Proposal Title

National Council on Workforce Development to Combine Existing Data & Tools for Interagency Collaboration

Verticals

Energy, innovation and environmental justice

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Disclosure of Any Conflict of Interest

The execution of these policy ideas and these policy recommendations does not directly or specifically benefit the authors or their organizations.

Opportunity/Problem Being Solved

Retraining for employees must be supported, especially in *legacy industries*, frontline and transitioning communities of color, and must lead to union work that is at similar or better pay. The Clean Energy (CE) workforce development programs should be data-driven at the local, state and national levels. The resulting jobs must be provided in an equitable way, by looking at who is under- or unemployed and where they are located in the U.S. Our geographic approach (utilizing layered GIS data from several federal departments) will require a coordinated collaboration of the public, private and non-profit sectors.

Impediments to Implementation

Barrier #1: Lack of a coordinated federal effort on Clean Energy workforce development.
Barrier #2: It is often unclear where and how Clean Energy jobs are geographically distributed, and where they are most needed.
Barrier #3: Lack of access to the right training to to be hired for these Clean Energy jobs.

Recommended Actions

Create a National Council on Workforce Development at the White House (WH) level, and a Energy Workforce Development Office in the Department of Energy (DOE). This low cost approach would pull together and reinvigorate existing government programs, pool data, identify gaps, and strategically recommend programs to fill those gaps.

Program Type

Program modification, with components that can recommend **new programs** or initiatives utilizing existing federal and private resources, asets, facilities and capabilities.

Authority

Existing authority which might benefit from **new legislation** that would supply additional funding (via standardized FOAs) to various exisiting programs in multiple departments.

Involved Agencies and/or Programs

Combine NREL's geospatial data science research capability (https://www.nrel.gov/gis/) with all of the following: DOE's Office of Electricity Delivery and Energy Reliability (OE), EERE, and cross cutting efforts such as DOE's Better Buildings programs (https://betterbuildingssolutioncenter.energy.gov/); HHS work (LiHEAP, etc); Department of Labor's Workforce Programs, Department of Labor (https://www.dol.gov/agencies/eta/wioa); Department of Agriculture Workforce Programs (including REAP, RESP); EDA (Dept. of Commerce); EPA (https://www.epa.gov/environmentaljustice/overview-ej-iwg), EJSCREEN: Environmental Justice Screening and Mapping Tool (https://www.epa.gov/ejscreen) and re-funded, related and relevant programs & initiatives in all departments.

Funding
The proposal's cost would be dependent and scalable on the number of personnel asigned to it. A second stage could provide grants, via streamlined and standardized FOAs, to the various partners mentioned below, to provide necessary training and workforce development.

Economic Benefits
Dependent on the level of funding and the job creation (see below). Benefits could be modeled using the approach utilized in the prior ARRA using the analysis tool similar to that used by the White House Council of Economic Advisors in the Obama-Biden Administration.

Job Creation
This is scalable with the amount of investment in the various sub-components in the departments and the areal extent of the program/iniative. A demonstration of the technique to estimate the number of CE jobs is available upon request.

Environmental Benefits
The Biden-Harris climate goals depend on the rapid development of a robust and dynamic clean energy workforce. These recommendations manage the risk of insufficient workforce for building out the U.S. clean energy economy, thereby supporting climate, jobs and equity goals.

Equity Benefits
Are assured by utilizing GIS mapping tools and data to locate and target the underserved and underemployed at locations where renewable or clean energy resources are available.

Stakeholder Support and Opposition
Support: Council of Economic Advisors, FACAs and National Membership Associations (NASEO, NASCAP, CAP); State, Territory, Local and Tribal Governments, the Private Sector; Universities, Community Colleges, Land Grant Universities, MSIs/HBCUs; Union leadership in the targeted areas (i.e., IBEW, IAMAW, UAW, etc.); Non-Governmental Organizations.

Key Experts
Any of the NREL GIS experts here: https://www.nrel.gov/gis/staff.html

Reference Materials
K. Surana, E. Williams, W. Krawczyk, et. al., Regional Clean Energy Innovation, University of Maryland Global Sustainability Initiative and Energy Futures Institute, February 2020.

Additonal Reference Materials Available

Regional Clean Energy Innovation, https://cgs.umd.edu/sites/default/files/2020-02/Final_Regional%20Innovation%20Report_2.20.20.pdf

David M. Hart and Peter L. Singer, Manufacturing USA at DOE: Supporting Energy Innovation, Information Technology & Information Foundation, May 2018. http://www2.itif.org/2018-doe-musa-institutes.pdf

Noel Bakhtian, "Energy Workforce Development Opportunities and Challenges" Testimony to U.S. House Appropriations, 2018: https://docs.house.gov/meetings/AP/AP10/20190307/109013/HHRG-116-AP10-Wstate-BakhtianN-20190307.pdf

Heidi Garrett-Peltier, Green versus brown: Comparing the employment impacts of energy efficiency, renewable energy, and fossil fuels using an input-output model, Economic Modelling 6 (2017) Pages 439-447. Available via: https://ideas.repec.org/a/eee/ecmode/v61y2017icp439-447.html

Reference materials, including case studies, and non-U.S. examples are included in Appendix A.

Appendix A - Examples of Successful Clean Energy Training Sites

- A Mid-Region Council of Governments report highlights that a Sandia (National Labs) Science and Technology Park contributed significantly to the local economy in 2018-19 by adding 310 jobs and generated increases in economic activity and tax revenue to the city and New Mexico.
- Clean Energy Hubs, such as the existing Clean Energy Manufacturing Hubs (US DOE Advanced Manufacturing Office and Department of Commerce) Background is available via a 2018 ITIF report.
- Some training can be performed at Regional Testing Centers which can provide some of the specialized testing equipment necessary in that part of the industry (e.g. solar, wind, biomass, geothermal, energy efficiency, etc.).
- These leverage the experience of the DOE EERE's consortia.
- In Southwest Virginia, there is a partnership to provide commercial-scale solar installations in the coalfield region specifically designed to employ local workers.The initiative will provide affordable solar solutions for businesses, nonprofits and local governments while building local workforce skills and opportunities for well-paying jobs in the growing solar energy sector.
- For abandoned coal mines, there are also recent precedents set by other nations:
    - The World Economic Forum reports that close to 30 schemes for household heating from geothermal heated mine water are planned across the UK.
    - In Genk, Belgium, an IMEC (Interuniversity MicroElectronics Center) energy research center and business incubator complex called Energyville is thriving at an abandoned coal mine. This provides financial stimulus and jobs in economically challenged regions.

Reference Materials for Appendix A

Sandia Science & Tech Park spurs economic growth," August 12, 2020. Available via: https://share-ng.sandia.gov/news/resources/news_releases/technology_park/
Department of Energy – Hubs. There are five Hubs supported by various DOE Offices. Available via: https://www.energy.gov/science-innovation/innovation/hubs
Clean Energy Manufacturing Initiative (CEMI) https://www.energy.gov/eere/cemi/clean-energy-manufacturing-initiative-current-activities
David M. Hart and Peter L. Singer, Manufacturing USA at DOE: Supporting Energy Innovation, Information Technology & Information Foundation, May 2018. http://www2.itif.org/2018-doe-musa-institutes.pdf
Office of Energy Efficiency & Renewable Energy, Regional Test Centers for Solar Energy, Available via: https://www.energy.gov/eere/solar/regional-test-centers-solar-technologies
DOE EERE's consortia. Available via: https://www.energy.gov/eere/amo/research-development-consortia
Details on a cool partnership bringing 10 MW of solar, local jobs to Appalachia, Solar Builder Magazine, September 2, 2020. https://solarbuildermag.com/news/details-on-a-cool-partnership-bringing-10-mw-of-solar-local-jobs-to-appalachia/
"This British village is heating homes with water from a flooded coal mine," World Economic Forum, August 24, 2020. Available via: https://www.weforum.org/agenda/2020/06/flooded-coal-mine-britain-heating-carbon/
EnergyVille, energy R&D innovation hub, Available via: https://www.energyville.be/en/about-energyville, https://www.imec-int.com/en/imec-magazine/imec-magazine-may-2017/a-city-full-of-energy