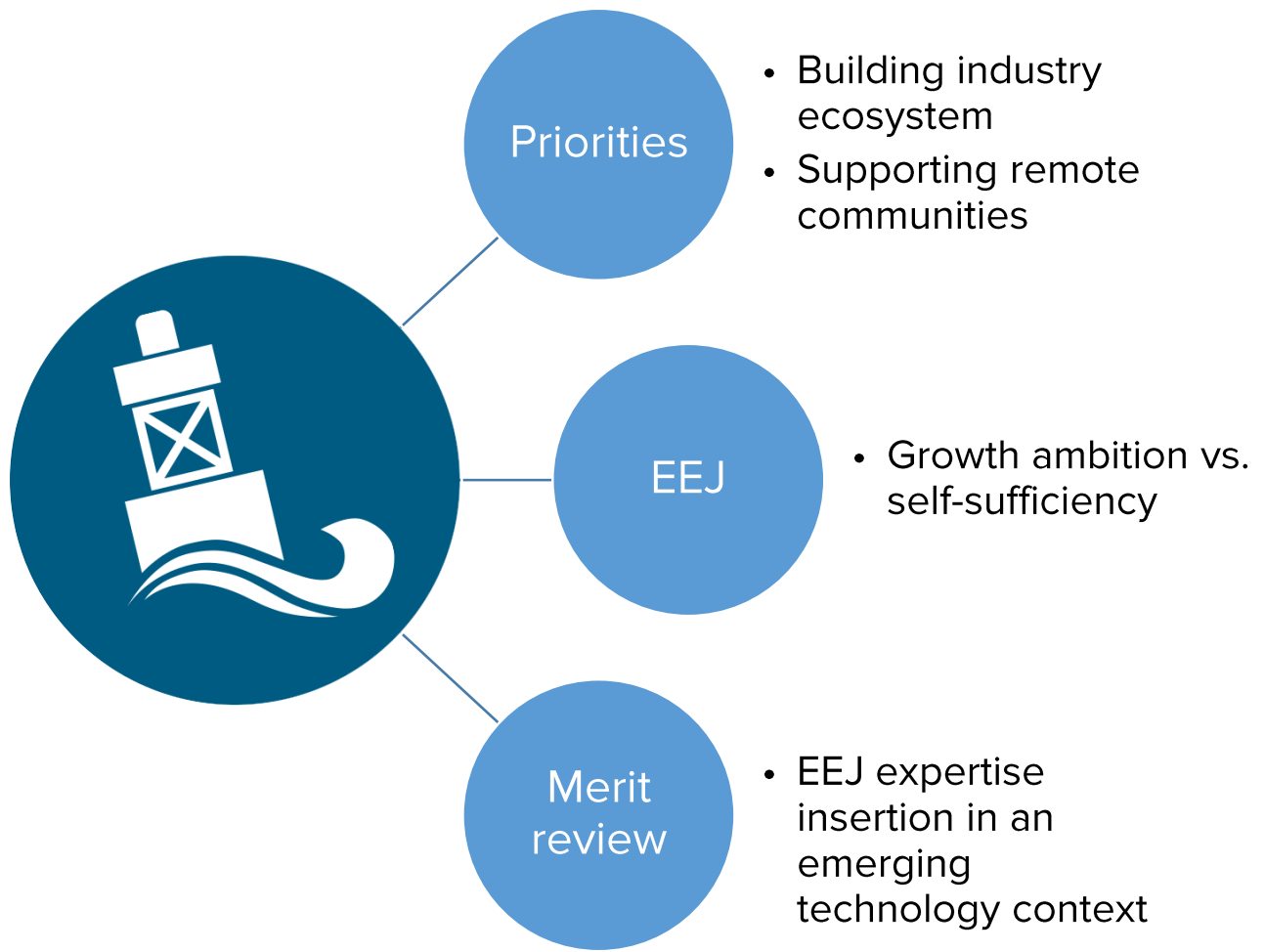
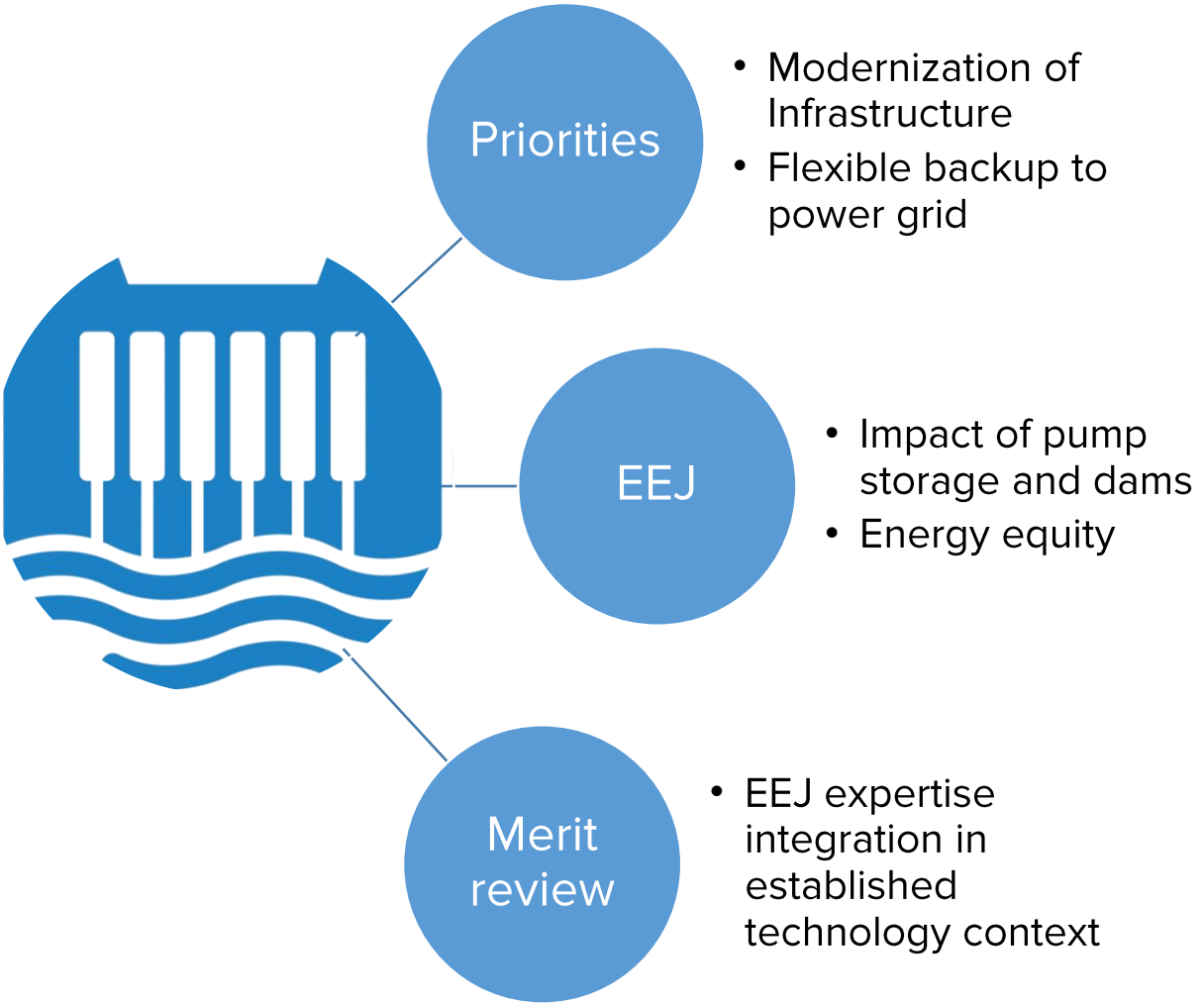
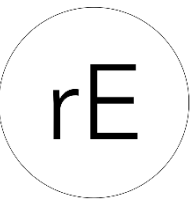
Justice40 Initiative: federal government-wide goal that 40 percent of the overall benefits of certain Federal investments flow to disadvantaged communities that are marginalized, underserved, and overburdened by pollution.



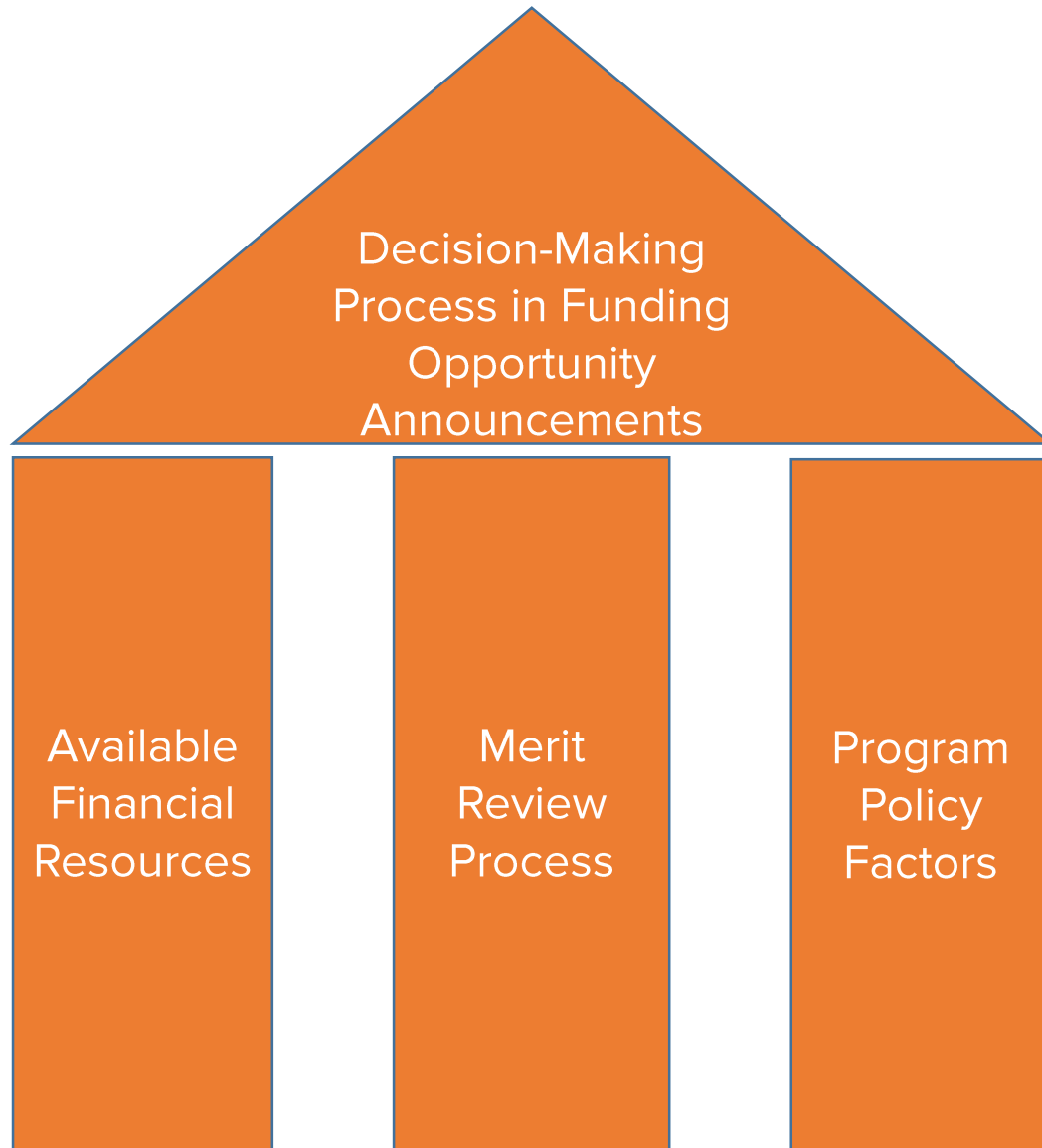
**How can federal agencies like DOE incorporate these values into their work?
How will we know if they succeeded?**



Cases: Hydro power and marine energy

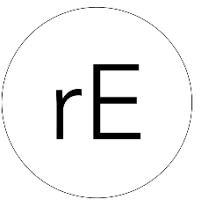


How to inject EEJ more effectively



- 🚀 Efforts in setting up an EEJ appropriate merit review process
- 🚀 Identify potential barriers to EEJ in the decision-making pyramid
- 🚀 A tool to guide program/project design

EEJ in the award process (merit review)



Negotiation & Award

?

?

Decision

Ranking of full applications



Merit review (technical merit)

federal subject matter experts (written review)

Non-federal subject matter experts (written review)

Special purpose reviewers for EEJ sections (written review)

Federal reviewers with a background in EEJ

Reception of full applications

Federal staff with a background in EEJ

Receipt and selection of concept papers

Creating a funding mechanism (DEIA plans, CBPs, etc.)

Take-aways

🚀 ‘Stop Gap’ Integration (FOAs) and institutional learning of EEJ

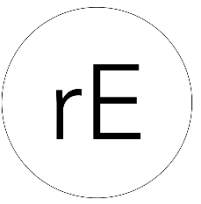
🚀 **Procedural dimension:**

- 🚀 Specific EEJ instruments are needed (i.e., DEIA or Community Benefits Plans)
- 🚀 It matters at what point in the decision-making process EEJ is considered
- 🚀 To integrate EEJ in the merit review requires to start at the instrument design level.



🚀 **Epistemic dimension:**

- 🚀 The insertion of non-federal EEJ expert voices is limited to written feedback in the merit review of full applications.
- 🚀 It is unclear in how far federal EEJ expert voices are part of the final rounds of decision making. (EEJ expertise is not required)
- 🚀 Navigating language requires specialized knowledge (information advantage)

Applying the analytical framework to funding instrument design





Goal alignment

-  Innovation mission of the Water Power Technology Office (WPTO)
-  EEJ-relevant policy initiatives such as Justice40 (EO 14008)

Weighting of EEJ categories

-  Percentage of score allocated to EEJ-relevant categories (i.e. Community Benefits Plans)
-  Available funding to accomplish an EEJ-relevant task

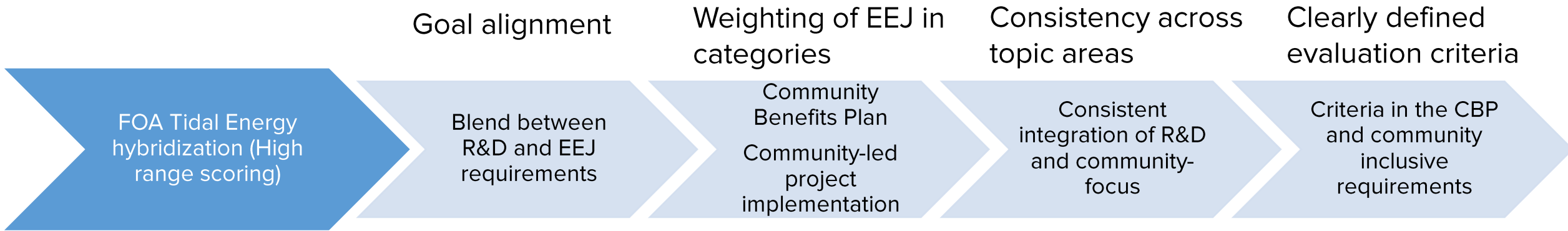
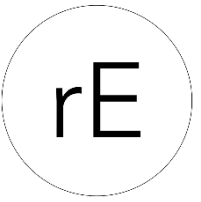
Consistency across topic areas

-  Funding Opportunity Announcements: Cross-topic area integration of EEJ-relevant categories such as CBPs or DEIA plans.
-  Are EEJ-relevant criteria situated in one specific topic area, several or all?

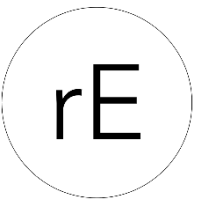
Clearly defined evaluation criteria

-  How clear are the suggested metrics and milestones?

A 'curved' scoring hierarchy



A 'curved' scoring hierarchy



Goal alignment

Weighting of EEJ in categories

Consistency across topic areas

Clearly defined evaluation criteria

FOA Tidal Energy hybridization (High range scoring)

Blend between R&D and EEJ requirements

Community Benefits Plan
Community-led project implementation

Consistent integration of R&D and community-focus

Criteria in the CBP and community inclusive requirements

FOA Marine Energy R&D: DEIA plan with guidance (mid range scoring)

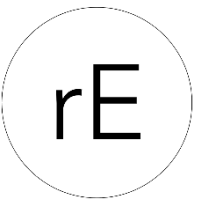
R&D requirements complemented with DEIA plan

Lower weights in the single topic areas

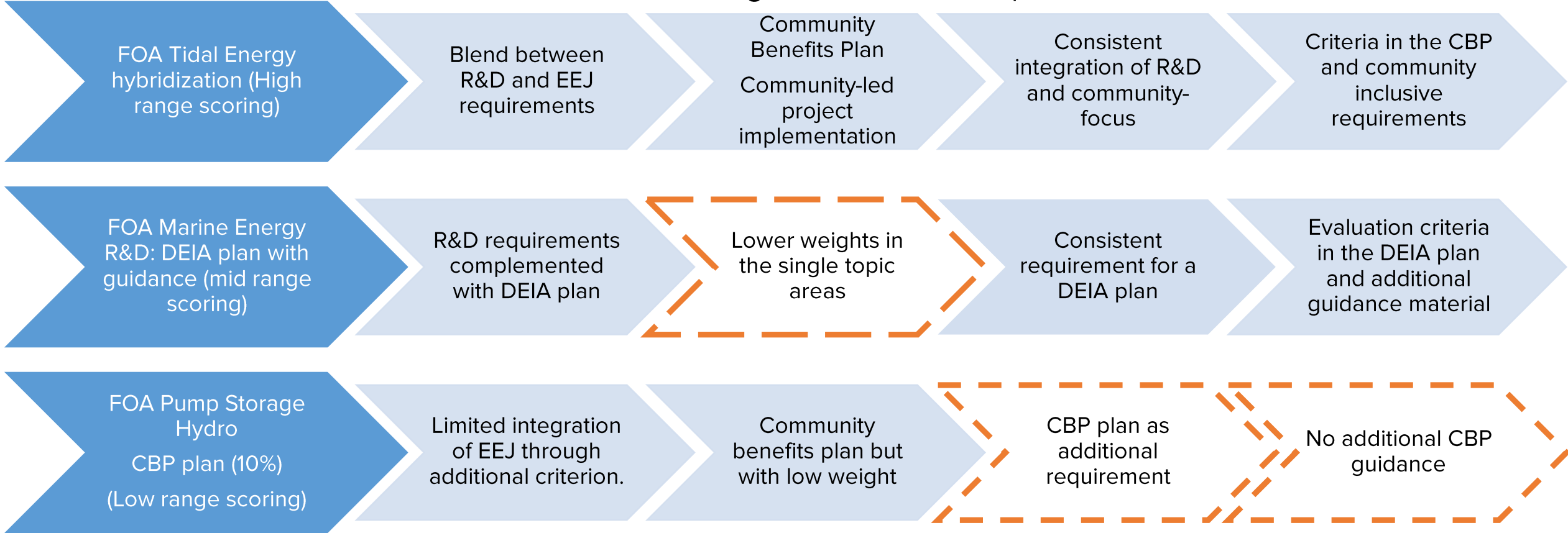
Consistent requirement for a DEIA plan

Evaluation criteria in the DEIA plan and additional guidance material

A 'curved' scoring hierarchy



Goal alignment Weighting of EEJ in categories Consistency across topic areas Clearly defined evaluation criteria



A PVM mapping tool

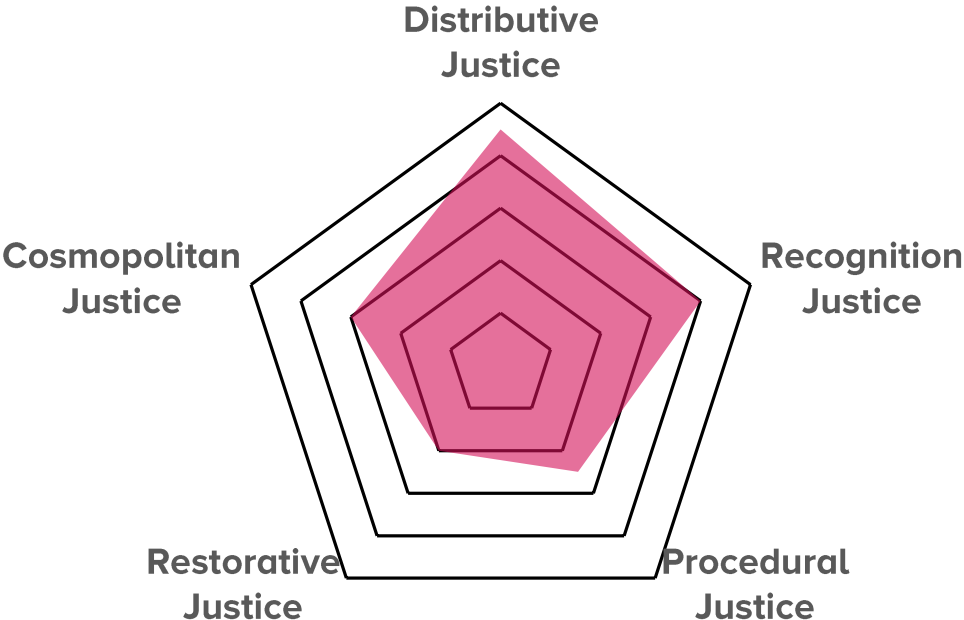
Semi-quantitative approach

Easily adaptable method leading to visualizations that help with decision-making

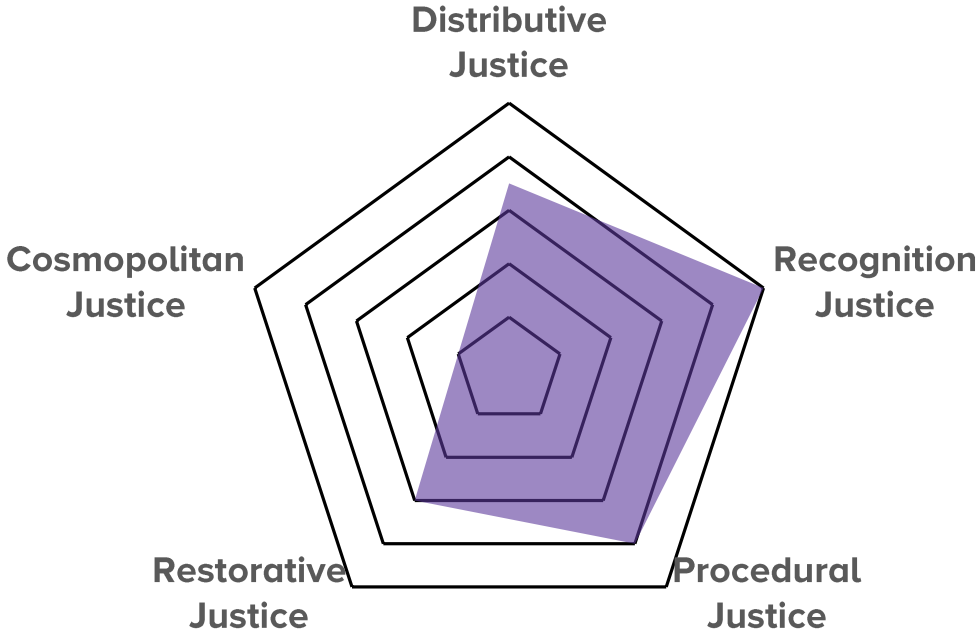
Changes can be tracked over time

	No alignment	Partial alignment	Full alignment
Intent and implementation	No EEJ values present in program objective and implementation	Some EEJ values present in program objective, or implementation	EEJ values present in program objective and implementation
Metrics and outcomes	No EEJ outcomes/metrics tracked	No EEJ outcomes/metrics tracked	EEJ outcomes/metrics known and tracked

Waves To Water Extent of Alignment: From objectives to implementation to outcomes



ETIPP Extent of Alignment: From objectives to implementation to outcomes



Conclusions

- ✈ Combination of community-led activities, community-benefits plans, and R&D focused activities is promising to account for EEJ values.
- ✈ Procedural barriers
 - ✈ Narrowing down the role of EEJ throughout the merit review process
 - ✈ Moving from explicit EEJ role as part of merit review to implicit EEJ role in award decisions
- ✈ Epistemic barriers
 - ✈ Giving EEJ-related expertise a voice as legitimate expertise
 - ✈ Selection officials' attitudes towards EEJ are important in the final decision stage

Next steps and opportunities to collaborate

🚀 Co-develop the tool

- 🚀 Testing of the framework on other funding instruments (i.e. prize competitions)
- 🚀 Explore application in other federal contexts

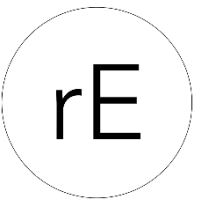
🚀 How does the negotiation process affect EEJ?

🚀 How can we track EEJ in project implementation and reporting?

🚀 Which concepts are crucial to EEJ integration?

- 🚀 Ownership, Accountability, Impact...

Contact



Darshan Karwat	Matthias Galan
Darshan.Karwat@asu.edu	matthias.galan@asu.edu
	+1 (202) 999 2431
https://www.linkedin.com/in/darshan-karwat-84a75835/	https://www.linkedin.com/in/matthias-galan/
Associate Professor	Postdoctoral Research Scholar
School for the Future of Innovation in Society, The Polytechnic School	School for the Future of Innovation in Society
Arizona State University	Arizona State University

Resources

- ✈ Bozeman, B., & Sarewitz, D. (2011). Public Value Mapping and Science Policy Evaluation. *Minerva*, 49(1), 1–23. <https://doi.org/10.1007/s11024-011-9161-7>
- ✈ Bozeman, B., & Sarewitz, D. (2005). Public values and public failure in US science policy. *Science and Public Policy* , 32(2), 119–136. <https://academic.oup.com/spp/article/32/2/119/1712220>
- ✈ Bryant Bunyan. (1996). Key Research and Policy Issues Facing Environmental Justice. *Poverty & Race Journal*, 5(4), 5–6.
- ✈ Carley, S., & Konisky, D. M. (2020). The justice and equity implications of the clean energy transition. In *Nature Energy* (Vol. 5, Issue 8, pp. 569–577). Nature Research. <https://doi.org/10.1038/s41560-020-0641-6>
- ✈ David Oonk, Kaul, M., Maurer, B., & M.A. Karwat, D. (2023). Public value mapping to assess and guide governmental investments in energy and environmental justice: Studying the United States Department of Energy. *Renewable and Sustainable Energy Reviews*, 188. <https://doi.org/10.1016/j.rser.2023.113765>