

# IPEEC/WEACT ASEAN Regional Energy Efficiency Workshop, Jakarta 2011

## Handout on Energy Efficiency Energy Action Plan Approaches and Resources

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An Energy Efficiency Action Plan (EEAP) is developed through a multi-step process. The following guidelines for EEAP development present potential steps and considerations based on the experience of energy efficiency action plans from around the world, with resources identified for further information. This document is based in part on the IEA's Energy Efficiency Governance Handbook, 2010. ([http://www.iea.org/papers/2010/gov\\_handbook.pdf](http://www.iea.org/papers/2010/gov_handbook.pdf))

**Step 1: Stakeholder Engagement:** Active stakeholder participation is essential to ensure that both a high quality plan is developed and that strong and enduring support is secured for plan implementation.

- For example, Indonesia's "Master Plan on National Energy Conservation" involved industry, academia, technology experts, representative of environmental concerns, and consumers in addition to government officials. (<http://www.ieej.or.jp/aperc/CEEP/Indonesia.pdf>)

**Step 2: Goal Selection:** A critical step is the establishment of clear goals for the EEAP supported by all stakeholders. Countries can then define specific sub-objectives and actions to achieve these goals.

- Broad goals outlined in the EU Action Plan ([http://ec.europa.eu/energy/action\\_plan\\_energy\\_efficiency/doc/com\\_2006\\_0545\\_en.pdf](http://ec.europa.eu/energy/action_plan_energy_efficiency/doc/com_2006_0545_en.pdf)) include:
  - Improving security of energy supply
  - Reducing carbon emissions
  - Fostering competitiveness
  - Stimulating the development of a large leading-edge market for energy-efficient technologies and products

**Step 3: Working Group Formation and Work Plan Development:** Working groups consisting of those implementing the EEAP and stakeholders can be organized to develop various aspects of the plan. Working groups can be based around targeted sectors (e.g., industrial, residential), programs (e.g., public education, energy efficiency regulations), level of governments (e.g., local, regional, national, supra-national), goals (e.g., energy security, energy cost savings), among others, and any combination thereof. The U.S. State Energy Efficiency Action Network utilized eight working groups based on "issue areas," which encompass a combination of technologies, sectors, and policy and program types: (<http://www1.eere.energy.gov/seeaction/>). The eight working groups for the State Energy Efficiency Action plans are listed below:

- Building Energy Codes
- Customer Information and Behavior
- Evaluation, Measurement and Verification
- Existing Commercial Buildings
- Financing Solutions
- Industrial Energy Efficiency and Combined Heat and Power
- Residential Retrofit
- Utility Motivation and Energy Efficiency

**Step 4: Analysis of Energy Efficiency Opportunities, Potentials, and Costs and Benefits:** An assessment of baseline energy use and historic trends, expected energy consumption growth, and the potential and costs and benefits of technology adoption and behavioral change (among other considerations) is needed to determine appropriate measures and achievable objectives. This analysis should be done for each sector of interest with results evaluated across sectors to help identify the most cost-effective opportunities for the country or region.

- Mexico used this approach in establishing its National Program for Sustainable Use of Energy. ([http://www.usea.org/Programs/EUPP/gee/presentations/Chavez\\_Andrade\\_Mexico\\_Mar\\_8,\\_2010-USAID\\_\(Washington\).pdf](http://www.usea.org/Programs/EUPP/gee/presentations/Chavez_Andrade_Mexico_Mar_8,_2010-USAID_(Washington).pdf)). An example from Mexico's analysis and plan measures is presented on the last page.
- For recommendations on conducting a potentials study, see: "Guide for Conducting Energy Efficiency Potential Studies," U.S. National Action Plan: (<http://www.epa.gov/cleanenergy/energy-programs/suca/resources.html>)

Technology- and sector-specific breakdowns of potentials enable targeted programs and policies.

- For example, the EU “Action Plan for Energy Efficiency” determined: “In residential buildings, retrofitted wall and roof insulation offer the greatest opportunities, while in commercial buildings, improved energy management systems are very important.”  
([http://ec.europa.eu/energy/action\\_plan\\_energy\\_efficiency/doc/com\\_2006\\_0545\\_en.pdf](http://ec.europa.eu/energy/action_plan_energy_efficiency/doc/com_2006_0545_en.pdf))

An analysis of previous energy efficiency policies and programs can inform realistic potentials, as well help identify barriers that could be addressed within the EEAP or otherwise considered.

- The IEA “Energy Efficiency Governance Handbook” describes typical barriers to energy efficiency adoption and ameliorating policies. ([http://www.iea.org/papers/2010/gov\\_handbook.pdf](http://www.iea.org/papers/2010/gov_handbook.pdf)). This IEA report identifies several types of barriers:
  - market barriers – e.g., price distortions, split incentives, transaction costs
  - financial barriers – e.g., up-front costs, perception of risky investments
  - information and awareness barriers – e.g., lack of information and understanding
  - regulatory and institutional barriers – e.g., energy subsidies that discourage EE investment, lack of rigorous standards
  - technical barriers – e.g., lack of affordable energy efficiency technologies or limited technical skills

### Step 5: Selection of a Portfolio of Specific, Measurable, and Achievable Short- and Long-Term

**Objectives:** Based on the results of the analysis, countries can convene dialogues with key stakeholders to select the energy efficiency measures for each sector and across sector that will best meet the EEAP goals.

EEAPs often include a portfolio approach with a variety of policies, regulations, and programs targeting multiple end-use sectors, technologies, and behavioural changes. Strategies should reflect country and sectoral realities.

Indonesia: Within its “Master Plan on National Energy Conservation,” Indonesia established multiple measures to address energy efficiency goals (<http://www.ieej.or.jp/aperc/CEEP/Indonesia.pdf>), including:

- mandatory energy conservation at government office buildings
- creation of a state-owned energy-service company
- energy labelling program
- auditing for industrial plants and commercial buildings
- energy conservation clearinghouse
- sectoral energy benchmarks and best practices guidelines
- energy efficiency standards
- residential lighting efficiency
- energy awards

Plans will often includes measures implemented at multiple levels of government and by various institutions.

- The EU Energy Action plan includes policies and measures at the supranational, national, regional, and local levels. ([http://ec.europa.eu/energy/action\\_plan\\_energy\\_efficiency/doc/com\\_2006\\_0545\\_en.pdf](http://ec.europa.eu/energy/action_plan_energy_efficiency/doc/com_2006_0545_en.pdf))

Embedding regulations, policies, and programs within a legal and/or regulatory framework increases the likelihood of long-term support and of achieving goals, and thus, that goals are met).

- Korea: the Low Carbon Green Growth Basic Law (IEA 2010) underpins the Low Carbon Green Growth Strategy. (<http://www.moleg.go.kr/english/korLawEng;jsessionid=2XVAoj0GR5al5jBzbf231tBLR5sfbIXWqUKrdjsnkPDpRoPPZWg4k7g10127dywk?pstSeq=52136>)
- Mexico addressed both technological and behavioural change within its portfolio of policies and programs. ([http://www.usea.org/Programs/EUPP/gee/presentations/Chavez\\_Andrade\\_Mexico\\_Mar\\_8,\\_2010-USAID\\_\(Washington\).pdf](http://www.usea.org/Programs/EUPP/gee/presentations/Chavez_Andrade_Mexico_Mar_8,_2010-USAID_(Washington).pdf))

The EEAP development process can result in the identification of many possible action items; however, prioritization can ease implementation and maintain costs within funding limits.

- Mexico narrowed its EEAP to 7 cost-effective areas of opportunity specific to its market conditions. ([http://www.usea.org/Programs/EUPP/gee/presentations/Chavez\\_Andrade\\_Mexico\\_Mar\\_8,\\_2010-USAID\\_\(Washington\).pdf](http://www.usea.org/Programs/EUPP/gee/presentations/Chavez_Andrade_Mexico_Mar_8,_2010-USAID_(Washington).pdf))

- The EU “Energy Action Plan” identified 5 high-priority cost-effective measures to be implemented immediately with additional measures to be carried out subsequently over the 6-year plan: ([http://ec.europa.eu/energy/action\\_plan\\_energy\\_efficiency/doc/com\\_2006\\_0545\\_en.pdf](http://ec.europa.eu/energy/action_plan_energy_efficiency/doc/com_2006_0545_en.pdf))

Also, policy synergies should be identified to avoid duplication, maximize use of resources, and enhance impact.

**Step 6: Distribution of Responsibilities and Accountability:** Specific action items (i.e., the implementation of policies and programs) must be assigned and integrated into current sector level programs and plans. Also, it is important to establish accountability for the plan’s effectiveness. Centralized accountability may simplify plan management and facilitate better coordination and evaluation. Conversely, distributed accountability engages a wider community in support of the plan by expanding ownership of policy and program impacts.

**Step 7: Circulation, Discussion, and Refinement of the Energy Efficiency Action Plan.** Draft plans should be broadly shared for review by key government policymakers and business and NGO stakeholders. This will both help determine whether adjustments may be needed to strengthen the EAAP and will also build support of these stakeholders for plan implementation.

**Step 8: Implementation:** The lead agencies should be given the necessary authority and resources to implement measures for which they are responsible. These lead agencies should assign specific individuals with responsibility for implementation and track progress.

**Step 9: Review of Action Plan Impacts and Progress:** Measurement and assessment of the impacts of specific policies and programs can inform whether there are aspects of the EEAP that are not being fully implemented or are not as effective as anticipated. Also, action items that are achieving targeted objectives can inform an adjustment of other policies, programs, and regulations (i.e., are there aspects that are replicable and internal lessons to be learned?). If goals are not being met, an evaluation of the cause(s) can result in refinements of the EEAP.

- The U.S. National Action Plan “Model Energy Efficiency Program Impact Evaluation Guide” provides suggestions on model approaches for calculating energy, demand, and emissions savings resulting from energy efficiency programs. ([http://www.epa.gov/cleanenergy/documents/suca/evaluation\\_guide.pdf](http://www.epa.gov/cleanenergy/documents/suca/evaluation_guide.pdf))

**Step 10: Ongoing Adjustments to the Plan:** Countries should establish a process for regular refinements and updates to the EEAP to reflect results to date and changes in market or policy considerations. This can include an annual review and adjustment process.

### International Programs that Can Support Plan Development and Implementation

Countries can seek assistance from international programs with design and implementation of their EEAP. This includes support from bilateral and multilateral donor agencies, as well as initiatives supporting energy efficiency policies. IPEEC can assist countries in exploring opportunities to receive assistance from donor programs and multilateral initiatives. Two initiatives that can provide action plan technical assistance are highlighted below:

- **The Clean Energy Solutions Center** ([www.cleanenergysolutions.org](http://www.cleanenergysolutions.org)) is a partnership of UN-Energy and the Clean Energy Ministerial. The Clean Energy Solutions Center serves both as a clearinghouse of policy best practices reports, tools and data, as well as a forum for delivery of expert assistance and peer learning on energy efficiency and renewable energy. In partnership with IPEEC, the Clean Energy Solutions Center has technical experts available to provide remote assistance to countries with energy efficiency action plans and policies. This includes review of plan design, analysis methodologies and results, policy options, and implementation strategies. Requests for such assistance can be made through the Solutions Center “Ask an Expert” service (<http://cleanenergysolutions.org/faq>) or through IPEEC.
- **Super-efficient Equipment and Appliance Deployment Initiative (SEAD)** - <http://www.superefficient.org/>. SEAD is a joint initiative of the Clean Energy Ministerial and IPEEC that engages governments and the private sector in transforming markets for energy efficient equipment and appliances. Among its activities, SEAD offers expert assistance with policies and programs to advance use of energy efficient products, such as incentives, procurements, standards, and labelling programs, procurements, and awards and recognition.

### Additional Examples of Energy Efficiency Action Plans:

- French EEAP: ([http://ec.europa.eu/energy/demand/legislation/doc/neeap/france\\_en.pdf](http://ec.europa.eu/energy/demand/legislation/doc/neeap/france_en.pdf))
- Hungarian EEAP: ([http://ec.europa.eu/energy/demand/legislation/doc/neeap/hungary\\_en.pdf](http://ec.europa.eu/energy/demand/legislation/doc/neeap/hungary_en.pdf))