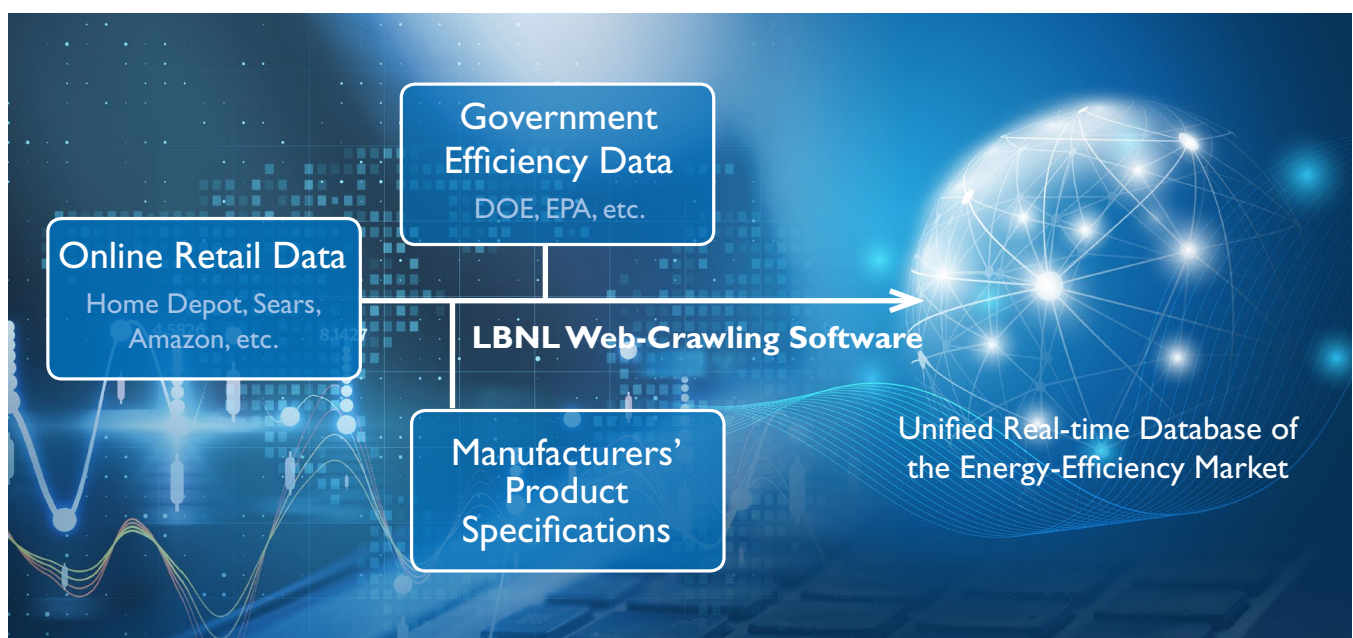# INTERNATIONAL DATABASE OF EFFICIENT APPLIANCES (IDEA)

The United States Agency for International Development's (USAID's) Energy Efficiency for Development (EE4D) program is a global initiative that provides technical resources and expert advice to USAID partner countries to advance energy efficiency strategies and achieve more resilient and sustainable economic development. EE4D helps countries access technical assistance for ***standards and retrofits, market priming and financing, and policy planning*** interventions necessary to rapidly and effectively scale up energy efficiency. The International Database of Efficient Appliances (IDEA) tool[1] enables EE4D to gather fragmented energy and performance data for appliances, electronics, and other equipment to evaluate the full impact of energy efficiency standards and labeling programs.

## INTRODUCTION

Retail data has rich information on the prices of appliances, but efficiency data is not as prevalent. To address this issue, IDEA employs a unique set of algorithms to match manufacturer model numbers to government certification databases for a more complete picture of energy efficiency. The result is a standardized data format for retail appliance data and a searchable database for data retrieval, which can then be used for a range of applications.[2]



**FIGURE 1:** MINING THE WEB: MODEL SCHEMATIC OF IDEA TOOL AND DATA SOURCES

IDEA provides detailed datasets at a fraction of the cost of current sources. Applications include:

- **Baseline Determination** – measurement of pre-program market efficiency distribution
- **International Benchmarking** – comparison of local markets to regional and major economic markets
- **Market Tracking** – observation of evolution of market following program implementation
- **Efficiency Indicators** – contribution to roll-up of macro-level national efficiency metrics
- **Efficiency–Price Relationship** – determination of cost of high efficiency products, pre- and post-program

## CASE STUDIES

### INDONESIA

In Indonesia, IDEA was deployed to evaluate the baseline for air conditioners and inform policy recommendations.[3] On-the-ground contributors collected data using smart-phone crowdsourcing. The resulting dataset gave a detailed, robust picture of Indonesia's air conditioner market, including product characteristics, efficiency ratings, and retail prices. The analysis revealed most of the market already exceeded the most stringent ratings, indicating no or limited impact from current and planned regulations for air conditioners in Indonesia.

### SOUTH AFRICA

Using IDEA web crawling techniques, Lawrence Berkeley National Laboratory (LBNL) worked with local consultants to collect and analyze appliance retail data and establish the efficiency baseline of South Africa's appliance market. The tool leveraged the existing labeling program to show the market's evolution over three distinct periods: 2011, 2014, and 2015. By comparing current efficiency levels to those announced in 2014, LBNL estimated energy savings from the program and contributed to the framework for tracking markets. The project further demonstrated the ability of these techniques to determine market baselines, assess the potential for cost-effective energy savings, and track markets over time to evaluate program impacts.

### REFERENCES

1  International Database of Efficient Appliances (IDEA): A Novel Tool for Efficiency Program Development and Evaluation. LBNL. 2015
2  IDEA: A new tool to support appliance energy-efficiency deployment. Applied Energy. 2017
3  Baseline Evaluation and Policy Implications for Air Conditioners in Indonesia. LBNL. 2017

**Energy Efficiency for Development (EE4D) provides technical assistance to energy system planners, regulators, and utility managers to overcome challenges associated with implementing energy efficiency programs.**

### FOR MORE INFORMATION

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