A data language that understands your grid.

Data Engineering to make answers simple

Data Engineering to Accelerate:

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

ANALYTICS
ASSET PERFORMANCE MANAGEMENT
MACHINE LEARNING
ARTIFICIAL INTELLIGENCE

Winner
New Energy Award
Winner
Best Start-Up
Australian Utility Week
Finalist
StartUp Energy Transition
Finalist
Global Ideas
Future Grid introduces the next generation data language which understands the grid – built with utilities for utilities. 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 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.

GRID MANAGER

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

IT HELP DESK

SITUATION

IT SUPPORT

GRID QUESTION
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!
Questions like this can only be answered by translating multiple data languages from multiple IT systems.

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

The current reality

Where you want to be

We need a “new language” that gives us more time to engage with data rather than just translating.
Future Grid is a data language to automate data engineering so that you gain insights that are simple, quickly and at scale.

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

**SUMMARY**

GENERATION & TRANSMISSION

CONSUMER

ENERGY (DER)

THE LOW VOLTAGE NETWORK

Distribution System Operator (DSO)
Using Compass you can be in production in two to three weeks at scale

**SOLUTION**

**Discovery**

- Identifying available data sets
- Understanding current technical footprint
- Selecting data analysis functions
- Prioritizing applicable use cases

**Build**

- Configure data hub instance
- Configure/deploy use case model
- Configure report structure and queries
- Initiate data ingestion and conversion

**Deploy**

- Continuously identify new use cases
- Refine report structure and queries
- Further automate data ingestion/export through direct integrations

**SCOPE**

**Ongoing**

- Configure data hub instance
- Configure/deploy use case model
- Configure report structure and queries
- Initiate data ingestion and conversion

**DURATION**

- **1 WEEK**
- **2 WEEKS**
- **ONGOING**

**Build and Deploy Multiple Use Cases**

- LIVE Asset Utilization
- Virtual Power Plants
- Active Voltage Control
- Active and Neutral Monitoring
- Phase and Asset Identification

**LIVE AND FAST DATA**

- Substation Data (SCADA)
- Asset & GIS Data
- Smart Meter Data (Itron/SSN)
- Inverter Data (Solar/Battery/EV)

**MULTIPLE AND AUTOMATED DATA DRIVEN USE CASES**

- Compass™
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**

- **Data-driven supply/demand matching**, enabling distributed energy resources (DER)
- **Fault and status detection using sensors and high-frequency data**
- **Predictive asset maintenance based on asset condition and criticality**
- **Field-force enablement and optimization (including contractor management)**
- **Improving customer interactions through insight, segmentation, and choice**
- **People analytics: data-driven decision making on hiring, training, performance management, and retention**

- **Optimizing heat rate and plant availability**
- **Optimizing grid planning (e.g., incorporating DER and evaluating non-wires alternatives)**
- **Vegetation management (e.g., optimizing trim cycle, route analytics, contractor management)**
- **Optimizing emergency response to outages and storms**
- **Data-driven tools to decrease grid load by DR/DMS (e.g., peak shaving), including smart operation of electric vehicles**
- **Health and safety analytics (e.g., investigation of root causes of common accidents)**

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McKinsey, Digital Utility Whitepaper, p.17
Future Grid translates complex grid questions into simple answers

Immediate, At Scale and at Reduced Cost

- Automate Data Engineering
- Directly Reduce OPEX
- Accelerate Analytics