

Delivering the Future: Is the energy system ready for decarbonised HGVs?



Lowri Williams

Practice Manager - Transport

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Is the energy system ready for zero emission HGVs at scale?

Not yet...

About Energy Systems Catapult

Mission: Accelerate Net Zero energy innovation



We help energy innovators launch new products and services



Independent, not-for-profit



Based in Birmingham, 250+ experts



Established by Innovate UK



SME support



Consumer insight and proposition design



Whole system modelling



Delivering trials and demonstrations



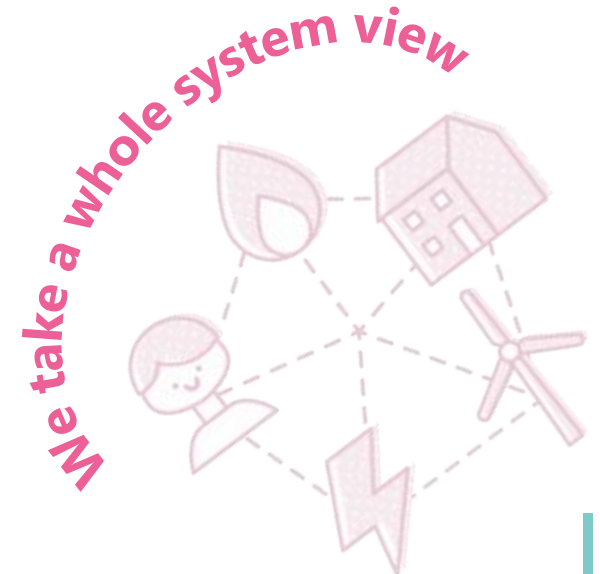
System and clean technology engineering



Digital and data expertise



Markets, policy and regulation





eFREIGHT 2030, lead by Voltempo, brings together the charging sector, vehicle OEMs, HGV fleets and Energy Systems Catapult.

Aiming to:

- Deliver eHGVs and charging infrastructure across the consortium's fleets and depots to support the goals of the ZEHID programme.
- Explore, understand and build an evidence base for the uptake of zero emissions HGVs beyond the ZEHID trials.

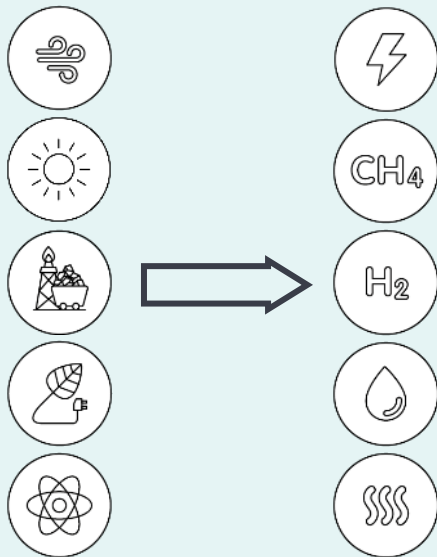
Energy Systems Catapult's scope includes exploring:

- Business models and TCO tools for eHGVs, private and public charging infrastructure to support the transition
- Whole systems stakeholder engagement and research
- Site-base system modelling to explore electricity network reinforcement mitigation
- Electricity network challenges and opportunities engagement and research
- Long term, national HGV scenario modelling to understand whole system impacts of the decarbonisation of HGVs out to 2050.

What is the energy system and how is it used?

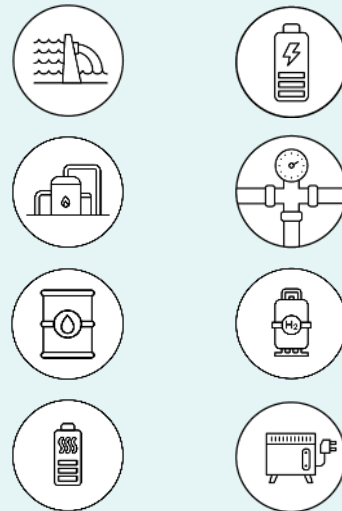
Production

Producing useful energy from available resources



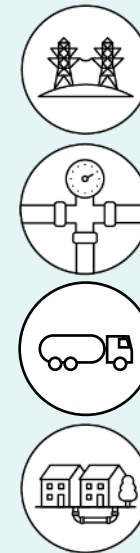
Storage

*Holding useful energy until **when** it is needed*



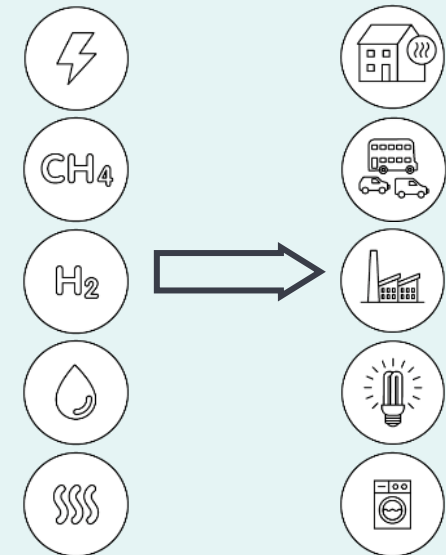
Distribution

*Moving useful energy to **where** it is needed*

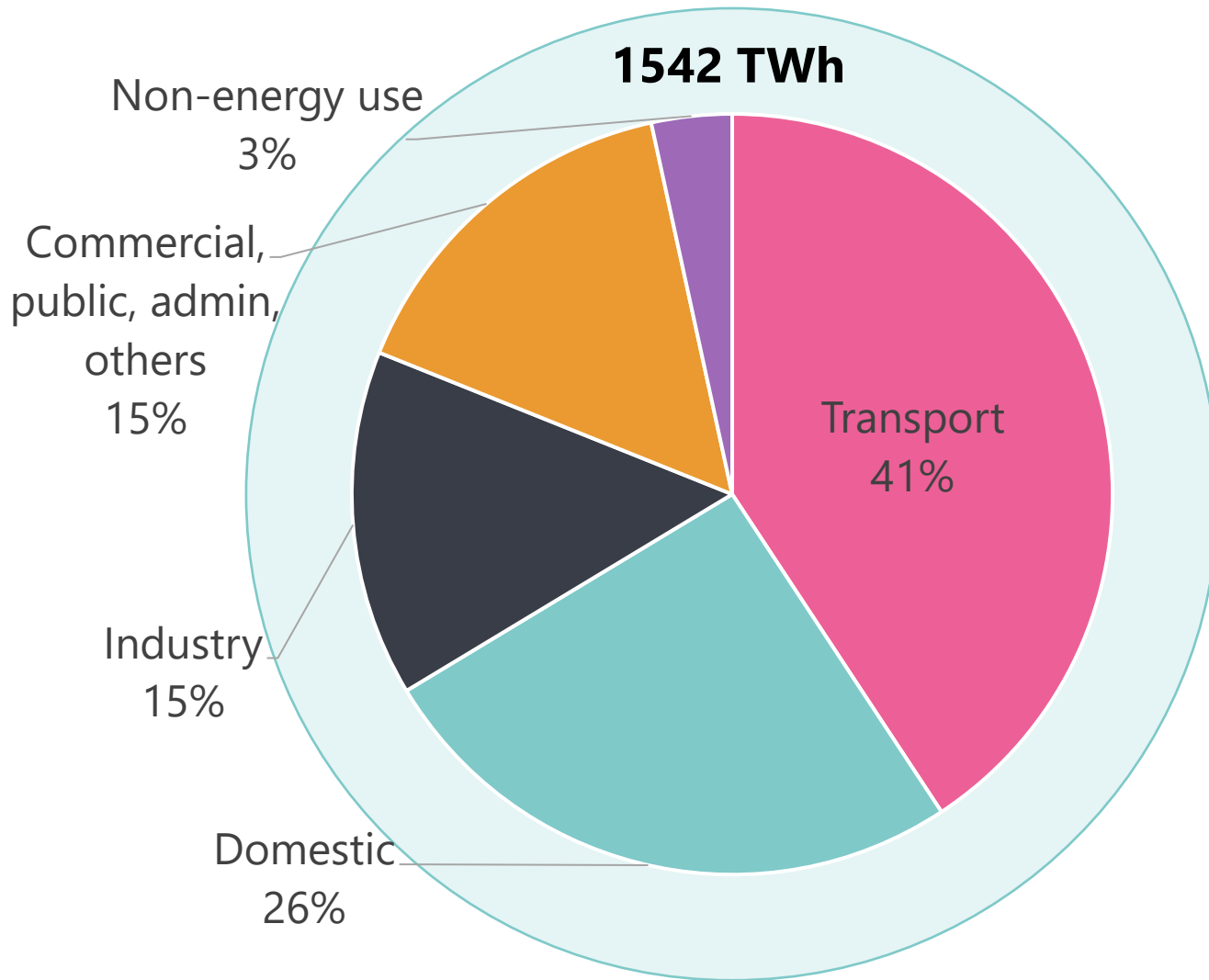


End use

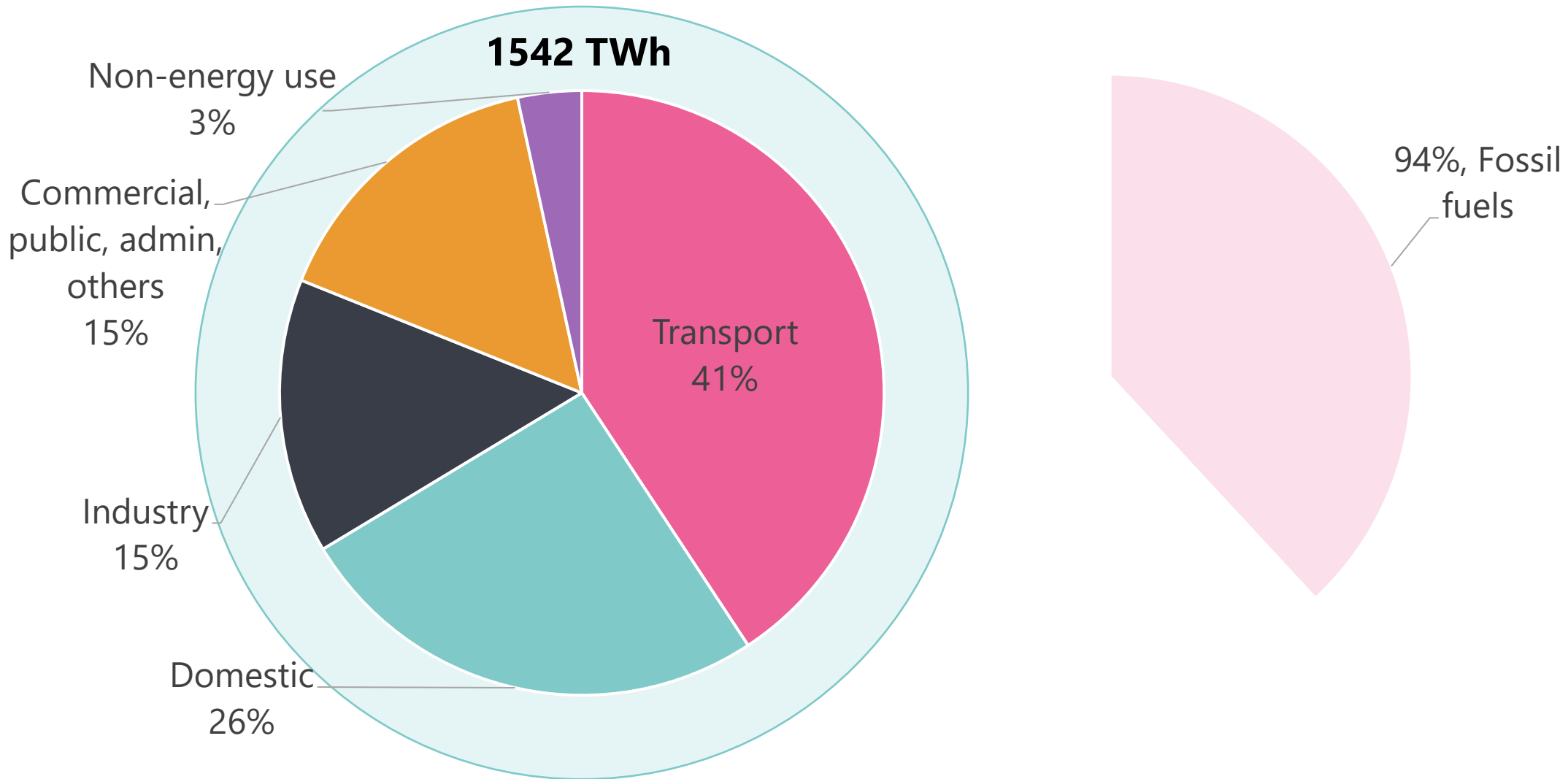
Turning useful energy into useful outputs



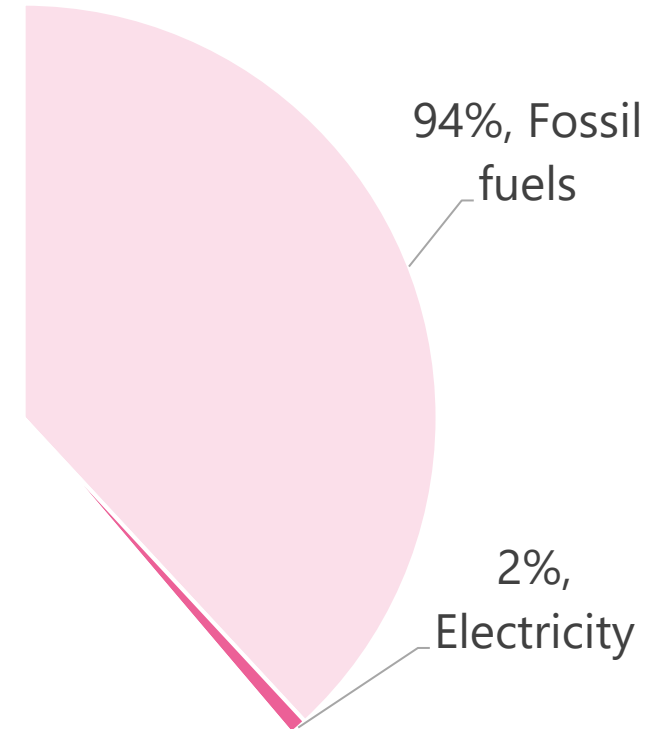
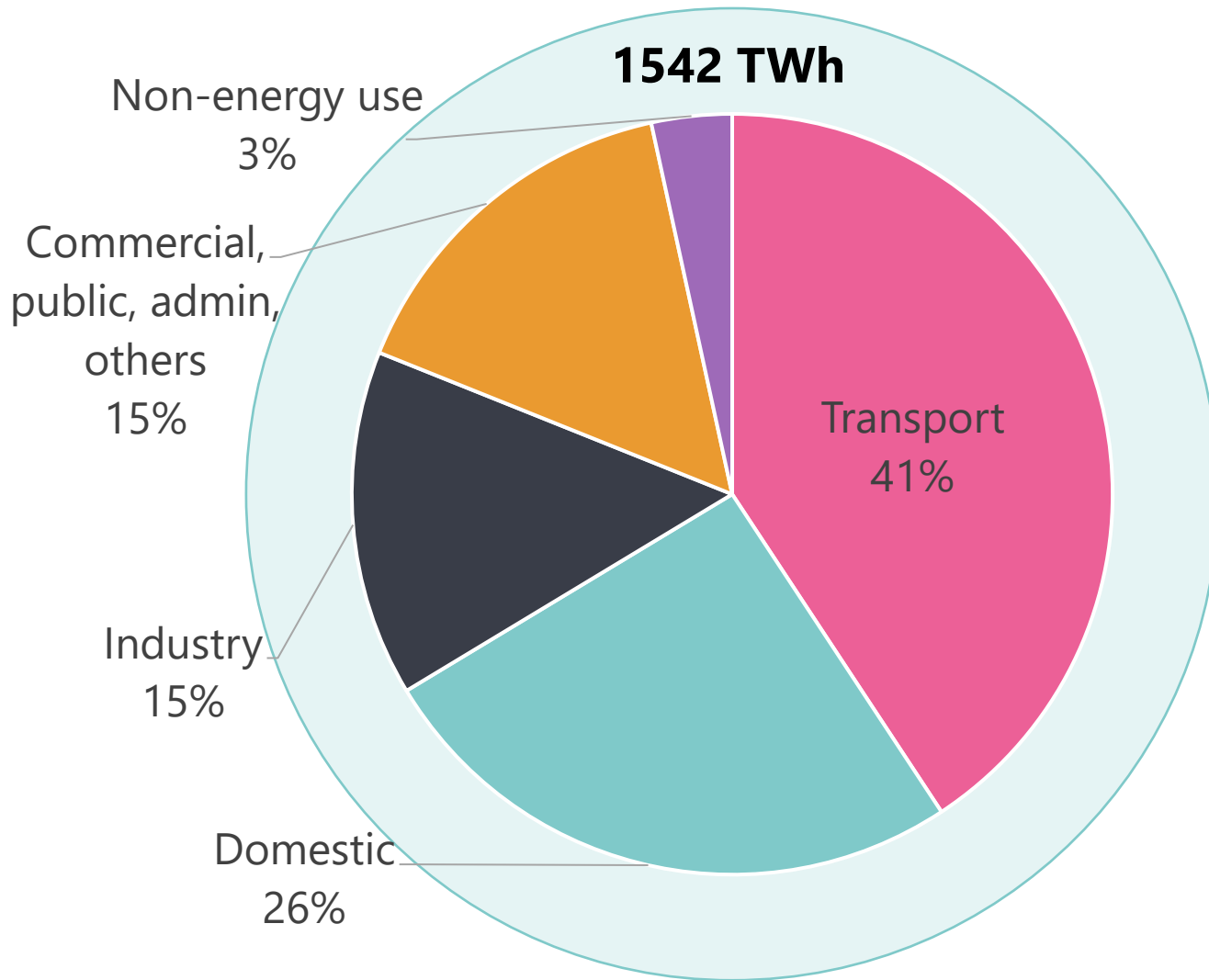
Transport represents the largest UK energy demand



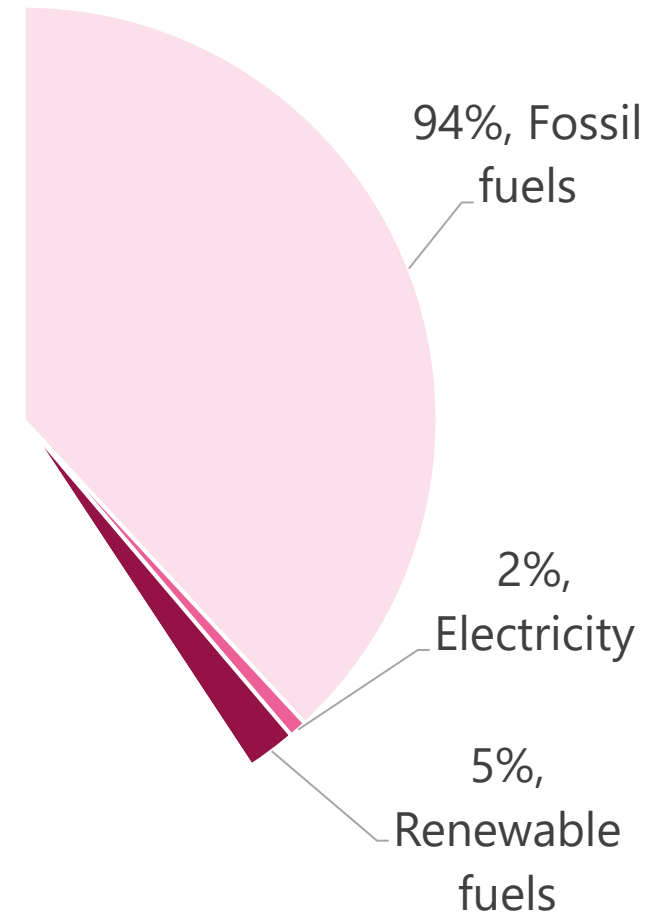
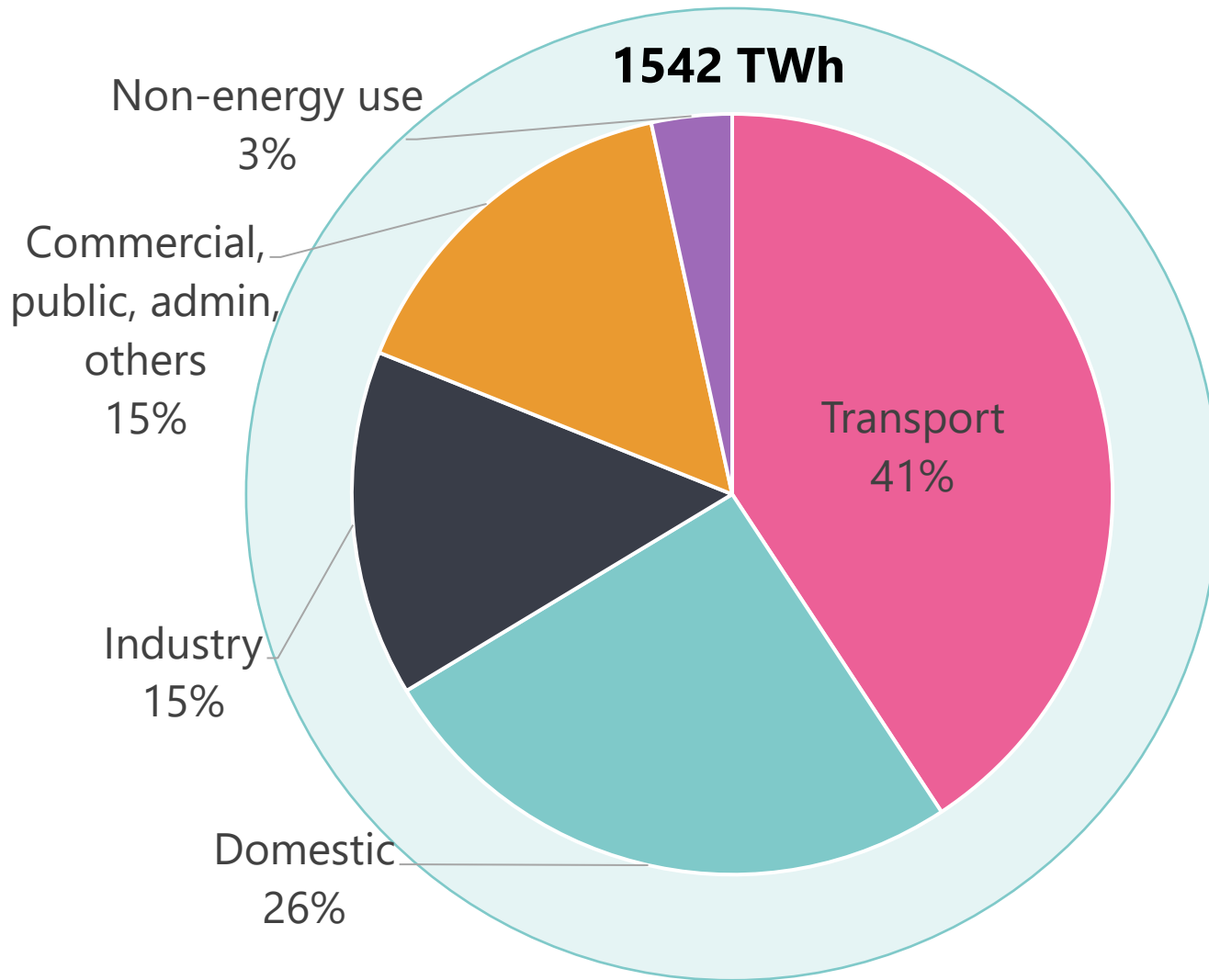
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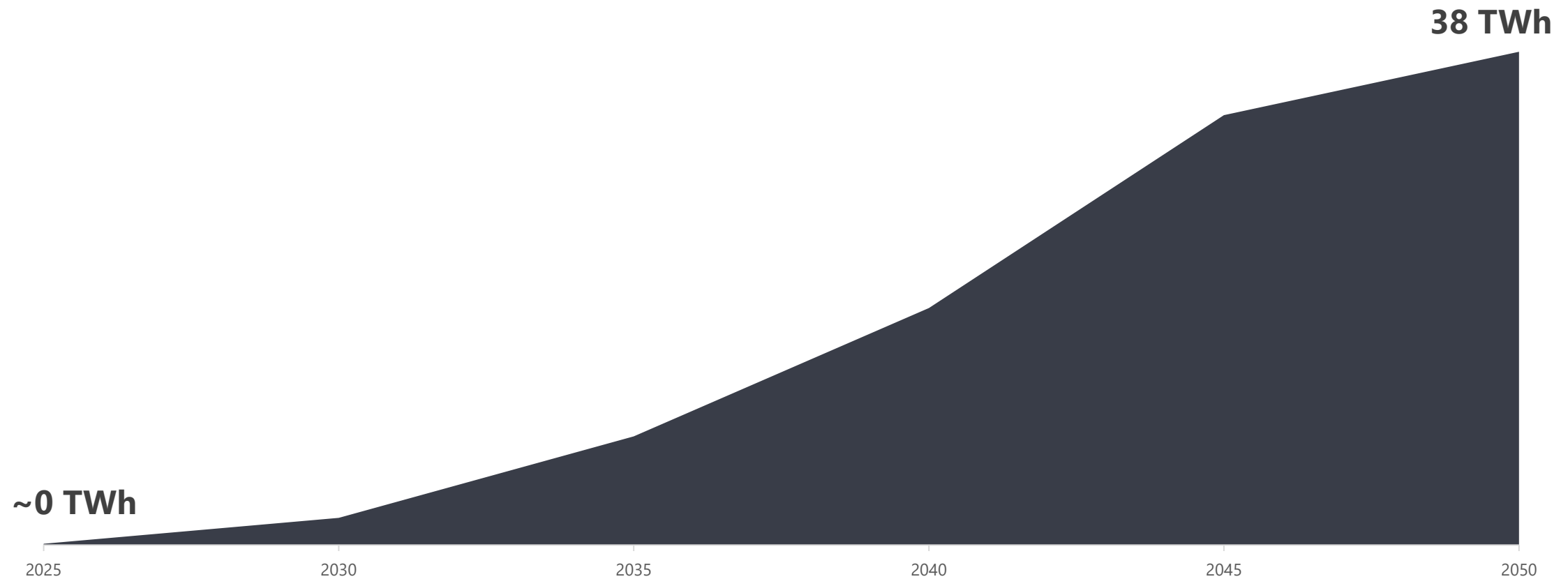
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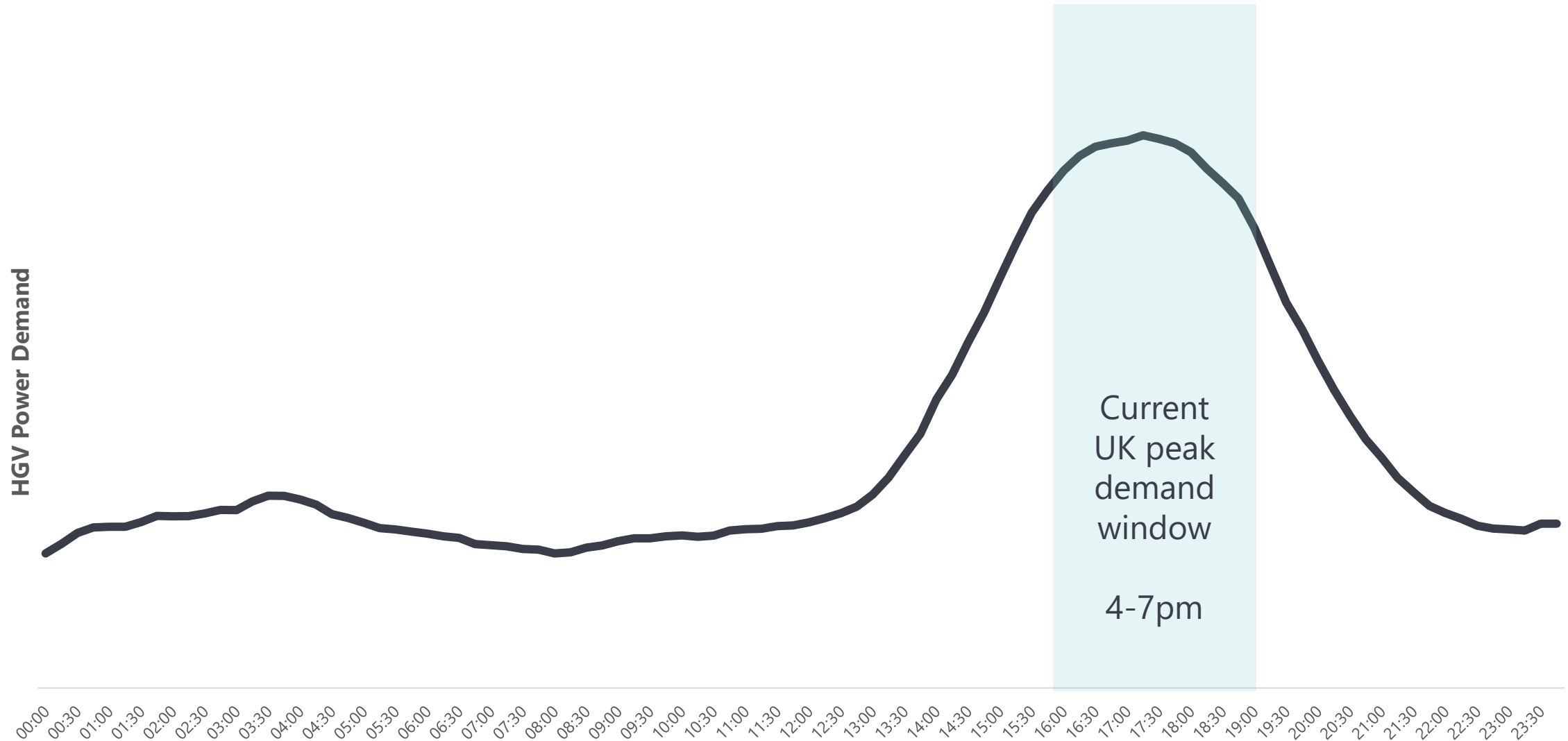


Electricity demand from HGVs looks set to grow



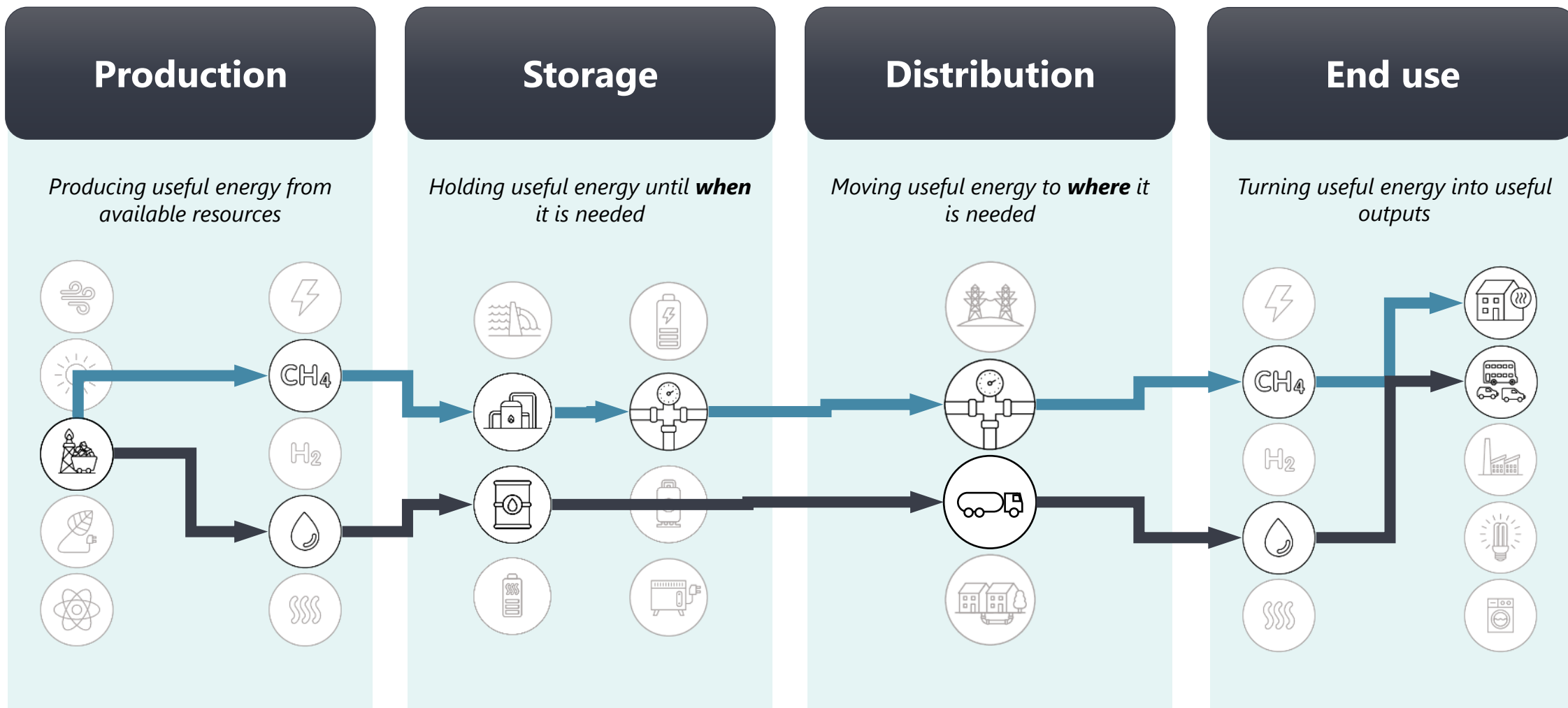
Annual electricity demand from eHGVs from the Catapult's nation long term modelling's Core Scenario.
This scenario does not meet the CCC's 7th Carbon Budget.

Potential that the HGV peak demand is at the same time as the current whole system peak

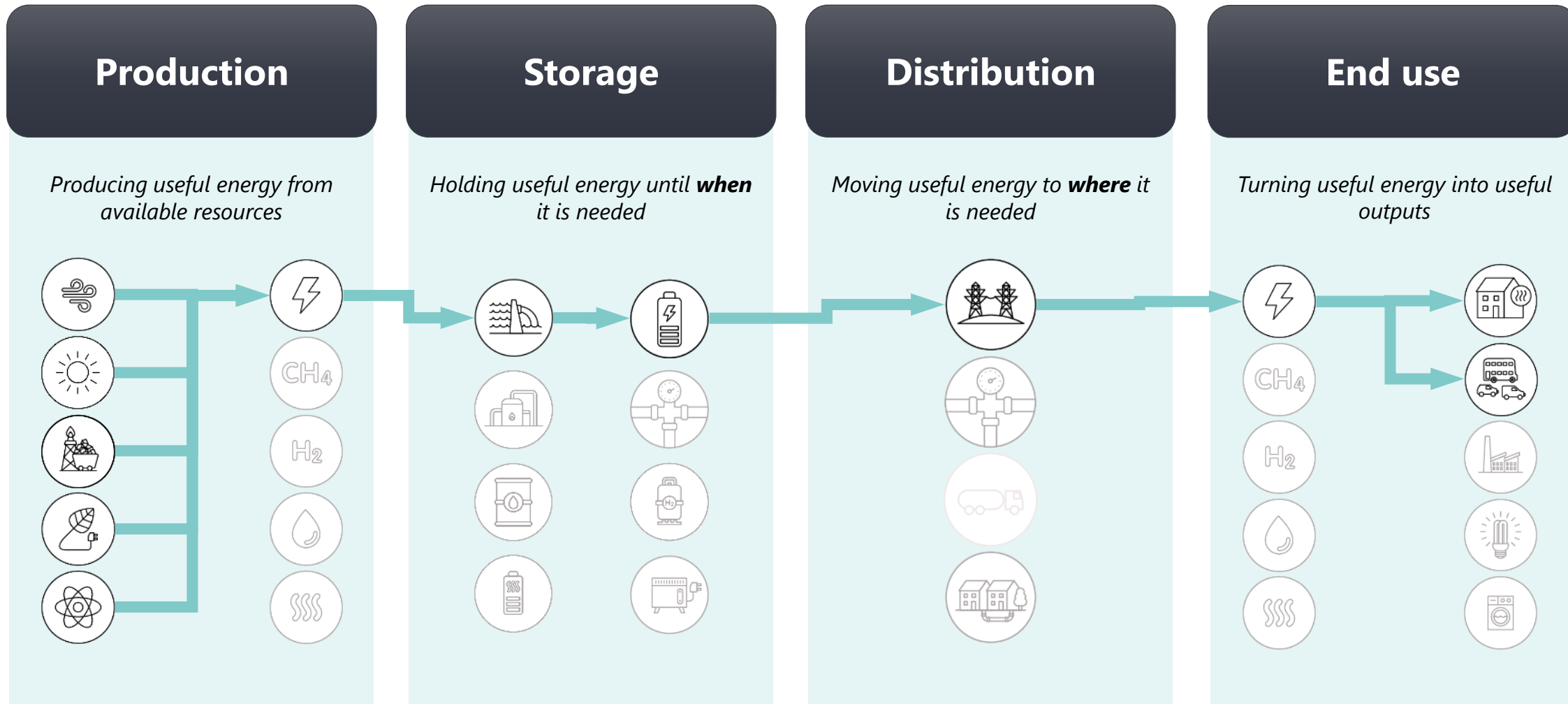


Daily profile of power demand from eHGVs from the Catapult's nation long term modelling's Core Scenario.
This scenario does not meet the CCC's 7th Carbon Budget.

HGVs aren't the only end use where electrification is an important step for decarbonisation



HGVs aren't the only end use where electrification is an important step for decarbonisation



The electricity system is already taking action to meet the challenge of growing demand

nationalgrid



Scottish & Southern
Electricity Networks

NORTHERN
POWERGRID



ofgem

nationalgrid

Electricity
Distribution



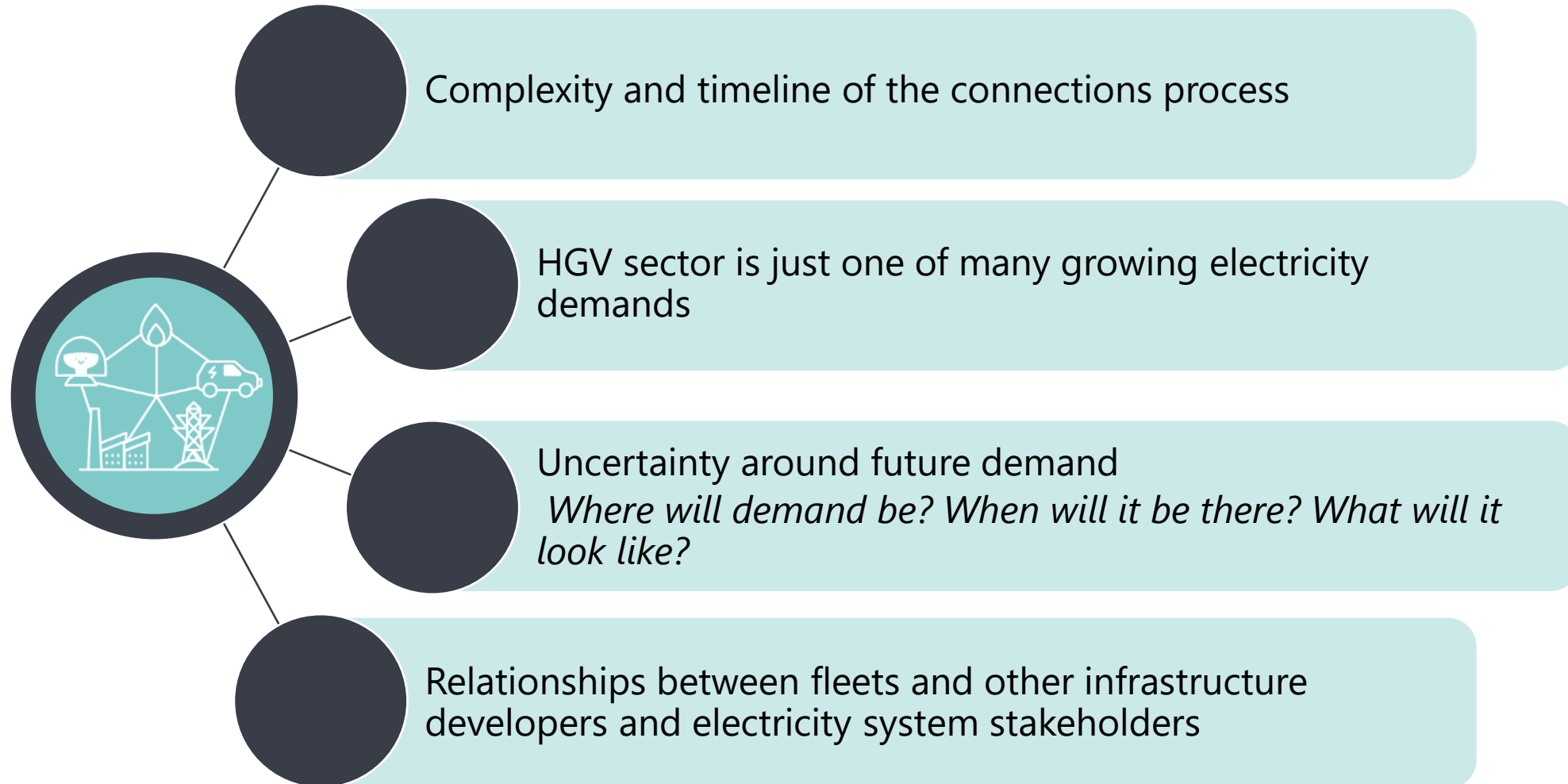
Department for
Energy Security
& Net Zero

ena
energy**networks**
association

The logo icon for SP Energy Networks, featuring three stylized leaves in green, blue, and yellow.
SP ENERGY
NETWORKS

UK
Power
Networks
Delivering your electricity

What is stopping the energy system being ready for decarbonised HGVs?



Want to know more?

eFREIGHT 2030 publications



Scan me!



Innovate
UK



Funded by
UK Government



Upcoming deliverables:

- Site-based network challenges, solutions and actions report
- eFREIGHT 2030 Networks Day insights brief
- National system impacts of decarbonised road freight report
- National system impacts modelling dashboard
- Business models to accelerate and support eHGV uptake and infrastructure deployment report
- eHGV financial assessment tool
- HGV decarbonisation whole system stakeholder engagement analysis report