"Yes, and": Integrating Equity in Technical Assistance Delivery

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ABSTRACT

Intentionally integrating equity into everything we do is necessary to realize the environmental justice opportunity presented by the clean energy transition. The challenge is that practitioners rely upon technical advisory frameworks developed over decades and it can feel radical or risky to adopt novel frameworks that incorporate equity. Even those with a sincere commitment to an equitable energy transition may feel challenged to make the connection between systemic inequities and their next boiler upgrade. This paper describes experiences and lessons learned to program administrators and delivery contractors on the application of robust equity frameworks that incorporate Justice40 metrics, equity risk assessments, and integrated community benefits planning. This paper will share lessons learned in the first several months of the U.S. Department of Energy's Onsite Energy Program, a new initiative to increase adoption of onsite clean energy technologies for large energy users, for which the authors are integrating energy justice into all aspects of program delivery, coequal with technical expertise. The authors will share what was learned from applying equity frameworks to the design of the Onsite Energy Program's technical assistance delivery workflow. We will also share case studies from early engagements with program participants to demonstrate how the frameworks can improve equity outcomes and mitigate risks associated with structural inequities built into the technical advisory process over decades. The equity frameworks and case studies presented in this paper will provide practitioners with models to emulate in their own programs.

Introduction

This paper describes experiences and lessons learned from efforts to integrate equity into technical assistance workflows in the first several months of the U.S. Department of Energy (DOE) Onsite Energy Program. This program is designed to accelerate adoption of clean onsite energy generation and storage by providing manufacturers and other large energy users with unbiased information on which technologies align with their goals and needs. The program also builds energy justice into the design.

DOE's commitment to building a clean, decarbonized economy puts American communities at the forefront of program activities, ensuring that we build an equitable, healthier future for all Americans. To achieve this impact, new clean energy related programs need to ensure they support sustainable community economic development and prosperity and advance the following principles and priorities: 1) diversity, equity, inclusion, and accessibility (DEIA); 2) energy equity; and 3) workforce development. These three priorities are described in more detail below:

- **Diversity, equity, inclusion, and accessibility (DEIA):** building a clean and equitable energy economy is an ambitious goal that will require providing opportunities and leveraging the skills of our entire society, including people of all racial, ethnic,

socioeconomic, and geographic backgrounds; those of all sexual orientations and gender identities; persons with disabilities; and those re-entering the workforce from incarceration.

- **Energy Equity:** recognition that disadvantaged communities have been historically marginalized and overburdened by pollution, underinvestment in clean energy infrastructure, and lack of access to energy efficient housing and transportation.
- **Workforce Development:** DOE is committed to encouraging collective bargaining and free and fair opportunities for workers to organize. DOE supports programs that expand good jobs through explicit strategies and actions designed to attract, train, and retain a skilled diverse workforce; foster safe and healthy work environments; reduce the risk of work slowdowns or stoppages; and ensure the efficient and effective use of taxpayer funds.

Onsite Energy Program

Program Description

To accelerate the deployment of onsite clean energy technologies, DOE launched the Onsite Energy program in January 2024. The program establishes a regional network of ten technical assistance partnerships (TAPs) that will provide direct technical assistance to industrial facilities and other large energy users to help with identifying technology options for achieving clean energy objectives. Table 1 lists the 10 regions, indicates which states are included in each region, and identifies the prevalence of manufacturing facilities in each region. As evident by Table 1, the Midwest has the highest concentration of manufacturing facilities (25%) followed by the Southeast (17%).

Table 1. Onsite Energy TAP Regions: State Composition and Percent of Manufacturing

TAP Region	States Included in Region	Percent of U.S. Manufacturing Facilities and Wastewater Treatment Plants
Midwest	IN, IL, MI, MN, OH, WI	25%
Southeast	AL, FL, GA, KY, MS, NC, SC, TN, PR	17%
Western	AZ, CA, HI, NV	12%
Southcentral	AR, LA, OK, NM, TX	10%
Mid-Atlantic	VA, WV, MD, DE, PA	9%
New York-New Jersey	NY, NJ	8%
Central	IA, KS, MO, NE	6%
New England	CT, MA, ME, NH, RI, VT	6%
Northwest	AK, ID, OR, WA	4%
Upper-West	CO, MT, ND, SD, UT, WY	3%

Source: Internal DOE Analysis. Contains all manufacturing facilities tied to NAICS codes 31-33 and wastewater treatment facilities.

The Onsite Energy TAPs expand upon the program model of the former Combined Heat and Power (CHP) TAPs, which over the last two decades helped transform the U.S. industrial market for CHP and district energy technologies. The new program provides a similar set of services for a broader set of technologies that include battery storage, fuel cells, geothermal, industrial heat pumps, renewable fuels, solar photovoltaics, solar thermal, thermal storage, and wind power. The Onsite Energy TAPs will help facilities across the nation integrate the latest onsite technologies by providing specialized technical assistance, including initial site screenings, identifying multi-technology solutions, offering advanced analysis to support project installations, and more.

Program Delivery Model

The regional Onsite Energy TAPs provide technical assistance to end users and other stakeholders about technology options for achieving clean energy objectives. Key services include:

- **Technical Assistance:** screen sites for opportunities to implement onsite energy technologies and provide advanced services to maximize economic impact and reduce risk from initial screening to installation to operation and maintenance.
- **End-User Engagement:** partner with organizations representing end users to advance onsite energy as a cost-effective way to transition to a clean energy economy.
- **Stakeholder Engagement:** engage with strategic stakeholders, including utilities and policymakers, to identify and reduce barriers to onsite energy through fact-based, unbiased education.[1]

Through these three key program activities TAPs share expertise with U.S. industrials and other large energy users on the potential for onsite energy technologies to lower costs, reduce emissions, and contribute to a clean energy economy. It is through these same activities that the DOE program team is intentionally integrating equity into everything the program does.

Community Benefits Program Model

In addition to having equity integrated throughout the core services, the program has been updated to include TAP activities that align with the three energy justice priorities described in the introduction:

- **DEIA:** TAP staff will participate in DEIA trainings provided by the DOE program team.
- **Energy Equity:** each Regional TAP will complete a community engagement plan that identifies priority communities (including disadvantaged communities) in their region and provide tactics to engage them.
- **Workforce Development:** each Regional TAP will complete a regional workforce report that summarizes region-specific workforce development programs and organizations (including a summary of minority-serving institutions), along with a characterization of workforce related needs/challenges in the region. The TAP's role is to characterize

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[1] Onsite Energy Fact Sheet. Industrial Efficiency & Decarbonization Office. https://www.energy.gov/eere/iedo/onsite-energy-fact-sheet. Accessed March 2024.

regional workforce implications and to provide that information to DOE to inform other programs whose primary role is workforce development.

Historical CHP TAP Experience with Communities

Though energy justice priorities are new to the TAP program model, the CHP TAPs had demonstrated experience engaging with disadvantaged communities (DACs) as shown in Table 2. Program data from 2018 to 2023 shows that the CHP TAPs completed over 1,200 technical assistance reviews, with 29 percent occurring in census tracts that are designated as disadvantaged based on the Climate and Economic Justice Screening Tool (CEJST) methodology.[2]

Table 2. CHP Technical Assistance Activity from 2018 to 2023

Technical Assistance (TA) Activity Description	TA Activity (Count)	TA Activity in DAC (Count)	TA Activity in DAC (%)
Screening	1,107	318	29%
Advanced TA	154	44	29%
Total	1,261	362	29%

In addition to providing technical assistance in disadvantaged communities, the CHP TAPs regularly engaged with end-user groups and stakeholders to promote the benefits of CHP within disadvantaged communities. Highlights from CHP TAP engagements include:

- **ReImagine Appalachia (January 2021):** the Midwest CHP TAP participated in a virtual roundtable with Ohio Senator Sherrod Brown hosted by ReImagine Appalachia promoting CHP as an economic and environmental opportunity in Appalachia.
- **West Virginia Governor's Energy Summit - Connecting Communities Through Energy (October 2022):** the Mid-Atlantic CHP TAP presented on CHP benefits: emissions reductions and grid support; reliability; decarbonization; security; resiliency for critical infrastructure.
- **Puerto Rico Resiliency (February 2023):** the Southeast CHP TAP presented on Combined Heat and Power for Resiliency at Public Facilities, highlighting the Rincon Beach Resort CHP system that was able to maintain operations during grid outages resulting from hurricanes Ian and Fiona.
- **DOE Office of Indian Tribal Affairs:** the Northwest CHP TAP was a regular speaker for the Tribal Energy Webinar Series including the following presentations:
  - Benefits from Combined Heat and Power Applications at Tribal Facilities (August 2022)
  - Tribal Energy Project Technology Options (May 2020)
  - Distributed CHP Challenges and Opportunities in Remote Communities (November 2018)

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[2] Climate and Economic Justice Screening Tool (CEJST). Methodology & Data. https://screeningtool.geoplatform.gov/en/methodology. Accessed March 2024.

Equity Support for Onsite Energy TAPs

The model for delivering community benefits under the Onsite Energy Program works similarly to that for technical assistance in that the DOE program team provides expertise on energy equity to support and supplement the TAPs' regional knowledge and relationships with end-user groups and stakeholders. To ensure success with these new activities, the DOE program team is providing the following support and capacity building activities to the regional TAPs:

- **Community Benefits Training:** training and support on energy equity and DEIA topics, such as overcoming bias, marketing to multicultural communities, creating an inclusive culture, equitable community engagement, etc.
- **Community Benefits Resources:** curation and development of resources to support engagement with communities on energy equity, environmental justice, and workforce development.
- **Community Benefits Regional Support:** interactive coaching and support through recurring office hours to reinforce the training and resources and to assist the TAPs in developing their own community engagement plans and regional workforce reports.
- **Community Benefits Metrics:** collaborate with TAPs to specify energy equity metrics to use for tracking impacts of key TAP activities, including community outreach, local stakeholder engagement, and workforce development. The metrics will align with the eight Justice40 priorities defined in the Climate and Economic Justice Screening Tool (CEJST): climate change, energy, health, housing, legacy pollution, transportation, water and wastewater, and workforce development.[3]
- **Equity Assessments:** develop a service to help regional TAPs assess the community benefits and/or EJ impacts related to potential onsite energy projects and other TAP services.

Early Program Lessons Learned

The Onsite Energy Program launched in January 2024. For several months preceding the launch, the DOE program team worked together intensively to lay the groundwork for a successful launch. Key activities included hosting kickoff meetings to build the team and establish expectations, defining the technical assistance workflow and data collection needs, developing and delivering training webinars on new processes and systems, and creating program collateral to promote the program and generate interest from end users and stakeholders.

Equity was a central focus in laying the program groundwork. Table 3 provides a summary of lessons learned in the early phase of the program. For each challenge encountered, we have identified solutions and ideas on how to adapt and be more successful. The sections following Table 3 explore some of these ideas in more detail.

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[3] Climate and Economic Justice Screening Tool (CEJST). Methodology & Data. https://screeningtool.geoplatform.gov/en/methodology. Accessed March 2024.

Table 3. Summary of Early Lessons Learned and Solutions

Challenges Identified	Success Factors / Solution Ideas
Time is needed to identify equity-related opportunities at the outset of new programs and align them with program activities and team members.	Be flexible and create time at the outset to explore opportunities, assess team needs, and develop tailored solutions to support the TAPs in successfully engaging with communities in their regions.
Equity practitioners and technical assistance practitioners bring different expertise and speak different languages.	Bring the two groups of practitioners together to collaborate, interact directly, and establish common understanding and terminology.
Need for more specific examples and concrete understanding of where Onsite Energy TAP assistance provided to industrial end-users intersects with community/equity considerations.	Collect examples of industrial-focused equity considerations. Develop case studies that hold up practical scenarios where equity considerations tie into and impact decision-making of industrial end-users exploring onsite energy projects.

Understanding Key Stakeholders

An early effort for the program team was assessing the TAPs needs and understanding their questions associated with equity topics. We polled directors from all ten regions and discovered that most TAPs consider themselves "Somewhat Knowledgeable" when it comes to connecting energy equity to their Onsite Energy TAP work. The following were identified by the TAPs as areas where they would like support on energy equity:

- Access to templates, examples, and collateral that describe best practices and successful engagements and projects.
- Gaining a better understanding of how energy equity is defined and its relationship to onsite energy technologies.
- Assistance in making connections with regional and community-based organizations that support disadvantaged communities.
- Information on funding opportunities available to promote clean onsite energy technologies in disadvantaged communities.

The responses have been used to plan for how the program team can best support the TAPs through development of training, resources, and office hours. The following sections describe how the DOE program team is incorporating the lessons learned into the program design.

Equity Office Hours

Successfully executing projects consistent with energy equity principles requires practice. The program team will provide training and resources the TAPs can apply in their regions and will make available additional, interactive coaching and support to apply the training effectively.

To provide this resource, the program team is implementing office hours in which we have staff dedicated to answering equity-related questions from TAPs.

Office Hours are an example of how we plan to bring the technical experts and equity experts together to provide space to engage in dialogue, ask questions, and learn from each other's expertise. As we learn more from the TAPs about needs in their regions, we will identify additional resources that can be developed to support the program, such as fact sheets, case studies, templates. The resources we develop will establish common definitions, terms, and concepts.

Case Studies

As part of the program scope, each regional TAP will develop case studies that illustrate the successful installation of onsite energy technologies and systems and assist in educating industrial end users on how onsite energy can meet their goals and objectives. Case studies are developed in conjunction with site contacts and include information such as graphics, photos, and testimonials.

The case studies incorporate equity by having a section that specifies the community benefits that the project offers. Topics may involve the projects' location near a DAC, the benefits related to lower greenhouse gas emissions, the workforce development benefits, etc. For example, a recently published case study describing the University of Missouri's District Energy Microgrid, which incorporates CHP, wind, solar PV, and solar thermal, summarizes benefits to the local economy, reliability benefits to the on-campus hospital, educational benefits to students and local residents, and GHG reductions resulting from the project.[4]

Case studies can also promote equity by serving as a resource that can be shared with stakeholders to show how onsite energy technologies generate benefits for the community. Successful projects lead to more successful projects.

Community Engagement in the Regions

The DOE program team is preparing guidance for the regional TAPs to aid them with their community engagement plans. The purpose of engaging communities and community organizations is to inform, educate and create sustainable partnerships to support DOE Onsite Energy technical assistance activities happening within the community. Incorporating key principles of community engagement in the delivery of the Onsite Energy Program will help ensure broadly shared prosperity in the clean energy transition.

DOE guidance addresses how to:

- Identify priority communities and key concerns in the TAP region.

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[4] Case Study. University of Missouri District Energy Microgrid. https://betterbuildingssolutioncenter.energy.gov/sites/default/files/attachments/University%20of%20Missouri%20District%20Energy%20Microgrid%20Case%20Study.pdf. Accessed April 2024..

- Develop tactics to raise program awareness, conduct outreach, engage, and build relationships with end-user groups.
- Find relevant resources for identifying end-user groups and/or events (e.g., CBOs, minority-owned business networks, etc.).

Defining Priority Communities

The Department of Energy (DOE) offers guidance on Justice40 implementation, highlighting the Climate & Economic Justice Screening Tool (CEJST) as a key tool for identifying disadvantaged communities. The CEJST is utilized to assess projects, policies, and initiatives for their impact on climate justice and economic justice concurrently. It aids in recognizing potential disparities or effects on marginalized communities by considering environmental and economic factors simultaneously. The CEJST operates on a census tract reporting unit, where out of approximately 74,000 census tracts in the U.S., 27,251 (36%) are identified as disadvantaged. To qualify as disadvantaged, a census tract must surpass a threshold for both environmental, climate, or other burdens, and an associated socioeconomic burden. The CEJST identifies 37 indicators grouped into eight Justice40 burden categories.

- Climate Change
- Energy
- Health
- Housing
- Legacy Pollution
- Transportation
- Water and Wastewater
- Workforce Development

Because the CEJST data is reported at the census tract level, it is useful for learning about the burdens associated with a specific location, for example, the site of a manufacturing facility. The amount of data can quickly become overwhelming when trying to filter or rank communities across a multi-state region.

To support the TAPs with their community engagement plans, the program team completed regional analysis using the CEJST dataset, which is available for download.[5] Table 4 shows a summary by TAP Region of the population of each region, including what percentage of the population resides in a census tract that qualifies as a DAC. The column entitled "CEJST Thresholds Exceeded" shows the sum of the CEJST indicators that were exceeded across all the census tracts in the region.

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[5] Climate and Economic Justice Screening Tool (CEJST) Downloads. Version 1.0. Released on Nov 22, 2022. https://screeningtool.geoplatform.gov/en/downloads

Table 4. Summary of Regional Populations, Total and in DACs, Ranked by Count of CEJST Thresholds Exceeded

TAP Region	Total Population	Population in DAC	Population in DAC (%)	CEJST Thresholds Exceeded (Count)
Southeast	68,928,688	29,428,922	43%	27,345
Midwest	52,411,090	13,610,455	26%	21,752
Southcentral	41,949,912	19,110,705	46%	17,761
Western	50,690,329	18,611,727	37%	17,111
New York-New Jersey	28,394,101	9,011,959	32%	12,287
Mid-Atlantic	30,725,628	7,120,142	23%	9,484
Central	14,069,641	3,778,138	27%	4,413
New England	14,790,787	2,922,382	20%	3,632
Northwest	13,980,478	3,251,129	23%	2,215
Upper-West	11,951,890	2,197,159	18%	1,794
TOTAL	327,892,544	109,042,718	33%	117,794

Table 4 shows the highest burden and highest number of people in DACs in the Southeast, Midwest, Southcentral, and Western regions. Looking back at Table 1, these are also the top 4 regions in terms of the manufacturing base. The dramatic differences between the regions in terms of their Justice40 burdens are further illustrated in Figure 1, which plots the CEJST Thresholds Exceeded using a stacked bar chart to differentiate the Justice40 burden categories.
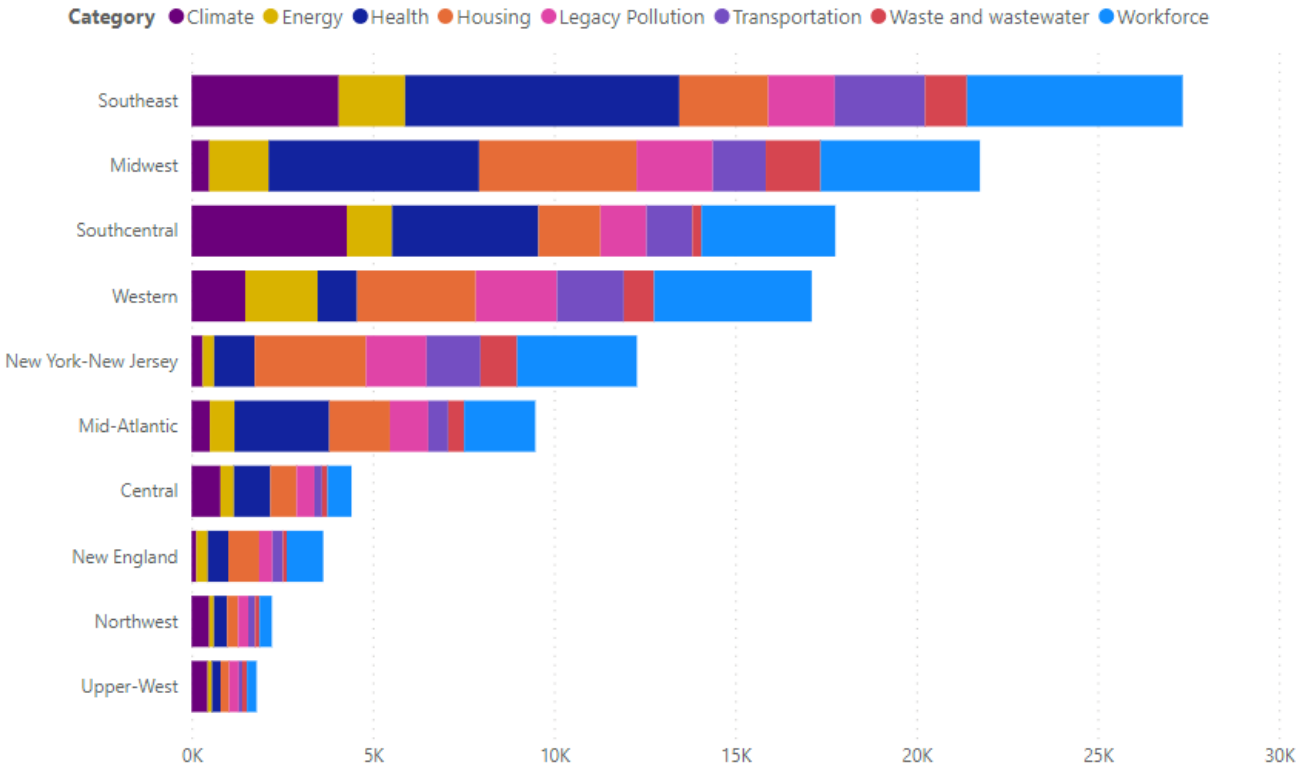
Figure 1. CEJST Thresholds Exceeds by Justice40 Burden Category. Source: CEJST Version 1.0

Reaching out to Priority Communities

In addition to supporting the TAPs with tools and analysis to identify the priority communities and key burdens in the regions, the program team is developing guidance on reaching out to communities. This guidance has two parts:

- Identify the benefits of onsite energy technologies for the priority communities – to inform the talking points and collateral that speaks to the needs.
- Identify tactics for engaging with communities.

Again, the DOE's General Guidance for Justice40 Implementation provides relevant materials that the program team is adapting to the specific needs of this program. For example, Table 5 identifies a subset of the DOE's policy priorities with associated metrics that are particularly relevant for this program.[6]

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[6] Department of Energy (DOE). General Guidance for Justice40 Implementation. Version 1.1 (Updated 7/24/2023). DOE Justice40 General Guidance 72523.pdf (energy.gov)

Table 5. Onsite Energy Policy Priorities and Related Metrics

Policy Priorities	Benefit Metrics and Units
Decrease environmental exposure and burdens for DACs	• Avoided air pollutants (CO_2 equivalents, NOx, SO2, and/or PM2.5) in DACs
Increase clean energy jobs, job pipeline, and job training for individuals from DACs	• Dollars spent [$] and/or number of participants from DACs in job training programs, apprenticeship programs, STEM education, tuition, scholarships, and recruitment. • Number of hires from DACs resulting from DOE job trainings • Number of jobs created for DACs because of DOE program • Number of and/or dollar value [$] of partnerships, contracts, or training with minority serving institutions (MSIs)
Increase clean energy enterprise creation and contracting for minority or disadvantaged businesses in DACs	• Number of contracts and/or dollar value [$] awarded to businesses that are principally owned by women, minorities, disabled veterans, and/or LGBT persons
Increase parity in clean energy technology access and adoption in DACs	• Clean energy resource [MWh] adopted in DACs
Increase reliability, resilience, and infrastructure to support reliability and resilience in DACs	• Increase in community resilience hubs in DACs • Number and size (MWh) of community resilience infrastructure deployed in DACs (e.g., Distributed solar plus storage, utility scale, DERs, microgrids)

More Ways of Integrating Equity into TAP Technical Assistance

The technical assistance workflow is a key area in which the equity experts will engage with technical experts to identify opportunities to integrate equity and to connect with community stakeholders. An important first step is establishing a framework to incorporate equity considerations into the comprehensive analysis of various onsite energy technologies. This framework will gather, condense, and communicate essential equity factors. In addition to technical aspects, it will delineate the potential advantages and disadvantages of different technologies within each project community's distinct context, taking into account diverse equity indicators and community metrics. To effectively bridge the gap between equity and technical assistance, the program will prioritize benefits for and with communities, acknowledging historical energy equities, disproportionate resources applicable to technical assistance, and community buy-in.

Technical assistance requests are submitted through a purpose built, internal program dashboard. This Onsite Energy Dashboard includes core functionality to identify project sites

that are located within DAC census tracts. TAP regions and DOE Program staff can consider these items in the planning stages. We are designing and reporting relevant metrics tracked in the Onsite Energy Dashboard so we can better gauge our Justice40 progress and course correct as needed.

One type of technical assistance service the TAPs provide is screening and prioritizing a portfolio of sites. For example, many corporate sustainability managers are evaluating opportunities at dozens or hundreds of sites in different locations across the country. Our analytical process for screening a portfolio of sites to identify a subset with favorable onsite energy project development criteria incorporates DAC identification and Justice40 considerations.

Conclusions

Technical assistance practitioners rely upon technical advisory frameworks developed over decades and it can feel radical or risky to adopt novel frameworks that incorporate equity. Even those with a sincere commitment to an equitable energy transition may feel challenged to make the connection between systemic inequities and their next boiler upgrade. Overcoming these hurdles to successfully integrate equity into technical workflows requires collaboration between stakeholders with different backgrounds and perspectives. The title of this paper, "Yes, and…", refers to a concept derived from improv and alludes to the interplay between multiple stakeholders with varied backgrounds and interests. The program team brings together experts with diverse experience ranging from energy engineers to multi-technology energy data modelers to community engagement specialists. All these skill sets are needed to address the climate crisis, especially if we are to address historic inequities in our energy systems and at the same time, address the highly technical challenges to transition from dirty fuels to clean onsite energy technologies.

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