



Where to start

Planning energy efficiency programmes

Session 1

Kevin Lane and Emily McQualter - Bangkok, 1 April 2019



#energyefficientworld

Overview of the appliance and equipment training sessions

#	Session	
0	Introduction and roundtable	<input checked="" type="checkbox"/>
1	Planning energy efficiency programmes	<input type="checkbox"/>
2	Selecting products for MEPS and Labelling programmes	<input type="checkbox"/>
3	Assessing efficiency performance and setting MEPS	<input type="checkbox"/>
4	Industry transformation	<input type="checkbox"/>
5	Stakeholder involvement and communication	<input type="checkbox"/>
6	The relationship between product efficiency and price	<input type="checkbox"/>
7	Modernising energy efficiency through digitalisation	<input type="checkbox"/>
8	Insights into energy labels	<input type="checkbox"/>
9	Monitoring, verification and enforcement	<input type="checkbox"/>
10	Monitoring and evaluating policies and programmes	<input type="checkbox"/>
11	Roundtable discussion, review and report back	<input type="checkbox"/>

The government wants a range of options for interventions to rapidly increase residential energy efficiency for appliances and equipment.

How do you identify, prioritise and quantify options for interventions?



List all the different kinds of activities (policy measures) your government is undertaking on energy efficiency



- MEPS/Labels
 - MEPS
 - Comparative labels
 - Endorsements labels
- Mandatory obligations on utilities
 - Green certificates
 - White certificates
- Financial incentives
 - To consumers/retailers/suppliers/third parties (architects, plumbers, etc)
 - Grants and subsidies
 - Loans
 - Tax relief
 - Taxes
- Procurement by institutions/government

- Awareness raising campaigns
- Information
 - Appliances labels
 - Retail and/or trade staff training
 - Advice Centres, hotlines, publications, etc.
- Education
 - School programmes
 - Professional training and qualification/accreditation
- RD&D
 - Research
 - Demonstration
 - Commercialisation

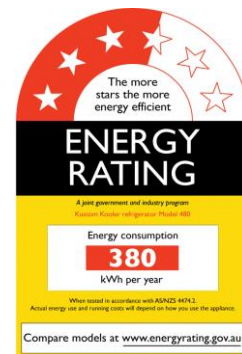
- **MEPS** specify the **minimum** level of **energy performance** that appliances, lighting and electrical equipment (products) must meet or exceed before they can be offered for sale or used for commercial purposes
- MEPS are an effective way to increase the energy efficiency of products
- Inefficient products are prevented from entering the marketplace, and manufacturers are given appropriate signals to increase product efficiency
- For consumers, MEPS mean that products available in the market use less energy and have lower running costs over their lifetime

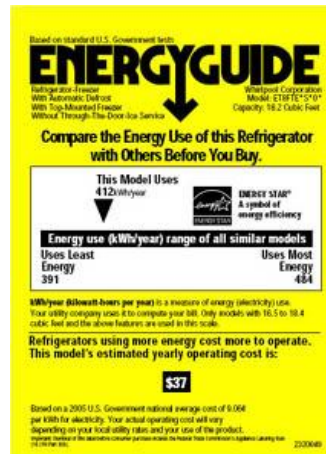


- Minimum Energy Performance Standards
 - Must understand the market and the supply chains
 - Must be able to measure performance to ensure test methods and measurement tools are suitable and compliance can be checked
 - Ideally standards should be harmonised on a global or if more appropriate a regional level to make efficient products and systems affordable to all

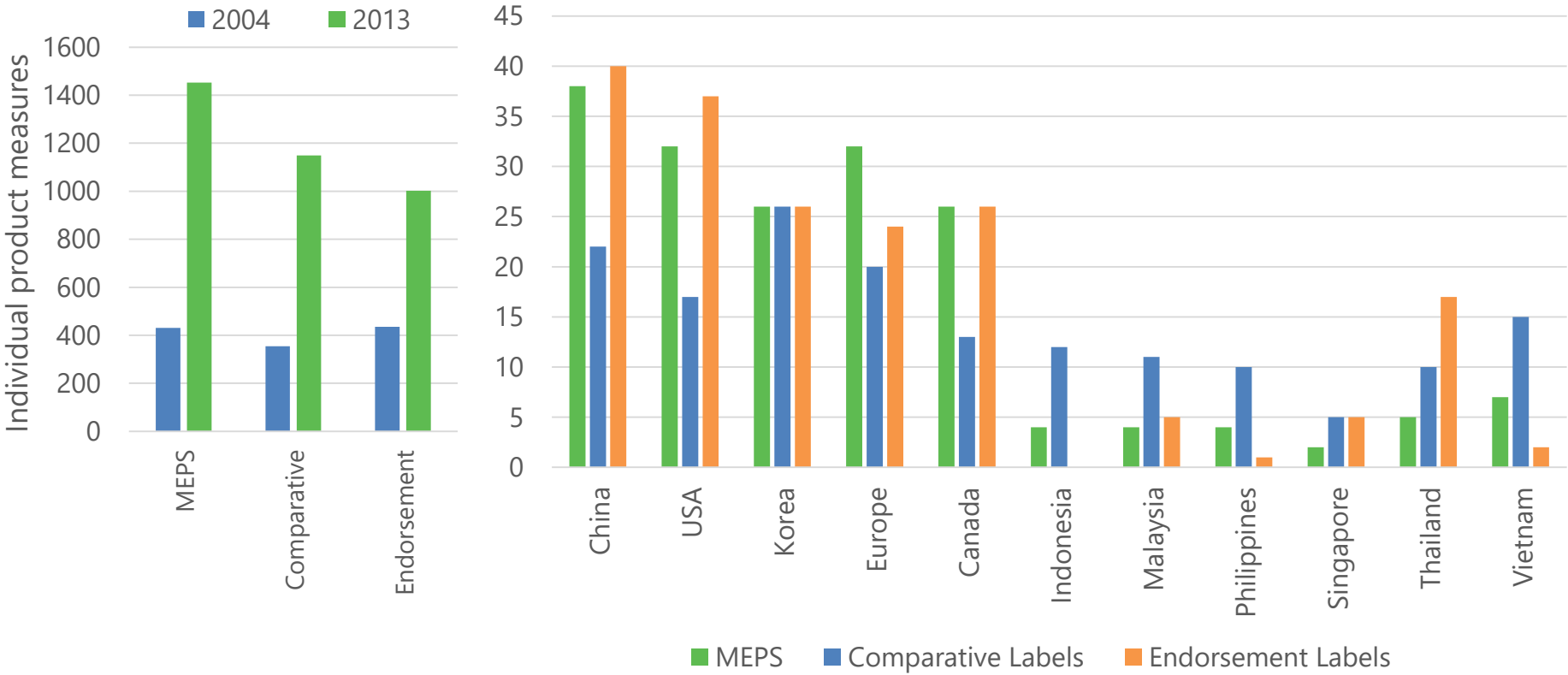


- When people buy appliances they buy an energy service in two parts:
 - They can see the appliance, and its cost
 - They cannot see the energy consumed, or its running costs
- Labels helps consumers understand which products have the lowest total cost during the purchase process
- Comparative labels may be voluntary, but mandatory is more common
- Comparative labels usually communicates in two ways:
 - quick visual rating
 - Some data e.g. actual kilowatt-hours (kWh), running costs, capacity/size





Summary of policy measures, by measure type for selected countries, 2013



Source: Harrington, L., J. Brown, and M. Caithness, *Energy standards and labelling programs throughout the world in 2013, 2014, Energy Efficient Strategies*

<https://www.youtube.com/watch?v=ma9d8z20CHw>

What do you think is the most effective policy measure?

What do you need to consider?

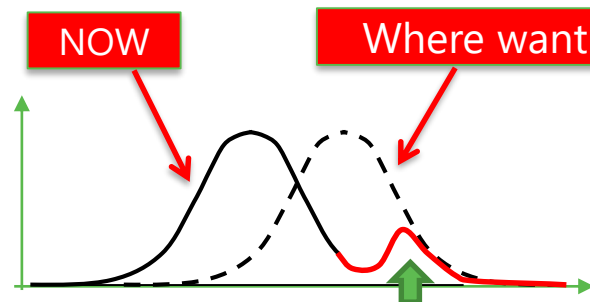


What to consider when ranking these different options?

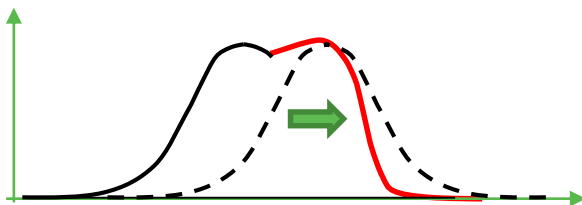
- Do they best help meet our programme objectives?
- How effective are they likely to be?
- Do they act on a small or large part of the relevant market?
- How certain are the outcomes?
- What resources will each require – costs, time, people, admin support, other?
- How fast acting are they?
- Are the outcomes sustainable in the long term?
- How difficult are each to organise? What partners could help?

Market Transformation: impact of different policies

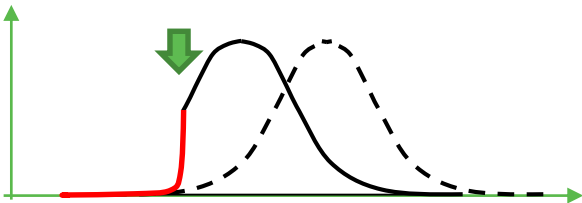
Leading Edge:
establishing new
technologies in the
market



Mid Market:
spreading good
practice



Laggards:
discouraging
bad practice



Innovation

- R&D*
- Demonstration
- Technology transfer
- Endorsement labels

Reduce barriers

- Access to information / finance
- Endorsement labels
- Comparative labels

Remove worst

- Minimum Performance standards

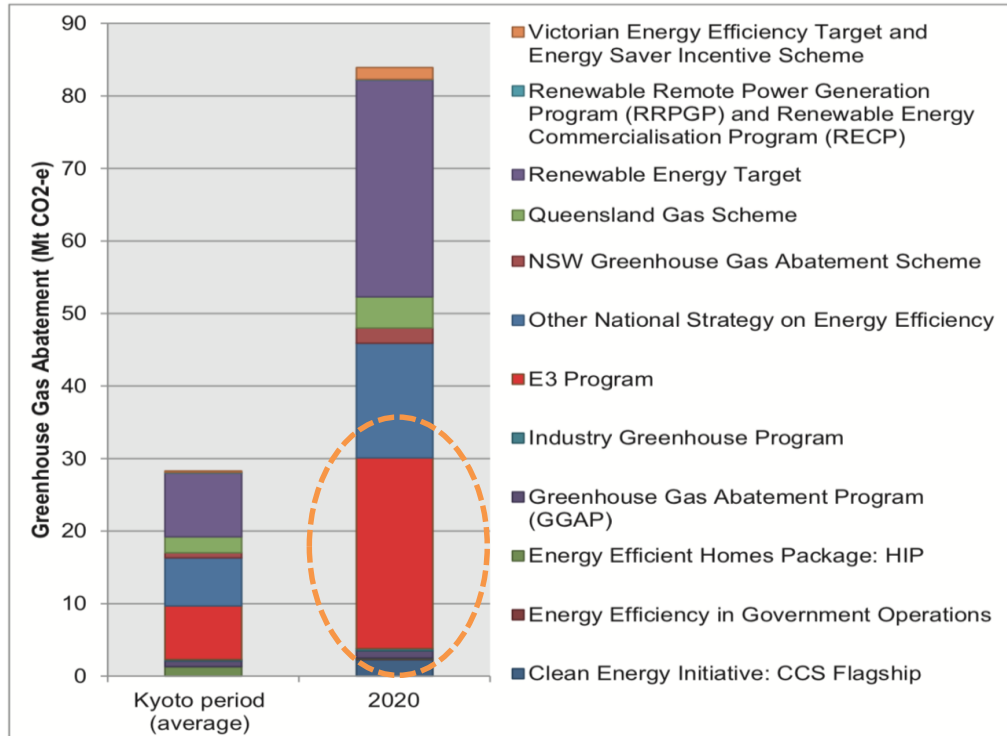
Market mechanisms increase incentives for higher energy efficiency across the whole distribution

* Research and Development

- MEPS and labelling often work closely together
 - Lowest rank of comparative label begin at MEPS level
 - Endorsement labels align with higher ranks
- EESL programmes operate in >80 countries, covering >50 different types of equipment in all sectors
- Provide the foundation for many other programme types:
 - Financial incentives
 - Procurement
 - Utility programmes

- The energy efficiency of major appliances have increased at more than 3x the underlying rate of technology improvement in countries with EESL programmes.
- One-off improvements of more than 30% have been observed.
- The most mature national EESL programs covering a broad range of products are estimated to save between **10% and 25%** of national or relevant sectoral energy consumption.
- In all programmes reviewed, the national benefits outweighed the additional costs by a ratio of at least **3 to 1**.

Figure ES1. Contribution from various programs to greenhouse gas abatement .



- Australia's emissions projections 2010, <http://www.climatechange.gov.au/publications/projections/australias-emissions-projections.aspx>

Data availability and accuracy

Indicators		Quantified assessment	Qualified assessment
Impact	Average appliance consumption		
	Overall energy reduction, peak load, ghg reduction, etc		
Resource Use	For government		
	For householders		
	For industry		
Employment	Overall employment impact		
Competition	Will competition increase?		
Speed & Ease of implementation	How fast will the impacts occur?		
	Support from key stakeholders		
Sustainability	Will the impacts be long lasting?		
Side-effects	Impact on appliance prices		
	Impact on local industry		

- Only very approximate data required to rank options
- Make use of overseas experience e.g impacts on prices and jobs
- Sometimes your 'best guess' may be sufficient
- Can add new data when available

Complete a simple evaluation table for two different policies.

Objective: *Reduce Total Energy Consumption*



1. **Policy 1:** MEPS on residential water heaters
2. **Policy 2:** Rebate on super high residential efficiency water heaters (10% capital cost of equipment)

Appraisal exercise

Indicators		Policy 1	Policy 2
1. Impact	Overall energy reduction		
2. Resource Use	For government		
3. Employment	Overall employment impact		
4. Competition	Will competition increase?		
5. Speed & Ease of implementation	How fast will the impacts occur?		
6. Sustainability	Will the impacts be long lasting?		
7. Side-effects	Impact on appliance prices		
	Impact on local industry		
TOTAL		SUM-1	SUM-2

Scale: 1-10

Positive
(good)

10



Negative
(bad)

1

Appraisal Exercise

Indicators		Policy 1	Policy 2
1. Impact	Overall energy reduction	8	
2. Resource Use	For government	7	
3. Employment	Overall employment impact	5	
4. Competition	Will competition increase?	8	
5. Speed & Ease of implementation	How fast will the impacts occur?	5	
6. Sustainability	Will the impacts be long lasting?	7	
7. Side-effects	Impact on appliance prices	7	
	Impact on local industry	4	
TOTAL		51	Y

Scale: 1-10

Positive
(good)

10



Negative
(bad)

1

Appraisal Exercise

Indicators		Policy 1	Policy 2
1. Impact	Overall energy reduction	8	5
2. Resource Use	For government	7	2
3. Employment	Overall employment impact	5	4
4. Competition	Will competition increase?	8	7
5. Speed & Ease of implementation	How fast will the impacts occur?	5	7
6. Sustainability	Will the impacts be long lasting?	7	3
7. Side-effects	Impact on appliance prices	7	5
	Impact on local industry	4	3
TOTAL		51	36

Scale: 1-10

Positive
(good)

10



Negative
(bad)

1

- Often more than one policy is required to create market transformation
- Some policies work well together
 - MEPS removes worst products; Labels incentivise best products
 - Procurement and financial incentives used to support highest labelled appliances



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Purchase a qualifying ENERGY STAR® smart thermostat to receive a \$50 rebate from PG&E.

Am I eligible for the rebate?

All ENERGY STAR smart thermostat rebate applications must be received within 60 days from date of purchase.

You will need to know about the attributes of different programme types:

- Industry /consumers often ask why government is doing more or focusing elsewhere
- Many regulatory impact processes require analysis of other policy options

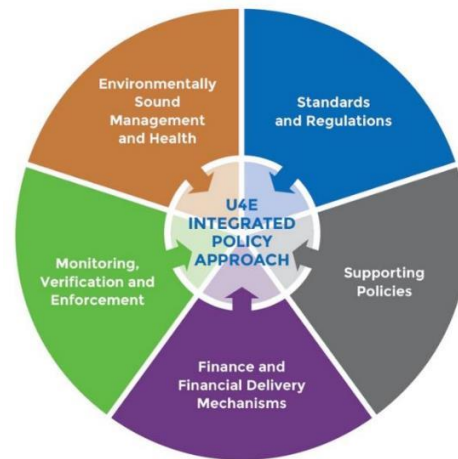
An analytical approach is used throughout S&L programme planning

- Need to assess what level of information is sufficient
- How to deal with a lack of information
- Be aware of a range of concerns and particular sensitivities

ASEAN <http://www.aseanenergy.org/resources/publications/asean-plan-of-action-for-energy-cooperation-apaec-2016-2025/>

IEA 4E [Energy Standards and Labeling Programs Throughout - IEA 4E https://www.iea-4e.org/.../energy-standards-labelling-programs-throughout-the-world-in...](https://www.iea-4e.org/.../energy-standards-labelling-programs-throughout-the-world-in...)

U4E https://united4efficiency.org/resources/publications/?fwp_resource_type=guidance-documents





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