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Heating without the hot air: Principles for smart heat electrification

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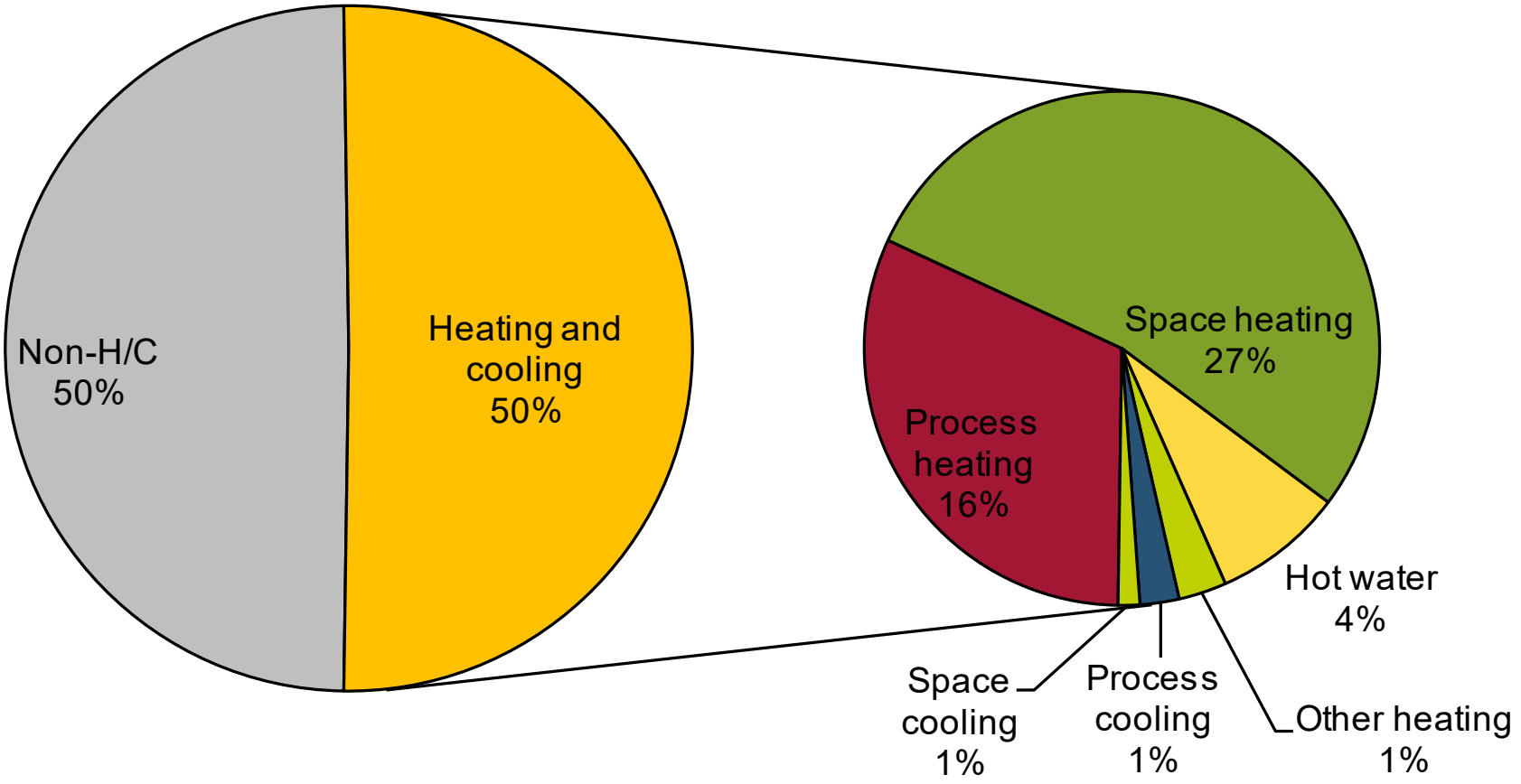
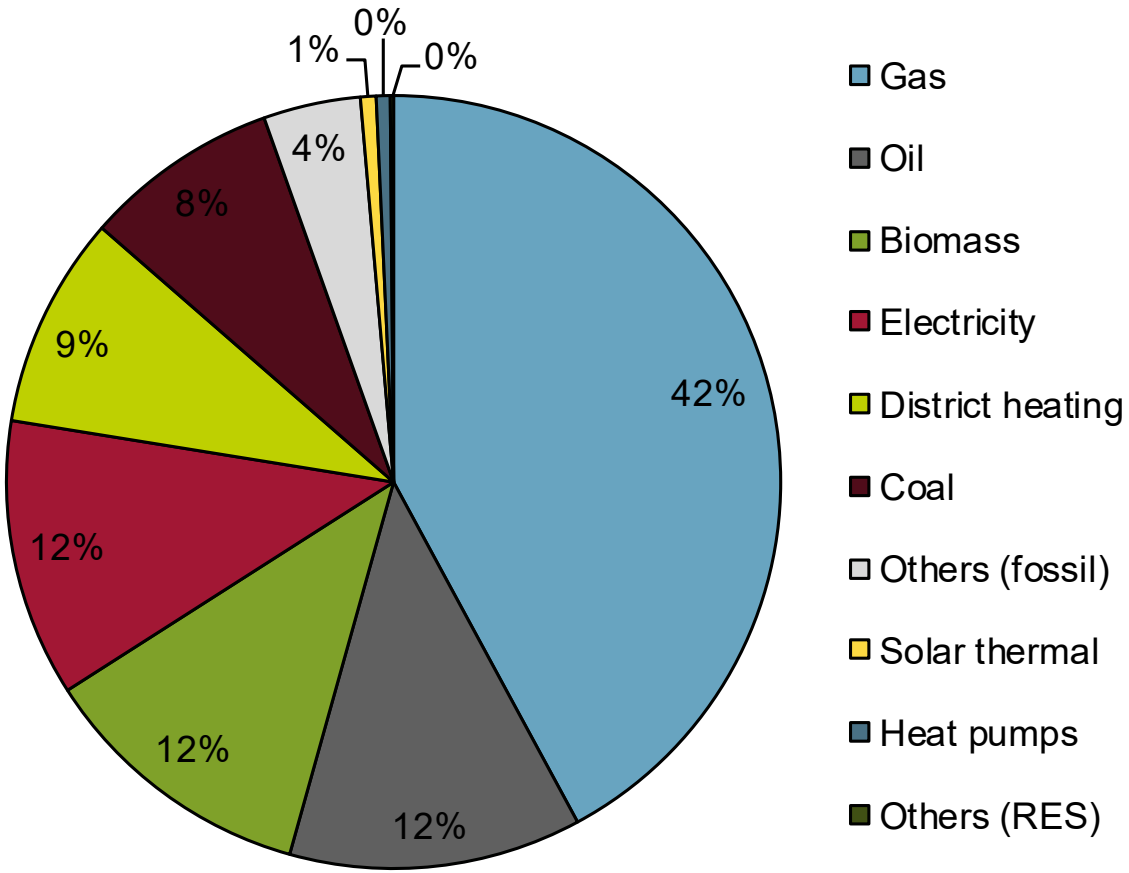
1 Why heating?

Almost half of energy use in EU



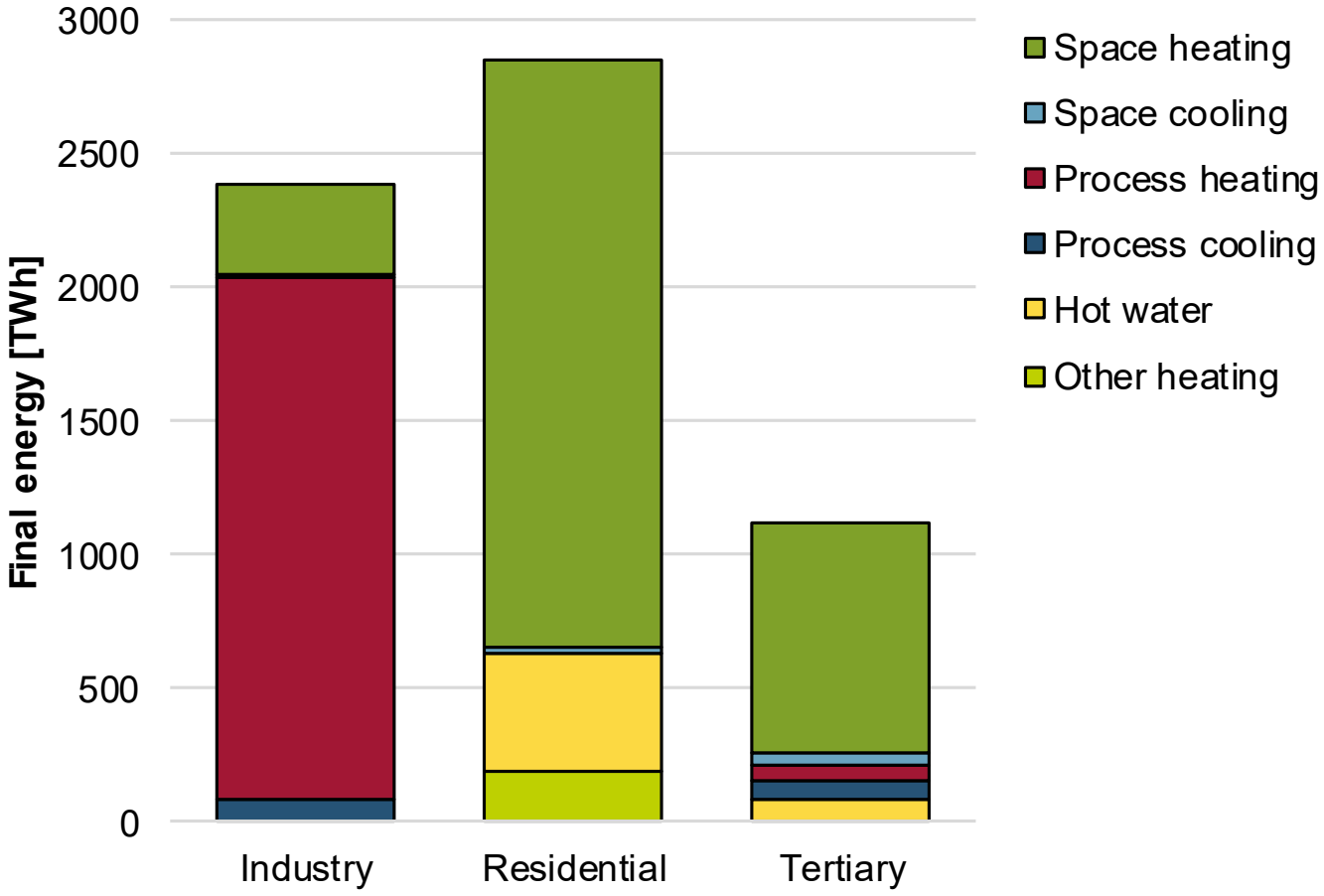
Source: Heat Roadmap Europe (2017)

75% of heat generated by fossil fuel



Source: Heat Roadmap Europe (2017)

Residential sector most important

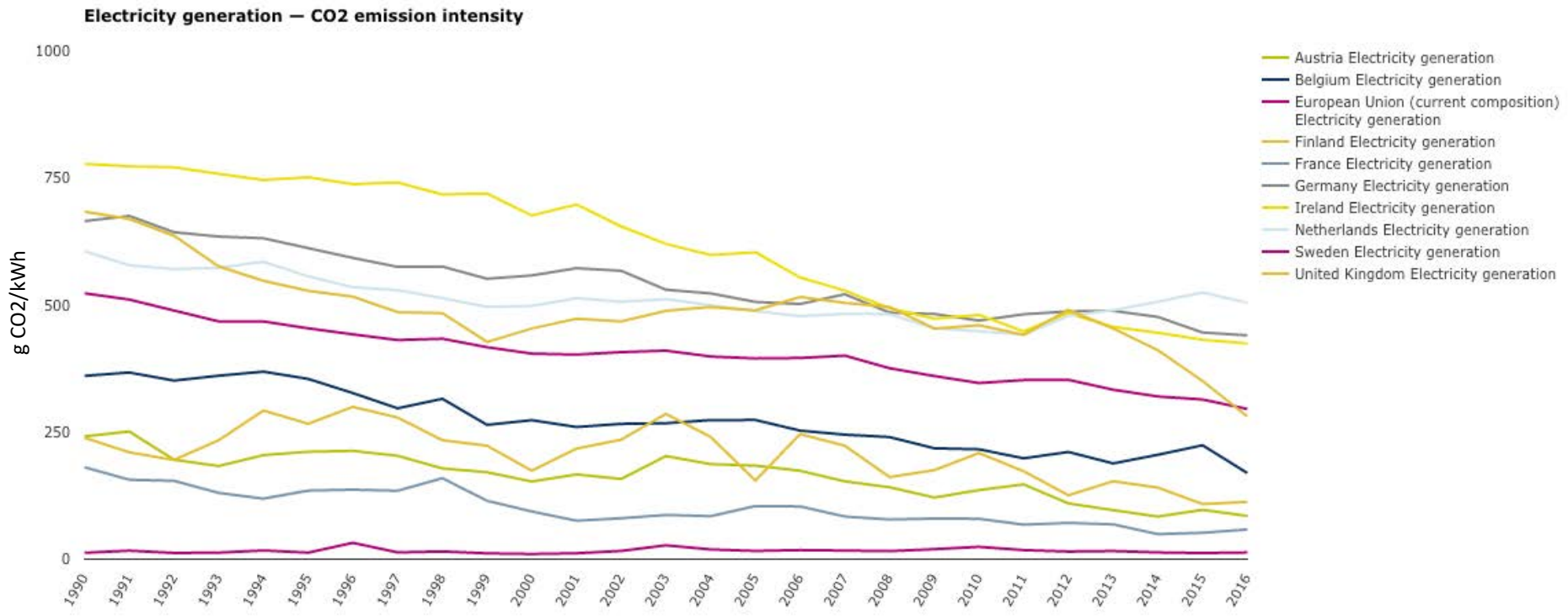


Source: Heat Roadmap Europe (2017)

2 Decarbonisation options and context

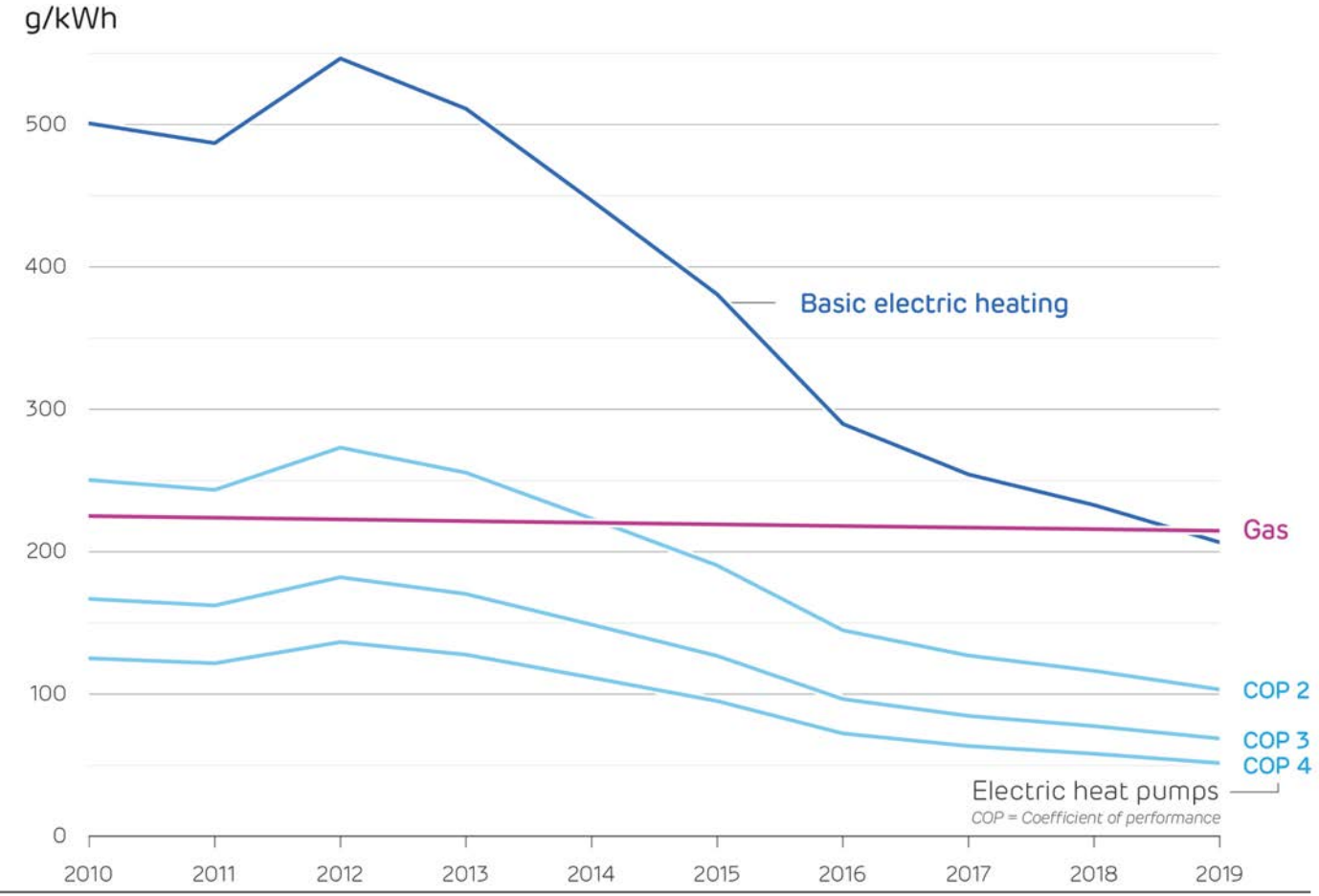
Limited options for decarbonisation

Electricity is becoming increasingly green



Source: EEA (2020)

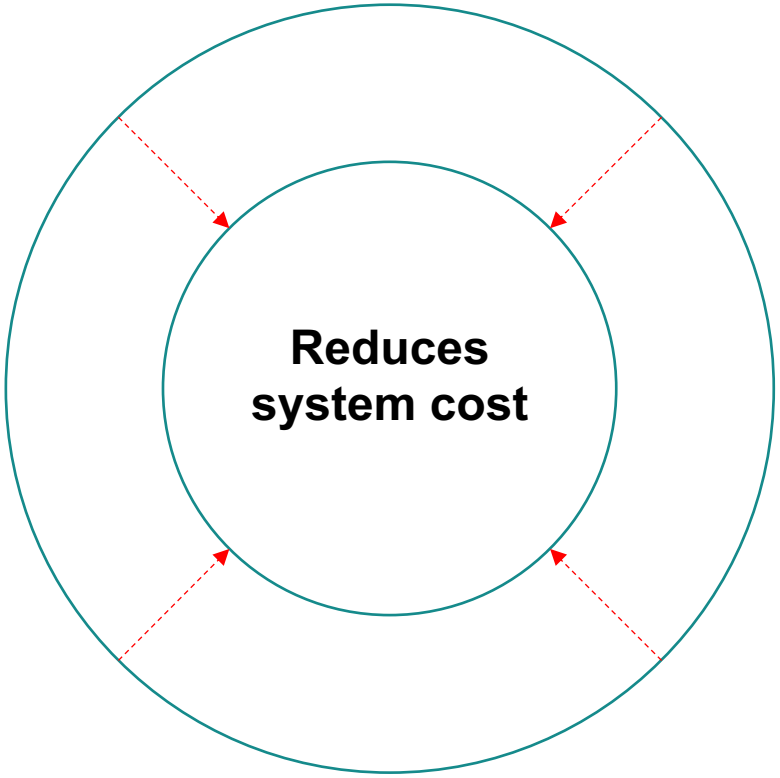
Heat pumps now much cleaner than gas – example UK

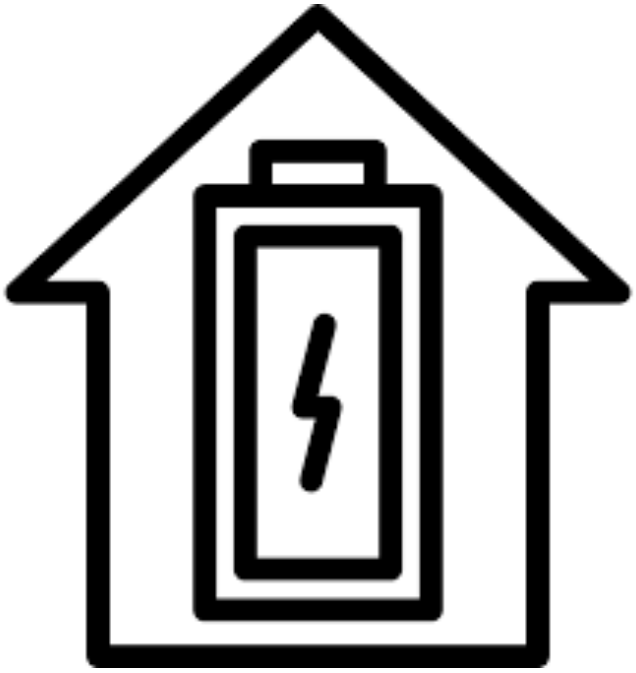


Source: Staffel 2019

3 Principles for heat electrification

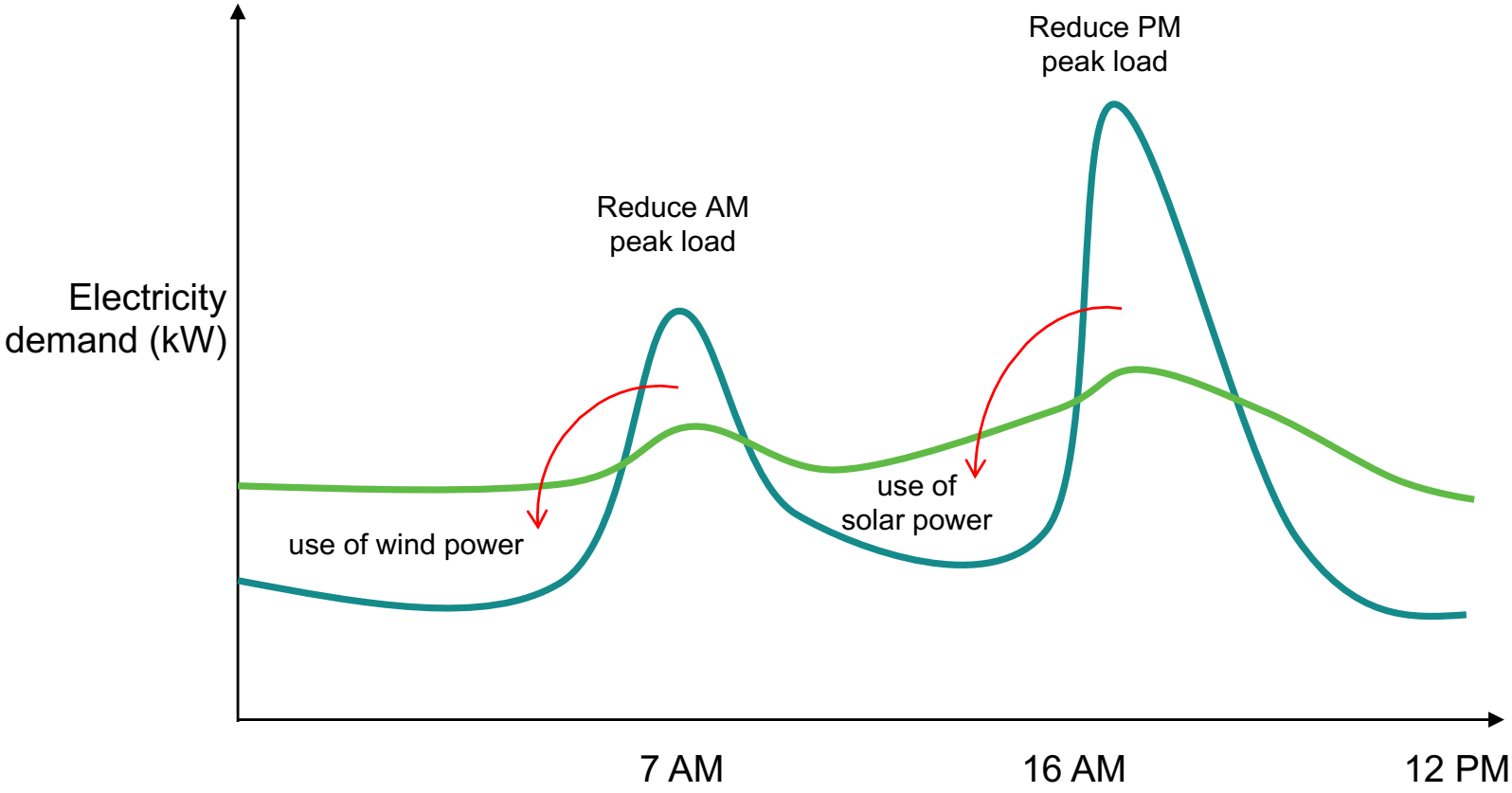
Principle 1: Put Efficiency First



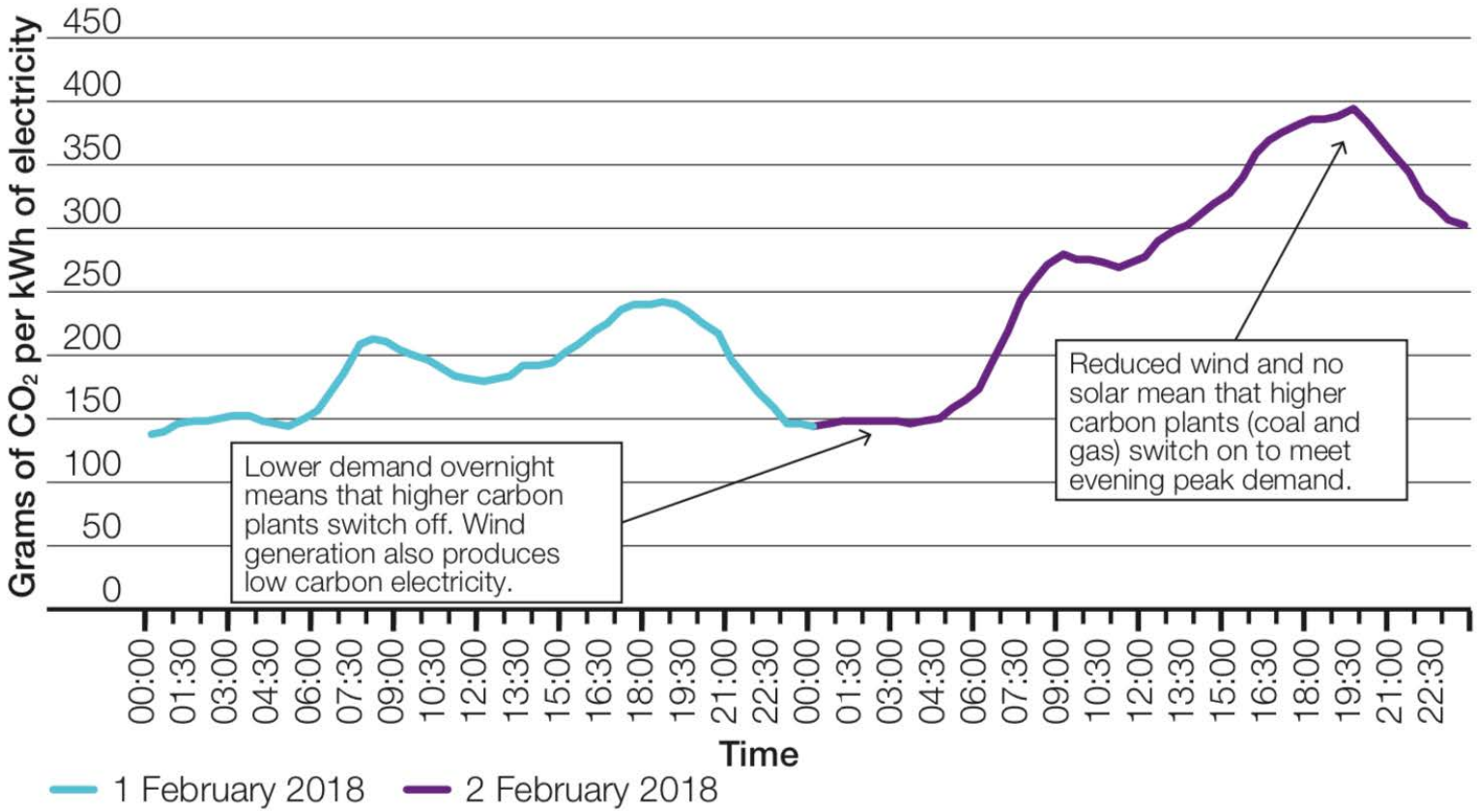


Provides thermal storage

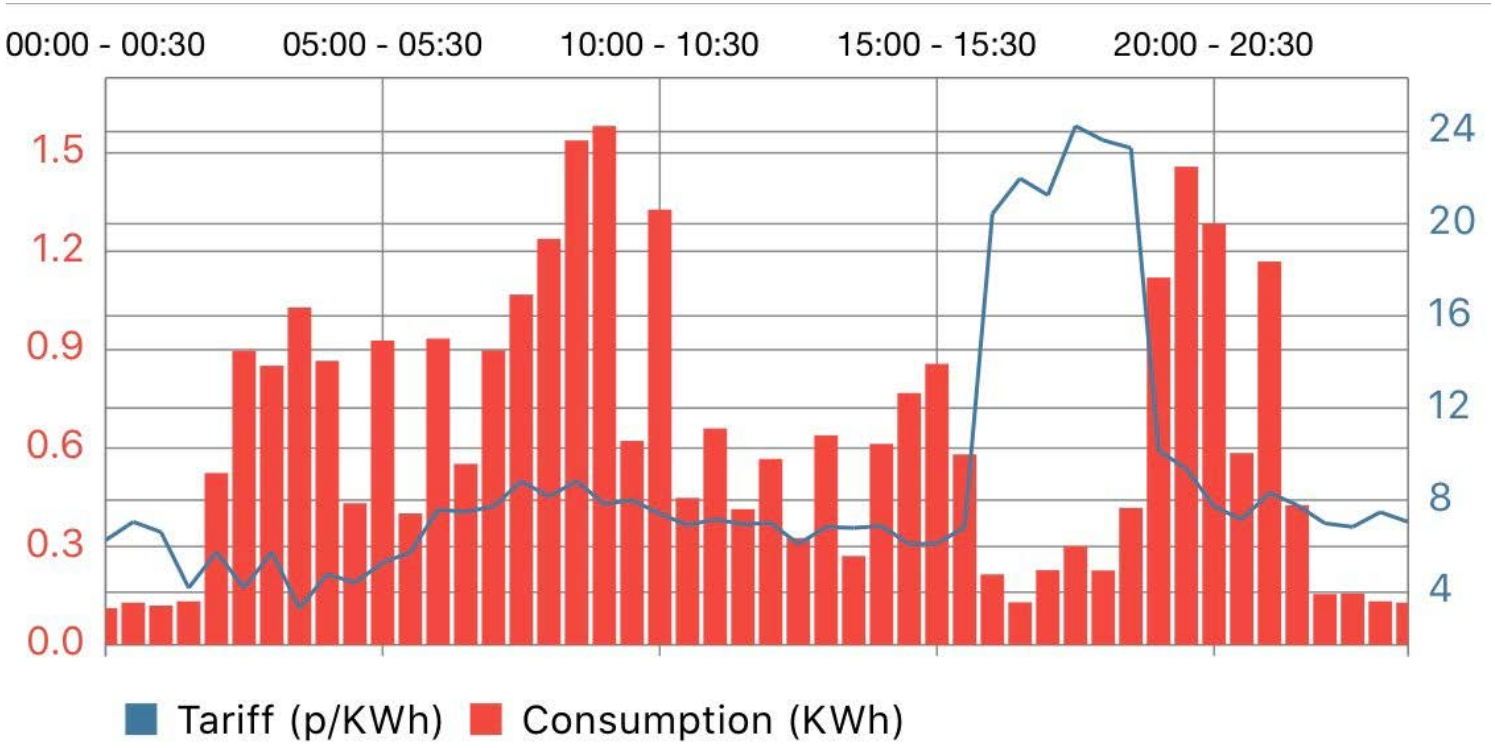
Principle 2: Recognize the value of flexible heat load

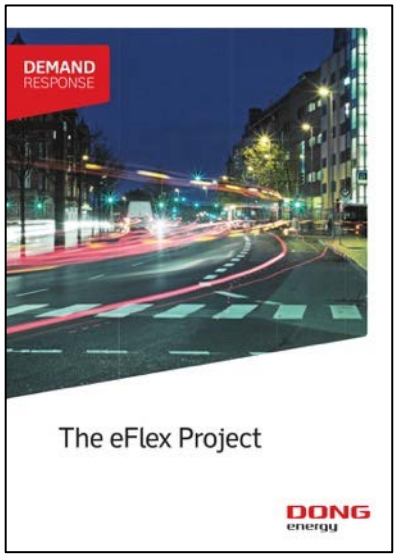


Principle 3: Understand the emissions effects of changes in load



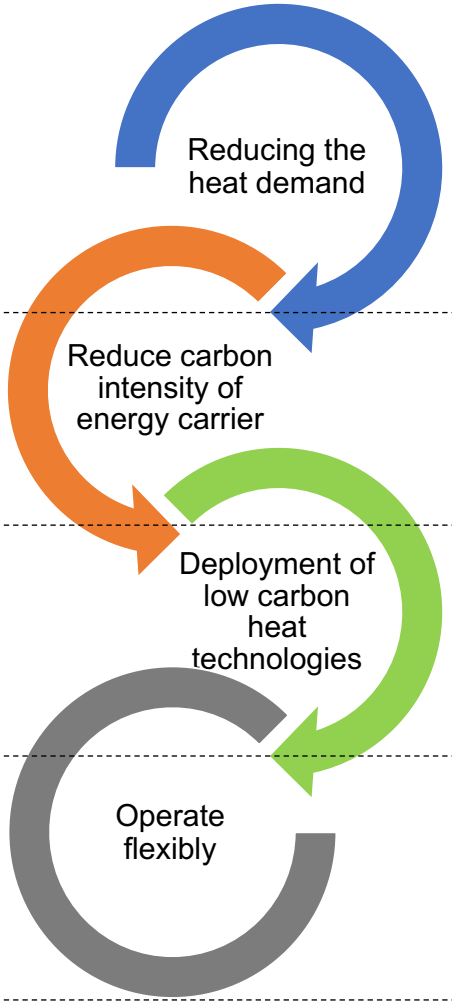
Principle 4: Design tariffs to reward flexibility





4 Heat policy

Heat policy



- Building codes, appliance standards and labelling
- Energy Efficiency Obligations and financial support schemes

- Carbon intensity standards

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- Energy Efficiency Obligations and financial support schemes

- Electricity pricing

5 Conclusion

Conclusions

- Decarbonising heat is critical for meeting climate and clean air goals
- Electrification is a central pillar
- Energy efficiency is key to minimize costs and build in thermal storage
- Flexible operation of heat pumps is possible and can be incentivized through tariffs
- Whole range of policy instruments needed to accelerate replacement rates

About RAP

The Regulatory Assistance Project (RAP)® is an independent, non-partisan, non-governmental organization dedicated to accelerating the transition to a clean, reliable, and efficient energy future.

Learn more about our work at raponline.org

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