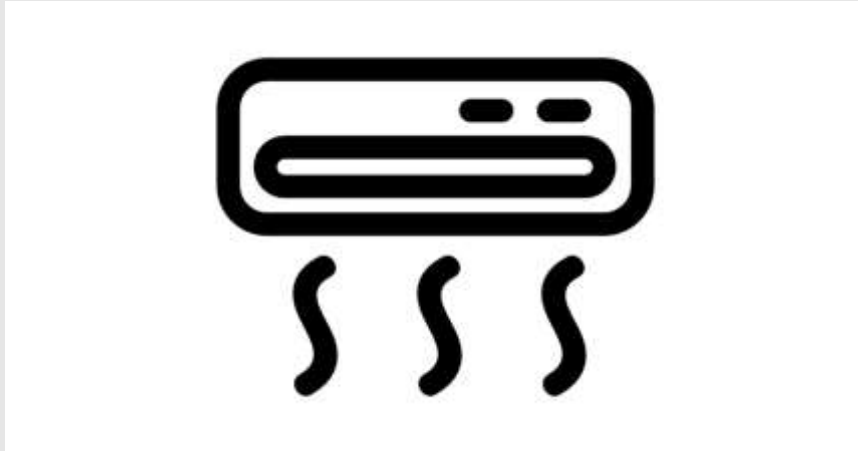


MOP 31 | MONTREAL PROTOCOL
ROMA 2019

ENERGY EFFICIENCY IN SERVICING SECTOR

JIM CURLIN
UNEP OZONACTION

Tuesday, 5 November 2019 | 18:00 - 20:00 | Iran room



Supply side *Equipment*

Energy policies
MEPs and labelling
Improving energy efficiency



Demand side *Use*

Servicing techniques, consumer
behavior, economic decisions
Maintaining energy efficiency



There are 3 billion RAC systems worldwide and they all consume energy – IIR 2015

The impact of proper installation, maintenance, and servicing on the efficiency of equipment and systems is considerable over the life time of these systems while the additional cost is minimal...The benefits of proper maintenance are considerable. Appropriate maintenance and servicing practices can curtail up to 50% reduction in performance and maintain the rated performance over the lifetime. – TEAP 2018 Decision XXIX/10 Task Force Report

Improper installation could increase household energy use for space heating and cooling on the order of 30 percent over what it should be. – National Institute of Standards and Technology 2014

If not properly installed, HVACR equipment, including cutting-edge energy efficient technologies, will not provide important energy-saving benefits and will undermine our national energy efficiency initiatives. – The HVACR Alliance 2017



Options to improve or enhance energy efficiency

- Introduce of low- and zero-GWP alternatives to HCFCs or HFCs
- Develop and enforce policies and regulations to avoid the market penetration of energy-inefficient equipment and promote the market penetration of energy-efficient equipment
- **Maintain energy efficiency in the servicing sector**
 - Training and certification
 - Safety and standards
 - Awareness raising and capacity building



The current picture



- Does servicing sector contribute to energy efficiency?
 - Yes, all agree
- How much energy can be gained through improved installation and servicing practices?
 - Nobody knows exactly – not industry, not government
- Are there incentives for consumers or technicians to seek it?
 - Not at present
- Do national energy policies reflect energy efficiency in servicing?
 - No. MEPS are supply side controls and do not address post-market issues.
- Conclusion : Energy efficiency in servicing is a great untapped opportunity that should be pursued – but it is complicated!



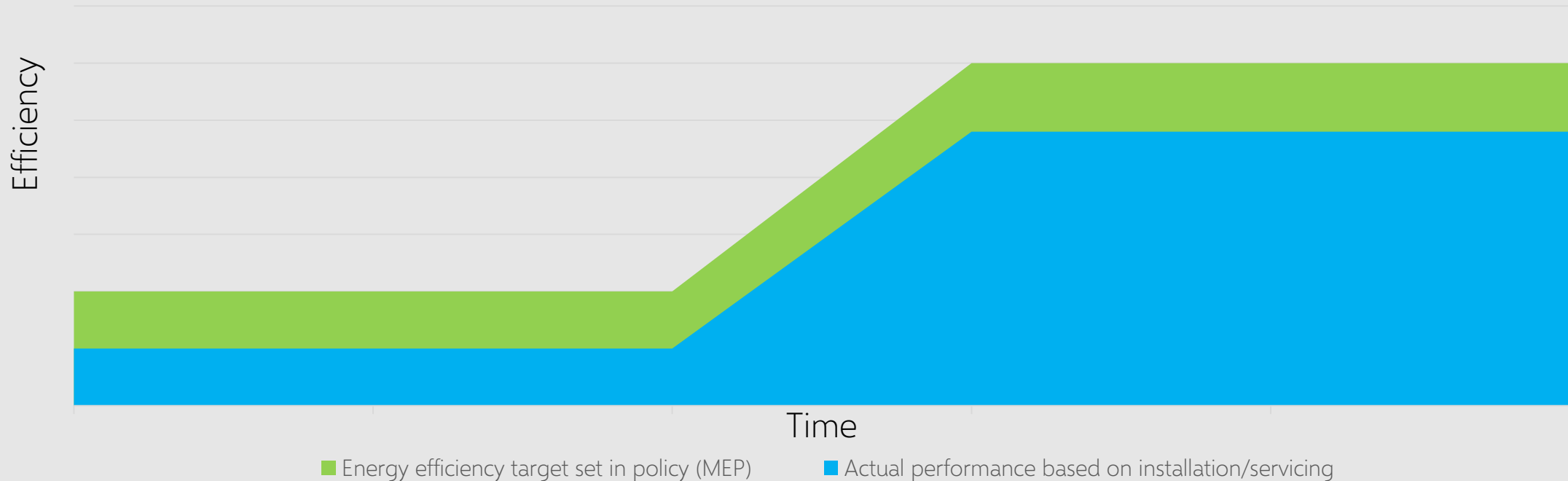
Energy efficiency opportunities through improved operation and maintenance

Action	Impact
No refrigerant leaks	+30 per cent energy consumption
Clean condenser and evaporator coils	+8 per cent energy consumption
Clean or replace filters regularly	Average savings of 25 per cent
Check operations and settings of controller	Average savings of 97 per cent
Check condenser pressure controls	Average savings 4 per cent

Source: Stefan Thie, EPEE Technical Expert



Policy vs reality





What is needed

- Demonstration projects to quantify the exact contribution of installation, servicing and maintenance to energy performance
- National environment and energy authorities should discuss this issue.
- Get electrical utilities and private sector involved
- Identify incentives for technicians and consumers to get interested



What is needed

- Energy efficiency aspects require additional training and further awareness.
- Incorporate energy efficiency into technician training curricula
- Certification of technicians should eventually include energy efficiency aspects.
- Policies can also be developed to encourage regular maintenance and servicing, i.e., maintenance contracts or warranties could be included as part of government procurement.



Cleaning Your Refrigerator Coils = Energy Savings

Ameren Illinois

How you operate your refrigerator can have a major impact on your energy savings. When the condenser coils are dirty, your refrigerator works twice as hard. Clean the coils to keep your refrigerator operating in pristine condition, and help you save energy and money on your next bill.

- Ameren Illinois, 2019

<https://youtu.be/uRd8qZOtgog>



There is hope – behavior can change

