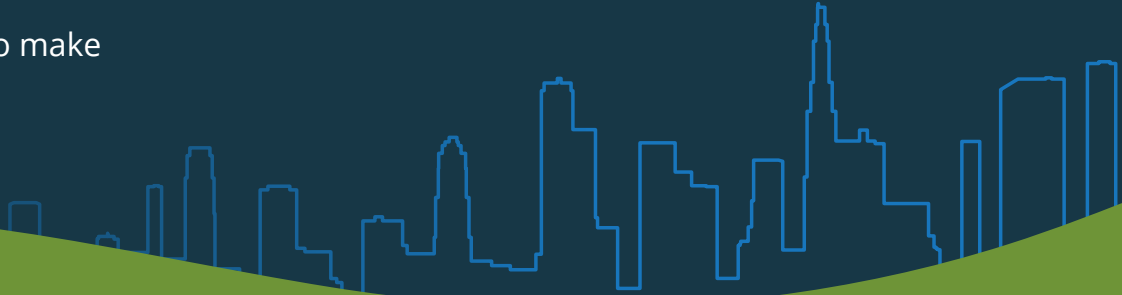




Future Grid

A data language that understands your grid.

Data Engineering to make answers simple



Data Engineering to Accelerate:



ANALYTICS



**ASSET PERFORMANCE
MANAGEMENT**



MACHINE LEARNING



ARTIFICIAL INTELLIGENCE

Features of Data Engineering

- ✓ Low cost data scalability
- ✓ Simple "Adapterless" data integration
- ✓ Dynamic Operational Data Models
- ✓ Hybrid infrastructure; sensitive data on-premise, cloud and edge
- ✓ Time Series Data

Winner
New Energy Award



Winner
Best Start-Up



Finalist



Finalist



Future Grid introduces the next generation data language which understands the grid – built with utilities for utilities

Future Grid is a data language to automate data engineering so that you gain insights that are simple and quick at scale



Grid Operators will increasingly be required to answer new, more complex analytical questions as Distributed Energy Resources increase ...

.... however assembling the data to support more complex grid analytical questions is actually very difficult and requires multiple query languages and data technologies

This is because questions like this can only be answered by translating multiple data languages from multiple IT systems.

Consequently, 80% of data analysis is spend preparing data rather than performing data analysis and gaining insights.

Future Grid is a data language to automate data engineering so that you gain insights that are simple and quick at scale

Future Grid Compass™ and PowerDrill™ are widely used for challenging use cases in grid analytics but are equally applicable across the utility value chain.

Using Future Grid your existing analytics is accelerated by establishing automated data engineering for ML and AI applications

A Future Grid Implementation can be as quick as 3 weeks

As a Grid Operator you will be increasingly required to answer new, more complex analytical questions as Distributed Energy Resources increases ...

.... however assembling the data to support more complex grid analytical questions is actually very difficult and requires multiple query languages and data technologies



GRID MANAGER

GRID QUESTION
[I need all the meter data] for this [Substation] for [last week]. Please include [where it is] and how [meters relate to each other] over the [same time].

ASSUMED ANSWER
No worries. It will only take a moment.



IT HELP DESK



IT HELP DESK

CURRENT ANSWER
Really? When do you need it?
We need IT support.

1. Build a complex join query on ITRON (Oracle DB) to extract list of meters, and then extract the list to a new temp database table;
2. Write some code to connect to ESRI and merge location data
3. Write some more code to connect to OSI PI and extract time-series meter data to another temporary table
4. Query HANA to retrieve asset relationships into a third temporary table
5. Try and figure out a VERY complicated SQL join between my three temporary tables
6. Look at the results and realize they look wrong, then figure out the meter list from Itron doesn't match OSI PI
7. Go back to Step 3 and rewrite the code so that the OSI PI data can be extracted and merged properly
8. Re-do step 5, QA the results and cross your fingers ...

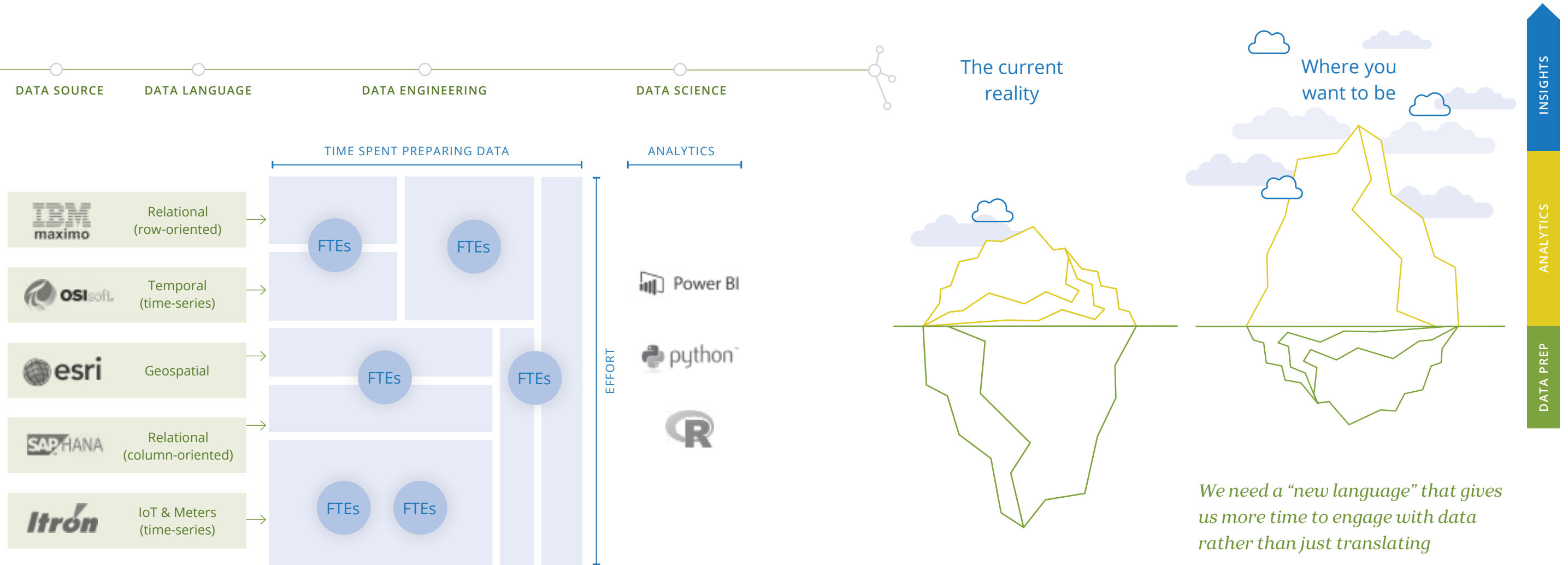


OMG!

IT SUPPORT

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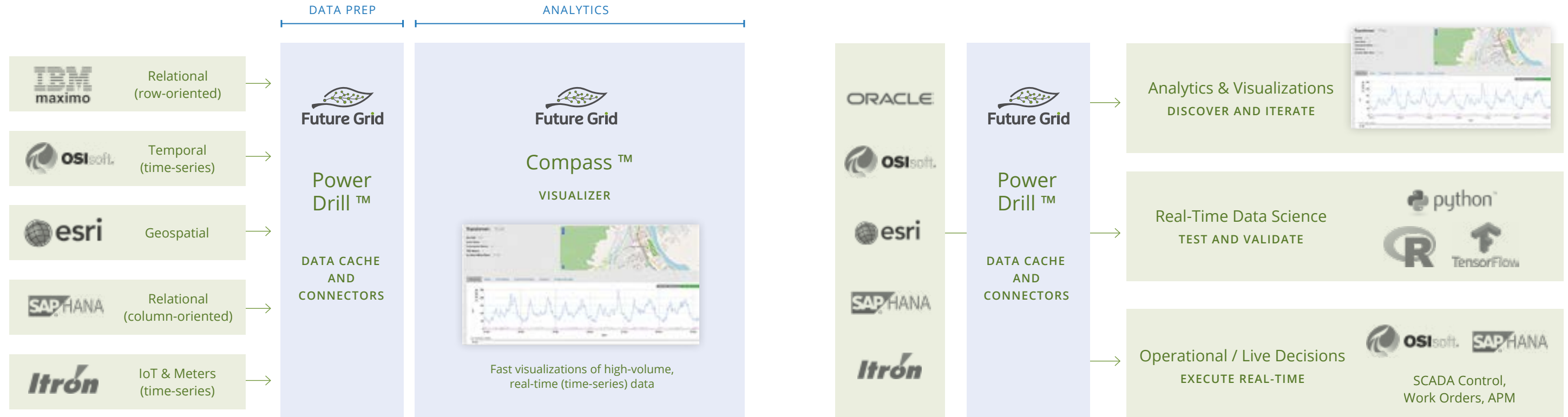


Future Grid is a data language to automate data engineering so that you gain insights that are simple, quickly and at scale

 Future Grid Compass™ and Power Drill™ allows you to:

- Seamlessly traverse your grid in Time, Location, and Hierarchy
- Replace massive data prep OPEX with modest CAPEX through the dramatic reduction in data preparation time, effort, and expertise
- Connect to and better leverage your existing investment in your existing data science tools (e.g. R, Python)

Using Future Grid, customers are able to translate existing analytics into hardened, operational, and live grid decisions



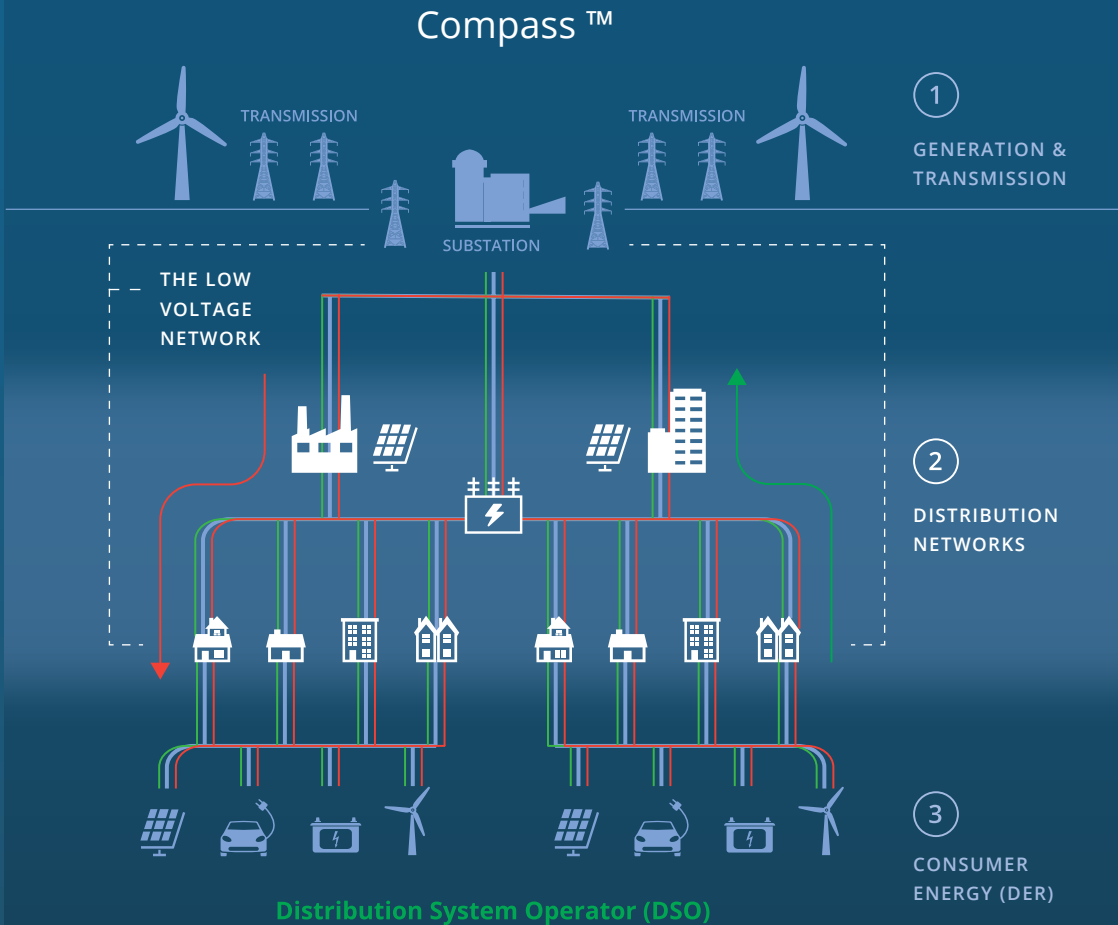
Compass™. Visualize and Manage the Low Voltage Grid

Compass™ understands your low voltage grid "LIVE"



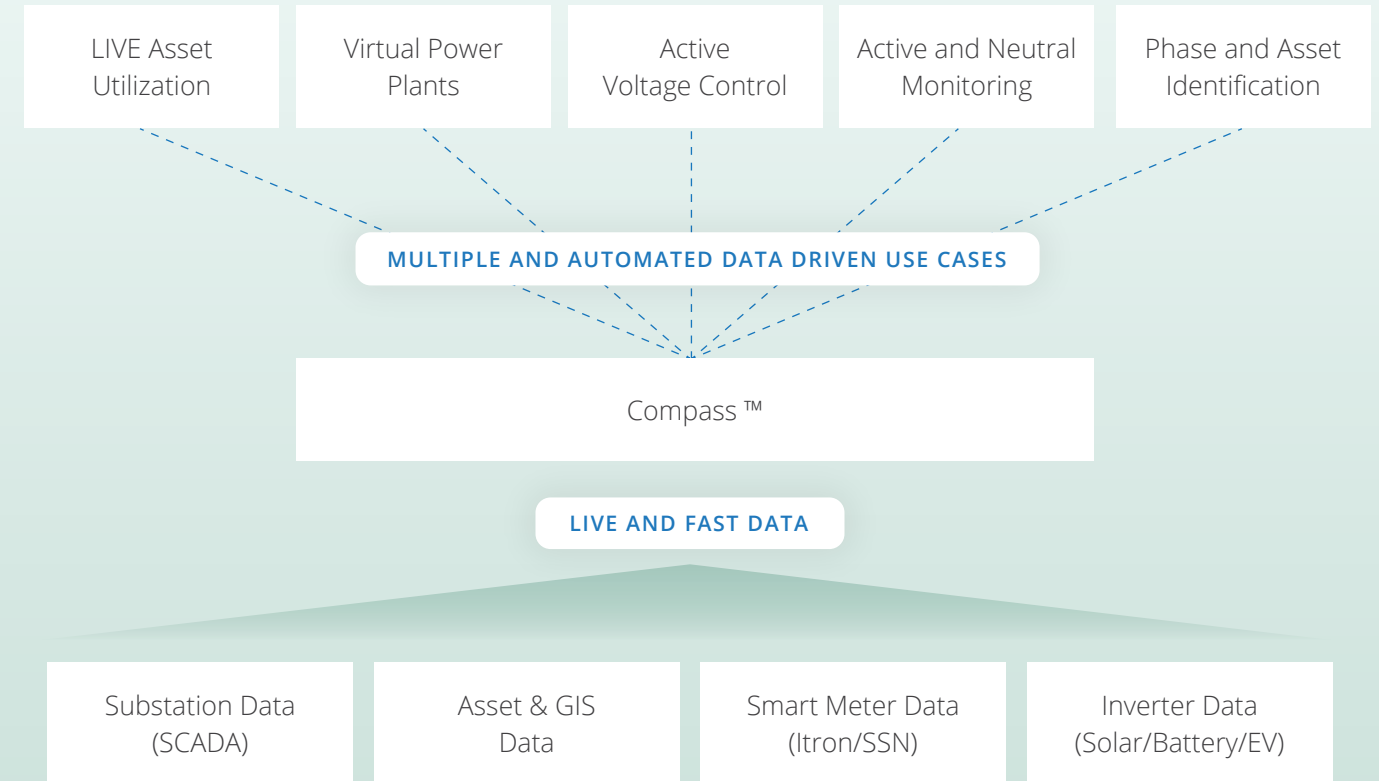
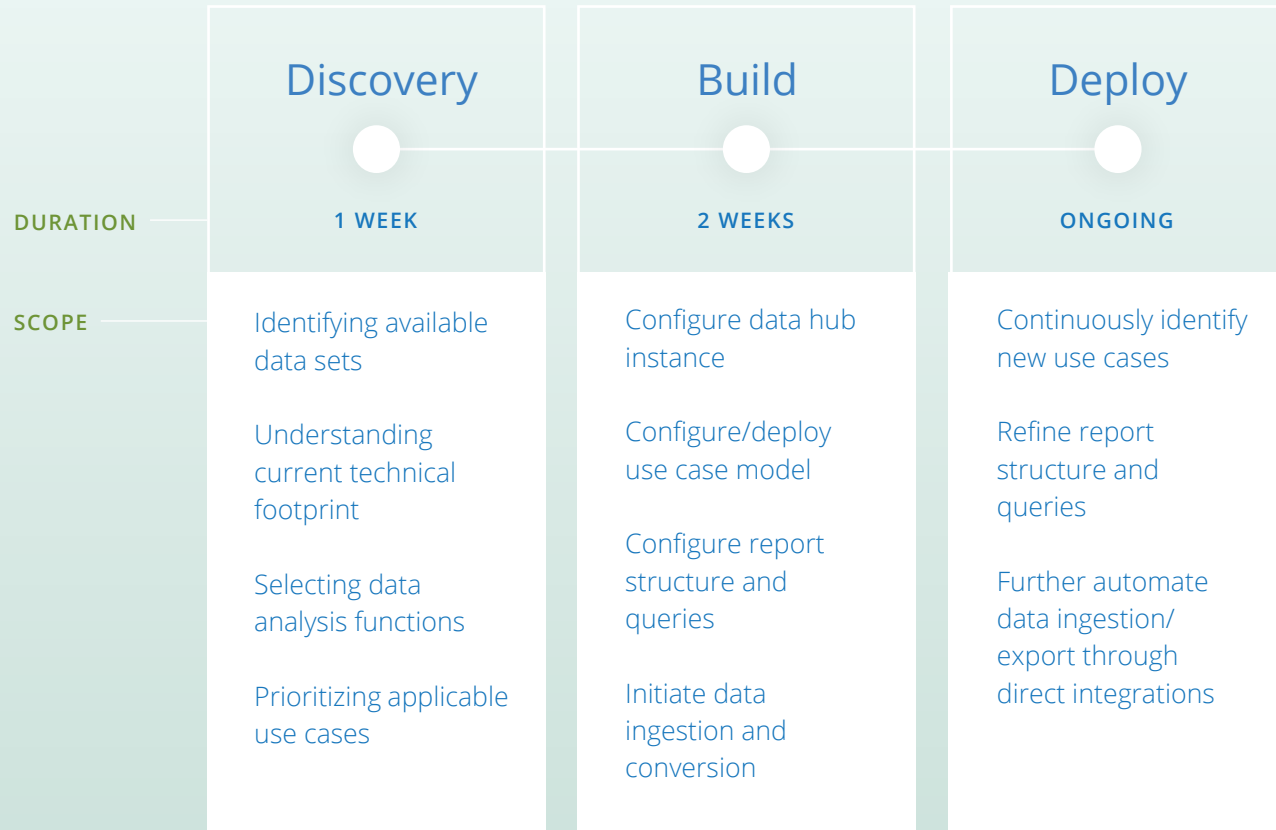
COMPASS delivers Low Voltage Visibility and grid-balancing decisions because distribution networks ...

- Are shifting from Top Down generation to Bottom up generation with DER
- Distribution Systems Operator (DSO) will be required to balance the **low voltage grid** with a mix of energy sources
- A need to manage millions of small assets (from a few hundred large ones today) real-time.



Using Compass you can be in production in two to three weeks at scale

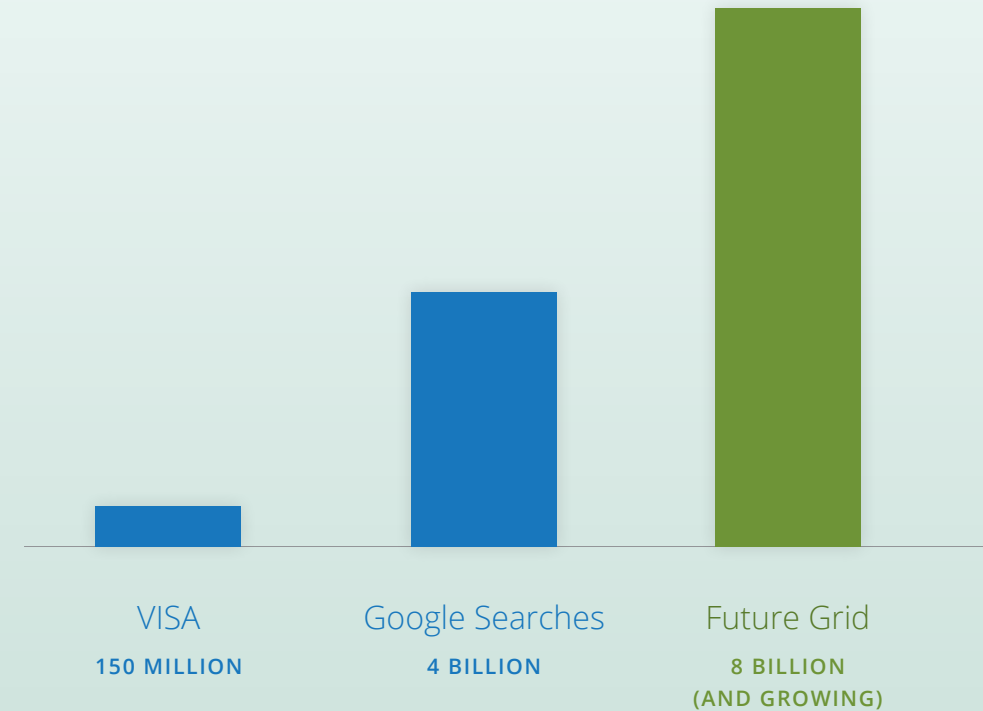
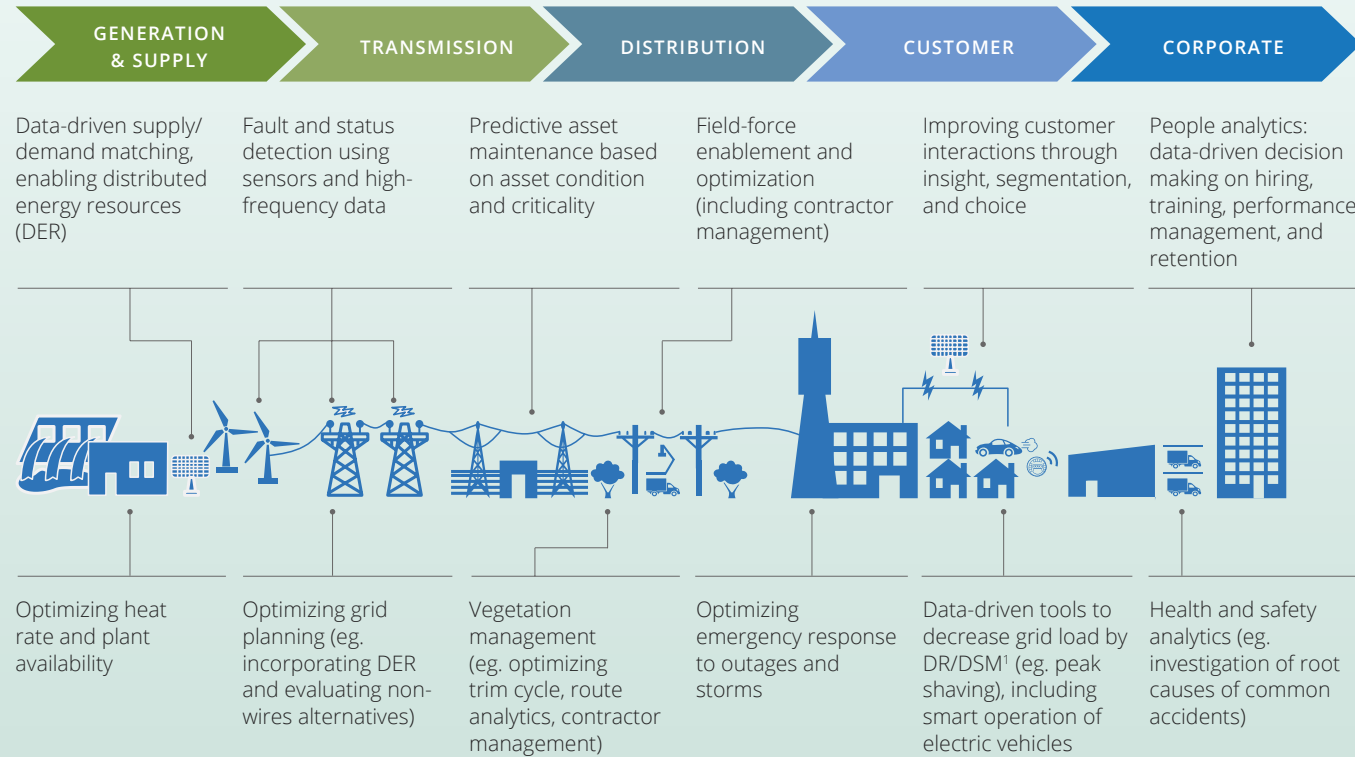
Build and Deploy Multiple Use Cases



Compass™ and PowerDrill™ are widely used for challenging use cases in grid analytics but are equally applicable across the utility value chain

Future Grid has done all the hard work so you don't have to. Our platform already manages 2x more transactions than Google per day.

FULL-SPECTRUM OF UTILITIES VALUE CHAIN ANALYTICS USE CASES



Future Grid translates complex grid questions into simple answers

Immediate, At Scale and at Reduced Cost



AUTOMATE DATA
ENGINEERING



DIRECTLY
REDUCE OPEX



ACCELERATE
ANALYTICS

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