



**Asia-Pacific  
Economic Cooperation**

**APEC Energy Efficiency Policy Workshop Summary Report:  
Policy and Program Evaluation II  
(Jeju Island, Republic of Korea, 27 March 2017)**

**Energy Working Group**

June 2017

EWG 10 2016A

Produced by:

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## 1. Background

In 2016, the Asia Pacific Energy Research Centre (APERC) conducted a successful workshop to build the capacity of government officials and evaluation practitioners of APEC developing economies. The workshop was delivered by IEPPEC, the principal international organization for evaluators of energy efficiency policies and programs. On 27 March 2017, APERC conducted another event in Jeju Island, Korea to build on the previous workshop and was the first of a number of evaluation events during 2017, including:

- A two-day evaluation workshop organized by IEPPEC at the Asia Clean Energy Forum in Manila in June 2017
- A two-day APEC workshop on evaluation in October 2017 to be held in Bangkok (IEPPEC will provide the consultants to deliver this workshop)
- The first ever IEPPEC Asia-Pacific Conference, also to be held in Bangkok in November 2017.

Some of the attendees at these four events will be the same, and many will also have attended the 2016 APERC workshop. This provided a unique opportunity to deepen the expertise of government officials and evaluation practitioners building their evaluation understanding, skills and confidence. Further, by meeting several times, these attendees have the chance to enhance their network of evaluators, with the associated benefits.

## 2. Objective

The core objective of the workshop was to enable participants to become more confident commissioners and users of evaluation. They obtained a fuller understanding of:

- The process of evaluation and how it can be incorporated in the policy making process
- Evaluation processes and techniques and how to use them to provide evidence and insight about the policies that are of interest to them.

## 3. Workshop Description

The workshop was designed to build on the 2016 APERC workshop while remaining accessible to participants who did not attend in 2016. It also laid the foundations for the evaluation capacity building journey through 2017.

The workshop used a combination of:

- Pre-work by participants to ensure they come with an understanding of their local energy efficiency policies and practices
- Expert presentations of evaluation theory and practice supported by case study examples from developed and developing countries
- Workshop sessions to enable participants to identify how they can implement evaluation to support their energy efficiency aims

- Workshop sessions to develop action plans and provide an understanding of which techniques can be used to answer different types of questions and evaluate different types of policy
- Materials to support participants in implementing their action plans following the workshop

The agenda is in Appendix 1.

The handout “Eight Step Evaluation Process” is in Appendix 2. The slides used in presentations are in Appendix 3.

And the list of participants is in Appendix 4.

#### 4. Workshop Sessions Summary

##### 1) Workshop Introduction (Presentation 1)

Presenter: Ed Vine, Lawrence Berkley National Laboratory.

Background and context were explained and participants introduced themselves each other.

##### 2) Evaluation Overview (Presentation 2)

Presenter: Ed Vine, Lawrence Berkley National Laboratory.

This session provided an overview of the challenges and opportunities for evaluation in APEC and set out a vision for the future. The session gave participants an understanding of key evaluation concepts:

- What is evaluation
- Why do we evaluate
- The focus of evaluation
- When do we evaluate
- Who are the key stakeholders
- The evaluation profession

The session explained the role of IEPPEC and encouraged participants to take part in further APEC and IEPPEC activities in Asia in 2017.

##### 3) Evaluation Toolkit (Presentation 3)

Presenter: Charles Michaelis, Strategy Development Solutions Ltd

This session set out two key concepts; an eight-stage evaluation process and the theory of change:

- The evaluation process involves:
  1. Determining the purpose of the evaluation
  2. Engaging stakeholders
  3. Developing a theory of change

4. Identifying evaluation questions
  5. Establishing the evidence required to address the questions
  6. Securing resources for the evaluation
  7. Conducting the evaluation
  8. Sharing learning
- A theory of change sets out how the policy is intended to secure its objectives; the main processes involved and key assumptions. The discussion was illustrated with examples of a theory of change for a typical energy efficiency policy and provided step-by-step guidance to developing a theory of change.

#### **4) Case Study – using theories of change to evaluate policies (Presentation 4)**

Presenters: Devi Laksmi, Ministry of Energy and Mineral Resources, Indonesia and Charles Michaelis, Strategy Development Solutions Limited

This presentation built on the earlier discussion of theories of change to show how the concept had been used to refine industrial energy efficiency policies in Indonesia.

#### **5) Economy presentations**

Four attendees from APEC developing economies gave short presentations:

##### **i. Evaluation of energy efficiency policy in Viet Nam (Presentation 5)**

Presenter: Hoang Viet Dung, Ministry of Industry and Trade, Viet Nam

This presentation described Viet Nam's policy on energy efficient appliances and provided some early results.

##### **ii. Evaluation of energy efficiency policy in Indonesia (Presentation 6)**

Presenter: Devi Laksmi, Ministry of Energy and Mineral Resources, Indonesia

This presentation described the Government of Indonesia's approach to evaluation of their policies on energy efficiency for appliances and industry.

##### **iii. Evaluation of energy efficiency policy in Russia (Presentation 7)**

Presenter: Ivan Kuzmenkov, Ministry of Energy, Russia

This presentation described the experience of providing energy to remote areas in Russia through a combination of renewables, back-up generation, and enhanced energy efficiency.

##### **iv. Evaluation of energy efficiency policy in Mexico (Presentation 8)**

Presenter: Hector Francisco Garcia Rodriguez, National Commission for the Efficient Use of Energy (CONUEE)

This presentation described the process of establishment of the energy efficiency learning networks initiative in Mexico, and some early evaluation results.

## **6) Exercise**

Attendees split into four small groups and each group worked to develop an outline theory of change for one of the policies described in the Economy Presentations above. Each group then presented their theory of change back to the whole workshop.

This session provided attendees with hands-on experience of developing a theory of change and deepened their understanding of the topic.

## **7) Impact Evaluation (Presentation 9)**

Presenter: Ed Vine, Lawrence Berkley National Laboratory.

This session described the principles of impact evaluation; linking theory to the practical example of MEPS for air conditioners used in the Evaluation Toolkit session.

The session provided guidance on how to isolate impacts relating to the policy that is being evaluated and identified data collection and analysis methods for impact evaluation.

## **8) Case Study: The Home Power Savings Program, Australia (Presentation 10)**

Presenter: Michael Reid, The Keyline Group.

The case study illustrated how the Government of New South Wales had used evaluation to improve the delivery of the Home Power Savings Program and to establish the energy impact and the non-energy benefits resulting from the policy.

The presentation illustrated the use of the eight-stage process described earlier in the day and gave suggestions for how non-energy benefits could be evaluated.

Mr Reid also pointed out that while often evaluation is not extensively done or, indeed, not done at all due to potentially high costs, it can also be more expensive not to evaluate projects adequately. This is because project implementers need to know if the projects (or policies) are having the desired effects and have the opportunity to change them before too much time and money are wasted.

## **9) Exercise**

Following this session, attendees returned to their four small groups to identify what evidence they would need to evaluate the impact of the policies they were considering and how they would secure that evidence. Attendees then presented their discussions back to the whole workshop.

## **10) Process evaluation (Presentation 11)**

Presenter: Ed Vine, Lawrence Berkley National Laboratory.

This session described the role of process evaluation and how the theory of change concept underpins process evaluation. It drew on examples of lessons learned from process evaluation conducted by the Electricity Generating Authority of Thailand (EGAT).

### **11) Panel session**

Panelists: Ed Vine, Michael Reid, Charles Michaelis

This session provided an opportunity for workshop participants to raise challenges and issues they had faced in conducting evaluations and to ask wider questions about evaluation. Questions were raised about:

- How to determine a baseline/counterfactual
- Evaluating the impact of a communications program
- Resources needed (e.g., budget) for conducting evaluation
- Availability of and access to information for conducting evaluation
- Evaluation of secondary impacts

### **12) Wrap-up (Presentation 12)**

Presenter: Ed Vine, Charles Michaelis

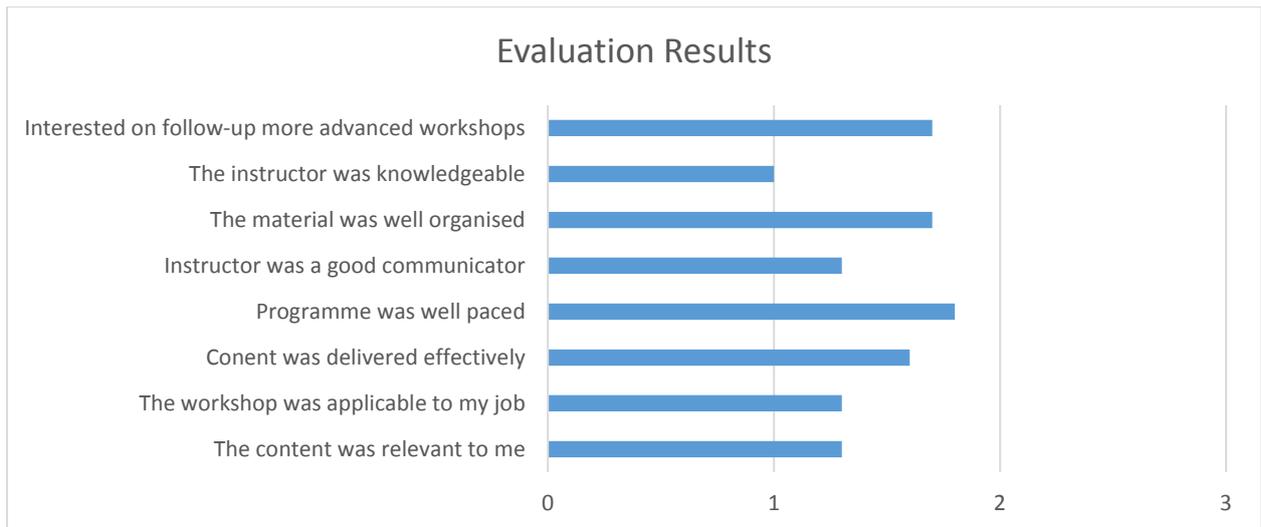
The presenters expected the workshop participants to become “evaluation champions” in their economies to provide future services, and introduced possible next steps. The presenters also indicated there is a drive to develop an evaluation community of practice in Asia, and hoped that this workshop would kick-start this process.

## **5. Workshop Analysis**

Over 30 individuals participated in the workshop, coming from Australia; China; Hong Kong, China; Indonesia; Japan; Korea; Malaysia; Mexico; New Zealand; the Philippines; Russia; Chinese Taipei; Thailand; United Kingdom; United States; and Viet Nam (Appendix 3).

10 attendees completed evaluation forms; they were asked to rate a number of aspects of the workshop on a scale of 1-5 where 1 is completely agree, 5 is completely disagree and 3 is neither agree nor disagree. It can be seen that respondents agreed or completely agreed with all statements. They particularly felt that the instructors were knowledgeable and good communicators and that the workshop was relevant and applicable to their jobs. Respondents felt that the content was well organized and delivered effectively and at a reasonable pace.

Six of the ten respondents were interested in more advanced workshops.



Seven respondents felt the workshop was the right length; one thought it was too short and two felt that it was too long. The visuals, meeting space and handouts were all rated good or better. The overall program was rated as good by four respondents, very good by two and excellent by four attendees. The workshop sessions were the most enjoyed. As improvements respondents suggested more case studies, examples of good and bad evaluation, using role playing and providing the slides and handouts ahead of the workshop.

Respondents were asked about their future needs; their comments covered a wide range of interests:

- Transition to RES
- Sustainable cities and urban systems
- Energy efficiency financing
- ICT based energy efficiency
- Refrigerant trends
- Measures to adopt EE Evaluation (from upstream to downstream)
- EE monitoring frameworks
- Promotion of cogeneration
- Public policy development
- Modeling and statistics

## Appendix 1

### Energy Efficiency Policy Evaluation Capacity Building APEC Workshop in Korea

#### Objective

The core objective of the workshop is to enable participants to become more confident commissioners and users of evaluation. They will obtain a fuller understanding of:

- The process of evaluation and how it can be incorporated in the policy making process
- Evaluation processes and techniques and how to use them to provide evidence and insight about the policies that are of interest to them.

The workshop will be designed to build on the 2016 APEC workshop while remaining accessible to participants who did not attend in 2016. It will also lay the foundations for an evaluation capacity building journey through 2017.

The agreed workshop agenda is shown below:

Time	Content	Session leader
<b>8:00-8:45</b>	Registration	
<b>8:45-9:00</b>	Brief Introduction Welcoming Remarks – Host Economy Rep	
<b>9:00-9:10</b>	Opening remarks – <b>APERC</b> Opening remarks – <b>EGEE&amp;C Chair</b>	
<b>9.10-9.30</b>	Background, context and introductions	Ed Vine
<b>9.30-10.15</b>	Evaluation overview – this session will serve to recap on the 2016 workshop and introduce new participants to the principles Questions and discussion	Ed Vine
<b>10.15-10.30</b>	Coffee break	
<b>10.30-11.00</b>	Introduction to evaluation planning tool and the concept of theories of change; these will be used through the day.	Charles Michaelis
<b>11.00-11.30</b>	Case study – using theories of change to support the development of energy efficiency policy in Indonesia	Devi Laksmi, Government of Indonesia
<b>11.30-12.30</b>	Exercise – developing theories of change for energy efficiency policies, identify key evaluation questions that will inform their policy development.  Participants will work in small groups using the planning tool and developing theories of change for different policy areas (appliances, industry, access/renewables integration, buildings). Each group discussion will build on a short presentation from one participant.	Facilitators: <ul style="list-style-type: none"> <li>• Charles Michaelis</li> <li>• Ed Vine</li> <li>• Michael Reid</li> </ul>
<b>12.30-13.30</b>	Lunch	
<b>13.30-14.00</b>	How to evaluate the impact of energy efficiency policies; which techniques can be used for typical policies and particular questions.	Ed Vine

<b>14.00-14.30</b>	Case study – evaluating the impact of energy efficiency in Australia; the experience of New South Wales	Michael Reid, ex-Government of New South Wales
<b>14.30-15.30</b>	Exercise - develop a plan to evaluate the impact of participants' policies using the theory of change developed and evaluation management tool techniques described earlier.	Facilitators: <ul style="list-style-type: none"> <li>• Charles Michaelis</li> <li>• Ed Vine</li> <li>• Michael Reid</li> </ul>
<b>15.30-15.45</b>	Tea break	
<b>15.45-16.15</b>	Process evaluation, explanation of process evaluation and suggestions for how process evaluation can be incorporated in evaluation plans	Ed Vine
<b>16.15-17.00</b>	Panel session to consider challenges to evaluation and to identify solutions and strategies to overcome those challenges – write up as a guide for participants.	Panelists <ul style="list-style-type: none"> <li>• Charles Michaelis</li> <li>• Ed Vine</li> <li>• Michael Reid</li> </ul>
<b>17.00-17.10</b>	Closing remarks	

## Appendix 2

### Handout



Evaluation Process
<b>1. Determine Purpose</b>
<ul style="list-style-type: none"> <li>• Why do we want to conduct the evaluation?</li> <li>• What benefits will we obtain?</li> <li>• How will we use the results?</li> </ul>
<b>2. Engage Stakeholders</b>
<ul style="list-style-type: none"> <li>• Who should be involved?               <ul style="list-style-type: none"> <li>• Policy “owners”</li> <li>• Other relevant ministries and agencies</li> <li>• Industry/consumers/third sector</li> <li>• Academics</li> <li>• Evaluators</li> </ul> </li> </ul>
<b>3. Develop Theory of Change</b>
<ul style="list-style-type: none"> <li>• Goal of the policy</li> <li>• Short/medium/long term outcomes</li> <li>• What will be delivered as a result of the policy</li> <li>• Costs and time allocated to policy</li> <li>• Assumptions</li> <li>• Risks</li> </ul>
<b>4. Identify Questions</b>
<ul style="list-style-type: none"> <li>• What has happened?</li> <li>• What difference did the policy make?</li> <li>• How well was the policy implemented?</li> <li>• How can we do things better?</li> <li>• Was the policy good value for money?</li> </ul>
<b>5. Evidence Required</b>
<ul style="list-style-type: none"> <li>• What types of evidence are needed? E.g.               <ul style="list-style-type: none"> <li>• Monitoring activities outputs, outcomes, impacts</li> <li>• Baseline</li> <li>• Counterfactual</li> <li>• Understanding/insight— who, how, why, why not, what if</li> </ul> </li> <li>• What methods will be used? E.g.               <ul style="list-style-type: none"> <li>• Surveys</li> <li>• Meter readings</li> <li>• Modelling</li> </ul> </li> </ul>
<b>6. Secure Resources</b>
<ul style="list-style-type: none"> <li>• Funding for . . .               <ul style="list-style-type: none"> <li>• Evaluation consultancy</li> <li>• Surveys/data collection</li> <li>• Modelling</li> <li>• Communicating learning</li> </ul> </li> <li>• Time for . . . Policy makers to take part</li> </ul>
<b>7. Conduct evaluation</b>
<ul style="list-style-type: none"> <li>• Implement the plan . . .               <ul style="list-style-type: none"> <li>• Project manager</li> <li>• Steering group</li> <li>• Appoint contractors</li> <li>• Conduct evaluation</li> <li>• Analysis and reporting</li> </ul> </li> </ul>
<b>8. Share Learning</b>
<ul style="list-style-type: none"> <li>• Within policy team - course correction</li> <li>• Value for money</li> <li>• Inform new policies</li> <li>• Wider lessons –what works, why?               <ul style="list-style-type: none"> <li>• Funders and stakeholders</li> <li>• Evaluation and policy community</li> </ul> </li> </ul>

## **Appendix 3**

### **Workshop Presentations**

**Presentation 1: Workshop Introduction (Ed Vine)**

**Presentation 2: Evaluation Overview (Ed Vine)**

**Presentation 3: Evaluation Toolkit (Charles Michaelis)**

**Presentation 4: Developing a Theory of Change (Charles Michaelis)**

**Presentation 5: Viet Nam's Policy on Energy Efficiency Appliances  
(Hoang Viet Dung)**

**Presentation 6: Evaluation of energy efficiency program, Indonesia  
(Devi Laksmi)**

**Presentation 7: Russia's Experience of Providing Energy Supply to Remote  
and Low-Populated Areas (Ivan Kuzmenkov)**

**Presentation 8: Learning Networks -Mexico (Hector Garcia)**

**Presentation 9: Impact Evaluation (Ed Vine)**

**Presentation 10: Case Study: Home Power Savings program - Australia  
(Michael Reid)**

**Presentation 11: Process Evaluation (Ed Vine)**

**Presentation 12: Next Steps (Ed Vine)**



## Workshop Introduction

Edward Vine  
Lawrence Berkeley National Laboratory

APERC Evaluation Workshop  
Jeju, Republic of Korea  
March 27, 2017

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## IEPPEC



- International Energy Policy and Programme Evaluation Conference
- Peer-reviewed papers and panels
- Every two years in Europe (even years)
- Sister conference in North America (odd years)
- First conference in Asia - Bangkok (Nov. 1-2, 2017)

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## Session Outline



- Why We Are Here
- Introductions

3

## Why We Are Here



- Challenges
- Opportunities
- Vision

4

## Challenges



- Evaluation experience is limited in most economies in Asia
  - Government initiatives do not include evaluation
  - Action plans or policy often focus only on implementation of policies and programs
  - Funding of data collection and evaluation of programs and policies is often not available or of low priority
  - Expertise (trained evaluators) is limited
  - Evaluation data are lacking or not standardized

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## Opportunities



- Economies are in the process of developing and implementing new policies on energy efficiency. There are opportunities to:
  - Introduce evaluation as part of the process
  - Increase expertise in governments for data gathering and evaluation (capacity building)
  - Increase the body of knowledge on the effects of energy efficiency policy and programs
  - Improve energy efficiency policy and program design and implementation

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## Vision



- Support the strengthening of evaluation leadership and capacity, especially in developing countries
- Foster the cross-fertilization of evaluation theory and practice in Asia
- Address international challenges in evaluation

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## Previous Activities



- October 2015: International Workshop for Asia Energy Efficiency Program and Policy Evaluation (Beijing)
- April 2016: APERC Evaluation Workshop (Taichung City, Chinese Taipei)

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## 2017



- **March: APERC Evaluation Workshop (this workshop)**
- June: ACEF Evaluation Workshop (Manila)
- October: APEC Evaluation Workshop (Bangkok)
- November: 2017 IEPPEC Asia-Pacific (Bangkok)

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## Contact Information



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## Introductions



- Name
- Organization/Country
- Why are you here?
- What do you want to get out of the workshop?

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## Evaluation Overview

Edward Vine  
Lawrence Berkeley National Laboratory

APERC Evaluation Workshop  
Jeju, Republic of Korea  
March 27, 2017

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## Session Outline



- 2016 APERC Workshop
- Key Evaluation Concepts
- Discussion

2

## APERC Taipei Workshop (2016)



- 31 individuals from 11 APEC economies and 3 APEC observer guests
- The workshop aimed to develop participants' understanding of:
  - How evaluation contributes to policy and program design
  - Using evaluation to refine and improve policy and program effectiveness
  - Evaluation approaches, methods and tools
  - International evaluation practice
  - The use of indicators to benchmark performance and support decision making

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## APERC Taipei Workshop Analysis



- Participants were keen to learn more about evaluation
  - Strong sense that evaluation was an important field which they needed to know more about
  - Took away a good understanding of the benefits of evaluation and where they could start in implementing evaluation within their economies
- Areas for inclusion in future workshops include training in:
  - Developing monitoring and evaluation frameworks
  - Qualitative and quantitative data collection techniques
  - Analysis of data for impact and process evaluation
  - Using evaluative techniques and insights in policy development

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## Key Evaluation Concepts



- What is evaluation?
- Why do we evaluate?
- Focus of evaluation
- When do we evaluate?
- Who are the key stakeholders?
- Evaluation profession

5

## What is Evaluation?



- Evaluation is an **objective** process of understanding **how** a policy or program was implemented, **what** effects it had, for **whom** and **why**
- Leads to **more effective** policies and programs

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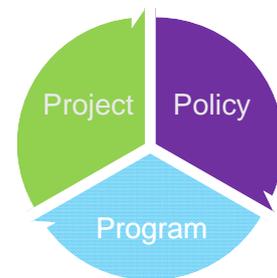
## Why Do We Evaluate?



- **To Reduce Uncertainty**
  - Provide the information necessary to make good decisions regarding policies and investments in programs
- **To Assess Impacts**
  - Estimate the change in energy usage and other targets due to programs & policies
- **To Improve Program & Policy Design**
  - Prioritize program & portfolio budgets, and inform resource planners and policymakers

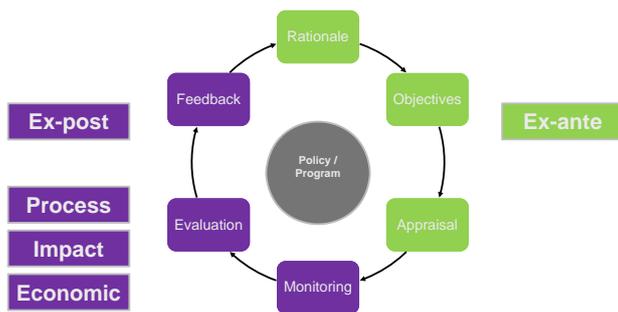
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## Focus of Evaluation



8

## When Do We Evaluate?



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## Who Are the Key Stakeholders?



- Program implementers
- Funders
- Regulators
- Planners
- Policymakers
- Elected and appointed officials
- Special-interest groups

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## Evaluation Profession



Program and policy evaluation have been conducted for many years relying on

- **professional methods, protocols, and guidelines**
  - to quantify the impacts from energy efficiency programs and policies
  - to improve program and policy effectiveness
  - to help policymaking and resource planning

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## A Professional Evaluation Community in Asia??



**“The best way to predict the future is to invent it.”**

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## Time for Questions

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## Evaluation toolkit

Charles Michaelis



1

## Eight step evaluation process...



2

## Eight step evaluation process...



- Why do we want to conduct the evaluation?
- What benefits will we obtain?
- How will we use the results?

3

## Eight step evaluation process...



- Who should be involved?
  - Policy “owners”
  - Other relevant ministries and agencies
  - Industry/consumers/third sector
  - Academics
  - Evaluators

4

## Eight step evaluation process...



- Goal of the policy
- Short/medium/long term outcomes
- What will be delivered as a result of the policy
- Costs and time allocated to policy
- Assumptions
- Risks

5

## Eight step evaluation process...



- What has happened?
- What difference did the policy make?
- How well was the policy implemented?
- How can we do things better?
- Was the policy good value for money?

6

### Eight step evaluation process...



- What types of evidence are needed? E.g.
  - Monitoring activities outputs, outcomes, impacts
  - Baseline
  - Counterfactual
  - Understanding/insight – who, how, why, why not, what if
- What methods will be used? E.g.
  - Surveys
  - Meter readings
  - Modelling

7

### Eight step evaluation process...



- Funding for...
  - Evaluation consultancy
  - Surveys/data collection
  - Modelling
  - Communicating learning
- Time for...
  - Policy makers to take part

8

### Eight step evaluation process...



- Implement the plan...
  - Project manager
  - Steering group
  - Appoint contractors
  - Conduct evaluation
  - Analysis and reporting

9

### Eight step evaluation process...



- Within policy team - course correction
- Value for money
- Inform new policies
- Wider lessons – what works, why?
  - Funders and stakeholders
  - Evaluation and policy community

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### Focus for today



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### Theory of change



- Description of:
  - Policy objectives
  - How the policy is intended to secure the objectives
  - Main processes
  - Key assumptions

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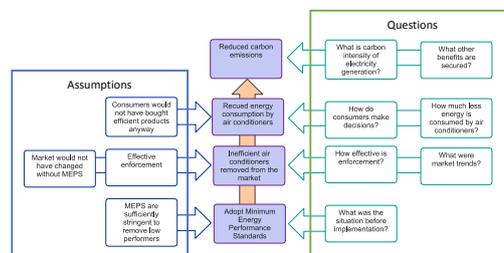
### Why is it useful?

- Communicate
  - What you are aiming to achieve and how
  - Assumptions
  - Key steps
- Identify:
  - Monitoring indicators
  - Evaluation questions
- Align evidence from different sources



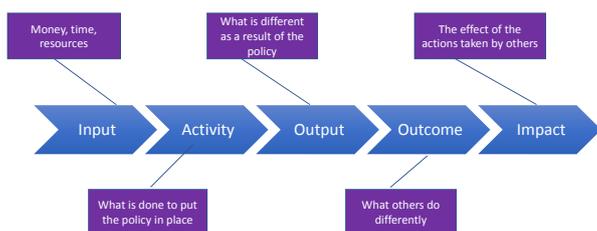
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### Example...MEPS for air conditioners



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### Typical form for theory of change



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### Step 1 – define the impact...

- For example...reducing carbon emissions
  - Compared to what?
  - By when?
  - For how long?
- Think about other impacts too...
  - Financial savings
  - Electricity demand
  - Energy security
  - Air quality



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### Step 2 – what will you do (activity)?

- What will the policy involve, e.g.
  - Regulations
  - Incentives
  - Information
  - Training
- Who will be affected by the policy?



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### Step 3 – what are the inputs?

- Think about:
  - Costs to government
  - Costs to wider society
  - Time and other non-financial resources



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### Step 4 – what outputs do you expect



- Regulations e.g. MEPS => supply side change
  - No longer possible to sell inefficient products
- Incentive e.g. subsidy => demand side change
  - Purchasing efficient products becomes more attractive
- Information/training
  - Change to knowledge/understanding
- Why do you expect these outputs?
- Are they different for different people/firms?
- What else might happen?

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### Step 5 – what are the outcomes?



- What will be different because of the policy ?
- For example...more energy efficient equipment installed
  - What equipment?
  - In what applications?
  - How will it be used, by whom?
  - Who makes the decisions, who else is involved?
  - Why will the policy have that result?
- Think about short medium and long term outcomes

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### At every stage think about...



- Your assumptions:
  - Why do you expect the policy to work like this? What else might happen?
  - Is the policy likely to work differently in different circumstances; e.g. for different people or in different places?
  - What needs to be in place for the policy to work as you expect?
  - What would have happened without the policy?
- Evidence:
  - What evidence do you have to support the assumptions?
  - What evidence do you need to enable you to test:
    - Whether the assumptions are right?
    - Whether the policy is working as you expected?
  - Where will you get the evidence you need?

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### Questions and discussion

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## Developing a theory of change

Charles Michaelis  
Ed Vine  
Michael Reid



1

## Developing a theory of change



- Groups looking at three policies:
  - Energy efficient appliances in Vietnam
  - Energy access and renewables integration in Russia
  - Energy efficient industry in Indonesia
- Short presentation on each policy
- Develop a theory of change
- Identify potential indicators and evaluation questions
- Each group to present

2



MINISTRY OF INDUSTRY AND TRADE

## VIETNAM'S POLICY ON ENERGY EFFICIENT APPLIANCES



Jeju, 27/03/2017



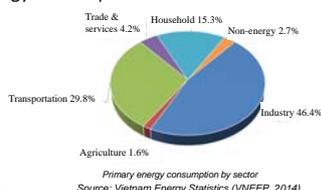
### Content

- 1 The aim of Vietnam's policy on EE appliances
- 2 The key elements of the policy
- 3 Why the policy is expected to make a difference
- 4 Some results



### I. The aim of Vietnam's policy on EE appliances

- Energy demand increases about 10%/year;
- GHG emissions from energy using sector account for 63% of total GHG emissions of Vietnam (2010) and will account for 80% since 2020.
- In the near future, the primary energy can not meet the demand of the energy consumption.



### I. The aim of Vietnam's policy on EE appliances

- Contribute to the GHG emissions reduction in the industry and trade sectors about 8-10% in comparison with the level in 2010 (MOIT's Green Growth Plan 2015-2020).
- Implementation of INDC of Vietnam: 8% GHG emissions reduction during 2021-2030; 25% with the international support.
- Reduce energy use, energy costs and may result in a financial cost saving to consumers if the energy savings offset any additional costs of implementing an energy efficient technology.
- Accelerate the transformation of the appliance market towards high-efficiency products, replace low-performance equipment.
- Reduce the peak demand.
- Support the local manufacturers in the competition with imported products.



### II. The key elements of the policy

- Law on Energy conservation and efficient use on 28 June 2010.
- Decree 21/2011/NĐ-CP, Regulation and measures to implement the Law on 29/3/2011.
- Decree 134/2013/NĐ-CP, Regulation on penalty in energy efficiency and conservation.
- Decision 04/2017/QĐ-TTg on List of equipment subject to labeling and application of MEPS and roadmap.
- Circular 36/2017/TT-BCT defining the energy labeling for means and equipment using energy.
- Decision 78/2013/QĐ-TTg on list of equipment and roadmap for rejecting.
- Decision 68/2011/QĐ-TTg, State procurement regulation on energy labeling products.



### III. Why the policy is expected to make a difference

- Mandatory energy performance requirements and labels have proved to be a highly cost-effective policy tool for encouraging the reduction of average energy consumption in equipment without reducing consumer choice or triggering sustained increases in prices.
- Rational policies will drive the consumers choice when buying household equipment and appliances, leading to the use of EE appliances. It also make a new approach for the distributors in the selection and selling appliances in the market. When the demand of high efficient appliances increases, the manufacturers and importers will promote the production and import of high efficient equipment and appliances accordingly.





#### IV. Some results

- Mandatory labeling and MEPS since 2013 for 15 kinds of products. About 10.000 models have been labeled.
- The awareness of consumers has been greatly improved, consumers can compare the energy saving of appliances and tend to purchase energy labeled and high energy efficient appliances .
- More than 90% of ACs and refrigerators have been labeled when selling in the market in 2015. The electricity saving due to change of consumers into EE ACs is about 100 million kWh/year.
- Incandescent lamp decreases from 55 million units in 2011 to 5 million units in 2015.
- Accumulative money saving is estimated about 480 million USD, GHG emission reduction is 34 million tons of CO2 in 2030.



Thank you!



# EVALUATION ON ENERGY EFFICIENCY PROGRAM IN INDONESIA



Directorate of Energy Conservation  
 Directorate General of New, Renewable Energy and Energy Conservation  
 Ministry of Energy and Mineral Resources

1

## BACKGROUND

- Evaluation on Energy Efficiency Program has not been done since the establishment of the Directorate General NRE&EC in 2010;
- Energy Saving Potential in end-user sectors
  - Industry 10 – 30%
  - Commercial Building 10 – 30%
  - Residential 15 – 30%
  - Transportation 15 – 35%
- To fulfill the target of National Energy Policy
  - Reduce energy intensity by 1% per year; and
  - Reduce energy consumption by 17% from business as usual

2

## OBJECTIVE

- To assess the effectiveness;
- To identify the barriers and weakness;
- To identify the need of data and information for developing the program and the need of resources for implementing the program
- To recommend for improvement, strengthening, law enforcement, management and sustainability of the program

3

## PROGRAM EVALUATION

- Conduct two kind of evaluation:
- Internal Evaluation, doing with stakeholders
  - External Evaluation, supported by IEA

4

## INTERNAL EVALUATION

- Internal evaluation focuses to 4 energy efficiency programs:
  - Energy Management
  - Standard and Labeling
  - Awareness Campaign
  - International Cooperation
- This evaluation based on process of program implementation.
- The result will be qualitative and to be followed-up by each sub-directorate in accordance with the duties and functions

5

## EXTERNAL EVALUATION

- External Evaluation focuses to end-user sector:
- Industry
  - Building
  - Home Electronic Appliances
  - Transportation

6

**THE RESULTS OF INTERNAL EVALUATION**  
Energy Management (1)

NO.	RECOMMENDATION	STATUS
1.	Revision on Government Regulation on Energy Conservation (expand the scope of mandatory on energy management and different treatment for each end-user sector)	on going
2.	Strengthening coordination among related ministries to integrate and harmonize the implementation of energy management into their program (Mol and MoE&F)	on going
3.	Scaling-up the compliance of mandatory objects by approaching them through company group, supply-based chain industry, and management of industrial area	on going

7

**THE RESULTS OF INTERNAL EVALUATION**  
Energy Management (2)

NO.	RECOMMENDATION	STATUS
4.	Increasing certified energy manager and energy auditor by providing capacity building to the candidates prior to certification test, expanding the number of professional certification agency, as well as energy manager assessor in Jakarta and outside Jakarta	on going
5.	Preparing incentive scheme to support energy efficiency investment	on going
6.	Exploring the opportunities to integrate energy management implementation as one criteria for obtaining tax relief (tax holiday and tax allowance)	-

8

**THE RESULTS OF INTERNAL EVALUATION**  
Energy Management (3)

NO.	RECOMMENDATION	STATUS
7.	Study the use of tri-generation and district cooling that can be applied in an industrial area and complex buildings or superblock	-
8.	Focus and intensive disseminating on implementation of energy management through company group, supply-based chain industry, and management of industrial area	on going
9.	Deploy the successful implementation of energy management through public service advertising and brochures	on going

9

**THE RESULTS OF INTERNAL EVALUATION**  
Standard and Labeling (1)

NO.	RECOMMENDATION	STATUS
1.	Conducting market survey for home appliances	on going
2.	Improving and extending supervision by strengthening the coordination with related ministries or government institution and local government and law enforcement	on going
3.	Coordinating with National Standardization Agency to revise membership of technical committee of energy conservation	done
4.	Forming technical working groups (TWGs) for each home appliances in order to speed up the drafting of minimum energy performance standards per appliances intended	on going

10

**THE RESULTS OF INTERNAL EVALUATION**  
Standard and Labeling (2)

NO.	RECOMMENDATION	STATUS
5.	preparing incentive scheme for local energy-efficient equipment manufacturers	on going
6.	cooperating with retailers for promotion of energy efficient products and provide short training to operational staff / sales and purchase about energy-efficient products	-
7.	Scaling-up dissemination of EE S&L through electronic media, exhibition in Mall/shopping centre, and to traders on-line	on going

11

**THE RESULTS OF INTERNAL EVALUATION**  
Awareness Campaign

NO.	RECOMMENDATION	STATUS
1.	Socialization on energy efficiency is more effective in schools because education is the beginning of human character development. Behavior change more easily occur in early childhood compared to adults	on going
2.	Teachers in schools and higher level officials in government and private institutions play an important role as a role model in the implementation of energy efficiency through behavior change	on going
3.	Integrating energy efficiency implementation in the program of Ministry of Education and MoE&F	on going

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**THE RESULTS OF INTERNAL EVALUATION**  
**International Cooperation (1)**

NO.	RECOMMENDATION	STATUS
1.	Organizing regular meetings with Donors at least 6 (six) months to monitor the progress and barriers in the cooperation activities, avoid duplication/overlap of activities, and determine the next actions if necessary	done
2.	Strengthening coordination among related ministry / institution in the field of energy efficiency (including international cooperation to avoid duplication/overlap)	on going
3.	Setting up "asset management (goods)" of the cooperation already completed, as well as knowledge management	on going

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**THE RESULTS OF INTERNAL EVALUATION**  
**International Cooperation (2)**

NO.	RECOMMENDATION	STATUS
4.	Expanding cooperation activities of energy efficiency to the transport sector	on going
5.	Develop matrix for mapping energy efficiency plan according to the needs that have not been accommodated in the activities funded by the state budget, and the matrix will be submitted to the Donors if offered cooperation	done

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MINISTRY OF ENERGY OF THE RUSSIAN FEDERATION

APEC Expert Group on Energy Efficiency and Conservation (EGEESC) Under the APEC Energy Working Group

### Russian experience of providing energy supply to remote and low-populated areas

Ivan Kuzmenkov  
Expert  
of Energy Conservation and Energy Efficiency Division,  
the Ministry of Energy of the Russian Federation

Energy Efficiency Policy Evaluation Capacity Building  
APEC Workshop

27 March 2017  
Jeju, South Korea

## THE ISSUE

- The provision of remote areas with reliable and efficient low-carbon energy infrastructure is one of the key objectives of the national energy strategy
- 78 % of the population of the Russian Federation is concentrated on 25 % of national territory
- About 70 % of the territory of the Russian Federation constitutes of the zone of decentralized electricity supply area
- There are 153 000 rural townships in the Russian Federation and 117 000 settlements with the population of 200 people and less

## KEY GOALS

- Reliable and high quality power supply of remote areas and regions with low density of consumers is one of the main guidelines of the state policy enshrined in the energy strategy of Russia until 2030
- Total capacity of 5.9 GW of Renewable Energy Sources (RES) and 2.5 % of total generation by 2024
- The use of hybrid power systems in remote townships will significantly reduce the expenses of the budget of different levels and costs for the establishment and operation of energy infrastructure, increase power supply reliability, reduce the cost of electricity for consumers

## POLICY MEASURES

- Governmental level:**
  - Government of the Russian Federation elaborates and defines the main directions and aspects of national energy policy, which includes the issue of energy supply of remote and low-populated areas, conduct national energy policy
- State-owned and private companies:**
  - Public and private corporations perform investment policy to enlarge the use of innovative technologies in order to provide remote and low-populated areas with sustainable and high-efficient energy sources

## RES SOLUTIONS FOR REMOTED AND LOW-POPULATED AREAS

### HYBRID POWER SUPPLY SYSTEM

Universal autonomous power station:

- Photovoltaic battery
- Diesel generator
- Management module
- Windpower

-Voltage converter  
-Storage

COMBINATION OF SEVERAL KINDS OF RES DEPENDING ON GEOGRAPHICAL FEATURES

## EXAMPLES AND PARAMETERS

- For standard township (100 people) with an installed load of 450 kW:
  - Generation of electricity from wind: at least 500 MW<sup>h</sup>/year (50% of total requirements);
  - The cost of construction of the wind farm: USD 1.3– 1.7 mln;
  - Annual maintenance costs: USD 31 thousands.
- For standard township (100 people), with an installed load of 450 kW:
  - Generation of electro energy: at least 500 MW<sup>h</sup>/year (50 % of the total need);
  - The cost of construction of typical solar plant: USD 1.3– 1.7 mln;
  - Annual operating cost: USD 17 thousands.
- For standard settlement (100 people), with an installed load of 450 kW:
  - Electricity generation from Mini-HPP: within 4 000 MW<sup>h</sup>/year ( up to 100 % of the total need);
  - The cost of construction: USD 3.5 – 6.4 million without VAT;
  - Annual operating cost: USD 86 thousands.

Menza project, Zabakalskiy district (pilot project of implementation of solar energy technology, overall capacity – 520 kW)

Ust-Kamchatsk pilot project (Wind turbine, 275 (kW), adjusted to the local climatic conditions)

Tomskaya Mini-HPP, 1 MW

## OUTPUT



- Facilitation of energy supply of remote and low-populated areas
- Expansion of modern low-carbon technologies
- Reduction in expenditure of construction and maintenance of energy infrastructure
- Increase of social standard of living in remote areas



7

## APEC EXPERIENCE



- **Why this issue is also important for APEC economies?**
- APEC economies have a diversified geographic structure including **remote areas** and **islands** are those that experience the most acute challenges to reliable and affordable access to energy
- Today, more than **400** million people in Asia-Pacific region do not have access to electricity
- Several important aspects of work which highlighted by **APEC Energy Working Group** are: enhancing the security of energy supply networks; promoting energy efficient and sustainable communities; supporting cleaner energy development etc.
- The widespread use of hybrid power systems and renewables directly corresponds with one of the main goal of APEC community to **double renewable energy** in the regional energy mix by 2030 and conduct **low-carbon** energy policy



8

## SPECIFIC EXAMPLES



- ✓ The improvement of capacity factors of variable renewables in **remote areas** in **China** because of transmission network enhancements. China also has a large technical potential of renewable energy resources, the quality of which is on par with the average level in APEC. Considering the wind speed, for example, average capacity factors of wind power place China in **9th** ranking in the APEC region.
- ✓ In an effort to move towards low-carbon and sustainable development, China invested nearly USD **90** billion in clean energy in **2014**, exceeding the total amount of all other economies in Asia (Bloomberg, 2015).
- ✓ High retail- and geography-related delivery costs are motivating a trend in **Australia** toward a less **centralised** and more distributed electricity sector. The high cost of using centralised power in **remote areas** is becoming less favourable than a decentralised model using rooftop solar, local generation etc.
- ✓ In **New Zealand** there is an aspirational target of **90 %** electricity generation from renewables by **2025**.
- ✓ One of the main recommendation for the government of **Peru** is facilitation of energy access to geographically **remote** or economically disadvantaged regions, as it is not currently possible for the private sector to supply energy to such areas.
- ✓ In **Philippines** through the Household Electrification Development Plan (HEDP) and the Sitio Electrification Program (SEP) envisage to cope with household lighting in off-grid areas and *sitios* (clusters of households), using mature renewable energy technologies such as **photovoltaic** solar home systems (PV-SHS), **PV streetlights** and **micro-hydro** systems. It aims to contribute to the government's goal of **90 %** household electrification by **2017**.

9

## THE INITIATIVE



- **This year Russia proposed initiative in the framework of APEC on: “Bridging Gap in Economic Development and integration of Remote Areas for sustainable growth in the APEC Region”**
- Under this initiative Russia is planning to propose a project of designing a database ranging and grading types of remote communities of Asia-Pacific economies to develop modular solutions for energy supply
- The project proposed is – the creation of **the Atlas** of remote areas of APEC economies with the determining of climatic and techno-economic potential and further classification for implementation of low-carbon energy solutions with the use of hybrid power systems and RES for sustainable energy supply of specified areas
- **The Atlas** could become one of the foremost instruments for designing integrated solutions adjusted to local geographical features for energy supply of remote areas of APEC economies



10



MINISTRY OF ENERGY  
OF THE RUSSIAN FEDERATION

**THANK YOU FOR YOUR  
ATTENTION!**

11

# Learning Networks

National Commission for the Efficient Use of Energy  
Mexico  
March 2017

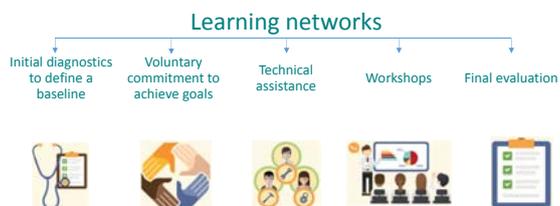


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Comisión Nacional para el Uso Eficiente de la Energía

## WHAT ARE LEARNING NETWORKS?

- Methodology**
  - It is a space where different stakeholders meet to collaborate and achieve a common goal.
    - Could be the implementation of energy efficiency measures, improve energy performance, or implement energy management systems.
- Structure**
  - The LEARNING NETWORKS are based on 5 fundamental activities:

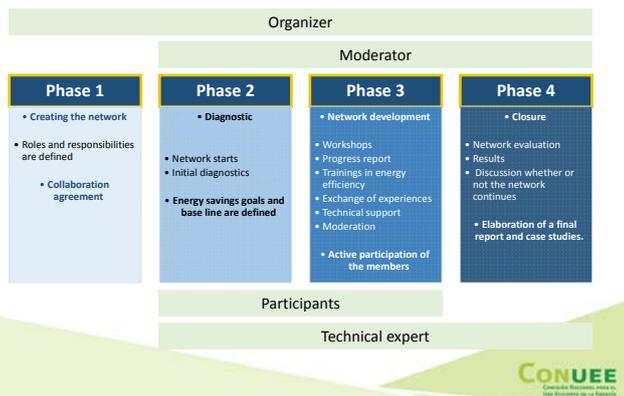


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## More about LEARNING NETWORKS

- LEARNING NETWORKS consist on:



3

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## Capability building

- LEARNING NETWORKS develop new connections between people and companies.
  - It is possible to exchange information, experiences and knowledge that contribute to capability building in three levels:
    - Individual
    - Organizational
    - Network



4

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## LEARNING NETWORKS in Mexico

- Mexico has implemented LEARNING NETWORKS in 4 sectors:
  - This LEARNING NETWORKS aimed to:
    - Reduce implementation costs of an energy management system.
    - Disseminate and exchange technology and experiences in energy efficiency.
    - Generate commitment and increase motivation for the participants to implement an energy management system.
    - Improve energy performance, increase energy efficiency and reduce environmental impacts



5

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## Results in Mexico

- 1164 employees involved
  - 31 employees were trained directly
  - 349 employees were trained indirectly
  - 784 employees are aware of the energy management systems



6

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## Impact Evaluation

Edward Vine  
Lawrence Berkeley National Laboratory

APERC Evaluation Workshop  
Jeju, Republic of Korea  
March 27, 2017

1



## What is Impact Evaluation?

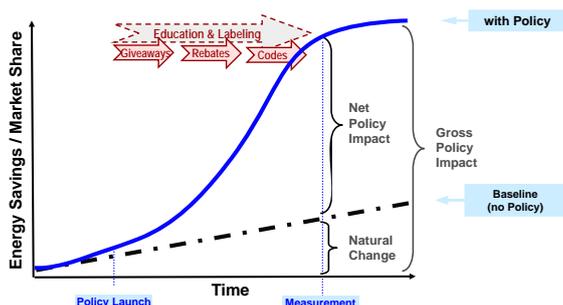


- **Purpose/Objective**
  - Estimate the change due to programs or policies
    - o Change in energy use, greenhouse gas (GHG) emissions, the market share for efficient products, other benefits, etc.
- **Methods**
  - Data collection (measurement and verification – M&V)
  - Engineering algorithms (deemed/stipulated savings), statistical/econometric analysis
  - Surveys, modeling, statistical analysis
- **Key Outcomes**
  - **Gross** energy and demand savings or changes in energy use
  - **[Net (attributable) energy and demand savings]**
    - o reflecting free riders & spillover

2

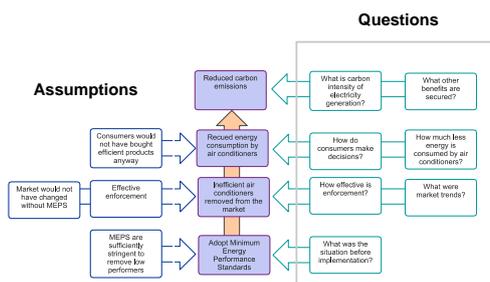


## What is Impact Evaluation?



3

## MEPS for air conditioners



## Which Impacts?



- **Energy**
  - Electricity: use (kWh) and demand (kW)
  - Natural gas
- **Time period**
  - Annually, seasonally, weekly, daily, hourly
- **Increasing interest in multiple benefits (non-energy impacts)**
  - Employment, indoor and outdoor air quality, health, climate change, etc.

5

## Energy Impact Data Needed to Collect



- Monthly energy (electricity) consumption
- Metered or monitored energy usage
- Load shape data (day, season, year)
- Hours of operation for building or measures
- Physical characteristics of the building and equipment (size and location)
- Other physical variables: temperature, flow, weather
- Building occupancy schedules and occupant data

6

## Data Collection and Analysis Methods for Energy Impact Evaluation



- Engineering methods
- Basic statistical billing analysis
- Multivariate statistical analysis
- End-use metering
- Short-term monitoring
- Integrative methods

7

## Reduced Energy Consumption by Air Conditioners



- Laboratory testing (efficient and inefficient)
- In-field monitoring (efficient and inefficient)
  - Sample of homes
    - Analysis of billing data
    - Analysis of end-use metering data

8

## Inefficient Air Conditioners Removed From Market



- Market Analysis
  - Interviews with manufacturers and retailers
    - Census or representative sample
  - Analysis of sales data
    - Availability of data
      - Pre-MEPS data
      - Post-MEPS data

9

## Carbon Emissions Calculation



- Lots of uncertainties and possible estimation errors
- Best to estimate carbon impacts using the least expensive approach for the accuracy desired
  - **Carbon emissions factors:** least expensive (least accurate)
    - Average carbon multiplier effect (uses average fuel source(s) for generating kWh)
  - Hourly based approaches (more expensive and more accurate)
    - Uses generator-specific dispatch data and hourly savings load shapes

10

## Time for Questions



11

## Case Study: Home Power Savings Program Australia

Michael Reid



1

## Defining the problem



The program was designed to address common barriers faced by low-income specifically:

- **limited money** for basic energy efficiency upgrades,
- a lack of **understanding** of home energy use,
- a lack of information about energy efficient **behaviors**

2

## What was the intervention?



3

4

## Eight step evaluation process...



- Why did we want to conduct the evaluation?
  - To understand what is working and what is not
  - Strengths and weaknesses
  - Verify if energy savings are being achieved
  - Reach of program (equity targets)
  - Audit and verification of commercial partner activities

5

## Eight step evaluation process...



- What benefits will we obtain?
  - Effective contract management
  - Early indications of any problem areas
  - Ability to adaptively manage program

6

### Eight step evaluation process...



- Who was involved?
  - Program delivery staff - Government
  - Program delivery partner – Private Sector
  - Stakeholder Advisory Group – Community Sector
  - Academics
  - Evaluators

7

### Eight step evaluation process...



**SAVE UP TO 20%\* OFF YOUR POWER USE**  
 Eligible concession card holders\*\* get a:

FREE Visit by an energy expert + FREE Power Savings Kit + FREE Personal Action Plan

**CALL 1300 662 416 NOW** **WHAT CAN YOU DO IN YOUR WORLD?**

### Eight step evaluation process...



- Goal of the policy – 20 % Energy and \$ Savings
- Capacity building around energy saving in the home
- Assumptions
  - Demand would need to be contained
  - Energy savings would be made made and taken
- Risks : #1 Energy Assessors going into private homes

9

### Eight step evaluation process...



- What has happened?
- What difference did the program make?
- How well was the program implemented?
- How can we do things better?
- Was the policy good value for money?

10

### Eight step evaluation process...



- Independent Evaluation focused on identifying the strengths and weaknesses of the program
- Statistical evaluation of electricity savings based on total consumption in participating households – Billing Data
- Expanded statistical evaluation of electricity savings to explore the relationships between electricity consumption, household characteristics, appliance ownership and usage.

11

### Eight step evaluation process...



- Target evaluation of reach into Aboriginal households with the objectives of achieving higher program uptake within the Aboriginal communities
- Evaluation of changes in Behaviour
- Non-Energy Benefits Evaluation

12

### Eight step evaluation process...



- Funding for...
  - Evaluation consultancy
  - Surveys/data collection
  - Communicating learning
- Time for...
  - Stakeholders ( Government, Business and Community) to take part
  - Leadership to create a holding environment

13

### Eight step evaluation process...



- Implement the plan...
  - Project management
  - Steering group ( Stakeholders)
  - Appoint contractors
  - Conduct evaluation
  - Analysis and reporting

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### Eight step evaluation process...



#### Within program team - course correction

The program's key strength was involving external stakeholders in adaptively managing the program. They were critical in the analysis of problems and the development of solutions:

- Driving demand
- New delivery methods in disadvantaged communities
- Enhancing behaviour change outcomes

15

### Eight step evaluation process...



#### Inform new programs – #1 lesson Value of Adaptive Management

"Factors such as proactive and responsive leadership, establishing a research practice interface, and recognizing the skills, expertise, and contributions of multiple stakeholders guided adjustments to the program, and later paved the way for longer-term organizational learning that impacted how other programs are delivered."

- "... for adaptive management to be effective, organizations must make a transition from a more traditional command and control structure to one that is more inclusive, collaborative, risk tolerant, and flexible."

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Contents lists available at ScienceDirect

**Journal of Environmental Management**

Journal homepage: [www.elsevier.com/locate/jenvman](http://www.elsevier.com/locate/jenvman)

Research article

#### Facilitating adaptive management in a government program: A household energy efficiency case study

Jim Curtis <sup>a,\*</sup>, Alex Graham <sup>b</sup>, Eraj Ghafoori <sup>a</sup>, Susan Pyke <sup>c</sup>, Stefan Kaufman <sup>d</sup>, Mark Boulet <sup>a</sup>

<sup>a</sup> BehaviourWorks Australia, Monash Sustainable Development Institute, 246 Commercial Road, Monash University 3800, Victoria, Australia  
<sup>b</sup> Office of Environment and Heritage, PO Box 4200, Sydney South 1232, New South Wales, Australia  
<sup>c</sup> Office for Environmental Programs, Wilson Avenue, The University of Melbourne, Parkville 3010, Victoria, Australia  
<sup>d</sup> Environment Protection Authority Victoria, GPO Box 4395, Melbourne 3001, Victoria, Australia

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### Eight step evaluation process...



#### Value for money + Risk

"Several state-based schemes, including the New South Wales<sup>4</sup> Home Power Savings Program, have been administered effectively, and suggest that involving State Governments in delivering programs would be beneficial."



18

### Eight step evaluation process...



- Wider lessons – what else was going on?

Through working with stakeholders as “Partners” the program began to see the transformative potential of understanding energy efficiency in a broad economic, environmental and social context.

19

### Cut costs and avoid large bills

PROGRAMS SAVING YOU CASH

**Big NSW Switch™**

LEVERPOOL resident Rita Connell has managed to cut about \$200 from her electricity bill per quarter. An energy efficiency program helped her make it even further. “The Home Power Savings Program has helped me and my children learn to be more efficient with our energy use,” Ms Connell said. While the State Government program has not, Ms Connell is up with good habits. She feels there’s more savings to be had. “I’ve adjusted to sleep around and get a better deal with the energy companies,” she said. After negotiating with her provider, the single mother became aware of another program and said she has been

asset and will definitely join One Big Switch if it means I can get a better deal,” Ms Connell said. “Those who can use be offered a discount from a retailer to “switch”, but their existing retailer might make a counter offer to avoid losing the business. “People don’t realize you can save just by filling the kettle half way. I own a lot to my health who turn off the appliances at the main where it’s over the tank,” she said. For more details visit [bignewswitch.com](http://bignewswitch.com) and see



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### Non-energy benefits



<b>Comfort</b>	• Scale questions on property becoming more comfortable (less hot / cold) across seasons
<b>Health</b>	• Improved property conditions alleviate related illnesses • Reduced stress
<b>Income</b>	• Accessing entitlements • Negotiating contracts etc.
<b>Indirect jobs</b>	• Retrofit / property improvement work
<b>Empowerment</b>	• Change in awareness / knowledge / control

21

### International Energy Agency's multiple benefits

15 categories for multiple benefits – at the household, system and economic levels.



22



23

### Questions and discussion

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[www.ieppec.org](http://www.ieppec.org)



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## Process Evaluation

Edward Vine  
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APEREC Evaluation Workshop  
Jeju, Republic of Korea  
March 27, 2017

1



## What is Process Evaluation?



- Process (formative) evaluation focuses on **how** a program is **implemented** and **operating**
  - Identifies **procedures** and program **logic**
  - Describes how it **operates**, the **services** delivered and the **functions** (roles and responsibilities)
  - **Assesses** reasons for success or problems
- Results in **recommendations** to improve program effectiveness and efficiency
  - Energy and GHG impacts, risk reduction and other multiple benefits, and cost-effectiveness

2

## Value of Process Evaluation



- Evaluations provide a systematic way to learn from program experiences, both within a particular program over time and across programs being fielded simultaneously or contemplated for the future
- Evaluations provide assurance to interested parties that programs are being implemented effectively and modified or refined as necessary

3

## Focus of Process Evaluation



- Explaining why the program succeeds or fails to deliver savings
  - Barriers to participation
  - Unanticipated behavioral response
  - Program operations

4



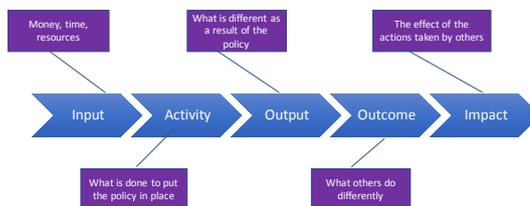
## Where Do We Start?



- Begin with:
  - Program design
    - Program activities
  - Program theory
    - Explains causal links of how program activities lead to desired program outcomes

5

## Typical form for theory of change



6

## Focus of Process Evaluation



- Examine how the program was actually implemented
  - What did the program do effectively?
  - How could efficiency and effectiveness be improved?
  - Did the causal links work as expected? If not, why?

7

## Process Evaluation Activities

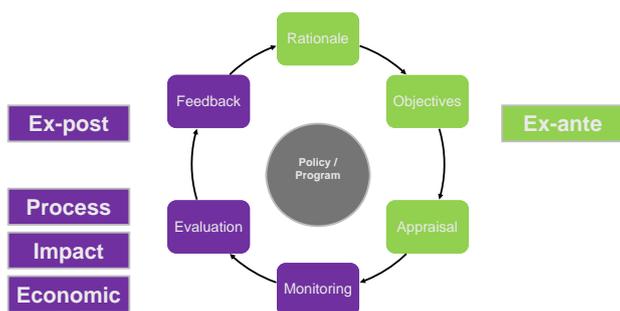


- Review of program theory, program plan, and all available program materials and records
  - Looking at input, activity, output, outcome and impact
- Interviews with program managers, others involved in the program, and key stakeholders
- Comparisons with similar programs
- Evaluation of available information on the targeted market and its structure
- Development of recommendations for program improvement

8



## When Do We Evaluate?

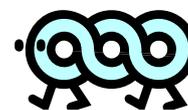


9

## Closing the Loop



Ensure that evaluation results are useful and used by varied program stakeholders.



10

## EGAT Example

Recommended Ways to Communicate to Audiences



- Disseminate results through informal meetings, oral briefings, and media presentations
- Write final reports with brief and nontechnical executive summaries
- Circulate results to other researchers and people interested in the issue
- Create and distribute a monthly tracking report
- Involve third parties (professional organizations) to help disseminate results

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## Time for Questions



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## After Jeju Island (1)



- This workshop is a step in a long-term effort in developing an evaluation community in member economies
- **Expectation:** workshop participants will return to their economies as “**evaluation champions**” and provide the following services, where appropriate:
  - annual conference or formal meeting
  - seminars or informal meetings
  - training workshops
  - website
  - resource library
  - newsletter or e-news broadcast

1

## After Jeju Island (2)



- e-conference
- networking communication facility (e.g. e-forums / listserv)
- thematic or regional groups
- evaluators database or directory
- employment opportunity posting or job bank
- internet hosting (e.g. web space, email server)
- evaluation consulting services
- scholarships or travel grants
- competitions & awards
- evaluation guidelines or standards or ethical codes
- qualified editorial activity (e.g. refereed journal)
- evaluation needs assessment

2

## You Are Not Alone! Supporting Organizations

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▪ Asia Development Bank	▪ Korea Energy Agency
▪ Asia Pacific Energy Research Centre	▪ Lawrence Berkeley National Laboratory
▪ China National Institute of Standards	▪ Indonesia Directorate General for Renewable Energy and Energy Efficiency
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▪ Electricity Generating Authority of Thailand	▪ New South Wales Government
▪ Energy Efficiency Services Limited (India)	▪ Research Into Action
▪ IEPPEC	▪ South Polar Group
▪ IEPPEC	▪ US Agency for International Development
▪ Independent Evaluation Office	▪
▪ International Copper Association	▪
▪ International Energy Agency	▪

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## Contact Information



We are looking for more “evaluation champions” (supporters) for developing an evaluation community/network in Asia – if interested, contact:

- Edward Vine (US) – [elvine@lbl.gov](mailto:elvine@lbl.gov)
- Charles Michaelis (UK) – [charles@camichaelis.com](mailto:charles@camichaelis.com)

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## 2017 IEPPEC Asia-Pacific



See you in Manila (ACEF) or Bangkok!



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## Appendix 4

### List of Workshop Participants

Title	Name	Economy	Organization
Dr	Li Pengcheng	China	CNIS
Dr	LIUREN	China	CNIS
Mr	Sun John Chun-ho	Hong Kong, China	Electrical and Mechanical Services Department
Ms	Laksmi Devi	Indonesia	Ministry of Energy and Mineral Resources
Mr	Okada Masahiro	Japan	Hitachi Metals, Ltd
Mr	Hwang Inchul	Korea	Korea Energy Agency (KEA)
Mr	Kim Junkyung	Korea	Korea Energy Agency (KEA)
Ms	Kim Kyungboon	Korea	Korea Energy Agency (KEA)
Ms	Park Eunyoung	Korea	Korea Energy Agency (KEA)
Mr	Sifi Sarah Sharrudin	Malaysia	Ministry of Energy, Green Technology and Water (MEGTW)
Mr	García Rodríguez Héctor Francisco	Mexico	CONUEE
Ms	Shivanandan Carolyn	New Zealand	Energy Efficiency and Conservation Authority
Mr	Artemio Habitan	Philippines	Department of Energy
Mr	Kuzmenkov Ivan	Russia	The Ministry of Energy of Russia
Ms	Latha Ganesh	Singapore	Energy Market Authority
Mr	Lo Henry shin-hang	Chinese Taipei	Industrial Technology Research Institute
Mr	Prajakwong Peanut	Thailand	Ministry of Energy
Mr	Wisaruth Maethasith	Thailand	DEDE
Mr	Abramson Alon	USA	University of Pennsylvania
Mr	Greenauer Derek	USA	UL LLC
Mr	Kern Jamie	USA	U.S, Department of Energy
Ms	Montgomery Amy	USA	University of Pennsylvania
Ms	Katie Purvis Roberts	USA	Department of State
Mr	Li Jiayang	USA	CLASP
Mr	Hoang Viet Dung	Viet Nam	Green Development Center
Dr	Irie Kazutomo	Secretariat	Asia Pacific Energy Research Center (APERC)
Mr	Brown-Santirso Martin	Secretariat	Asia Pacific Energy Research Center (APERC)
Dr	Vine Edward	Consultant	Lawrence Berkeley National Laboratory
Mr	Michaelis Charles	Consultant	IEPPEC
Mr	Michael Reid	Guest speaker	Keyline Group
Mr	Karmarkar Mayur	Observer	International Copper Association, Asia