



The role of process optimization on the road to net zero

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Confidential

Overview

- Introduction to Verco
- A question of efficiency
- How do we prioritise improvements?
- Successful process optimisation



Introduction to Verco

**Our vision is to provide solutions
for a zero carbon world**

Employee owned , with a 30 year track record



Our services support the transition to net zero



Expert, independent advice

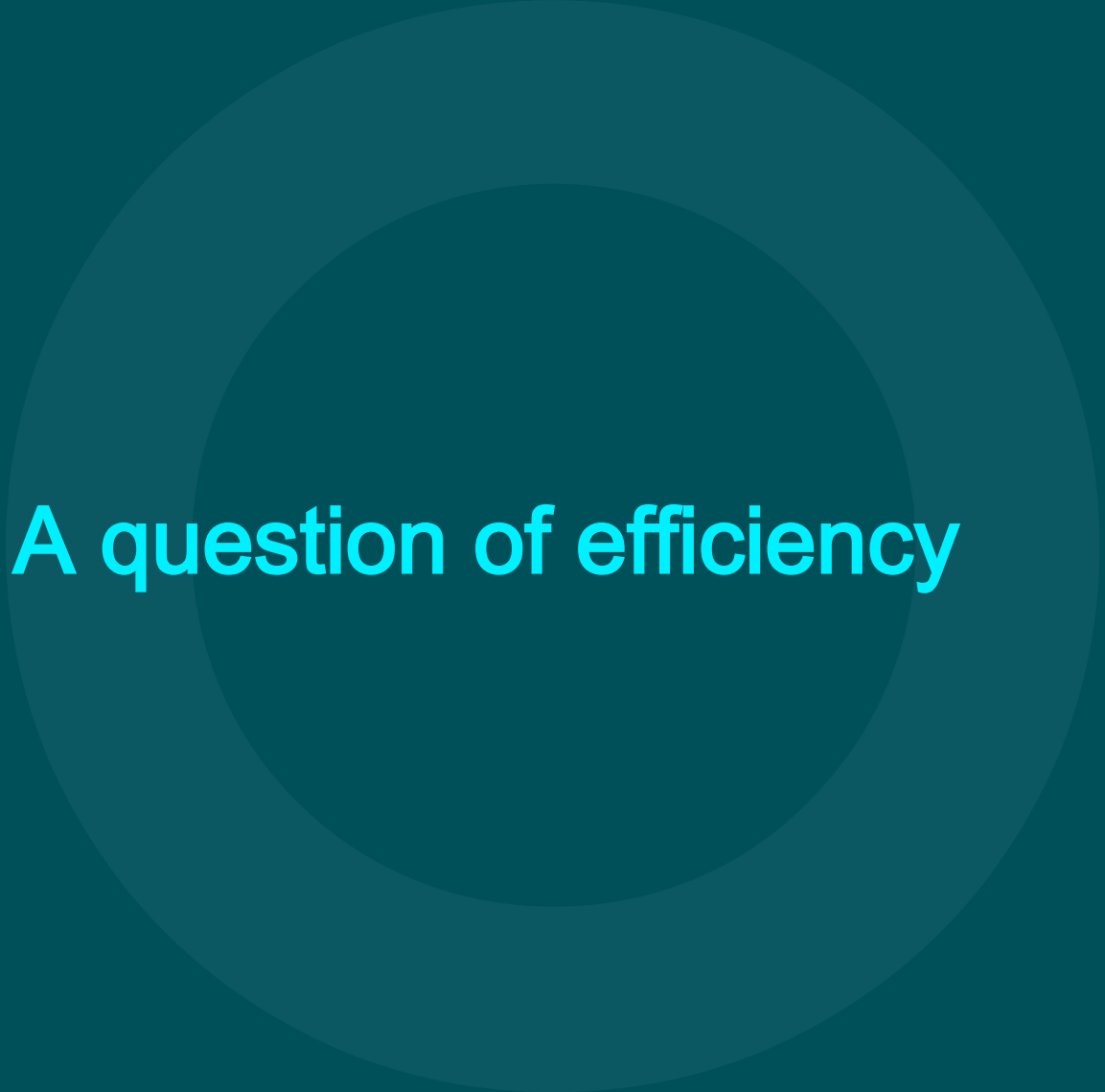
- Understanding climate risks
- Setting of ambitious targets
- Developing net zero plans

Support services and implementation

- Bottom up carbon / energy delivery plans
- Development and delivery of projects
- Data solutions to optimise efficiency

Industry leading data and reporting

- Custom Scope 3 reporting solutions
- Tracking performance and providing insights
- Meeting requirements of voluntary and mandatory reporting



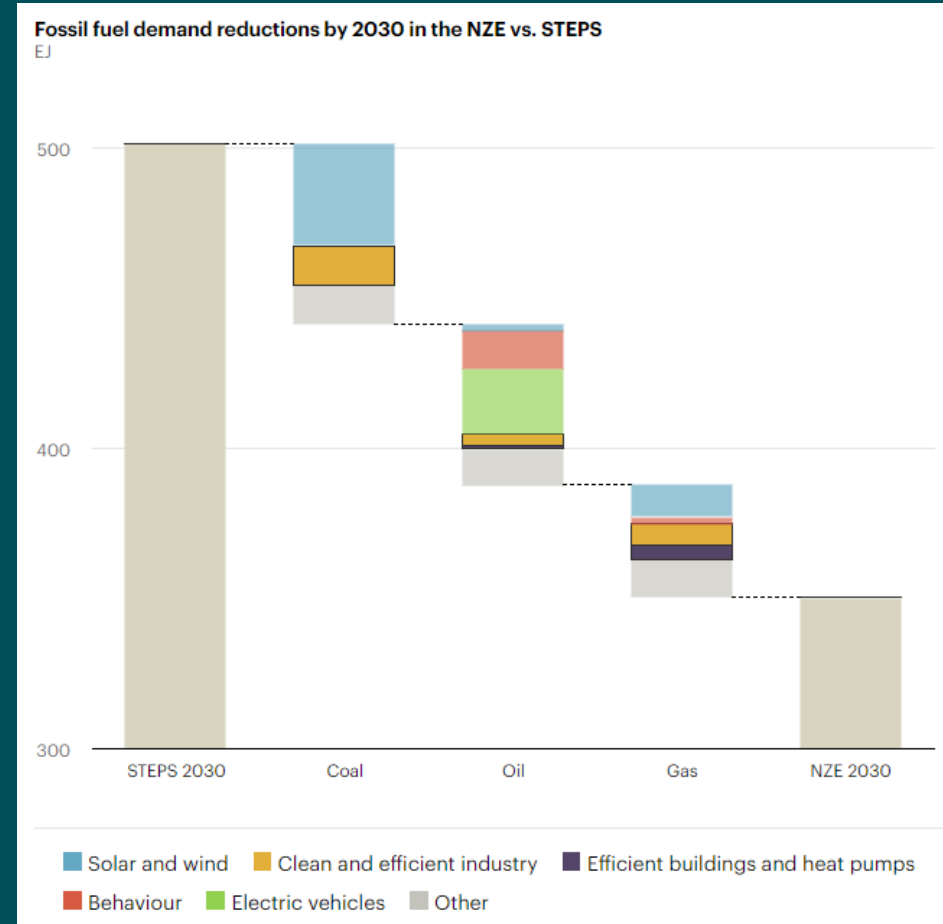
A question of efficiency

Energy efficiency in context

*“...in the NZE Scenario, energy intensity improvements to 2030 are **[must be]** nearly three times faster than over the past decade.”*

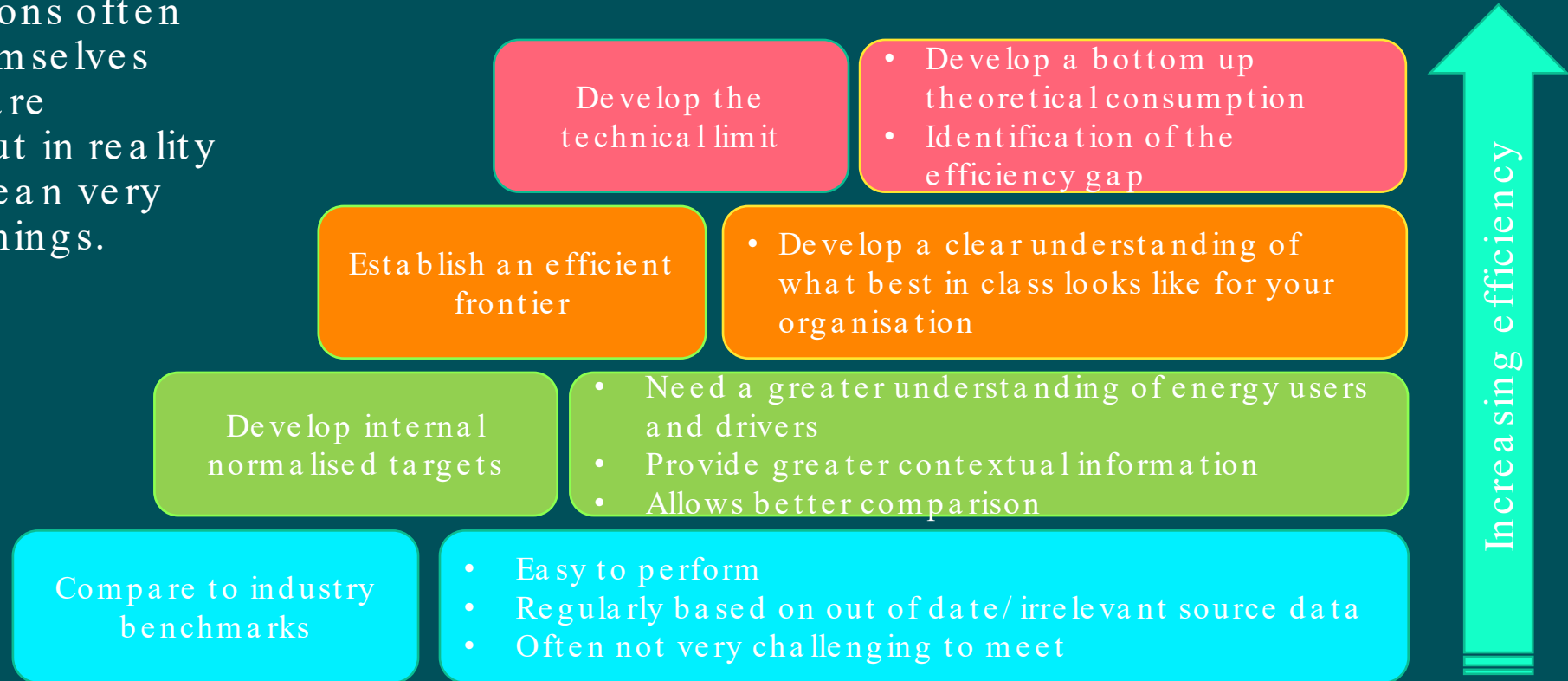
*“...in 2030, energy savings from energy efficiency, material efficiency, and behavioural change **[could]** amount to around 110 EJ, equivalent to the total final consumption of China today.”*

Source: IEA, Global energy outlook, October 2022
STEPS = Stated policies scenario
NZE = Net zero scenario



How can we be sure we are efficient?

Organisations often satisfy themselves that they are efficient but in reality this can mean very different things.



Where does the value come from?

Process optimisation is often overlooked and can be a “quick win”



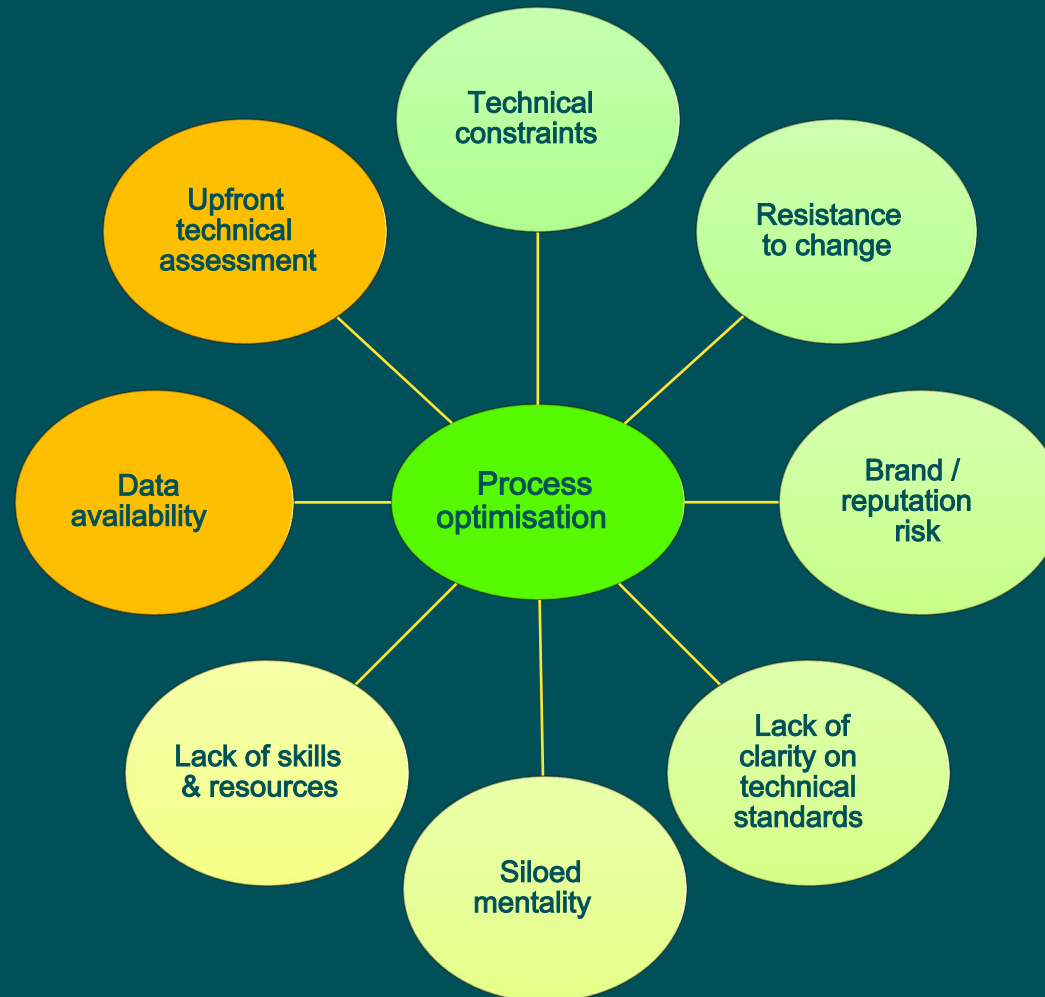
Process optimisation

“...the discipline of adjusting
optimise (make the best or most
of) some specified set of parameters
violating some constraint”

Source: Wikipedia



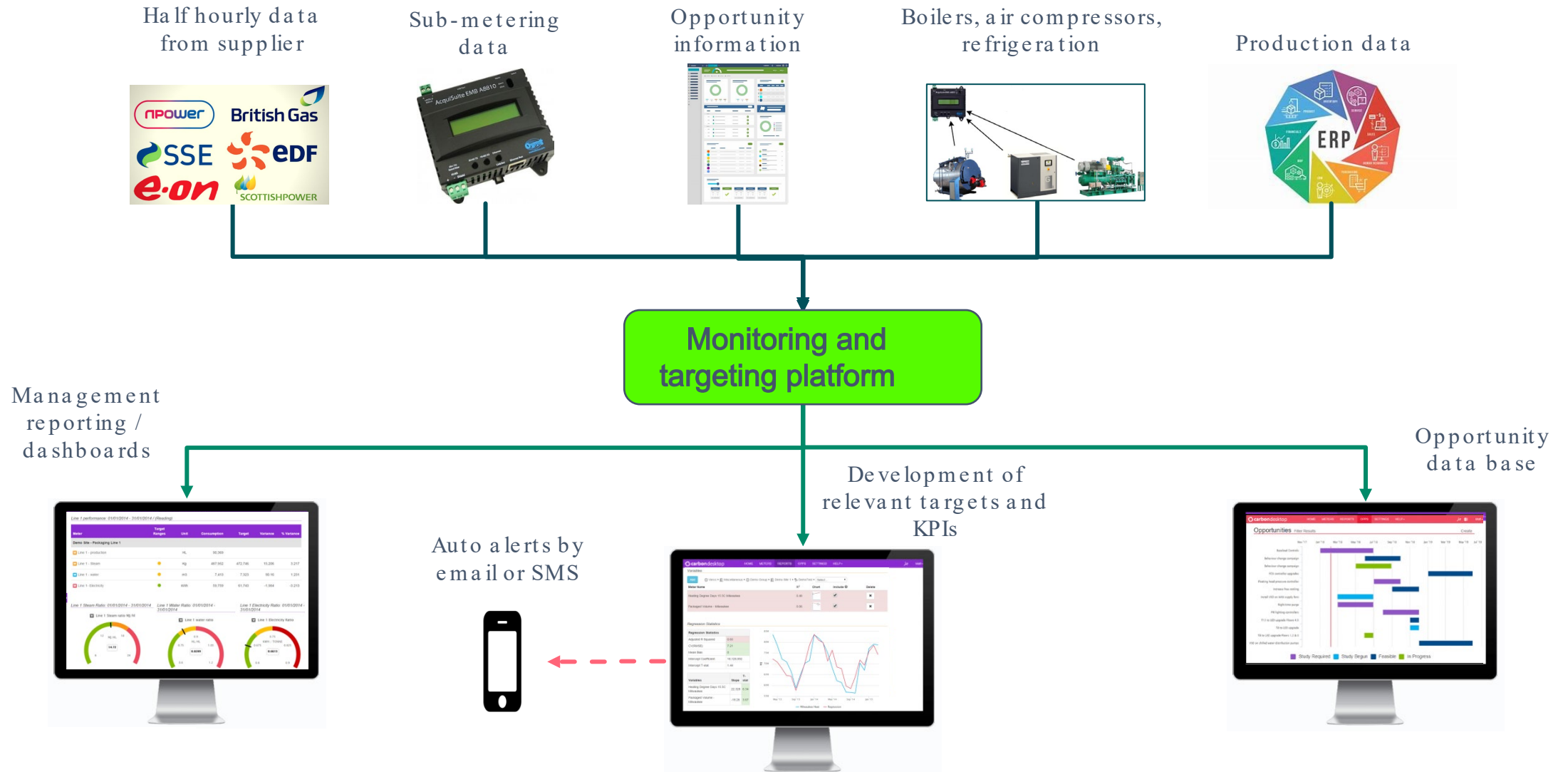
What is stopping us?



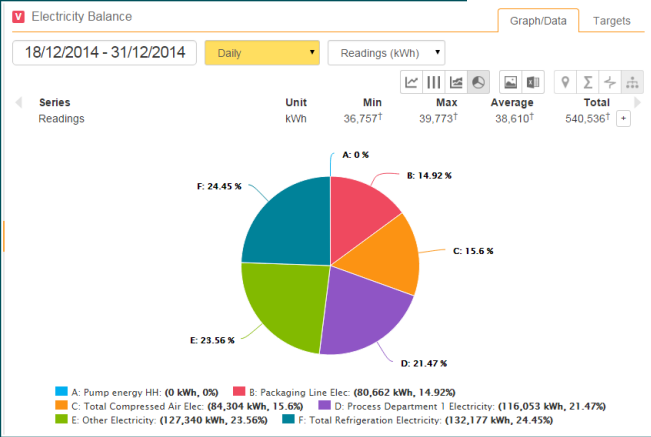
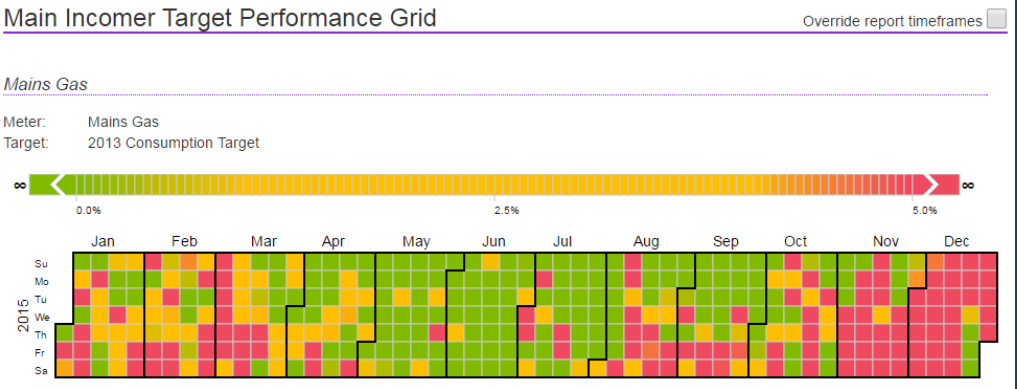
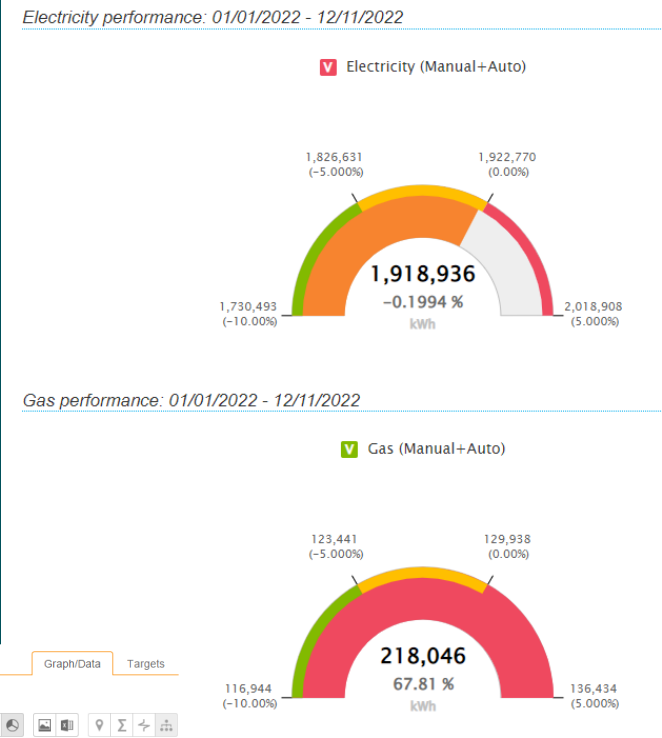
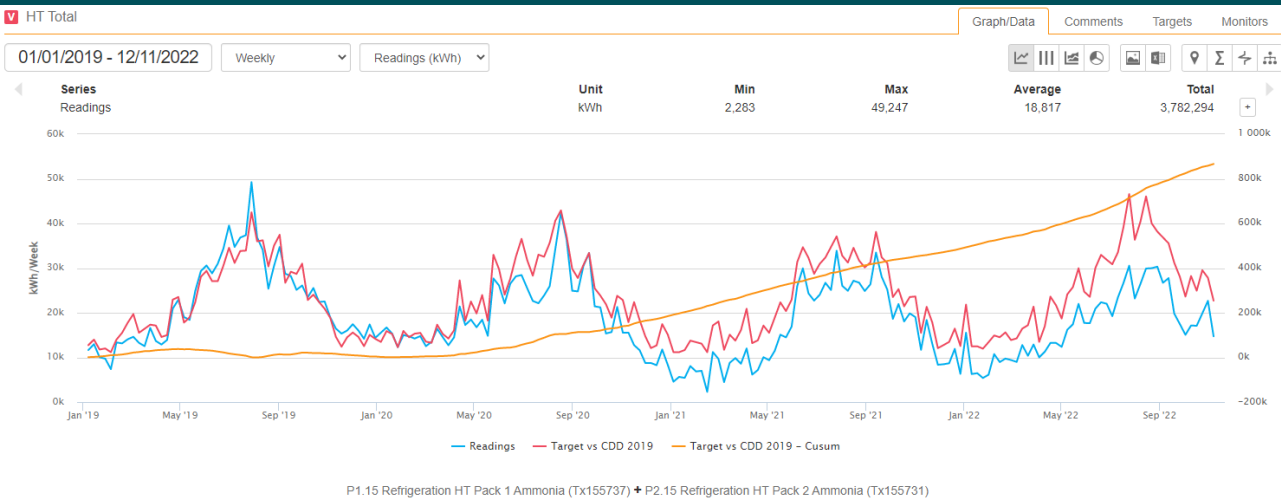
The image features a solid teal background. In the center, there are two concentric circles. The inner circle is a darker shade of teal, and the outer circle is a lighter shade of teal, creating a subtle ring effect. The text "How do we prioritise?" is centered within the inner circle.

How do we prioritise?

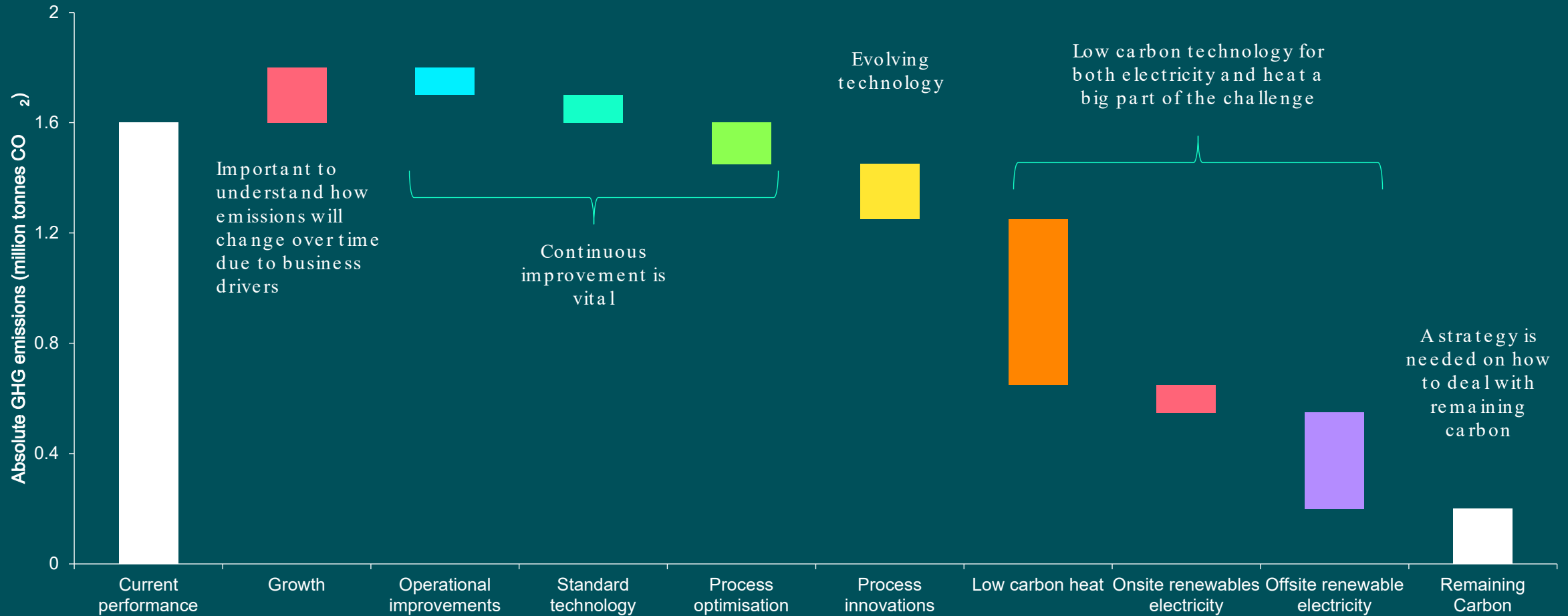
You can't reduce what you can't measure

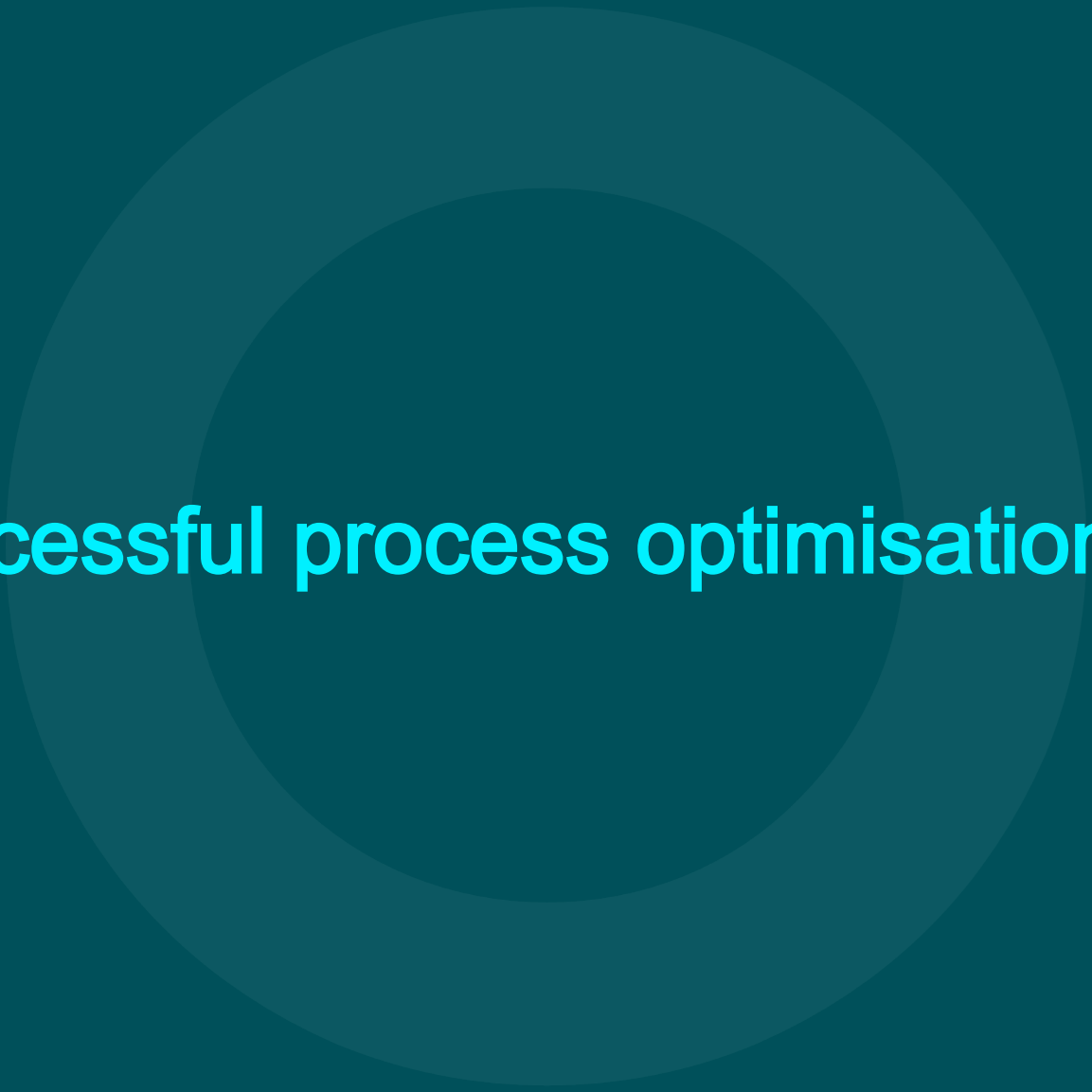


Insights from data are key to decision - making



Net zero roadmap – combining data with bottom -up technical assessment





Successful process optimisation

Case study: developing the efficient frontier

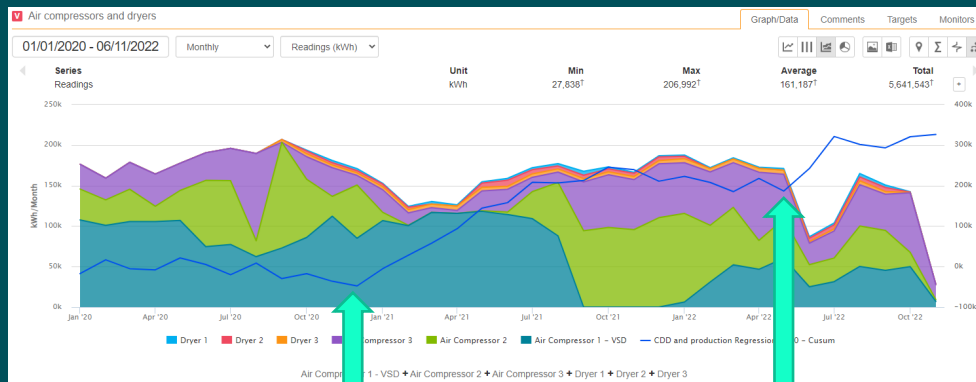
Brief

- Verco was asked to contribute to a “total plant assessment” for a manufacturing site to reduce operating costs
- Air compressors was identified as a key area for optimisation

Approach

- Meter and monitor consumption
- Reduce wastage from operations (e.g. leaks)
- Identify best-in-class retrofit technology to minimise generation losses
- Value-engineer replacement assets

Outcomes



Major interventions

Outcomes

- 16% running cost / carbon reduction
- 20% avoided capital cost
- Additional generation capacity

Case study: multi - site process optimisation

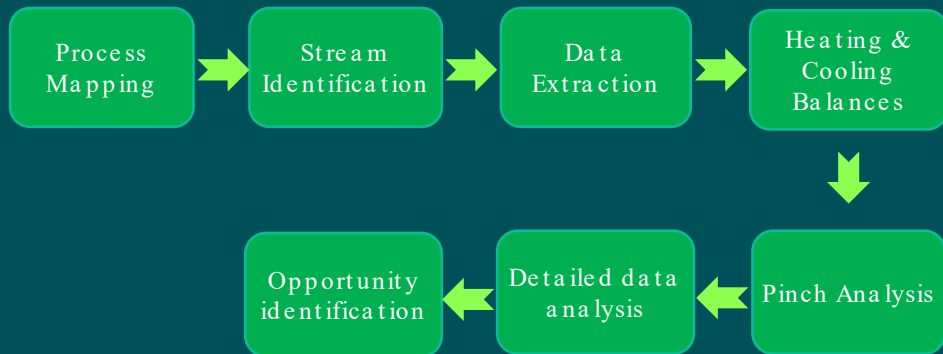
Brief

- Verco were asked to complete a detailed process energy mapping study for an international manufacturer
- Study was a pre-requisite before capital would be signed off for energy related projects

Objectives

- Develop a detailed model for heating and cooling for each plant using high frequency data
- Identification of opportunities for process improvement across 6 sites

Approach



Outcomes

8 - 15% demand reduction opportunity identified at each site. Opportunity categories:

- Process changes to reduce heating/cooling demand
- Challenges to technical standards
- Heat integration opportunities
- Quantifying the impact of planning decisions

Concluding thoughts

Benchmarks are only guides, there is often much further potential to establish efficiency

You can only fully understand what potential you have once you have defined the technical limit

Effective use of data can unlock previously unknown opportunities

Process optimisation often accelerates when key stakeholders are incentivised by efficiency

Ensuring your demand side energy use is optimised will ensure best use of capital

For more information:



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