The link between safety standards and legislation:

How do they impact the implementation of legislation and the choice of technologies by manufacturers?
Standardization in Europe
Key Standards in the EU

EN 378 (ISO 5149)

- Refrigerating systems and heat pumps
- Refrigerating appliances, ice-cream appliances and ice makers
- Electrical heat pumps, air-conditioners and dehumidifiers

- Commercial refrigerating appliances with an incorporated or remote refrigerant unit or compressor
- EN 60335-2-89 (IEC 60335-2-89)
- EN 60335-2-40 (IEC 60335-2-40)
- EN 60335-2-24 (IEC 60335-2-24)

Other
• Requirements in product standards prevail over requirements in generic standards.

• Product standards specify charge requirements particular to the scope of the standards. It is normal practice to have different charges for different products.
## Interplay between standards

<table>
<thead>
<tr>
<th>Low Voltage</th>
<th>Machinery</th>
<th>Pressure equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
</tbody>
</table>

- **EN 60335-2-40**: Needed for compliance with Pressure equipment directive/is kind of product standard.
- **EN 60335-2-89**: Covers general safety: electrical, mechanical; includes charge limits, and safe use.
- **EN 378**: Covers pressure safety: flammability affects safety requirements e.g. number of devices needed

**Product standards**
- Needed for compliance in product design

**Generic standards**
- Mainly influence national regulation
Interaction of standards & legislation

**EU**
- F-gas regulation
- EN 378
- EN 60335-2-40
- EN 60335-2-89
- EN 13313

**Member states**
- Building codes

**Local level**
- Fire fighting departments
- City council, licensing

The standards are under revision

Codes may refer to EN 378. But not all building codes do. (MS do not necessarily follow standardisation work)

Limitations for the use of flammable refrigerants may arise from various fields of national legislation / regulations. Among them may be national regulations on:
- Workplace safety
- Fire safety
- Building construction
- Environmental protection
- Regulations on public areas / spaces.
Why & how standards impact the implementation of the F-Gas Regulation
The EU phase-down

Entry into force of GWP limits
The refrigerant dilemma

GWP
Example: supermarket refrigeration

R-404A to be quickly phased out in new commercial refrigeration equipment.

It is replaced with a range of different lower GWP alternatives.

Source: The EPEE Gapometer
Example: small split a/c

R-410A to be phased out in new split air-conditioning

It is replaced with lower flammability refrigerants

Source: The EPEE Gapometer
Standards, legislation, innovation and manufacturers’ choice
Ecodesign: Minimum Efficiency Performance Standards (MEPS) in Europe

ECOLABEL: Identifies products and services that have a reduced environmental impact throughout their life cycle

ENERGY LABEL: “Pull” Help consumers to choose the most energy-efficient products

ECODESIGN: “Push” Minimum energy efficiency requirements

Legislation and Standards go hand in hand
MEPS can trigger innovation

- Move towards Inverter technology
- Electronic expansion valves
- Improved efficiency control
- Reduction of standby consumption

Example of a/c <12 kW:
Boosting the overall energy efficiency of the product
Conclusions
Don’t put the cart before the horse!

- A coordinated approach between standards and legislation is indispensable to ensure successful implementation of legislation.

- F-Gas Regulation and Ecodesign Rules show that innovation and change happen if rules are ambitious, yet realistic, and if industry and political decision makers work together in a transparent way.
Questions?

Contact details:

EPEE
46 Avenue des Arts
1000 Brussels, Belgium

a.voigt@epeeglobal.org
www.epeeglobal.org
@EPEESecretariat
@AndreaVoigt2305