



Energy Efficiency Training Week

Appliances & Equipment Course

Introduction

Kevin Lane and Emily McQualter, IEA - Paris, 21 May 2019



#energyefficientworld

Who are we?

- The **International Energy Agency** works to ensure reliable, affordable and clean energy for its 30 member countries and beyond.
- Focus:
 - energy security
 - economic development
 - environmental awareness
 - engagement worldwide.



The 2018 Energy Efficiency Training Week held in Paris (Photo: IEA)

Your trainers for the week



Kevin Lane Emily McQualter

International Energy Agency

Who is in the room?

- Hands up:
 - National government staff
 - Regional government staff
 - Industry
 - NGO
 - Other
- Who is working directly on energy efficiency?
- Who works on Ozone Depleting Substances?
- Who's work is more broadly involved in the environment?



Who is in the room?

Programme Maturity	Country
Under development	Gambia Nigeria Sierra Leone
1-5 years old	Colombia Indonesia Kenya South Africa Uganda
Over 5 years	Brazil China Egypt France Ghana India Mexico Kenya

Who is in the room?

Name & Organisation



What is the biggest energy efficiency challenge that you are facing?



Aim of the course is to develop skills and knowledge to design, implement, and evaluate appliance and equipment energy efficiency policy

Training philosophy

- A. Where to start: we discuss the basic principles
- B. Toolkit: we discuss what can be done, what are the solutions
- C. What are the steps: how you can implement what you have learnt

Overview of the appliance and equipment training sessions

Tuesday 21 May		
0	Introduction and roundtable	<input 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	The relationship between product efficiency and price	<input type="checkbox"/>
Wednesday 22 May		
6	Stakeholder involvement and communication	<input type="checkbox"/>
7	Insights into energy labels	<input type="checkbox"/>
	Site visit	<input type="checkbox"/>
Thursday 23 May		
8	Modernising energy efficiency through digitalisation	<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"/>

Plenty of activities all aimed to increase your understanding

- A. Actively participate and share experiences
- B. Ask questions
- C. Learn from others
- D. Guest Speakers
- E. Use the opportunity to network!
- F. Site Visit
- G. Group Activity and Presentation



Slides will be uploaded to the IEA's website at the end of the training week.

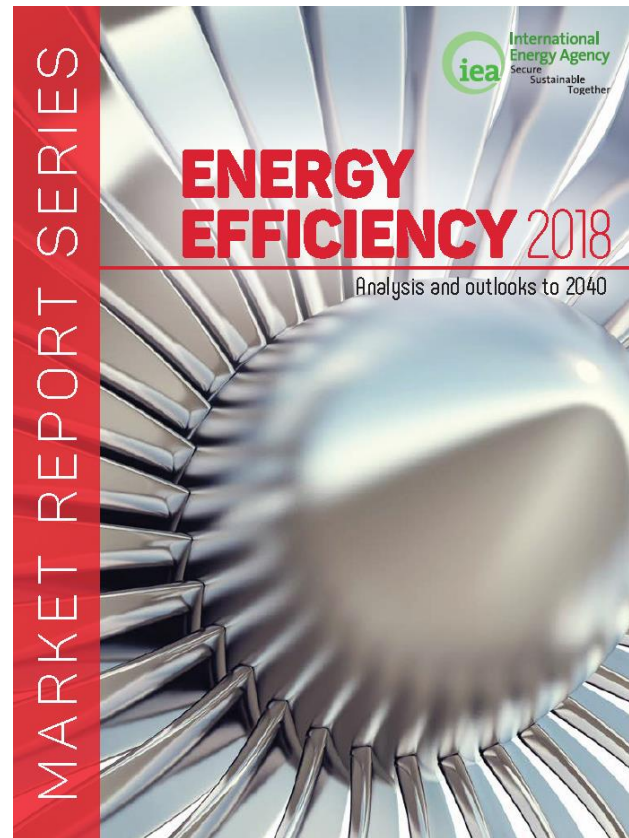
- Plenty of additional references and links (end of presentations)
- USB

- **Plan for the next few days**
 - Informal
- **Logistics**
 - Meals
 - Wifi
 - Mobile phones & computers
 - Site visit
- **Fun Stuff**
 - Networking Event
 - Boat Cruise on the River Seine (tonight!)

Context: Why is energy efficiency important?

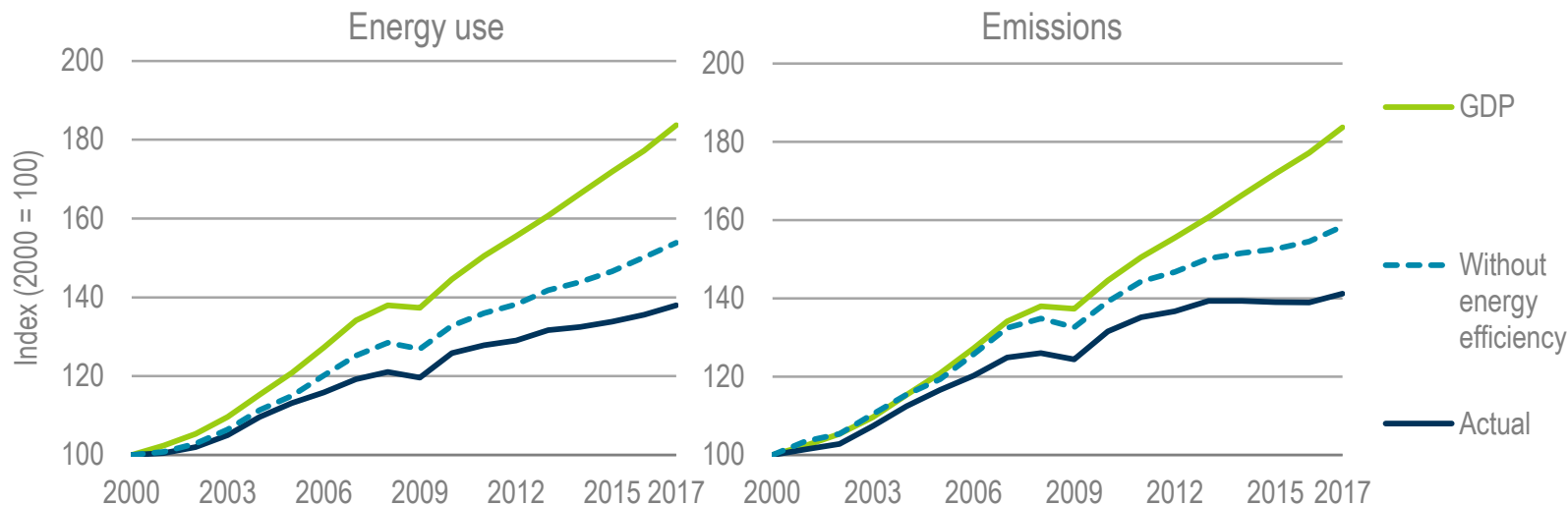
- Energy efficiency means energy consumption is lower than would otherwise have been
- Multiple other benefits
- Future efficiency essential for sustainable development

<https://www.iea.org/efficiency2018/>



The impacts of energy efficiency are already significant

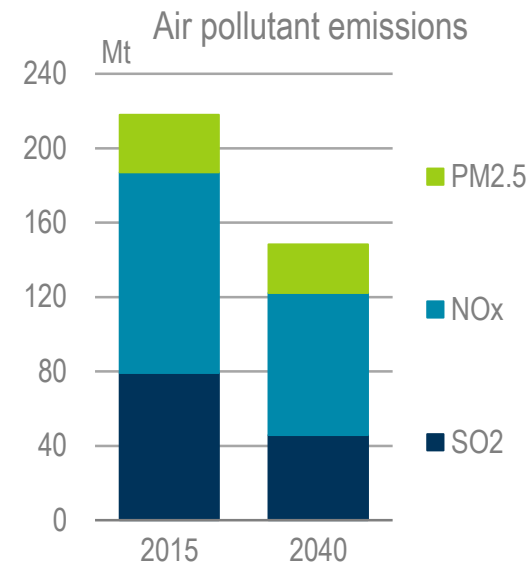
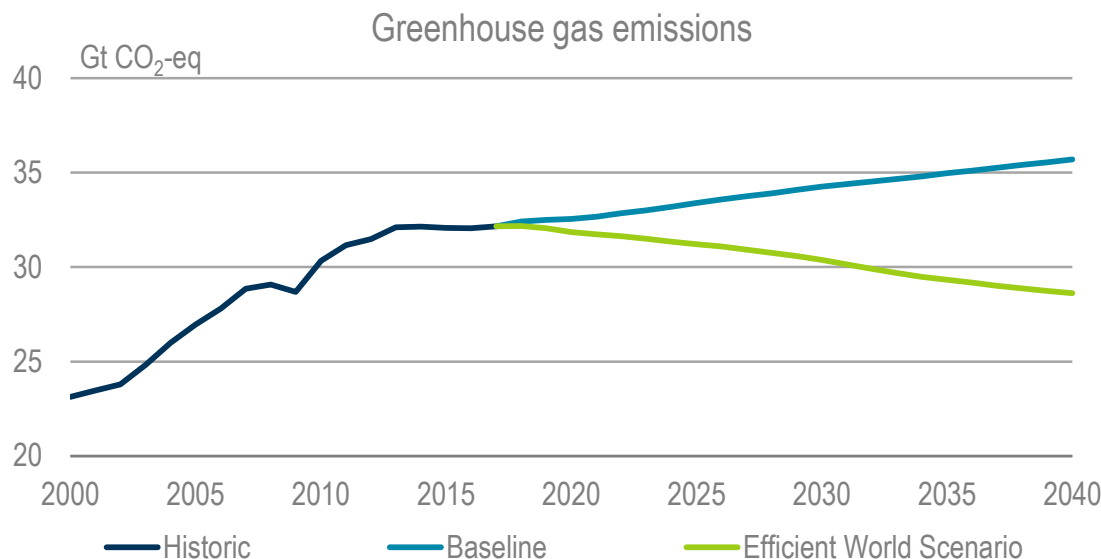
Global final energy use and emissions with and without energy efficiency improvements, 2000-17



Energy efficiency improvements since 2000 prevented 12% more energy use and emissions in 2017.

Efficiency can deliver immediate environmental benefits

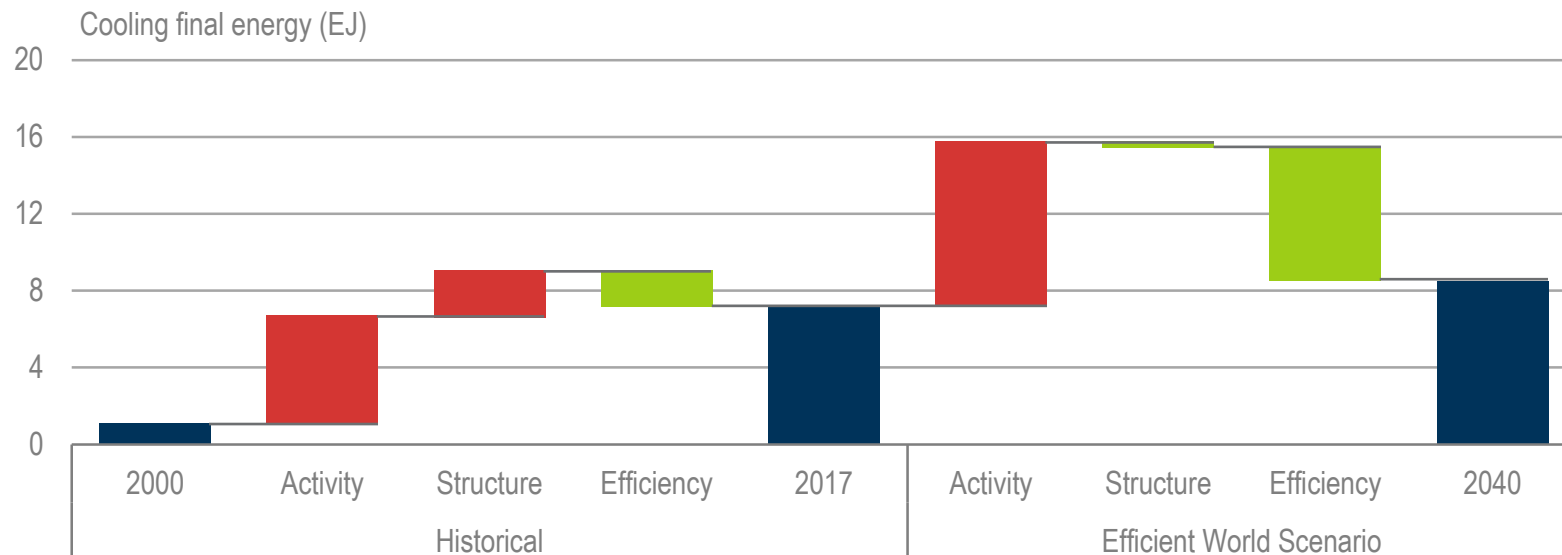
Greenhouse emissions in the NPS and EWS, 2000-40 (left) and air pollutant emissions in the EWS, 2015-40 (right)



The EWS results in an early emissions peak and around 40% of the abatement required by 2040 to be in line with Paris targets. Energy efficiency is indispensable to achieving global climate targets.

Space cooling energy use will grow rapidly

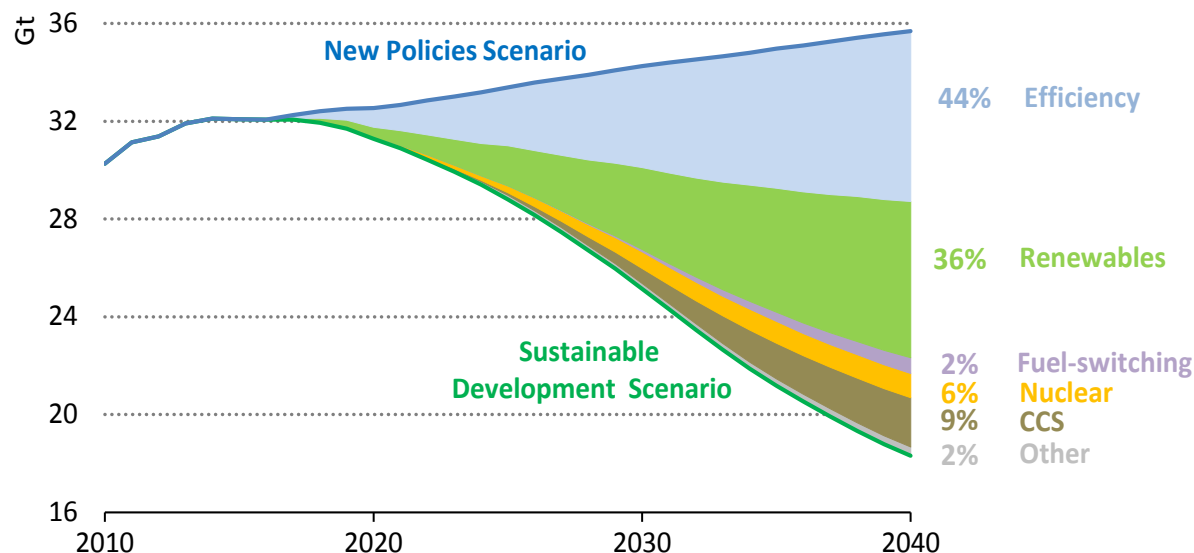
Buildings cooling energy use decomposition, global, 2000-40



Space cooling energy use has grown rapidly, as a result of warming climates and growing populations. Forces pushing space cooling energy demand will continue to grow, but efficiency can limit the impact.

The EWS is the efficiency of component of the IEA SDS

Global CO₂ emissions reductions in the New Policies and Sustainable Development Scenarios

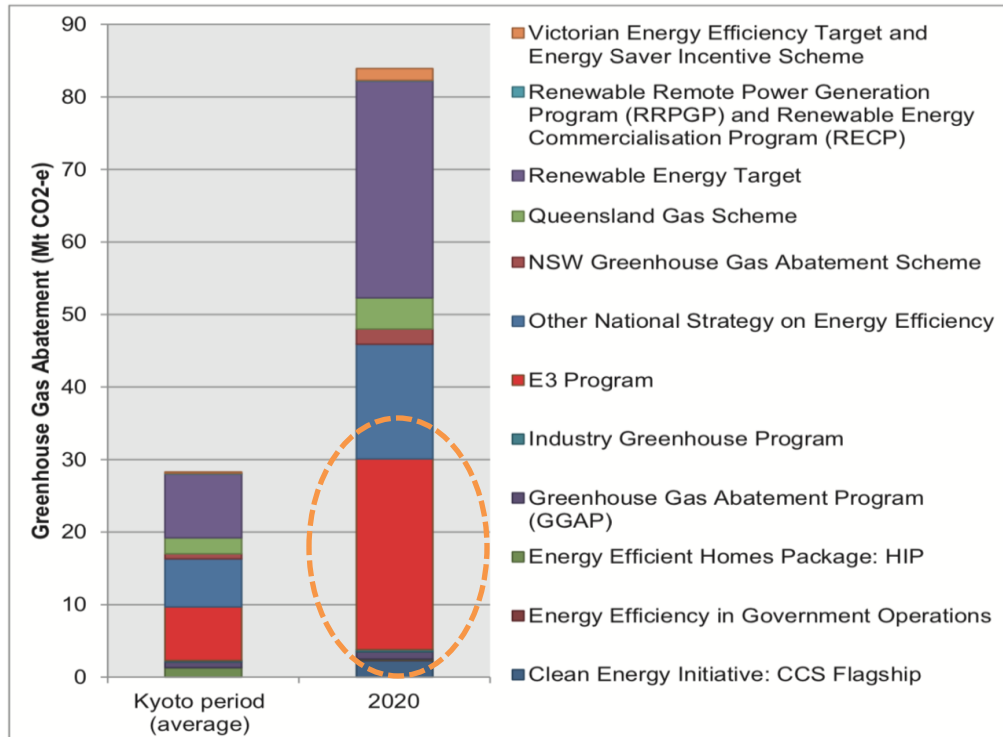


Energy efficiency and renewables account for 80% of the cumulative CO₂ emissions reductions in the SDS.

Appliances and Equipment – Why are these important?



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



Why S&L programmes?

- A&E are homogenous traded goods, easy for governments to regulate
- Very cost-effective programme: low cost, high impact
- Reliable - substantial evidence it works
- Easy programme to engage with consumers/public
- Other...

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

- Refrigerants used in various applications (blowing agents, AC equipment, etc.)
- Refrigerants can be ozone depleting and contribute to global warming (AC)
 - Direct Emissions (approximately 20%) – Refrigerant leakage
 - Indirect Emissions (approximately 80%) – CO₂ emissions from fossil fuel-based electricity
- Montreal Protocol (MP) to address ozone depleting substances and efficiency
- The Kigali Amendment to the MP
 - Kigali Amendment – October 2016
 - The link between efficiency and refrigerants
 - Adds the phase-down of production and consumption of HFCs to the Montreal Protocols
 - Controls HFCs that have high Global Warming Potential



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