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# Update on 4E

## APEC EGEE&C, November 2011

**Tim Farrell**

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EFFICIENT ELECTRICAL END-USE EQUIPMENT

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# 4E AT A GLANCE

- 4E provides an **international forum for governments** and other stakeholders to:
  - Share expertise and develop understanding of electrical end-use equipment and policies
  - Facilitate co-ordination of international approaches in the area of efficient electrical end-use equipment
- 4E seeks to meet the **challenges** for policy makers **to maximize energy efficiency** on all types of non-transport electrical equipment.
- Launched in March 2008, 4E now has **13 member countries** actively participating in collaborative projects.

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# PARTICIPATING COUNTRIES

## MEMBERS

Australia (vice-chair)
Austria
Canada
Denmark
France
Japan
Korea
The Netherlands (chair)
Switzerland
South Africa
Sweden
UK (vice-chair)
USA

## CONSIDERING MEMBERSHIP

China
Mexico

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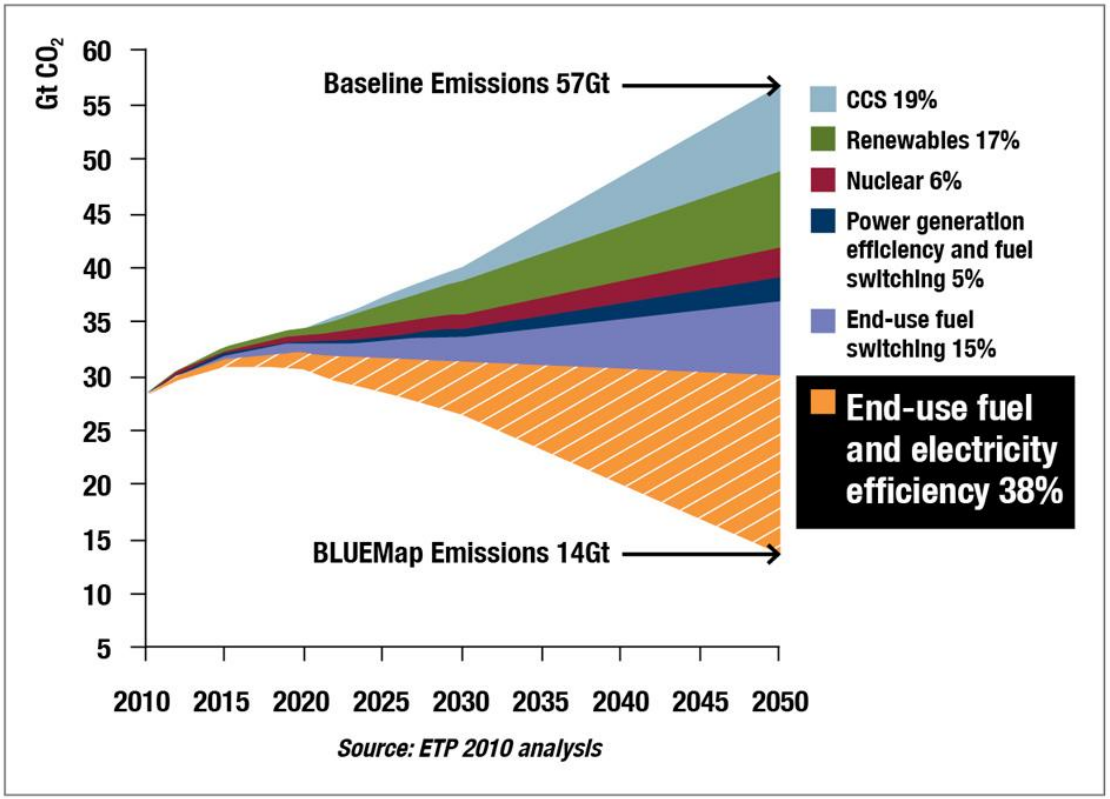
# ENERGY EFFICIENCY – THE LARGEST RESOURCE




- Analysis suggests that energy efficiency has the greatest opportunity to cut $CO_2$ emissions and one of the quickest
- End-use appliances and equipment are the largest contributor

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# WHY INTERNATIONAL COOPERATION IS THE WAY FORWARD

- Many policy makers are seeking answers to **similar questions:**
  - How do appliances compare in different countries?
  - What have been the most effective policies?
  - What targets could we use?
- **New challenges** regarding appliances:
  - Proliferation of types of electrical equipment
  - Growing complexity
  - Increased international trade
- **Opportunities** in international co-operation:
  - Clear goals and road maps: policies *better predictable* for industry,
  - *Shared costs make policies cheaper* to develop and implement (by countries and industry),
  - and *more effective*

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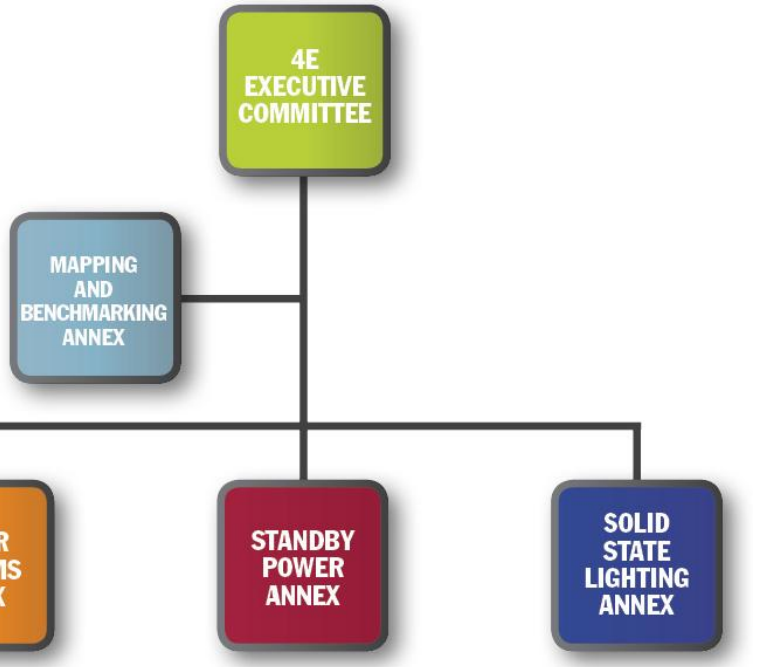
# STRUCTURE OF 4E




**Mapping & Benchmarking:** Compares and contrasts policies and outcomes with global best policy practice. This long-term endeavour will help identify future projects for 4E.

**Electric Motor Systems:** Reporting the means used to improve efficiency and encourages alignment on policies proven to be effective.

**Standby Power:** Identifying new trends in standby power and the policies with potential to reverse increasing energy use.

**Lighting:** Definition and measurement methods for good LED lighting.

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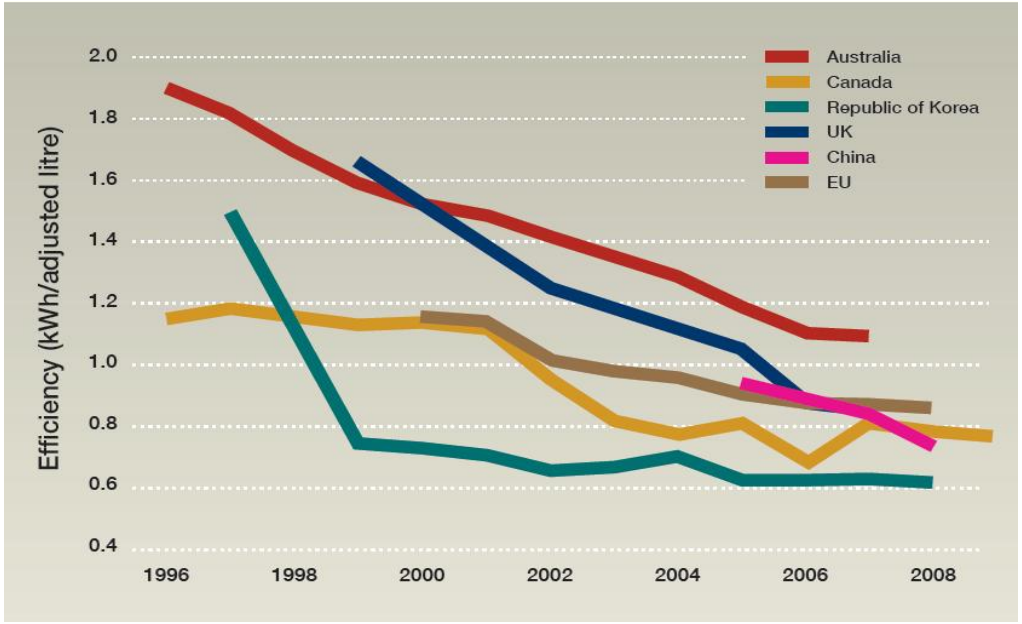
# BENCHMARKING ACROSS COUNTRIES TO INFORM NATIONAL POLICY DEVELOPMENT

- Policies to improve the efficiency of refrigerators and freezers have been in force in most economies for many years.
- These have focused on reducing the energy used per unit volume, and have been highly effective.
- The rate of improvement varies significantly between countries.
- Some of this efficiency improvement is the result of increased product sizes rather than improved product performance.




- The combination of minimum performance standards and mandatory labelling appear to have the greatest market impact compared to other interventions, provided they are revised on a regular basis.

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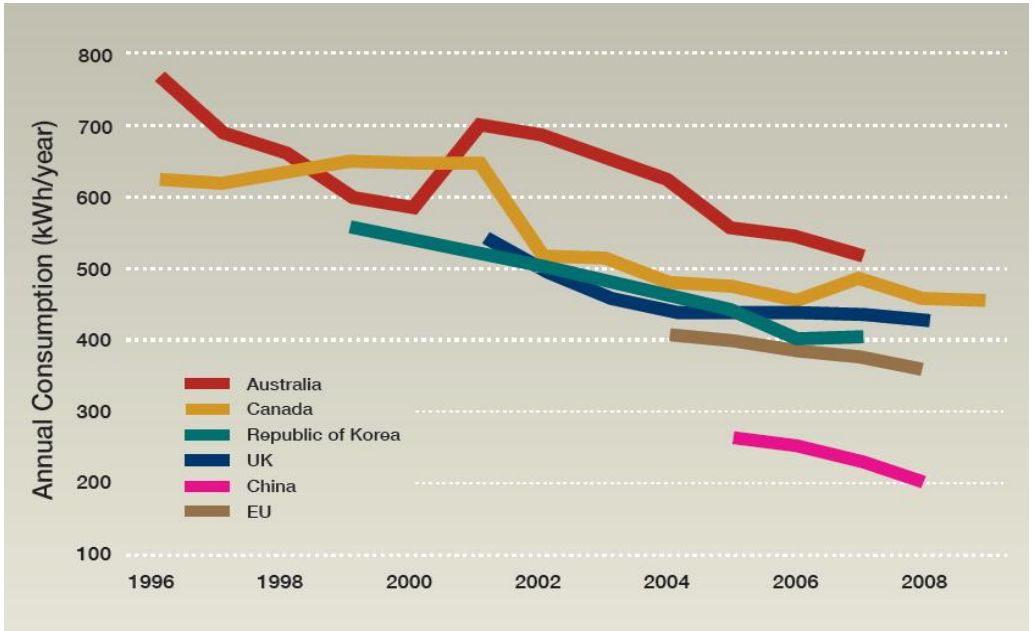
# BENCHMARKING ACROSS COUNTRIES TO INFORM NATIONAL POLICY DEVELOPMENT

- Differences in cold appliance energy consumption between countries are relatively small and less than expected given the variation in appliance sizes.
- Total energy consumption will naturally increase with the growth in household numbers and/or second appliance ownership.




- Strong policy intervention is required to further reduce new product consumption to minimise or reverse this increase.
- If reduced energy consumption is the goal rather than efficiency, consideration should be given to setting maximum product energy consumption limits.

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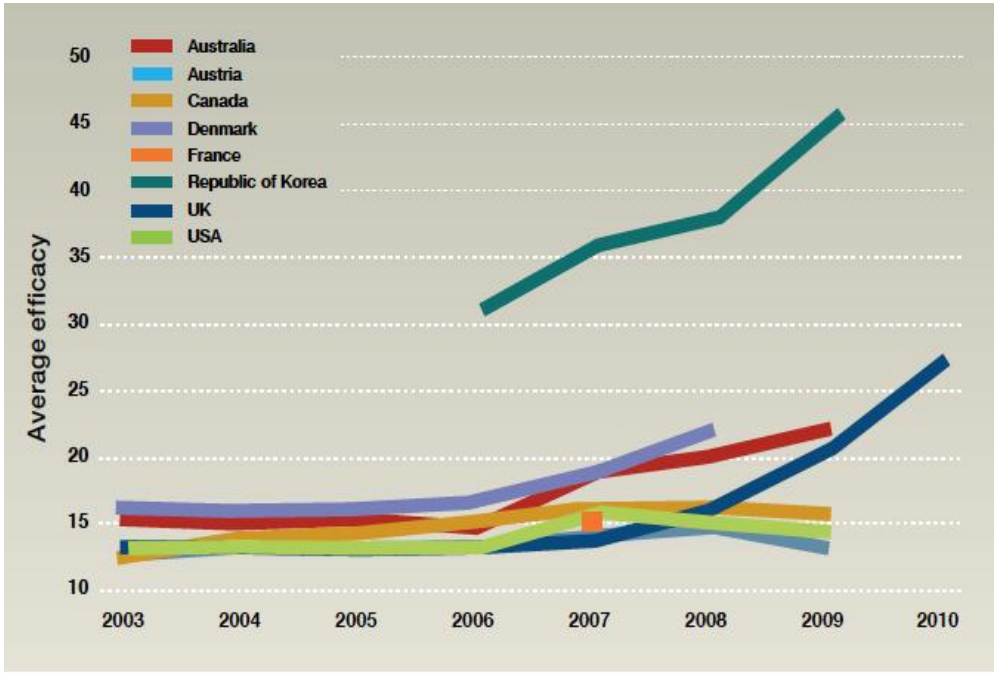
# BENCHMARKING TO TRACK IMPACTS OF POLICY IMPLEMENTATION

- Analysis of the impact of regulations to phase-out inefficient lighting in eight countries gives policy makers an insight into the effects on the market during the implementation phase.
- Significant differences in approach are apparent.
- There is significant opportunity for harmonisation across countries and regions.
- Policies proving successful in Australia, Korea and the UK (the three countries with the most advanced phase-out programs).

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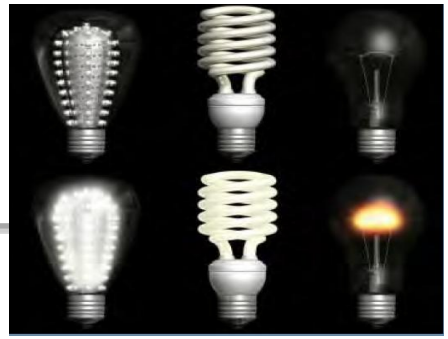
# INFORMED POLICY GUIDANCE



- It appears that regular and well signposted regulatory revision of the lighting market is highly successful.
- Significant delays between the date of announcement and the date at which regulations come into force may result in a short to medium term market effect completely at odds with the intention of the policy action.
- Contrary to popular belief, at the time or preparation of the benchmarking there was little actual penetration of LEDs into the domestic lamp sector.
- As a result of the phase-out of inefficient lighting, the total number of lighting products sold will fall dramatically.
- Market monitoring is needed to quickly identify if:
  - Consumers are switching to smaller or larger lamps that may be outside the scope of the regulations.
  - Suppliers are bringing ‘new’ products to market that are simply modifications of existing products that in some way exempt them from the regulation and enable their sale, thereby confounding the intent of the policy.

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# WHAT PRODUCTS ARE COVERED?

- The focus of the Annex is on household and commercial products that consume significant quantities of electricity, now or in the future.
- Member Governments periodically select a priority list of products for analysis

| PRODUCT | RELEASE DATE |
|---|---|
| Domestic Cold Appliances | August 2010 |
| Televisions | October 2010 |
| Air Conditioners | February 2011 |
| Laundry Dryers | June 2011 |
| Domestic Lighting | July 2011 |
| Washing Machines | November 2011 |
| Notebook Computers | December 2011 |
| Retail Display Cabinets | January 2012 |
| Vending Machines | January 2012 |
| Desk Top PCs | August 2012 |
| Dishwashers | December 2012 |
| Set-top Boxes | January 2013 |
| Water Heaters | April 2013 |

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# SSL ANNEX

- **8 funding economies**
  - France, Australia, The Netherlands, UK, Sweden, Denmark, Japan, USA
- **20 experts from 9 economies**
  - As above plus China

- **Task 1: Develop SSL Quality Assurance**
  - Identify performance tiers
  - Disseminate data on LCA & health issues
- **Task 2: SSL Testing**
  - Improve testing protocols (CIE, IEC, ANSI)
  - Round Robin #1 to calibrate 4 Nucleus labs.
  - Round Robin #2 to calibrate participating labs.
- **Task 3: Assist development of International Accreditation procedures**

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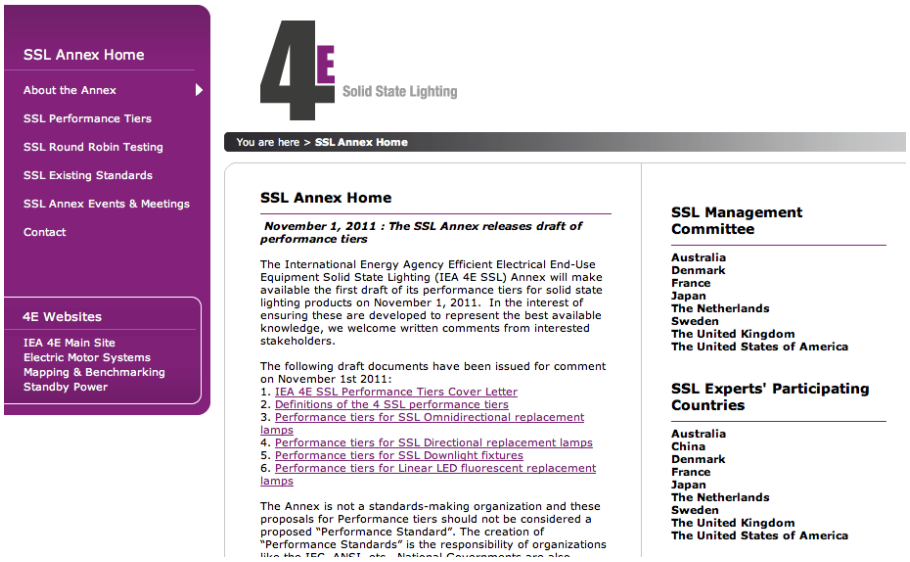
# SSL ANNEX RELEASES DRAFT PERFORMANCE TIERS FOR COMMENT

- 1st drafts released 1 November 2011 as part of industry consultation.
- APEC and APEC economies are invited to submit written comments no later than February 1, 2012




Download from:
http://ssl.iea-4e.org

Comments to:
ssl.annex@gmail.com

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# MORE INFORMATION ON 4E

4E and Annex newsletters


4E website: www.iea-4E.org


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# THANK YOU FOR YOUR ATTENTION