REWIRING AMERICA

Homegrown Energy workforce impacts methodology

December 2025

In each state, we model the ideal heat pump upgrade based on the upgrade that will result in the largest annual residential peak demand reduction. This upgrade is either upgrading (1) electric resistance space heating to heat pumps, (2) inefficient central air-conditioners to heat pumps, or (3) electric resistance water heating to heat pump water heaters. We also model a 5 kilowatt rooftop solar installation for all households with suitable roofs and a Tesla Powerwall 3 battery for all households. We then estimate the total upfront costs of the electric appliances, along with the total capacity of the solar and storage upgrades. These costs and capacities are then multiplied by the multipliers described below to estimate the total job-years associated with investment in the electric upgrades. We also subtract the incremental jobs associated with fossil fuel generation buildout that would be required to achieve the same capacity as the electric upgrades to arrive at a net jobs impact.

For a full description of our upfront cost models and the specifications of the electric upgrades, please refer to the technical methodology for the Homegrown Energy report.

Job multipliers

Energy efficiency/electrification upgrades

We use job multipliers from Brown, et al, estimating employment from energy-efficiency investments. We use the residential energy efficiency direct jobs multiplier of 3.78 jobs/$M of direct investment in 2015 dollars, which we inflation-adjust to 2025.

Fossil fuel/gas generation

We use the full-time equivalent jobs per gigawatt (FTEs/GW) of new generation capacity for NG Combined Cycle generation (4,724 FTE) found in Table 8 of the EPA's Methodology for power sector-specific employment analysis from 2019.

Battery storage

We use the U.S. BES Jobs/MW by Industry 2025 (11.6 jobs / MW) from the National Renewable Energy Laboratory, which we then adjust downward using our 40 percent cost reduction estimate applied in the report that represents further efficiencies. For the low estimate, we calculate incremental storage employment impacts only for households that don't also get rooftop solar installed, with the assumption that the install of both would happen simultaneously and the storage wouldn't carry additional workforce requirements. In the high estimate, we apply the storage jobs multiplier to 100 percent of the storage capacity installed.

Rooftop solar

We use the estimate of 16.3 job-years per megawatt of installed capacity from "The National Impact of 30 Million Solar Homes: A Vision for an Equitable Economic Recovery Built on Climate Protection and Energy Democracy" by the Institute of Self-Reliance, which we adjust downward in two ways:

- First, we calculate 2025 impacts (from 2021) by using the NREL estimated 28 percent reduction in labor requirements between 2020 and 2025 from the report above, to represent ongoing and current efficiencies in rooftop solar installations.
- We assume a further 40 percent reduction in cost-estimate using the efficiency factor from the Homegrown Energy Report.

Using the multipliers above, we calculate the number of job-years associated with investment in each of the electrification solutions, as well as the equivalent capacity in fossil fuel generation, which we subtract from the total of the electrification solutions. We then divide these job-years over five years, the same time period we used to analyze the total new demand from planned data centers.