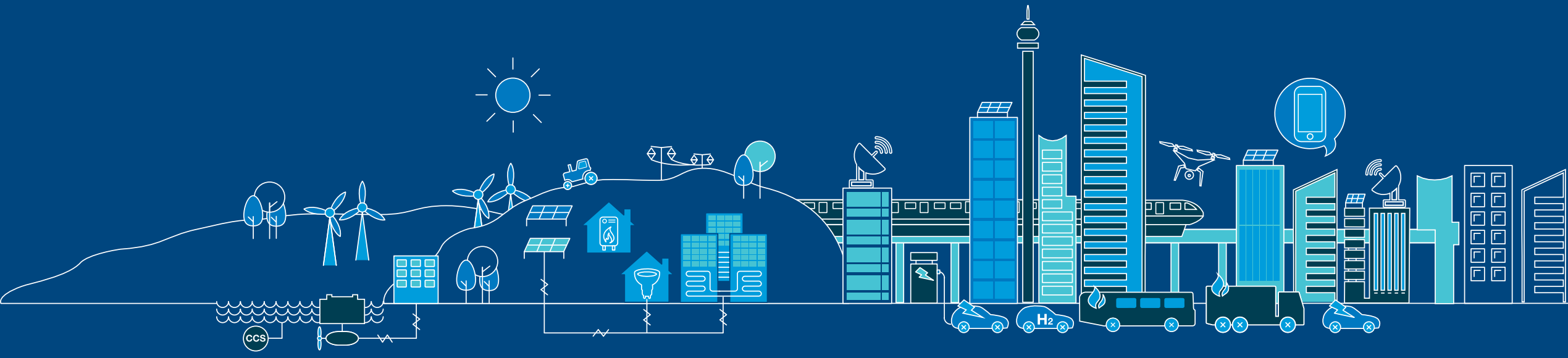




Guest speaker

Dr Alastair Martin

Founder and Chief Strategy Officer, Flexitricity



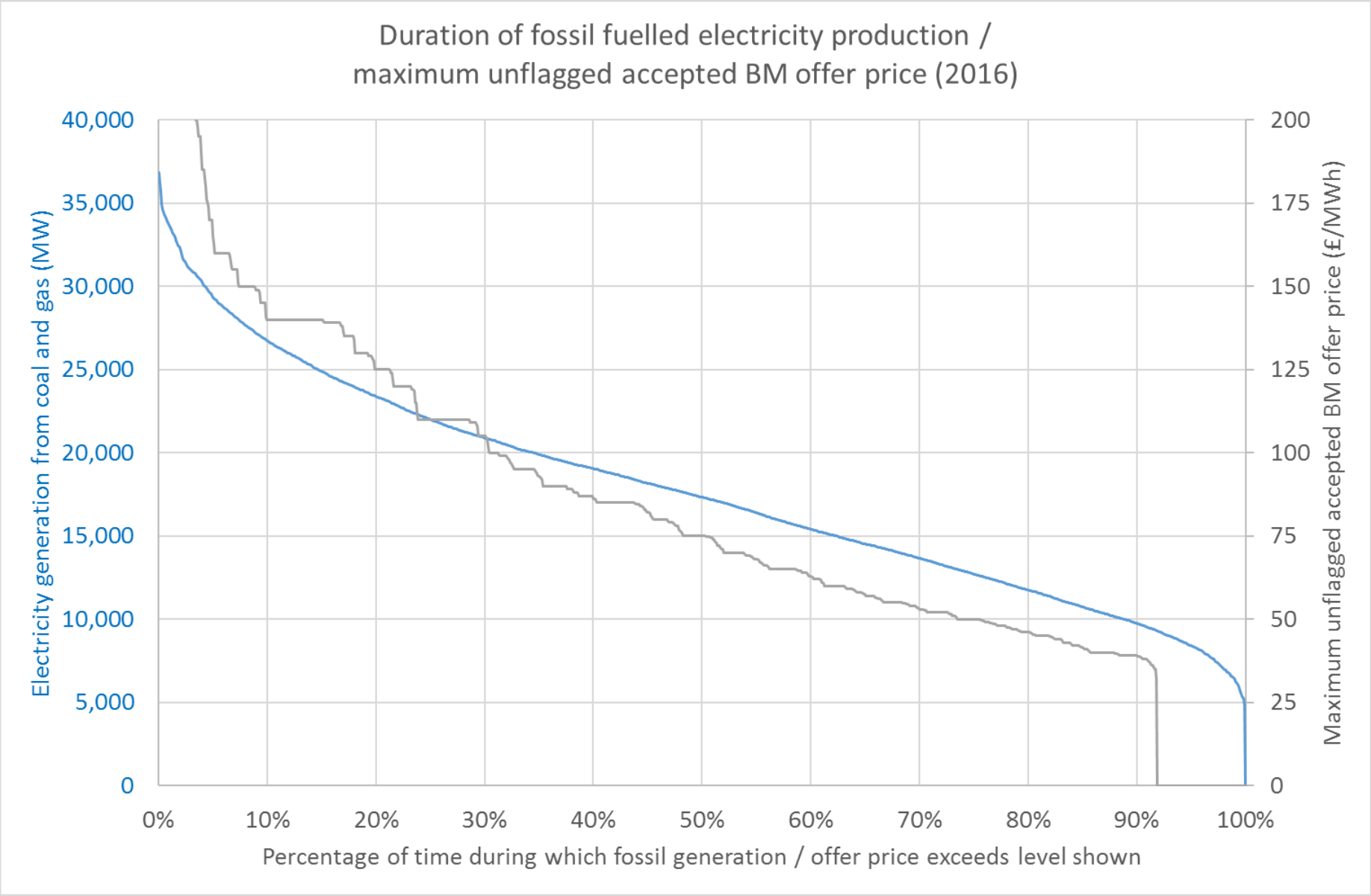
The business of flexibility

Industry's stake in the future of electricity

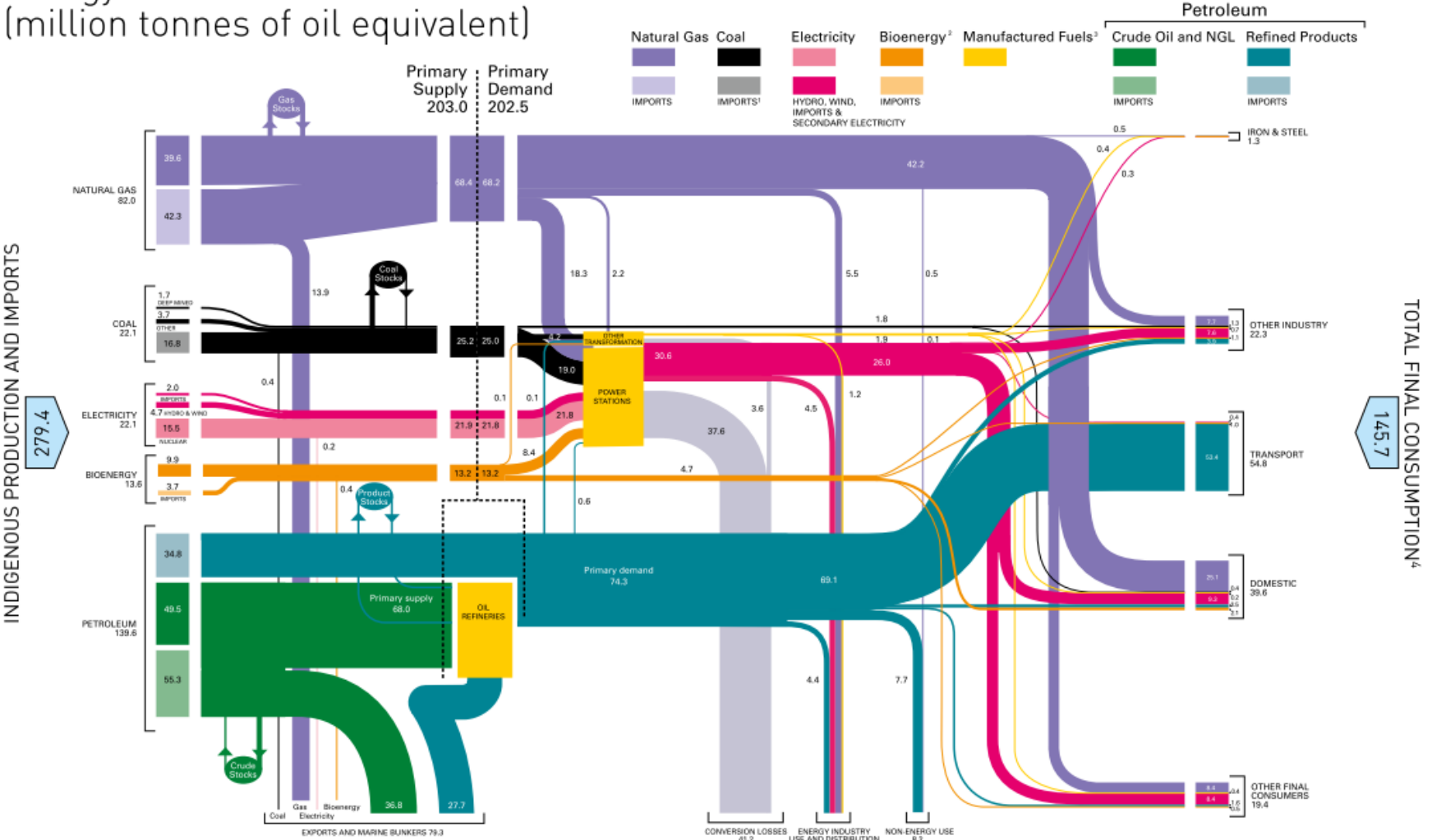
Demand Response.
Delivered.



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Energy Flow Chart 2015 (million tonnes of oil equivalent)



FOOTNOTES:
 1. Coal imports and exports include manufactured fuels.
 2. Bioenergy is renewable energy made from material of recent biological origin derived from plant or animal matter, known as biomass.
 3. Includes heat sold.
 4. Includes non-energy uses.
 This flowchart has been produced using the style of balance and figures in the 2016 Digest of UK Energy Statistics, Table 1.1.

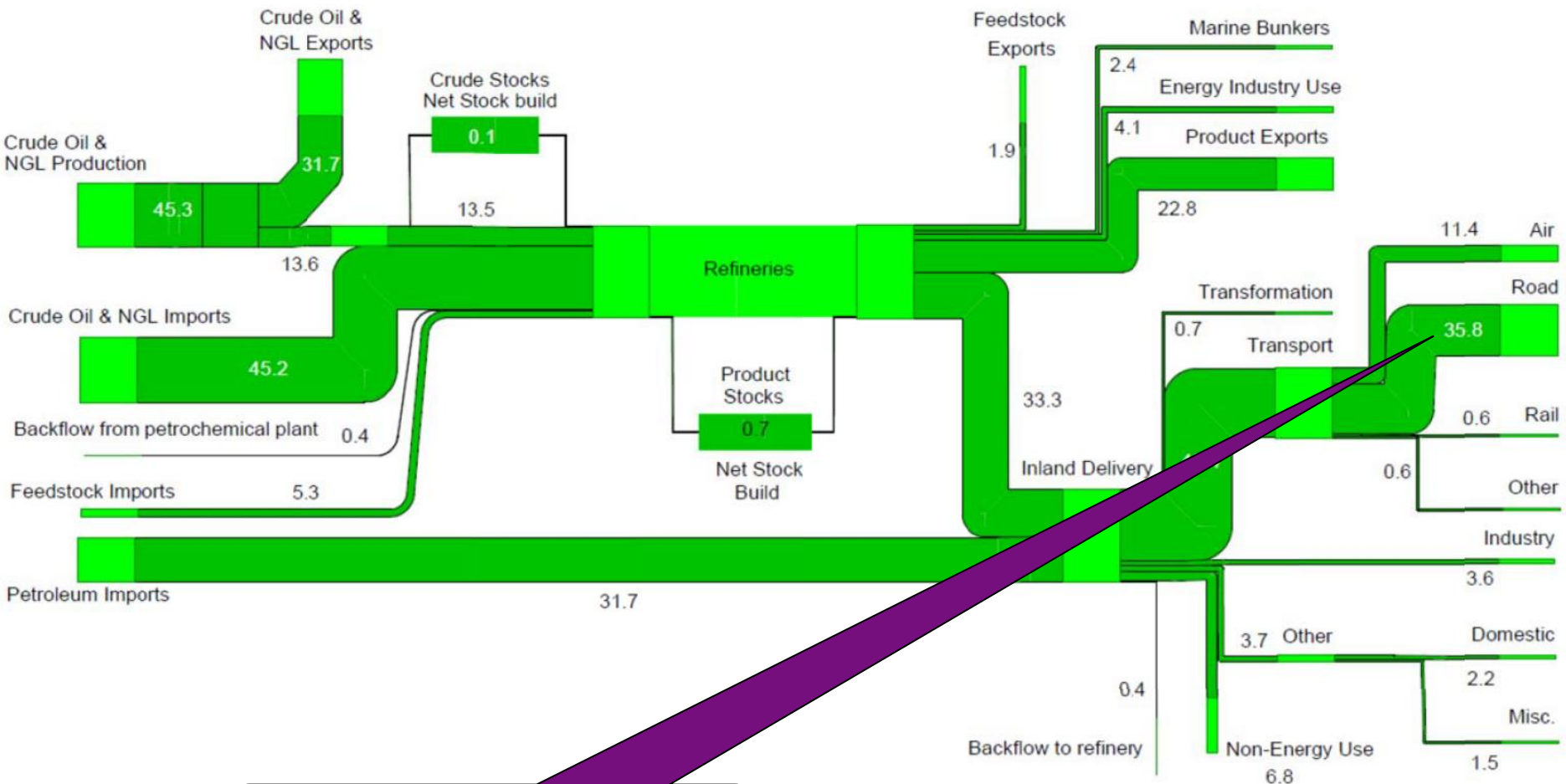


Smoke and steam

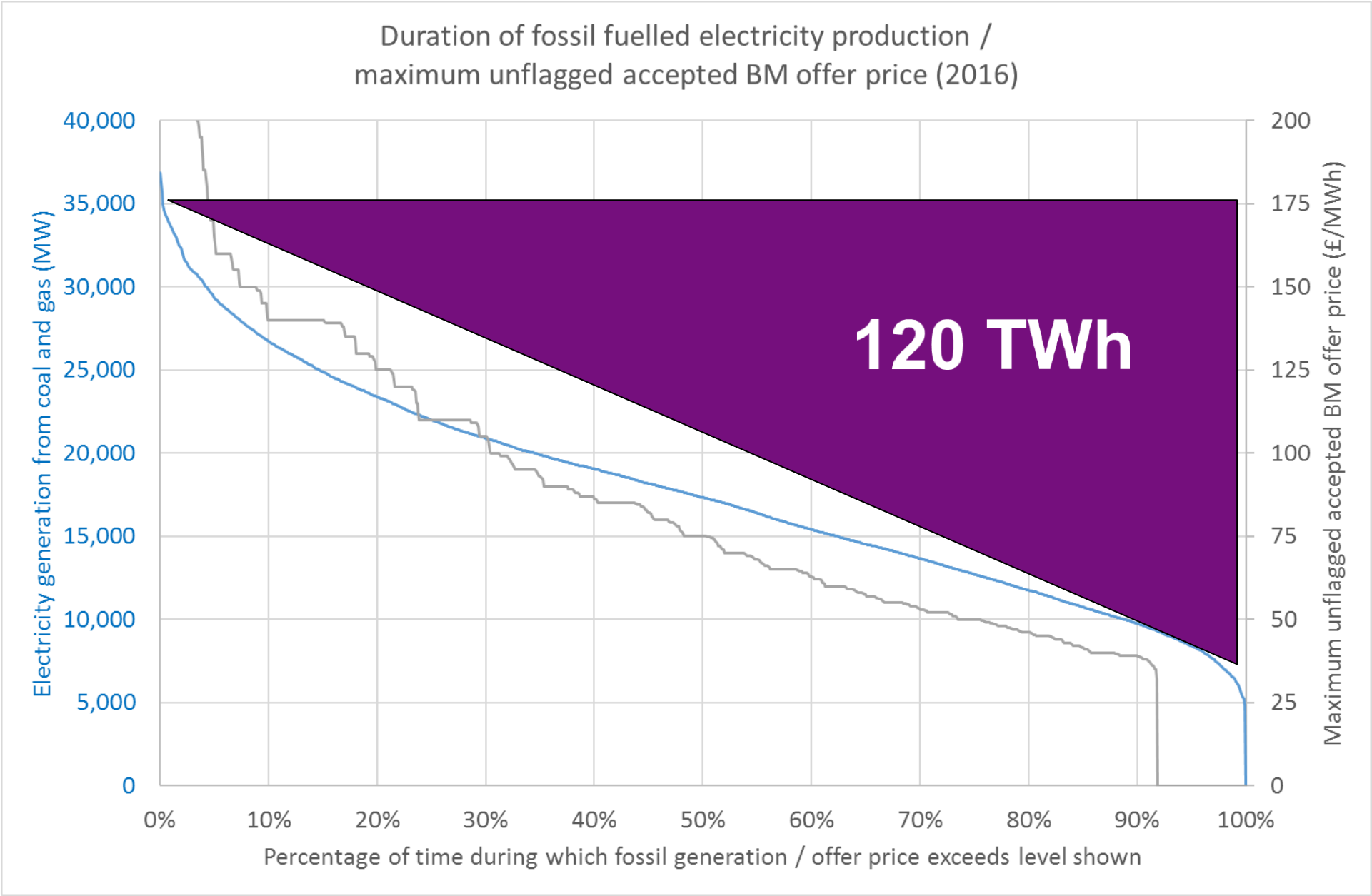


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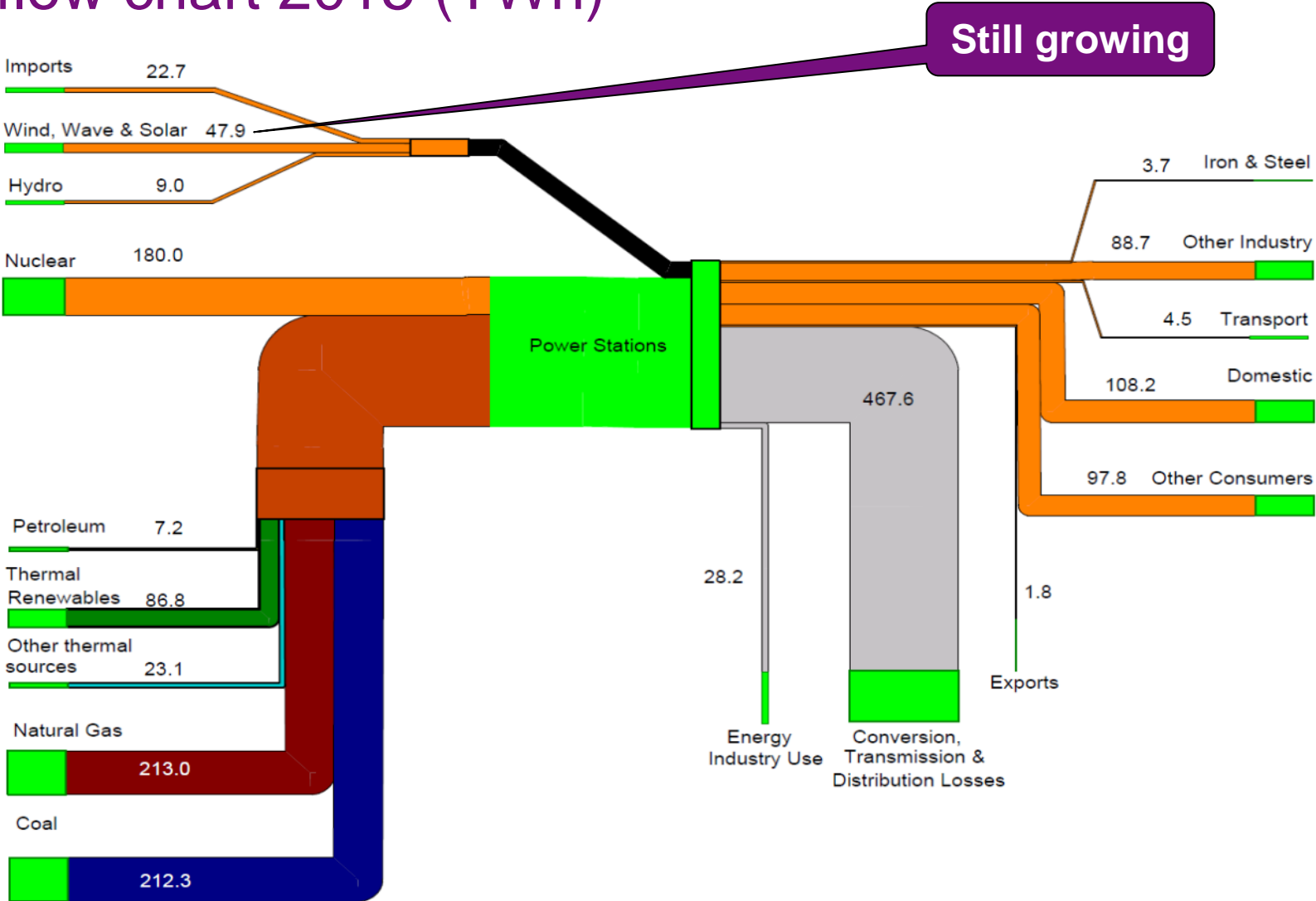
Petroleum flow chart 2015 (mtoe)



As oil: 416 TWh
As electricity: ~120 TWh



Electricity flow chart 2015 (TWh)



Flexibility and efficiency



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The market will provide... what?



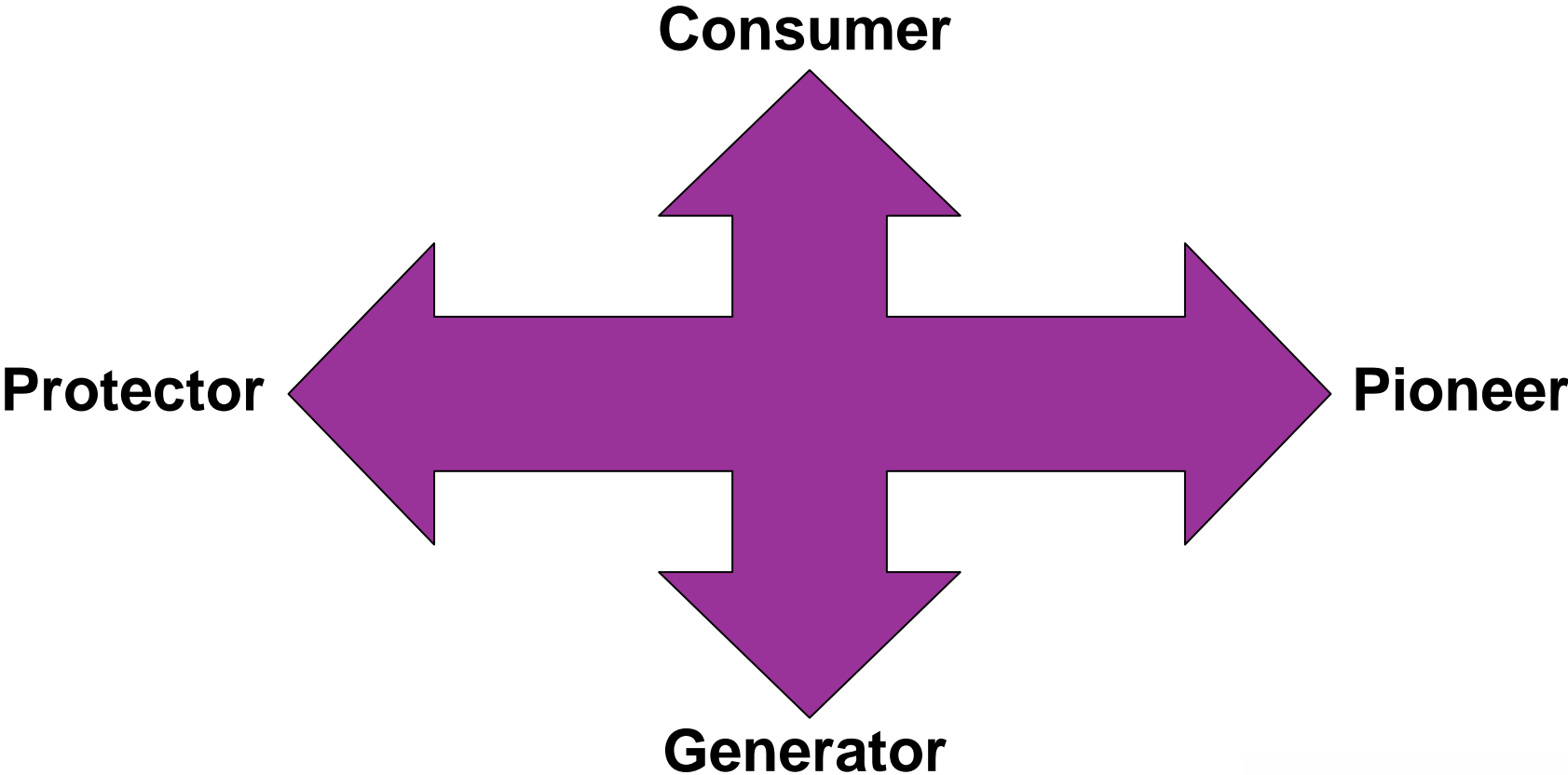
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Flexible, symbiotic energy use



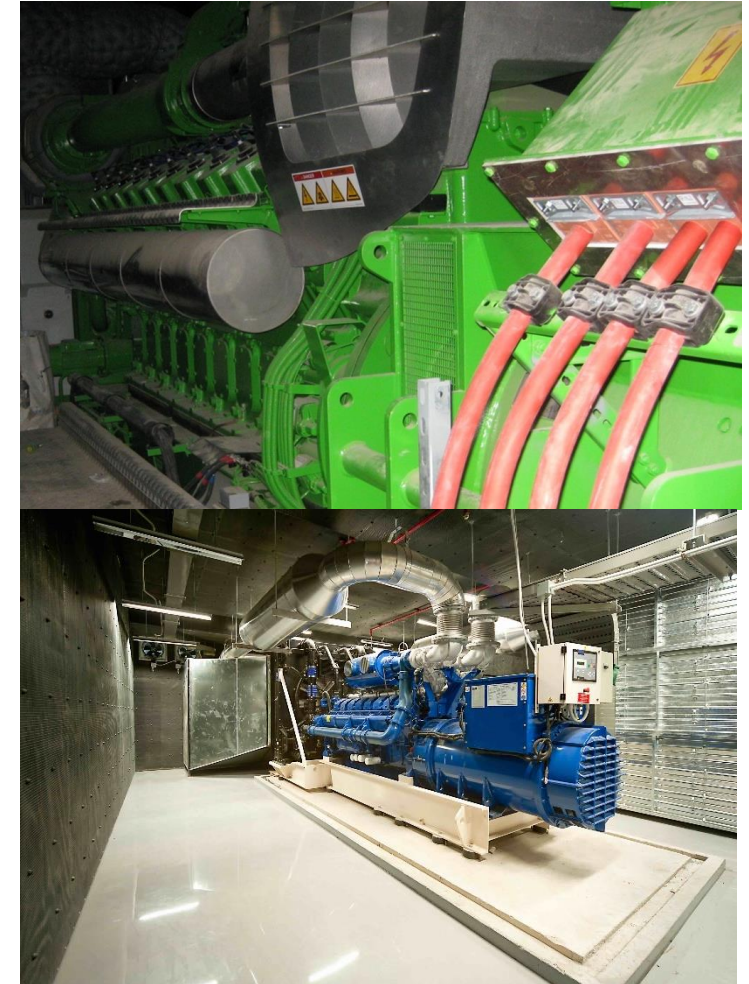
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Industrial and commercial customers



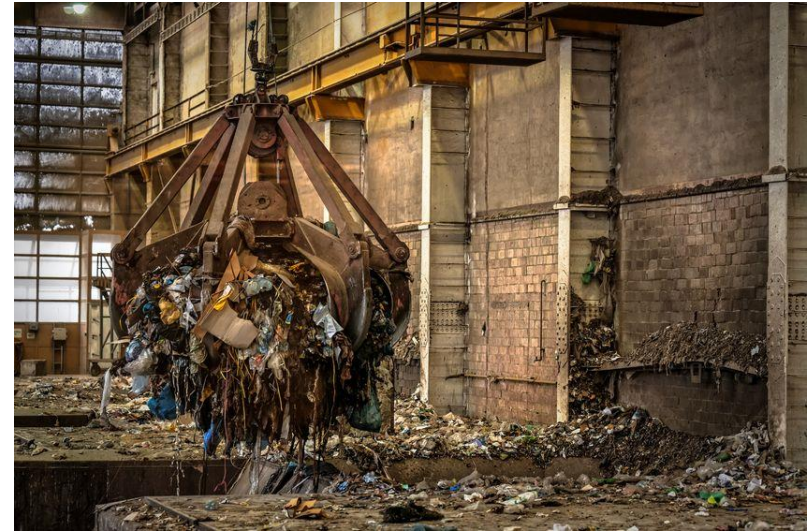
Small generator: hospital energy centre

- Protector
 - Secure supply
 - Secure heat
 - Economic operation
- Buying/selling behaviour
 - Fixing prices ahead
 - Residual tolerance
- Flexibility
 - Capacity Market (CHP, standby)
 - Positive reserve (standby)
 - Negative reserve (CHP)



Small generator: waste-to-energy CHP

- Pioneer/protector
 - Maximise ROCs/FiTs
 - Maximise gate fee
 - Serve heat customers
- Buying/selling behaviour
 - Prompt, pass-through
- Flexibility
 - Day-ahead, intraday energy markets
 - Flexible STOR and DTU
 - Within operational limits



Energy user: large manufacturer

- Protector/pioneer
 - Production is king
 - Seeking competitive advantage
- Buying/selling behaviour
 - Active on all timescales
 - Consistent volumes
- Flexibility
 - Capacity Market
 - Reserve and response
 - Energy market opportunities



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Energy user: multiple small sites

- Pioneer, but don't tell the boss!
 - Comfort is king
 - Tight margins
 - Seeking saving opportunities
 - Efficiency comes first
- Buying behaviour
 - Data-driven
- Flexibility
 - Profiled
 - Large but disseminated
 - Woefully underexploited



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Breaking through

- Customers are not power stations
 - Don't just photocopy the power station rule book
- Value what the customers have
 - Profiled, predictable availability
 - Demand correlates with demand!
- Business-as-usual
 - Trials are not enough
- Market access
- Logical market



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Energytopia

- Community energy
 - Engagement
 - Heat/coolth/transport/electricity symbiosis
 - Optimise local resources
- Smart
 - EV charging should be 99% smart from now on
 - Let domestic customers into the market
- Invest in the right things
 - Efficiency first
 - Renewables second
 - Demand response third
 - New build fourth



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Flexitricity overview

From our 24-hour control room in Edinburgh, Flexitricity runs the most complete set of demand response services in the industry.

We have the UK's largest number of connected industrial and commercial customers, the most diverse customer base, and the broadest portfolio of services. Flexitricity brings revenue to British businesses, increase asset reliability, reduce national CO₂ emissions and helps to secure energy supplies.

We are Britain's demand-response leader.

www.flexitricity.com



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