



Energy Efficiency Training Week

Appliances & Equipment Course

Introduction

Kevin Lane and Emily McQualter, IEA - Bangkok, 1 April 2019

 #energyefficientworld

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 would prefer to be in their office?



Who is in the room?

1. Name & Organisation
2. Describe one key challenge that you face in your work
3. What do you want out of this week?



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



#	Session	
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	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"/>

Plenty of activities all aimed to increase your understanding

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



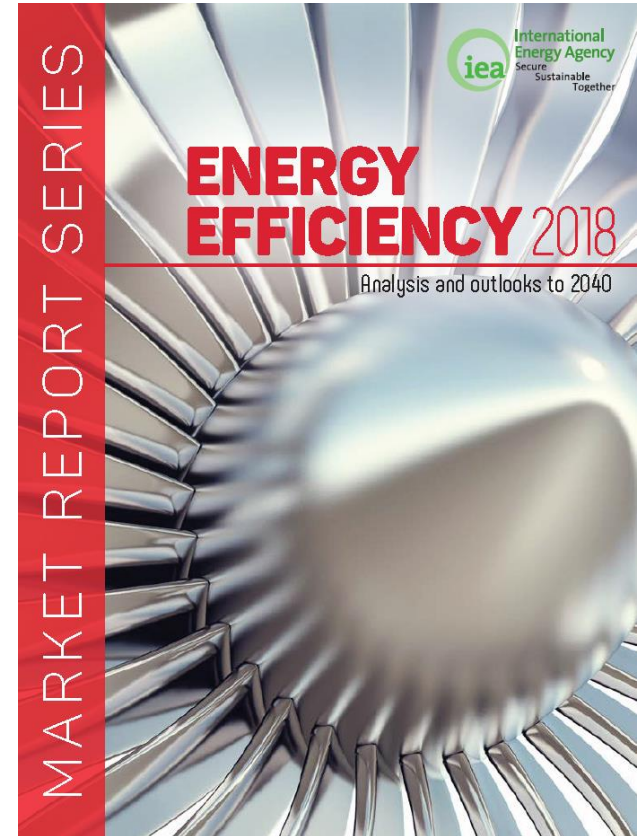
Slides will be uploaded to the IEA's website at the end of the training week.

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

- **Plan for the next few days**
 - Informal
- **Logistics**
 - Meals
 - Wifi
 - Mobile phones & computers
- **Fun Stuff**
 - Cocktail & Networking Event
 - Energy Efficiency Innovation
 - Colour the poster & Network

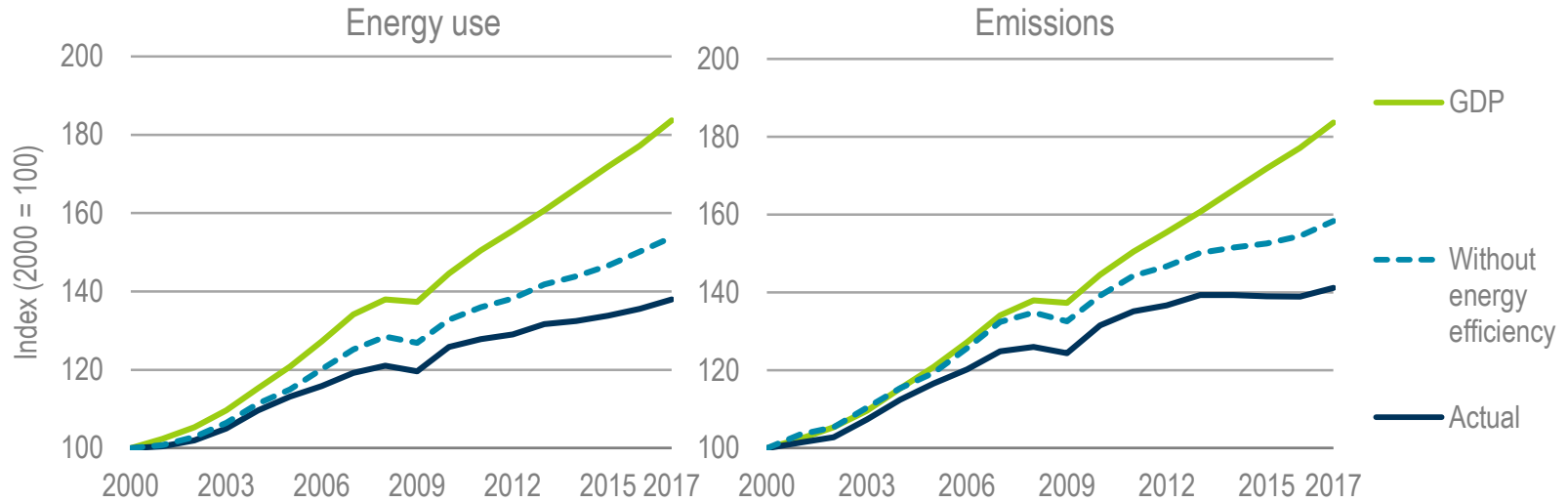
Context: Why is energy efficiency important?

- Energy efficiency means energy consumption is lower than would otherwise have been
- Multiple other benefits
- Future efficiency essential for sustainable development
- A few slides from EEMR 2018 follow



The impacts of energy efficiency are already significant

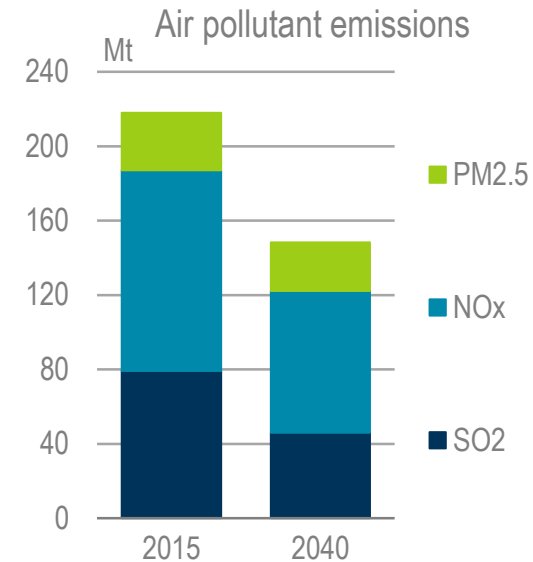
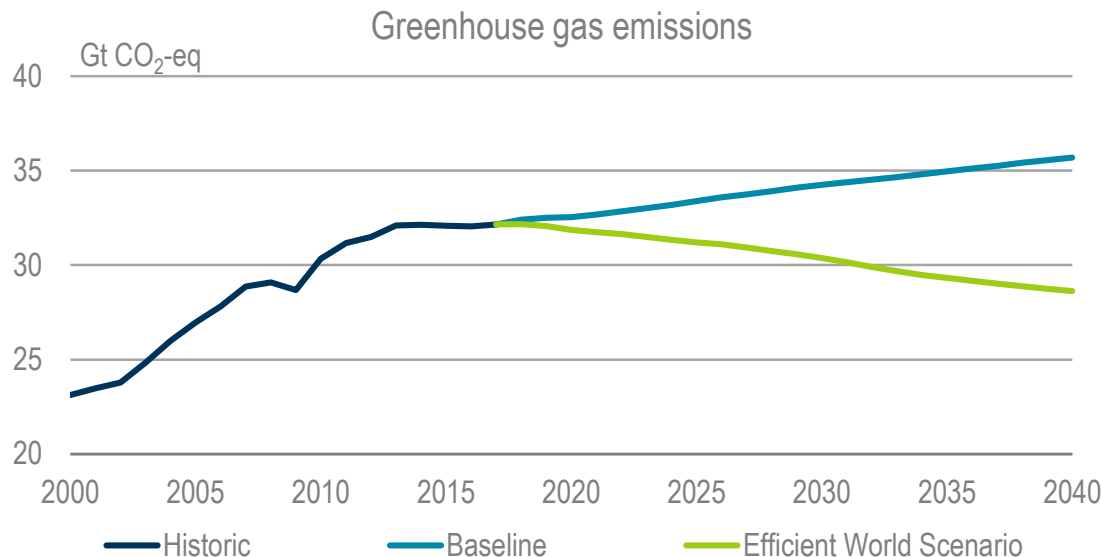
Global final energy use and emissions with and without energy efficiency improvements, 2000-17



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

Efficiency can deliver immediate environmental benefits

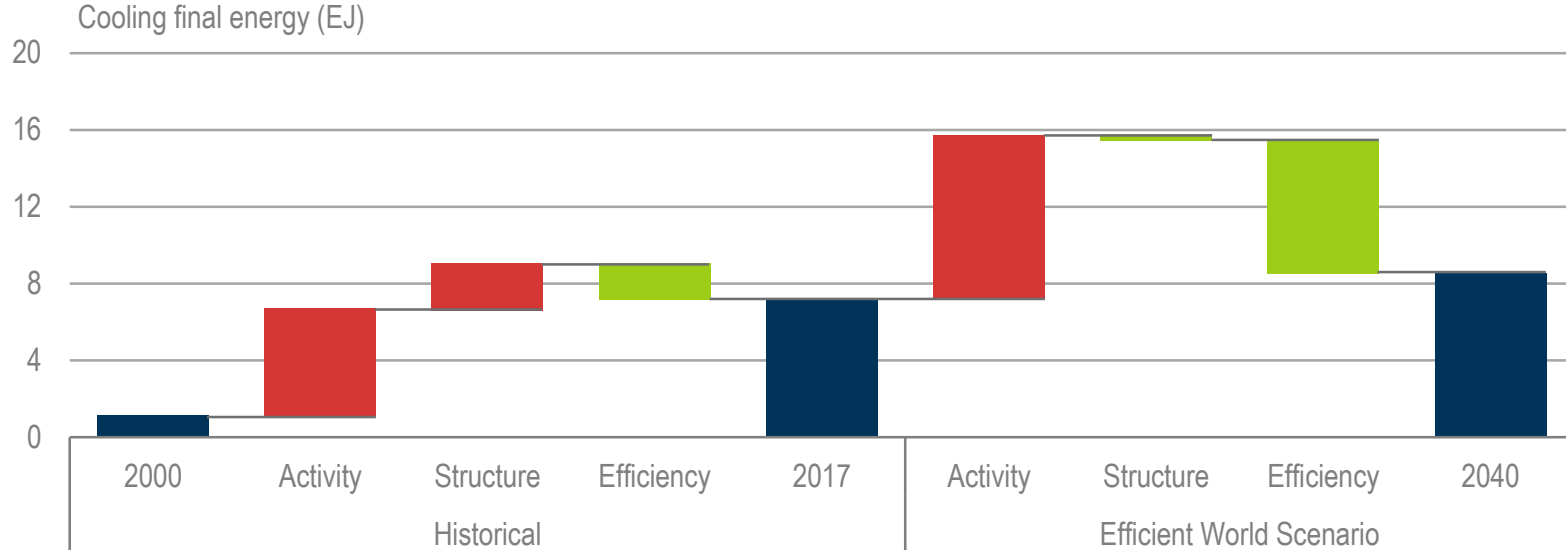
Greenhouse emissions in the NPS and EWS, 2000-40 (left) and air pollutant emissions in the EWS, 2015-40 (right)



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

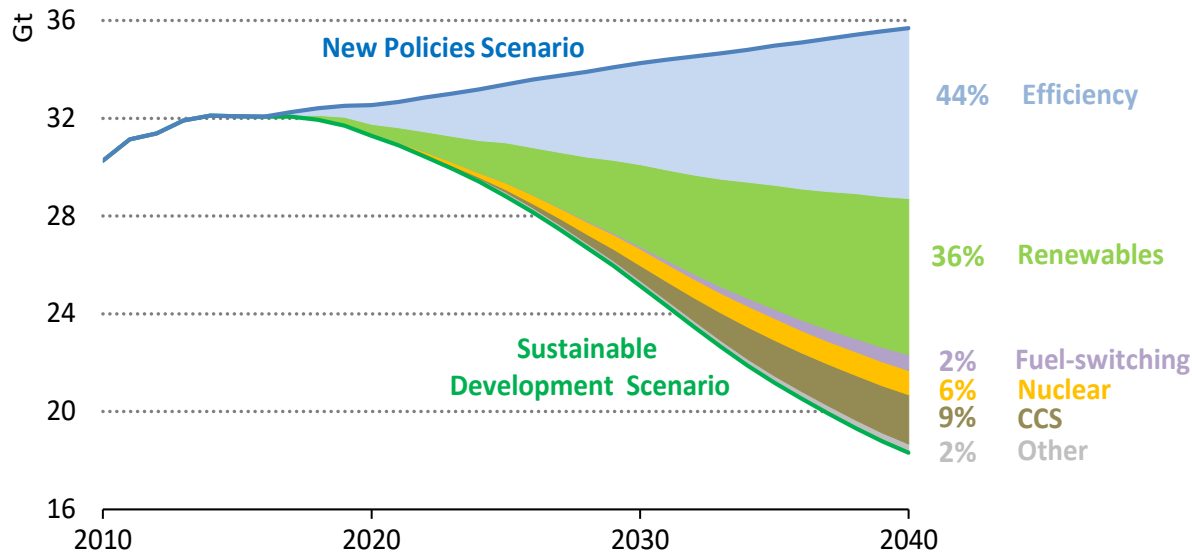
Buildings cooling energy use decomposition, global, 2000-40



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.

- 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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