Energy Efficiency Policies in Europe and Industry Response

By: Paul de Larminat
EPEE vice-chair of F-gas Working Group

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2019

The demand for cooling is set to grow

Warming climate

Ageing / growing population

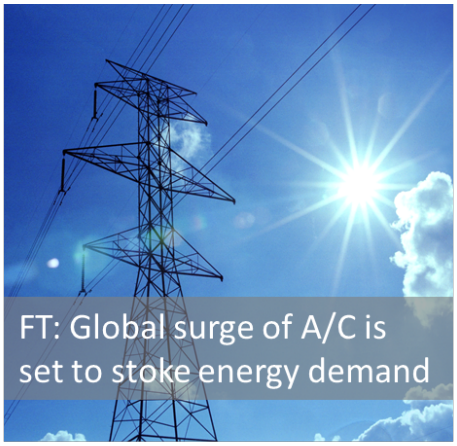
Urbanisation

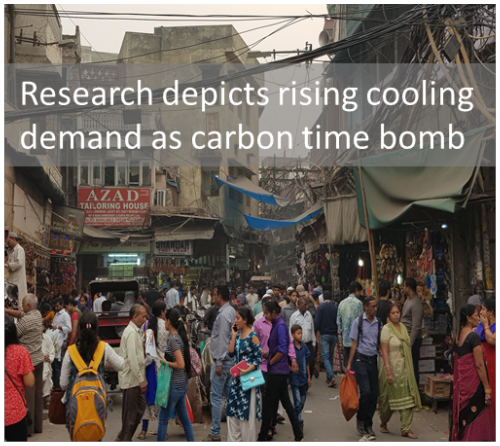
Scarcity of resources

Health & Well-being

Digitalisation

Potential impact on energy & emissions attracts attention of mainstream media





The New York Times

The World Wants Air-Conditioning. That Could Warm the World.

euronews.

As we plan energy strategies, 'clean cooling' needs to come in from the cold | View

By Toby Peters

From air conditioning in our offices, restaurants and shops, to ice-creams and ice in our drinks, we are this summer experiencing the value of cooling to our comfort and productivity.

Le Monde

Comment les climatiseurs réchauffent la planète

La forte demande de refroidissement dans les parties les plus chaudes de la planète va faire augmenter la consommation d'électricité et risque d'accentuer le changement climatique.

BBC

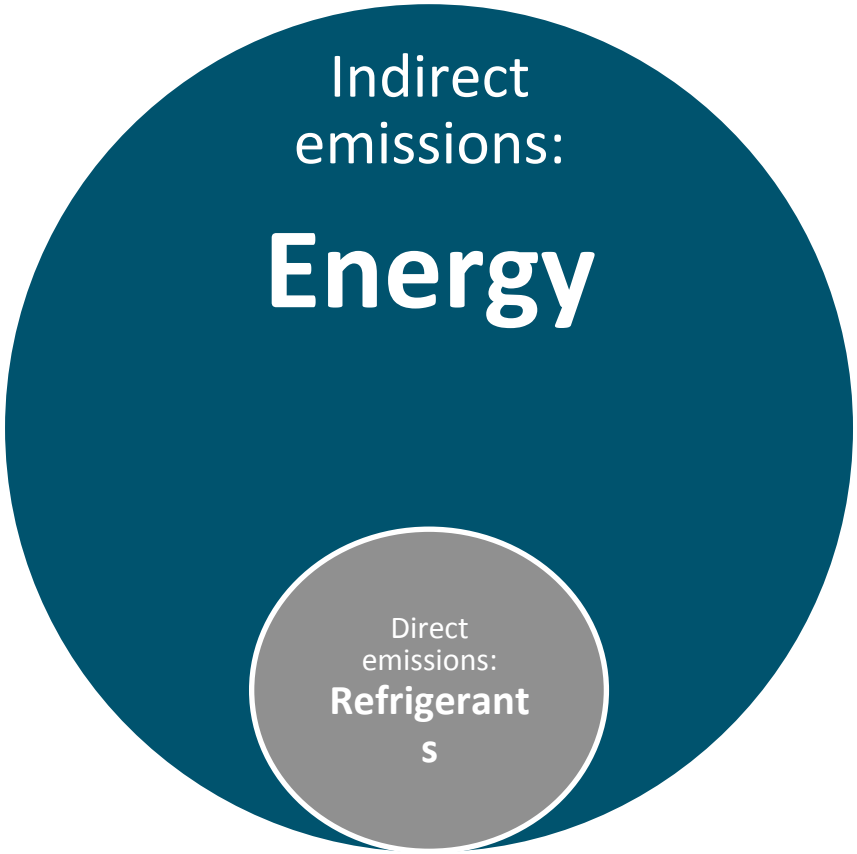
How trying to stay cool could make the world even hotter

Frankfurter Allgemeine

UMWELTSCHÄDLICH

Klimaanlagen verbrauchen gigantische Mengen Strom

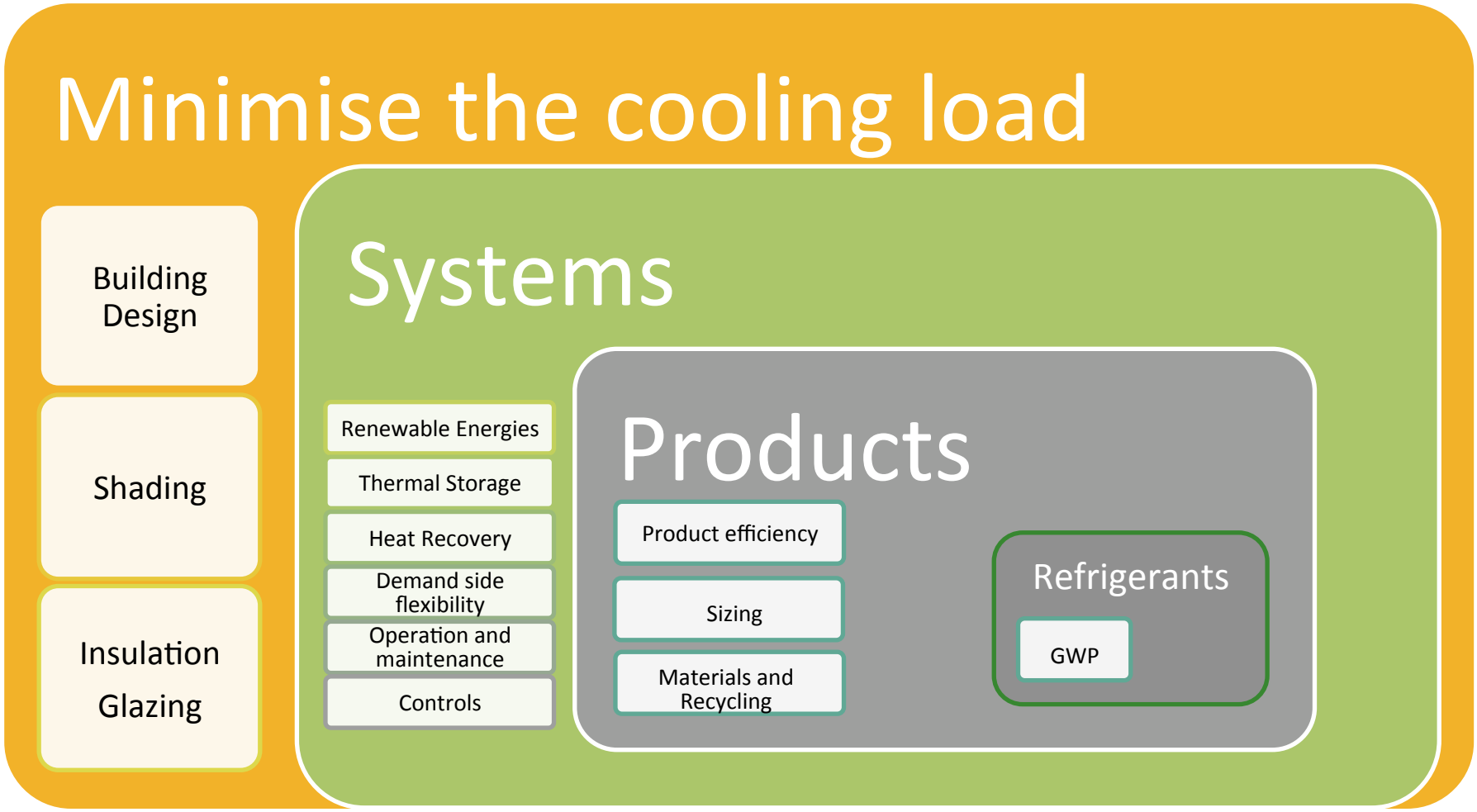
Energy & Refrigerants are in the spotlight



- **Indirect** emissions are related to energy type and consumption and typically represent > 80% of total emissions
- **Direct** emissions are related to refrigerants and represent a far smaller share of the total emissions

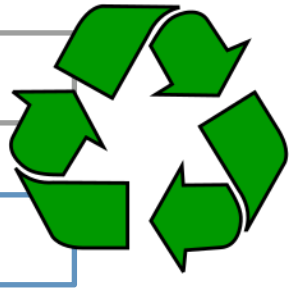
➔ **Both are interrelated and both need to be addressed to reduce emissions**

Refrigerants are one (small) part of the puzzle



They are addressed in many ways: Stimulated by the EU F-Gas Regulation

- Stop using high GWP refrigerants
- Move to lower GWP refrigerants
- Reduce refrigerant charge sizes
- Design for leak-tightness and reduce leakage
- Recover, recycle, reclaim gases
- Get ready for flammable refrigerants



The EU‘s Climate and Energy Framework addresses the broader energy context

40% GHG emission reduction

32% Renewable energy

32.5% energy efficiency

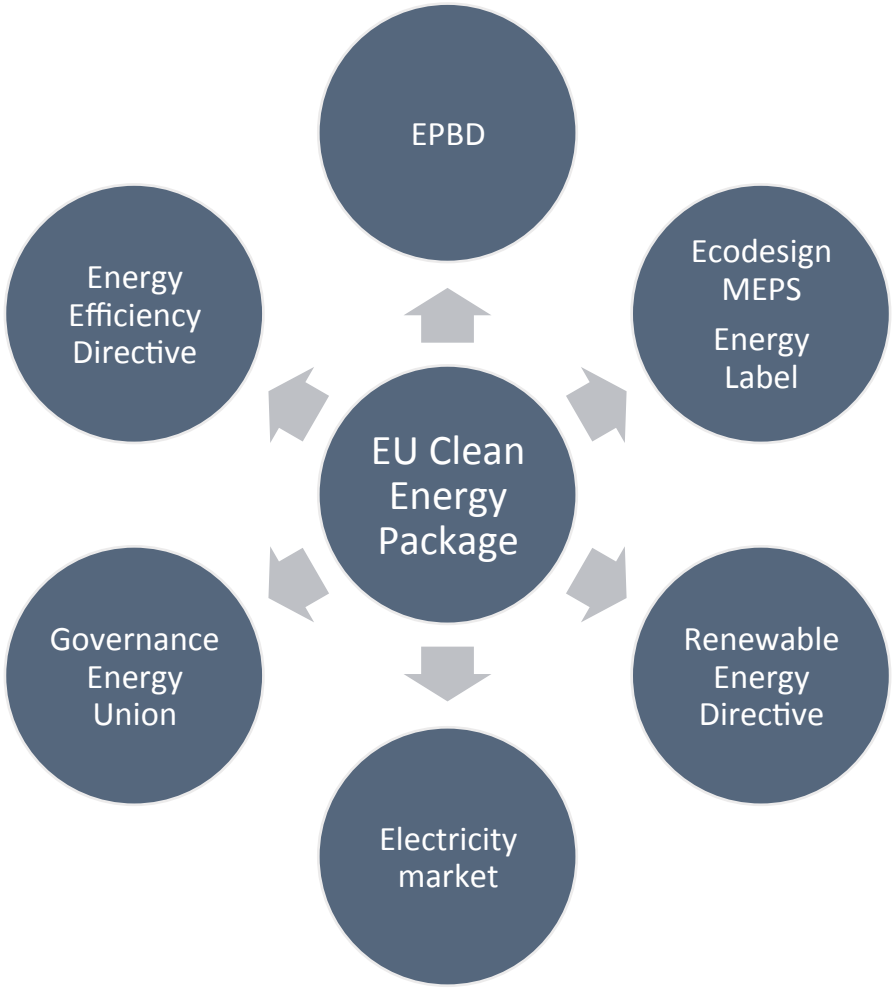
Clean Energy for all Europeans Package

- National energy and climate plans (NECPs) covering 2021 - 2030
- National long term strategies

Decarbonisation 2050 Strategy

For a modern, competitive and climate neutral EU economy in 2050

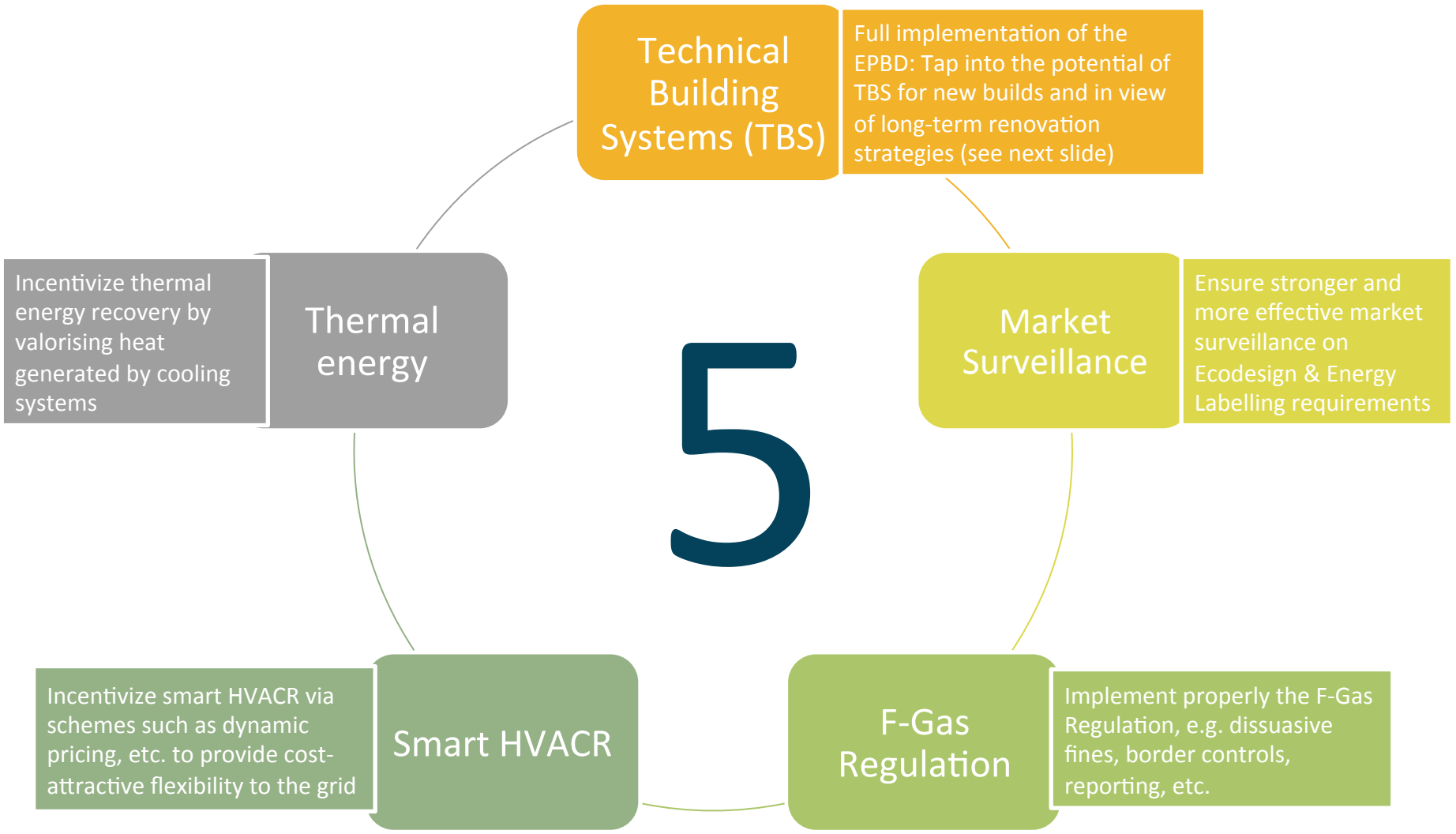
The Clean Energy Package



A dedicated framework addressing energy with the objective to provide **clean and affordable energy for all Europeans**:

- ✓ Buildings (EPBD)
- ✓ Electricity
- ✓ Products (Ecodesign, Labelling)
- ✓ Renewables
- ✓ Energy Efficiency
- ✓ Governance

A focus on National Climate & Energy Plans: EPEE's top 5 priorities

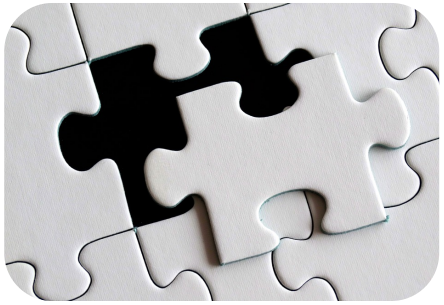


A focus on Heating & Cooling in Buildings (EPBD)
EPEE's top 5 priorities

Inspections & Maintenance:
av. 25% savings

BACS & Monitoring:
Up to 49% savings

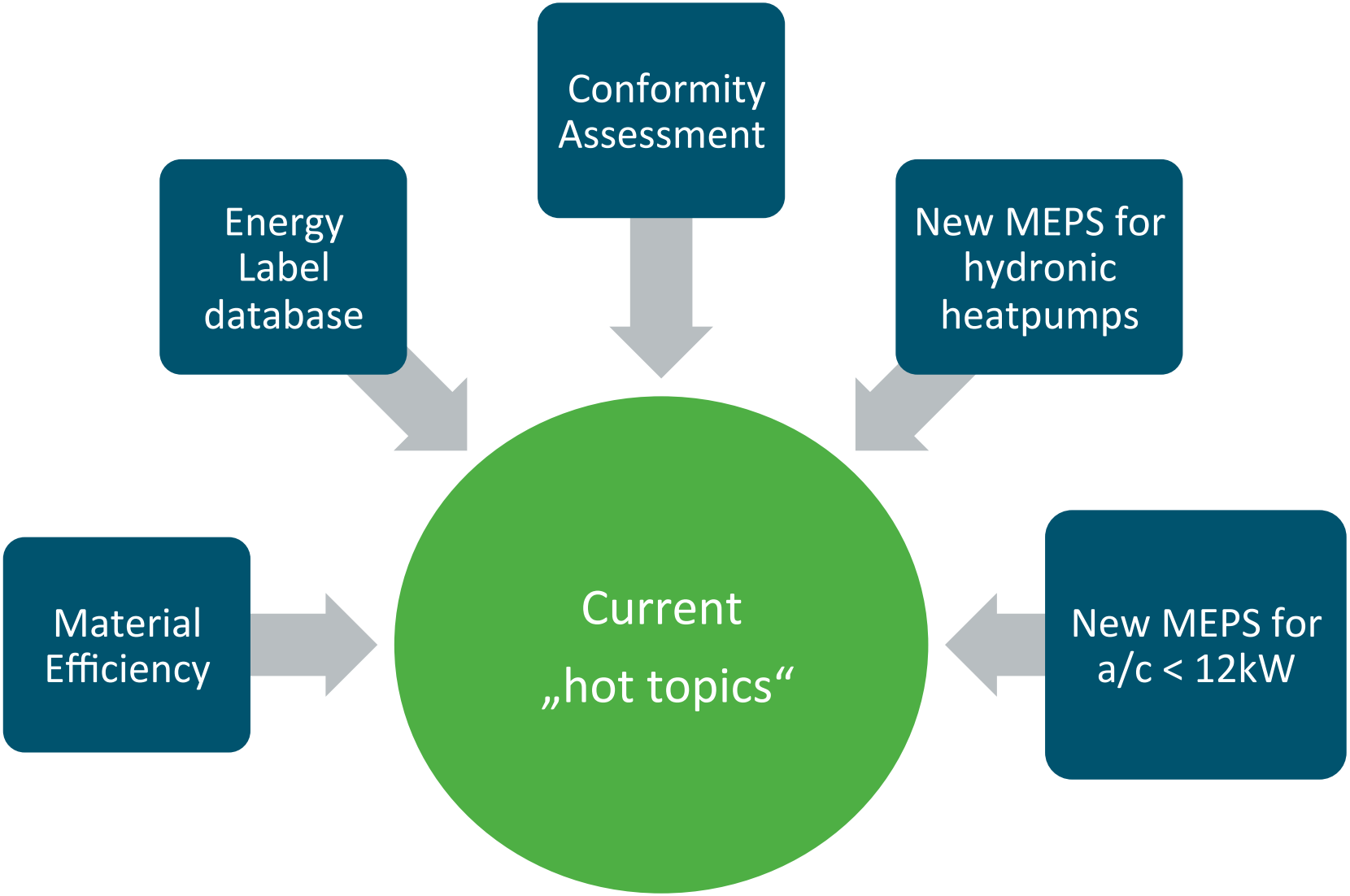
EPB Standards:
For a uniform and transparent implementation across Europe



Part Load Efficiency :
HVACR systems run 98% of their time on part load

High Efficiency products:
Ensure consistency with Ecodesign MEPS

A focus on products (Ecodesign)



The role and potential of HVAC&R

HVACR can act as an „enabler“

Energy Efficiency

1

Reduce the energy demand to address growing needs

Renewable Energies

2

Deploy renewable energies on supply (electricity) and demand (thermal) side

Carbon neutrality

3

Only achievable with green electrification

How the HVACR industry responds: We are ready!

ENERGY EFFICIENCY

- Energy efficient products
- Service and Maintenance
- BACS, Monitoring and Sizing
- Heat recovery
- Leakge reduction
- Recycling Reclaim

Sustainable HVACR

RENEWABLE ENERGIES

- Synergies btw. Heating and cooling
- Thermal storage
- Demand side flexibility
- Heat pumps

What stands in the way?

Lack of Skills

- Flammables - Safety
- Smart HVACR

Few incentives

- CapEx vs. OpEx
- Few incentives on smartness, heat recovery, storage
- Sustainable public spending (taxation, subsidies, etc.)

Lack of Awareness

- Political recognition
- Market awareness and understanding

Siloed approach

- Synergies between heating and cooling
- Thermal energy not valorised

Conclusions

- HVACR is indispensable for a safe and comfortable life in today's society.
- The HVACR market will grow significantly in the coming decades: this is an opportunity for the industry but also a huge responsibility.
- There are many top of the line, sustainable technologies readily available.
- Refrigerants are just one piece of the puzzle and the HFC phase-down is just one tool among others to achieve emission reductions.
- Direct measures such as containment, recycling/reclaim and charge size reduction can be very effective and should be prioritized.
- Indirect emissions represent the largest share and need to be addressed in dedicated legislation.

Thank you for your attention – Questions?

Contact:

EPEE
46 Avenue des Arts
1000 Brussels, Belgium

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