ENERGY EFFICIENCY IN SERVICING SECTOR

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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 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

<table>
<thead>
<tr>
<th>Action</th>
<th>Impact</th>
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<tbody>
<tr>
<td>No refrigerant leaks</td>
<td>+30 per cent energy consumption</td>
</tr>
<tr>
<td>Clean condenser and evaporator coils</td>
<td>+8 per cent energy consumption</td>
</tr>
<tr>
<td>Clean or replace filters regularly</td>
<td>Average savings of 25 per cent</td>
</tr>
<tr>
<td>Check operations and settings of controller</td>
<td>Average savings of 97 per cent</td>
</tr>
<tr>
<td>Check condenser pressure controls</td>
<td>Average savings 4 per cent</td>
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Source: Stefan Thie, EPEE Technical Expert
Policy vs reality

- Energy efficiency target set in policy (MEP)
- Actual performance based on installation/servicing
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
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.
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