# POLICY ANALYSIS MODELING SYSTEM (PAMS)

The Policy Analysis Modeling System (PAMS) is an easy-to-use software tool that helps decision-makers assess the costs and benefits of energy efficiency standards and labeling (EESL) programs and identify the most attractive targets for appliance efficiency levels.

COST-BENEFIT ANALYSIS TOOL

Decision makers—including policymakers, funding agencies, and other stakeholders—need to know the potential environmental and financial impacts of any EESL program under consideration. This information is essential to prioritizing strategies that maximize benefits for both consumers and governments. Even at the initial stages of policy development, having access to comprehensive estimates of energy savings and equipment costs/electricity cost savings is critical.

- PAMS draws upon the U.S. Department of Energy methodology to set appliance and equipment energy efficiency standards.[1]

- The tool comes loaded with default parameters for key appliances, but can be customized for a given country to integrate inputs from local government and stakeholders (through surveys and interviews).[2]

- PAMS is then used to conduct cost-benefit analysis for different target efficiency levels.

- Impacts are evaluated for a set of ranked efficiency levels, from the current country's baseline to the best available technologies (international).

- PAMS provides results on appliance life cycle cost, national energy savings, emissions reductions, and net present value of the program throughout the EESL implementation period (approximately 30 years).

Microsoft Excel

Cost and Saving of Modeled Appliance
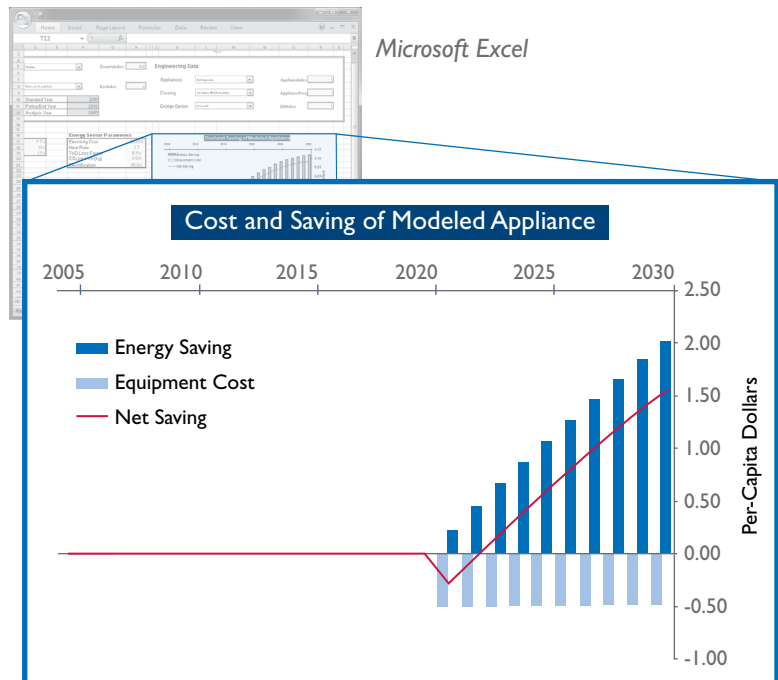
The results above show the additional costs (light-blue) and benefits (dark blue) of a given policy. In the policy scenario, more expensive units replace less-efficient ones, which results in additional costs at the time of purchase and increased savings during the appliance's operating lifetime. Over time, the energy savings outweigh the equipment cost increase, and the policy has a net benefit on users (in this case, only two years after it takes effect).

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APPLICATIONS

CHILE

In Chile, the Ministry of Energy has used PAMS since 2009 to support the energy efficiency standards program for lighting, refrigerators, motors, air conditioners, and distribution transformer standards, which effectively covers the largest electricity end-uses in the country. The Ministry uses PAMS to report the impacts of Minimum Energy Performance Standards (MEPS) on consumers and at the national level. Over the years, the analysis has been transferred to local consultants through trainings provided by the Lawrence Berkeley National Laboratory (LBNL). These trainings build on decades of experience in the United States and internationally to ensure robust environmental and financial impact analyses and contribute to building sustainable technical capacity within Chile to support the success of the EESL program.

BRAZIL

In Brazil, PAMS has been used to update the INMETRO energy label for mini-split air conditioners. The analysis demonstrated the benefits of transitioning to high-efficiency air conditioners for both consumers and government but also for local manufacturers. The results were used to support the discussions in a public consultation process with local stakeholders, resulting in an updated INMETRO label consistent with international best practices. The PAMS analysis identifies 4.5GW of avoided demand in the power sector by 2035, which will avoid 60 million tonnes of CO_2 emissions from 2021-2035 and save Brazilian consumers $5 billion.[3]

REFERENCES

1 Methodology for the Policy Analysis Modeling System. LBNL. 2007.
2 User Instructions for the Policy Analysis Modeling System. LBNL. 2007.
3 The manufacturer economics and national benefits of cooling efficiency for air conditioners in Brazil. LBNL. 2019

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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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