

Common Data Sources for Use in the Energy Efficiency Opportunity Assessment Tool

Data quality and availability is a critical factor in using the Energy Efficiency Opportunity Assessment Tool. Non-availability of data, especially in developing countries, has the potential to limit and reduce utilization of the tool. To identify opportunities for energy efficiency improvements in a specific country, the tool must include data in the following areas:

- Sector-wise energy consumption and forecasts
- End-use energy consumption percentages for each identified sector
- Baseline end-use and efficiency data
- Incremental or full measure costs and savings as well as measure life

All of the above data can be found with varying levels of ease and reliability. In general, good national level end-use data are not readily available in developing countries and must be patched together using a variety of different sources. The International Energy Agency (IEA) energy statistics (<http://www.iea.org/statistics/>) could be a good starting point to collect high level data such as sector-wise energy consumption and forecasts of the country. Publications of multilateral, bilateral, and regional organizations could also provide regional or country specific data for the tool. For example, country specific in-depth energy efficiency reviews published by the Energy Charter Secretariat (<http://www.energycharter.org/what-we-do/energy-efficiency/energy-efficiency-country-reviews>) is a useful resource for economies in Europe and Central Asia.

Breakdown of end-use energy consumption data for major electricity consuming sectors is usually available in the load research reports published by local or state utilities. For example, in India, the energy efficiency services limited (EESL) conducted the load research for major energy consuming sectors in various states with the help of local electric utilities. These load research reports are available on the EESL website (<http://www.eeslindia.org>). While the load research data collected through a local utility may not be applicable to the entire region, or to states for a large country, because of varying climate conditions, it can be considered as national level data for a smaller country or for a country with little or no climate variation across its geography.

Some publicly available data exists on measure savings and costs. For example, the Database for Energy Efficient Resources (DEER) (<http://www.deeresources.com>) provides estimated incremental costs and savings for selected measures and technologies. Commercial construction cost publications by construction trades or labor unions can be a source of measure installation labor costs. The United Nation (UN) Comtrade database (<https://comtrade.un.org>) is another source to find out the cost data of equipment and technologies. The Comtrade database contains values of import and export volumes of commodities and respective trade values converted from national currency into US dollars using exchange rates supplied by the reporter countries.

In general, the above public data sources should be considered for the country specific data collection; however, they provide data averaged over large regions and are sometimes not very accurate. For some countries, utility, state, or other local data may be available that is specific to the geographic area/

country being studied and will provide greater detail and accuracy. Examples of locally developed data that may exist include:

- Baseline studies that characterize the types and efficiency of appliances and equipment in existing and new buildings.
- Energy use forecasts, estimating existing and new construction energy use and separated by major consuming sector. For example, Power for All report published by the Ministry of Power, Government of India.
- End-use disaggregation data - this may be from statistical models, metering, or simulation models. For example, the demand modeling report published by the Department of Energy, South Africa.¹
- Program evaluations that identify measure savings and document penetration rates and baseline practices. For example, India labeling program impacts study conducted by CLASP.²
- Appliance saturation studies.

If resources are available then it is encouraged to collect primary data through surveys of samples of facilities and market actors in the country being analyzed. This can provide the most specific and accurate data, but obviously requires higher commitments of time and budget. If the data is collected through secondary sources, it is highly encouraged to conduct stakeholder workshops to verify assumptions, measure savings, and costs data.

Finally, any effort to use data from a country as a proxy for another country or region should be done with caution and an understanding of the factors that might affect the applicability of the data to the new country. Suitable adjustments should be made to account for the differences in climate, economic and demographic factors, and the prevalent commercial and industrial customer types.

The Energy Efficiency Opportunity Assessment Tool was developed by ICF through a cooperative agreement with USAID – the Energy Efficiency for Clean Development Program (EECDP). The tool and supporting materials are publically available at www.icf.com/EECDP.

¹ http://www.energy.gov.za/files/IEP/IEP_Publications/AnnexureA-Technical-Report-Part1-Demand-Modeling-Report.pdf

² <http://clasp.ngo/Resources/Resources/PublicationLibrary/2007/India-labeling-program-impacts-case-study>