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December 14, 2023



Hi Everyone,

It is my pleasure to welcome you to Berkeley Lab's December international newsletter.

Berkeley Lab is continuing to collaborate with partners internationally to bring science solutions to the most pressing issues that face a transition to a low carbon development. Through this newsletter, you will find information on our increasing focus on the human dimension of this transition, in building decarbonization as well as ensuring gender equality in energy access. You will learn about our program on industry decarbonization with our local partner Institute for Essential Services Reform (IESR) in Indonesia and discover our new collaboration with Ecuador on reducing cooling peak demand through our partnership with

the U.S. Agency for International Development (USAID).

As we reach the end of the year, we would like to take a moment to thank all of our partners across the globe for their support, collaboration and thought leadership. Berkeley Lab's global contribution is possible due to our dedicated partners and we are very thankful to be part of this community. We look forward to continuing and expanding our collaborations to make an impact for a better and more sustainable world in the new year.

All the best,

Stephane de la Rue du Can

Research Scientist Lead of the Energy Efficiency for Development Program (<u>ee4d.org</u>) Energy Analysis and Environmental Impacts Division Lawrence Berkeley National Laboratory

Our Latest Research

The Human Behavioral Dimensions of Building Decarbonization

The global energy transition will require systematic changes and new thinking about the buildings sector that captures the untapped potential of behavior and lifestyle changes. In a new paper published in *Nature Human Behavior,* Berkeley Lab researchers <u>Jeetika Malik,</u> <u>Tianzhen Hong,</u> and <u>Max Wei</u>, and Dr. Sea Rotmann from the International Energy Agency's <u>Users TCP</u> proposed a sufficiency-first approach that fosters



equitable building decarbonization, while maintaining planetary boundaries. They provide recommendations for the community to advance building energy sufficiency. A panel discussion on the topic was also organized at the recent Behavior, Energy & Climate Change Conference held in California.

Read the full article: nature.com/articles/s41562-023-01752-0

Dissemination Workshop of Indonesia Industry Decarbonization Roadmap

Indonesia is the 4th most populated country and is projected to be the 4th largest economy by 2050 worldwide. Today, fossil fuels, and coal in particular, dominate the country's primary energy mix. The industrial sector is the largest in the country, consuming about 35% of the country's energy. This year, Berkeley Lab and the Institute for Essential Services Reform together developed an industry decarbonization roadmap



in Indonesia for five selected energy-intensive industries, including policy recommendations to support the implementation of the roadmap. A <u>final workshop</u> in Jakarta disseminated the results of the study and received feedback from local stakeholders. A final report is expected to be published early in 2024.

The Need for a Measurement, Reporting, and Verification (MRV) System for Methane and Other Non-CO2 Greenhouse Gases

MRV is a systematic approach that can be used across all sectors to track greenhouse gas (GHG) emissions trends and reductions, evaluate programs, and promote transparency. As methane and other non-CO2 GHGs become critical to mitigating near-term climate change impacts, strong MRV systems are needed to improve emission inventories, facilitate climate policy and target development, and demonstrate progress. <u>A new report</u> by Berkeley Lab focuses on sectoral issues — including the emerging roles for satellites and remote sensing technologies — and international best practices in MRV for methane, nitrous oxide, and hydrofluorocarbons in specific sectors. Based on a review of China's current MRV system, we offer suggestions for a possible path forward for developing and implementing a stronger non-CO2 MRV system.



Increasing Women's Benefits to Electricity Access in Uganda

U.S. Agency for International Development (USAID) and Berkeley Lab co-organized <u>a national workshop</u> with the Ministry of Energy and Mineral Development of Uganda in Kampala as part of the <u>Energy Empowers East</u> <u>Africa program</u>. More than 80 stakeholders including representatives from ministries, private sector entities, non-governmental organizations, financial institutions, and local communities explored potential



pathways to enhance the efficient and productive use of energy in Uganda, with the goal of increasing efficient energy usage to stimulate economic growth and improve livelihoods.

The workshop was held at a pivotal time when Uganda revises the Energy Efficiency and Conservation Bill. The knowledge exchange and collaboration inspired the development of *actionable next steps* to optimize the benefits of electricity utilization in productive sectors and laid the ground for the development of a national Efficient Productive Use of Electricity (EPUE) strategy to effectively leverage both on-grid and off-grid electricity resources in innovative ways. Berkeley Lab researchers are drafting an Action Plan with recommendations designed to address and overcome barriers to the adoption of EPUE practices, with a special focus on gender equality as an important development strategy.

For more information please contact: Stephane de la Rue du Can <u>sadelarueducan@lbl.gov</u> and Ingrid Xhafa <u>ingridX@lbl.gov</u>.

Net Zero World Initiative Action Center Website is Live!

We're thrilled to announce that the Net Zero World (NZW) Action Center's website is now live! Join us in the mission to create a sustainable and inclusive energy future as we bring together experts from 10 DOE national laboratories, 9 U.S. government agencies, and philanthropic organizations. Explore the NZW Initiative and be a part of the change today!



Berkeley Lab Advances Energy Efficiency Standard Update for Air Conditioners in Ecuador



An update of Ecuador's air conditioner minimum energy performance standards (MEPS) could avoid 240 MW of new generation capacity by 2035 and 460 MW by 2045, according to a Berkeley Lab report developed with USAID's Energy Efficiency for Development program (EE4D). The study was presented in Quito in November 2023 at a Cooling Summit organized by USAID, Berkeley Lab, and Ecuador's Ministry of Production, Foreign Trade, Investment, and

Fisheries and attended by representatives of government agencies, HVAC industry, and the cooling research community. The study provides a technical assessment supporting the update of Ecuador's air conditioner (AC) minimum energy performance standard, which was set in 2013. The study methodology includes the scenario analysis of five different MEPS levels, the estimation of the current AC ownership rate, and the projection of the AC stock in Ecuador to 2050. In the context of rolling blackouts currently implemented by the Government of Ecuador to address the reduction of hydropower caused by low water levels during the dry season, the technical assistance provided by EE4D advances energy efficiency as part of the strategy to reduce the vulnerability of the power sector.

For more information, please read the <u>Executive Summary</u> of the Berkeley Lab report, visit the <u>EE4D website</u> or contact Alberto Diaz and Stephane de la Rue du Can.

Jobs in International Energy Research @ Berkeley Lab

Take your career to the next level or ask your networks to join us in our quest to develop science

solutions for the world.

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Mary Ann Piette, Associate Laboratory Director, Energy Technologies Area

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ETA International | 1 Cyclotron Road, Berkeley, CA 94720

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