drax

Harnessing the Power of Data in the Utilities Sector

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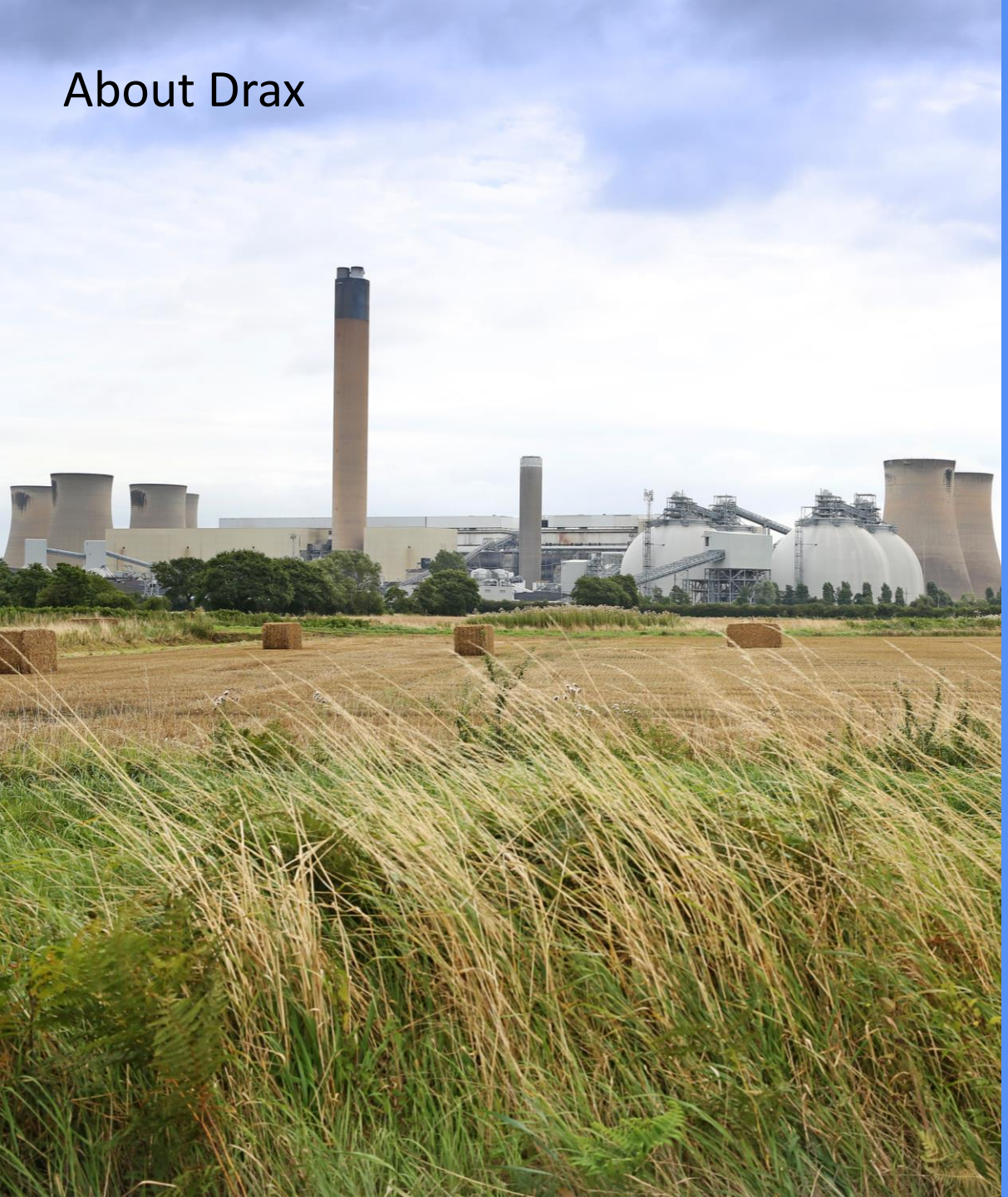
Our Purpose

We’re enabling a zero carbon, lower cost energy future.

About Drax



- We’ve transformed from the UK’s largest coal-fired Power Station, into **Europe’s largest decarbonization project**
- We’re the **largest generator of UK renewable electricity** (12%)
- We’re the **third largest generator in the UK** (8.3m homes)
- Our operations and supply chain **support 18,000 jobs**
- We’re a leading producer of wood pellets from **sustainably managed working forests**
- Our B2B supply brands, Haven Power & Opus Energy, are **the UK’s largest suppliers of renewable energy to businesses** (396,000 meter points)
- Our BECCS pilot project could create **the world’s first carbon negative power station**

Our Business

Across 21 sites in England, Scotland, Wales and the US

Generation

Manages our portfolio of flexible, low carbon and renewable assets

Customers

A leading supplier of renewable energy to business customers

Capital Projects

Develops and invests in large scale projects such as new OGCT & CCGT

Innovation

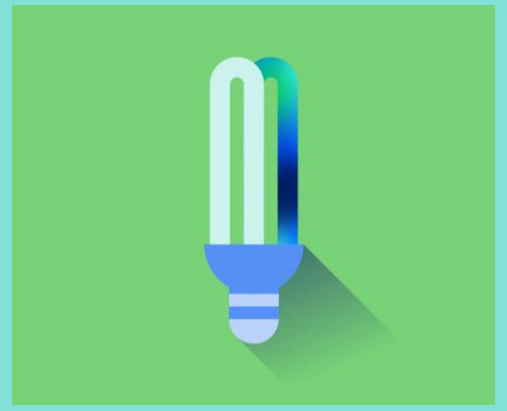
Explores and develops genuinely new technology such as BECCS

Core Services

Ensures our colleagues and businesses operate effectively

Using data effectively

How it can support Net Zero



The Drax Data Hub…

Allows us to connect and manage disparate data sources

Easier business performance management

- Up to date Drax Group KPIs on every smart phone
- Shared Core Services Information, such as Joiners/Leavers

State of the Art Data Science

- Pellet quality prediction, cost modelling
- Advanced Condition Monitoring, Predictive Maintenance
- Customer Behavior Prediction, including Debt, Renewal, Use

Wider Drax Group collaboration

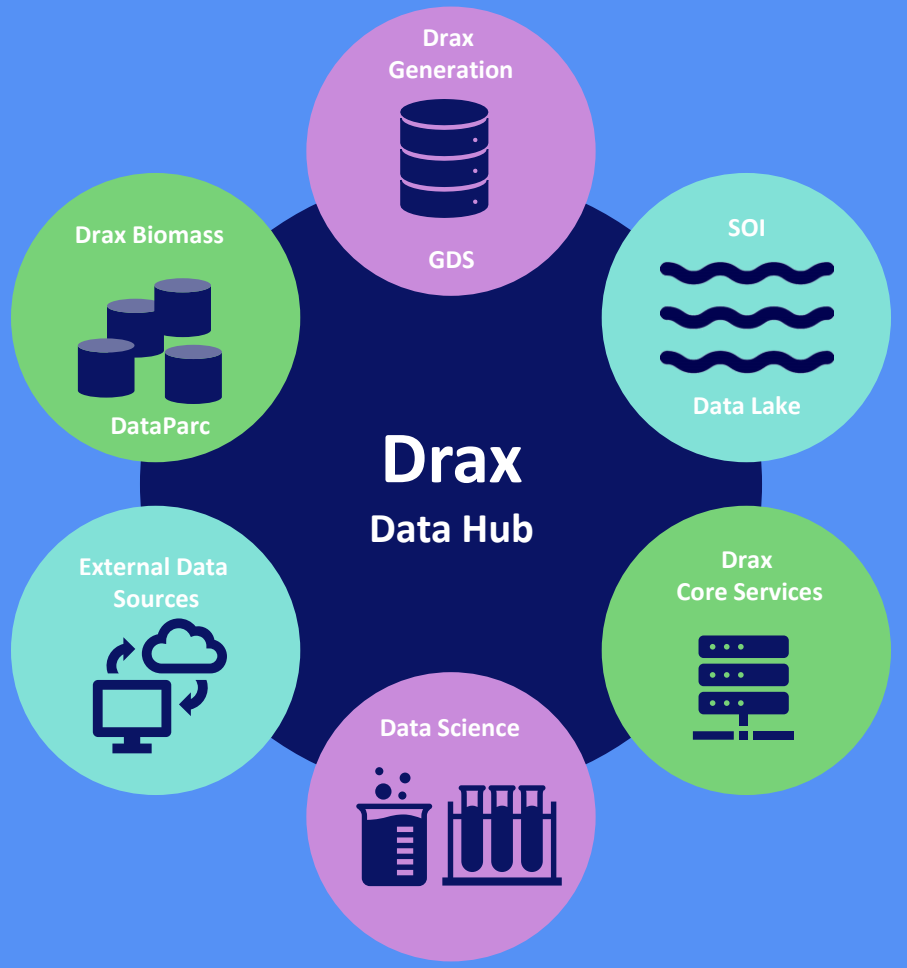
- Trading data exchanges between Generation and Customers Business
- Data Exchange between DBI, Generation and Supply Chain

Inside Out Data Flows

- Secure sharing of data sets with 3rd party service providers
- Links to facilities management, EV and Battery providers

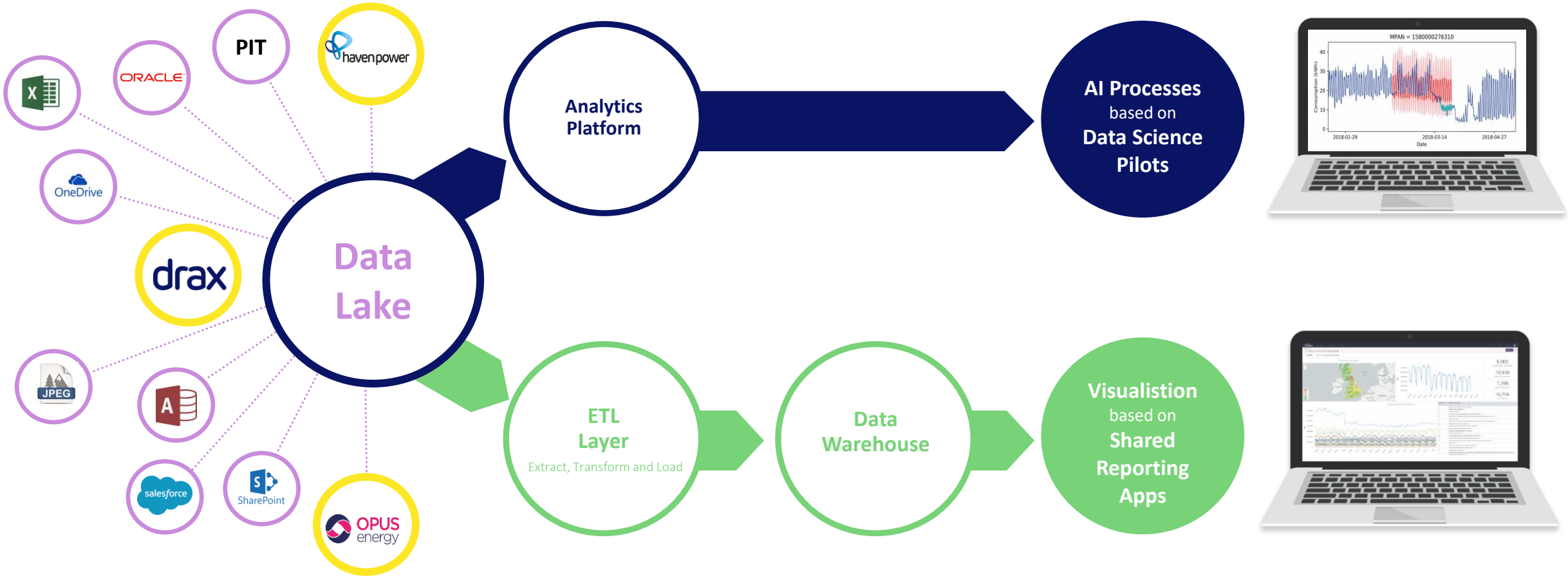
Outside In Data Flows

- Purchase / Ingestion of strategic data sets
- Energy Data Taskforce: democratised data



We have several data estates that already enable value

System integration leads to both self-serve reporting and data science trials



There are 6 main areas of interest by our internal stakeholders

… these are reoccurring and need to be addressed by the core data team

Data Foundations

Data Governance

Security & Privacy

Data Project Integration & Prioritisation

Data Experts across Drax

Job Descriptions and Career Paths

Peer reviews and expert communities

Cross BU collaboration and Lessons Learnt

Data Platforms

USA Data Store

Drax Generation Data Store

Drax Customers Data Lake

Data Reporting

Interactive Reporting Tools

Data Models and Data Quality

Self-serve reporting

Data Analytics

Centralised and Embedded Analytics

Real time and predictive/prescriptive analytics

Alignment of data quality requirements

Data Science

Establishment of internal capability

Integration of state of the art tools

Review of highest value benefits cases

We are governing the basics of data with a proven approach.

How to ensure investment into data is complete and balanced?

We selected three frameworks to map investment and services capabilities to business processes

Baringa
Brighter together

Management consultancy

Gartner

Global organisation that provides best practice frameworks based on research across thousands of organisations

APQC
American Productivity & Quality Center

Global business productivity organisation that provides best practice frameworks. Aligned to Drax Group EIM programme.

1

Maturity Model

Business Processes

Assessment of business process maturity, KPI management and integration, decision making based on data sets and data quality management

Governance Processes

Benchmarking and maturity assessment around data governance, information asset ownership, etc

2

Capability Model

Business Insight and Analytics

Underlying architecture, storage and loading, embedded analytical content, scalability, meta data management, dashboards, interactive exploration, publish/share/collaborate, ease of use.

Data Science Capability

Data preparation, exploration and visualisation, user interface, machine learning, performance and scalability, automated model selection, project management and delivery.

3

Business Process Framework

End to end business process

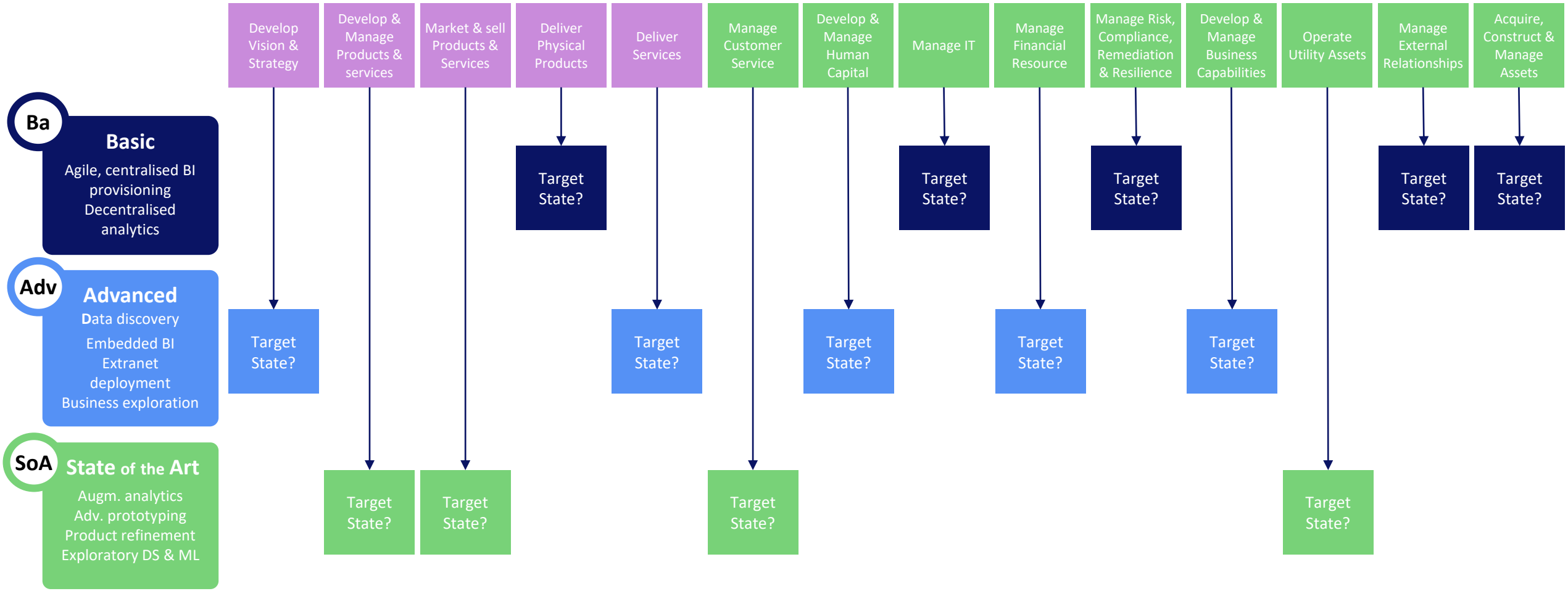
Standardised end to end business process framework, divided into operational processes and management services.

Cross Industry Benchmarking

Framework is used for cross industry benchmarking through assessment of process performance with selected metrics.

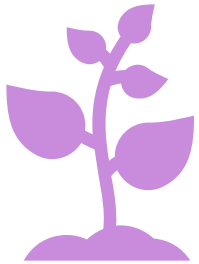
We will prioritise investment into business priority areas

Linking the two frameworks together, we developed a roadmap towards our Target State? over time



Our Data Science Engagements usually follow 8 phases, with three checkpoints

This allows for lean governance and iterative funding approval



Funding	A) Seed Funding		B) Prototyping			C) Deployment		
Model Phase	1. Objective Definition	2. Data Exploration	3. Data Pre-Processing	4. Model Prototyping	5. Model Evaluation, test & learn	6. Model production deployment	7. Post investment review	8. Model iteration and maintenance
Duration (wks)	0 - 1	1 - 2	1 - 3	3 - 6	3 - 6	3 - 4	1	(varies)

Conclusion: Harnessing the power of data

Creating tools that support the business

Today, **data is king**. It can be used to **predict** customers' usage behavior and support in the **development** new products

- **Data driven decision making** - At the core of product development, is data. Harnessing the data we capture from our customers helps inform how products are not only created but how they evolve
- **Identifying customer needs** – Using data to identify needs before they arise. This is key when innovating. Creating a product after the fact isn't using data effectively
- **Developing tools to analyse** – Data is useless unless you create tools and processes to analyse the data you're collecting.

Helping our Customers take control of their energy

Putting it into practice

We keep the lights on for over 350,000 businesses in the UK.

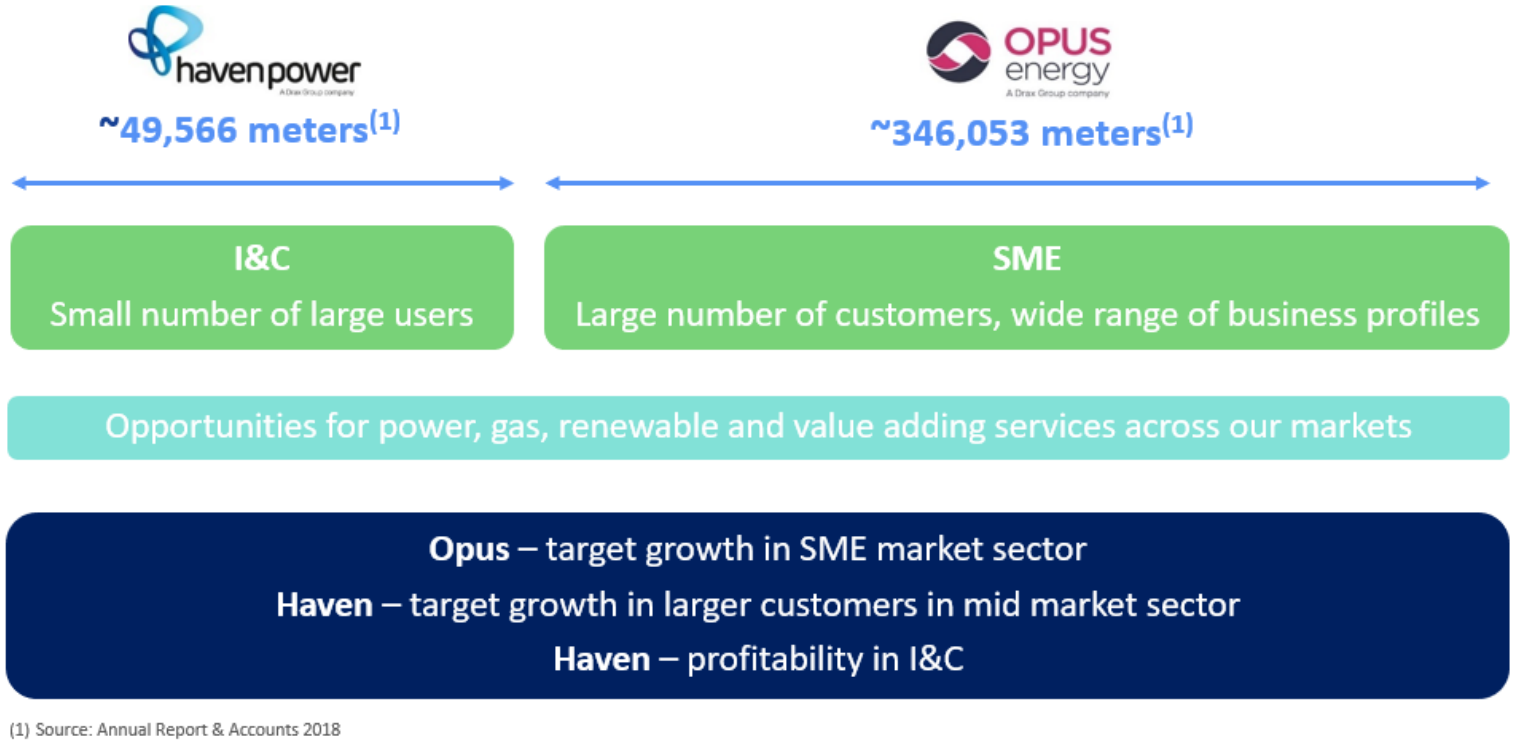
Helping Our Customers take control of their energy

Our Customers Businesses

Our Drax Customers business is **the third largest business supplier** in the UK;

- Haven Power **supplies over 40,000 meters** and specialises in **servicing large industrial users**
- Opus Energy s**ervices over 340,000 meters in the SME sector**, helping our customers grow their business
- Our **innovative products** are helping customers **take control of their energy**

The Chart below demonstrates the breakdown between our Customers businesses



(1) Source: Annual Report & Accounts 2018

Helping Our Customers take control of their energy

Electric Vehicles

In 2019, we **announced our End-to-End electric vehicle proposition**;

- We **help our customers analyse the cost of switching** their fleet to electric vehicles and **advise them on the best technologies to use**
- Once the new technology is in place, **we teach our customers how to use their new vehicles in the best way** for their **bank balance** and for the **environment** and supply them with our **own renewable electricity**

Helping Our Customers take control of their energy

Getting Smart and maximizing data

SMART meters enable customers to have **greater control and insight** of their energy consumption. We are innovating products to help our customers get the most out of their SMART meter.

– We have already **switched a number of our customers** to SMART meters, helping them **grow their business**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Thank You