

Loss Decomposition in Utility Scale Plants with 3E Solar Analytics

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3E & SynaptiQ: Leveraging access to a large dataset

Asset Operations

15 GW

CONNECTED

125

CLIENTS

20 GW

CONTRACTED

40

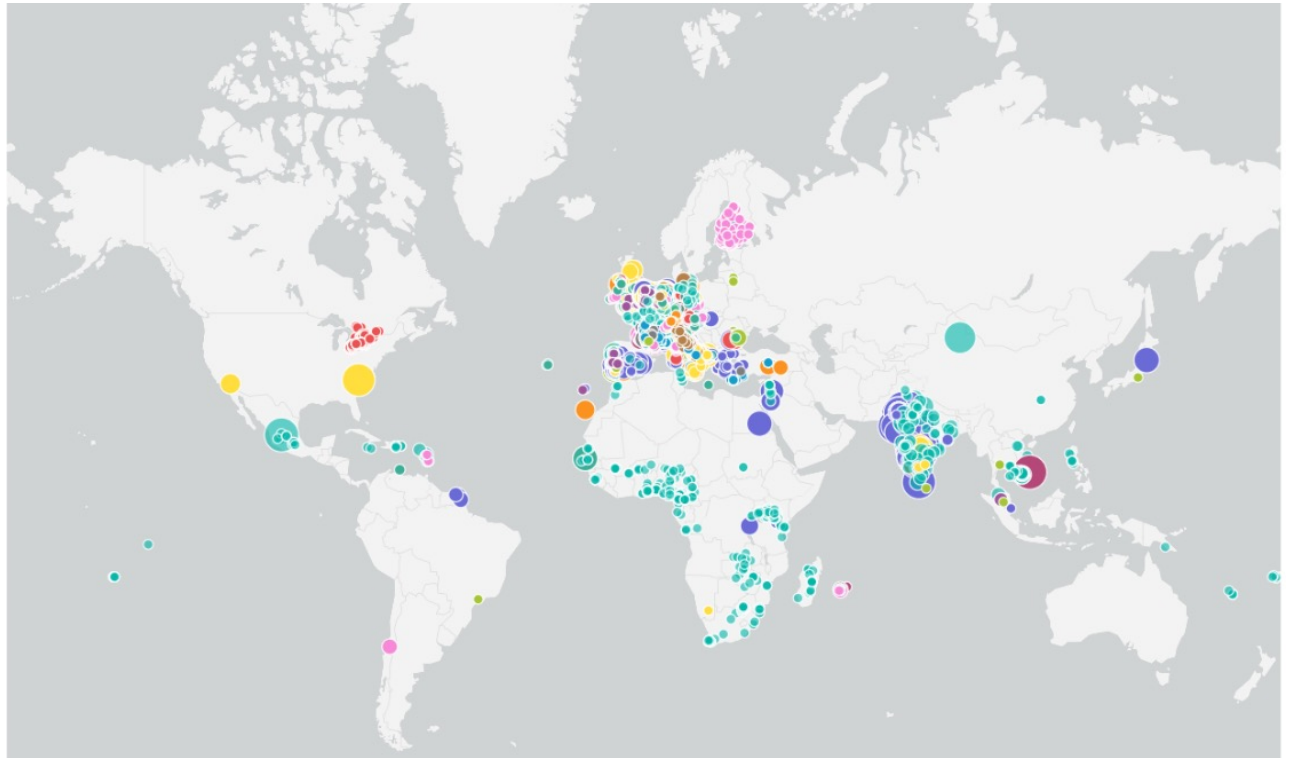
COUNTRIES

10,000

SITES

20 million

DEVICES & SENSORS





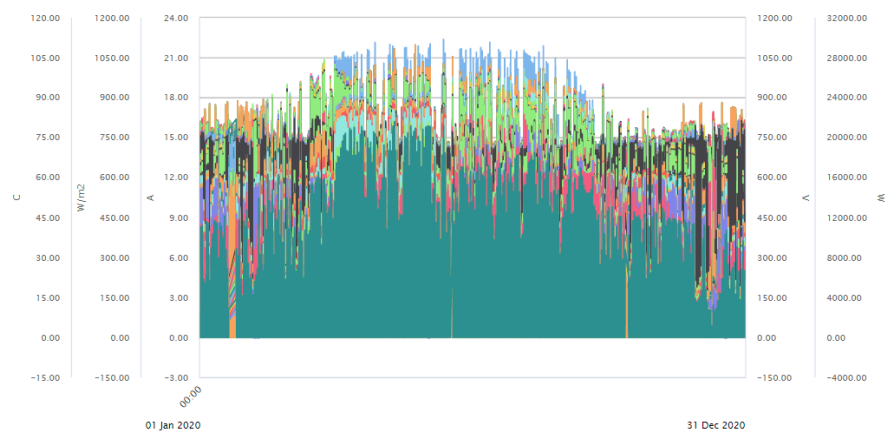
Data ➔ **Decision**



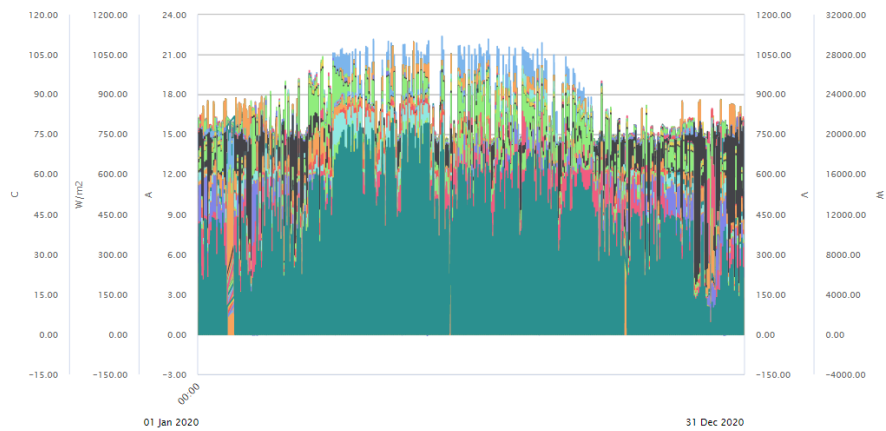
SynaptiQ Solar Analytics



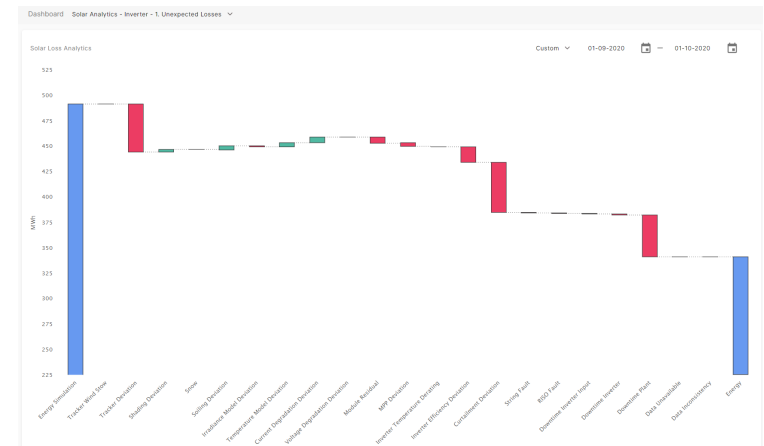
Data



Data

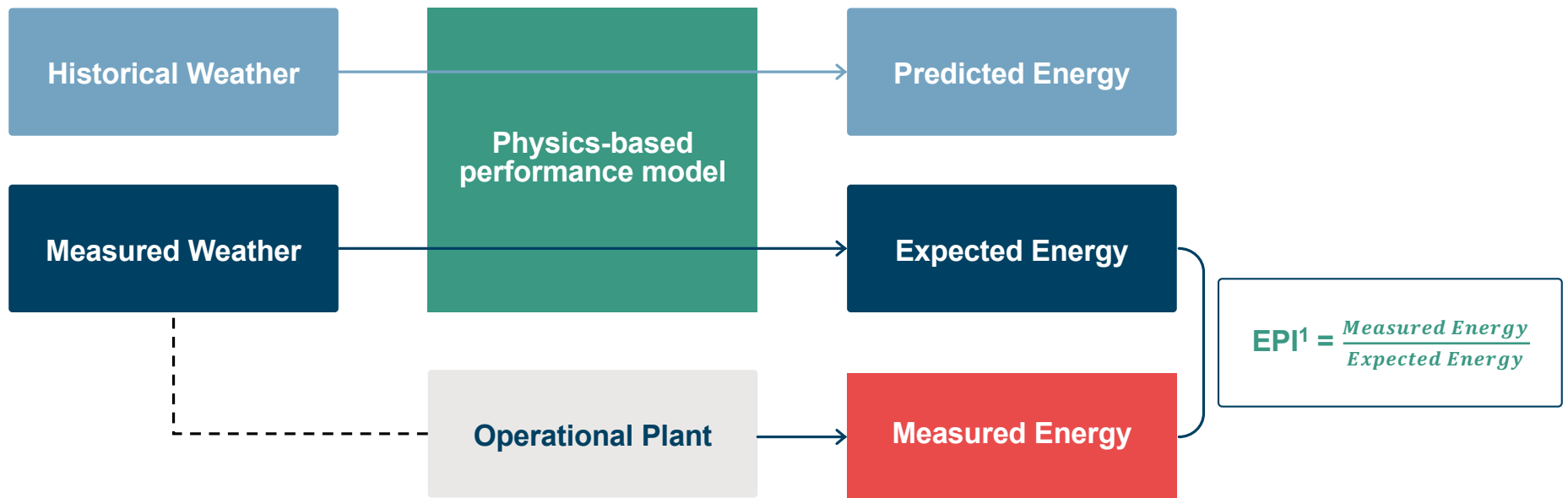


Actionable Insights



Advanced Solar Analytics

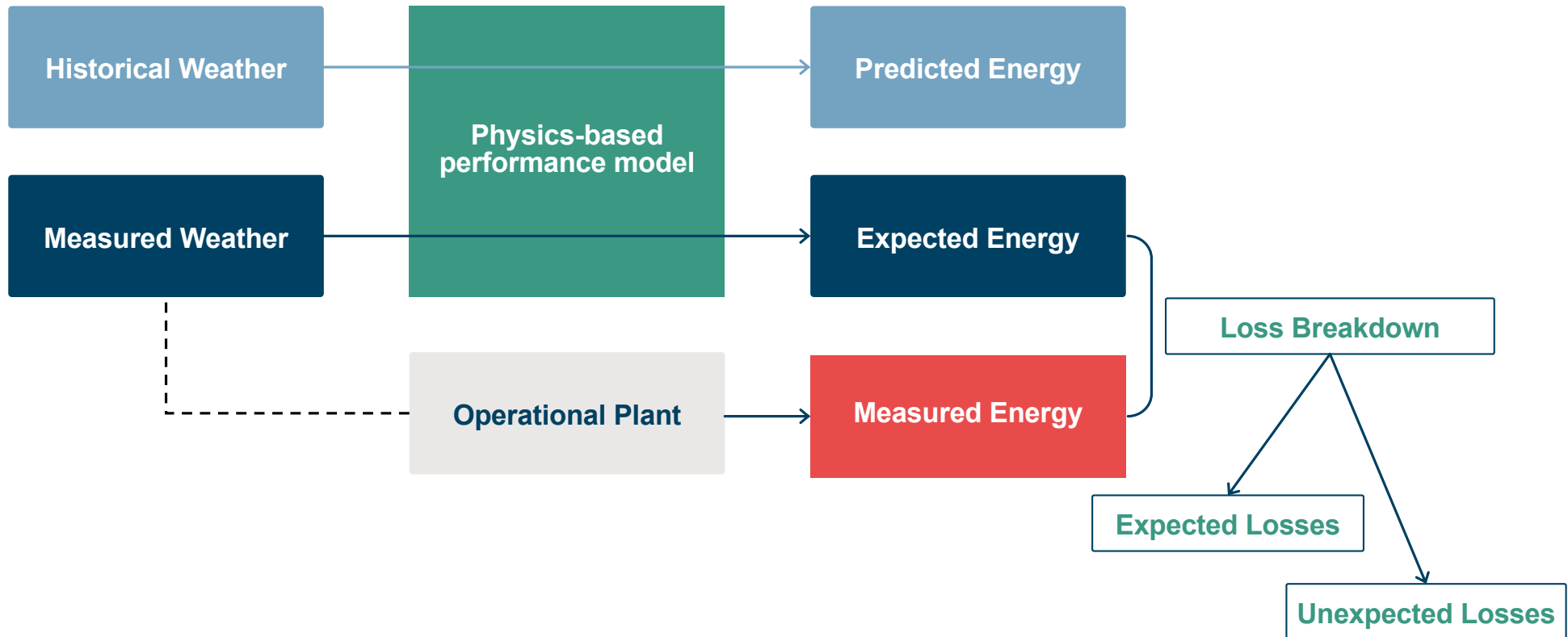
From descriptive to prescriptive



¹ Energy Performance Index

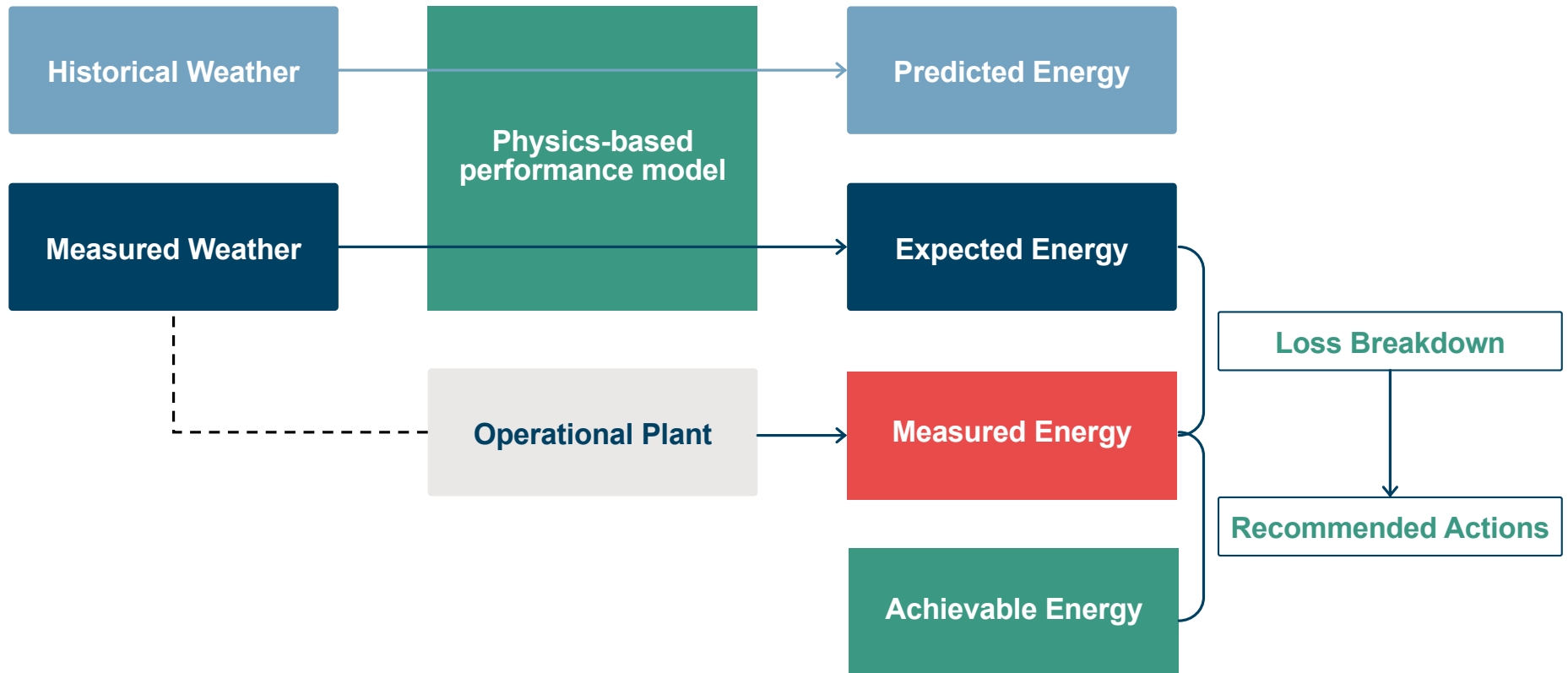
Advanced Solar Analytics

From descriptive to prescriptive



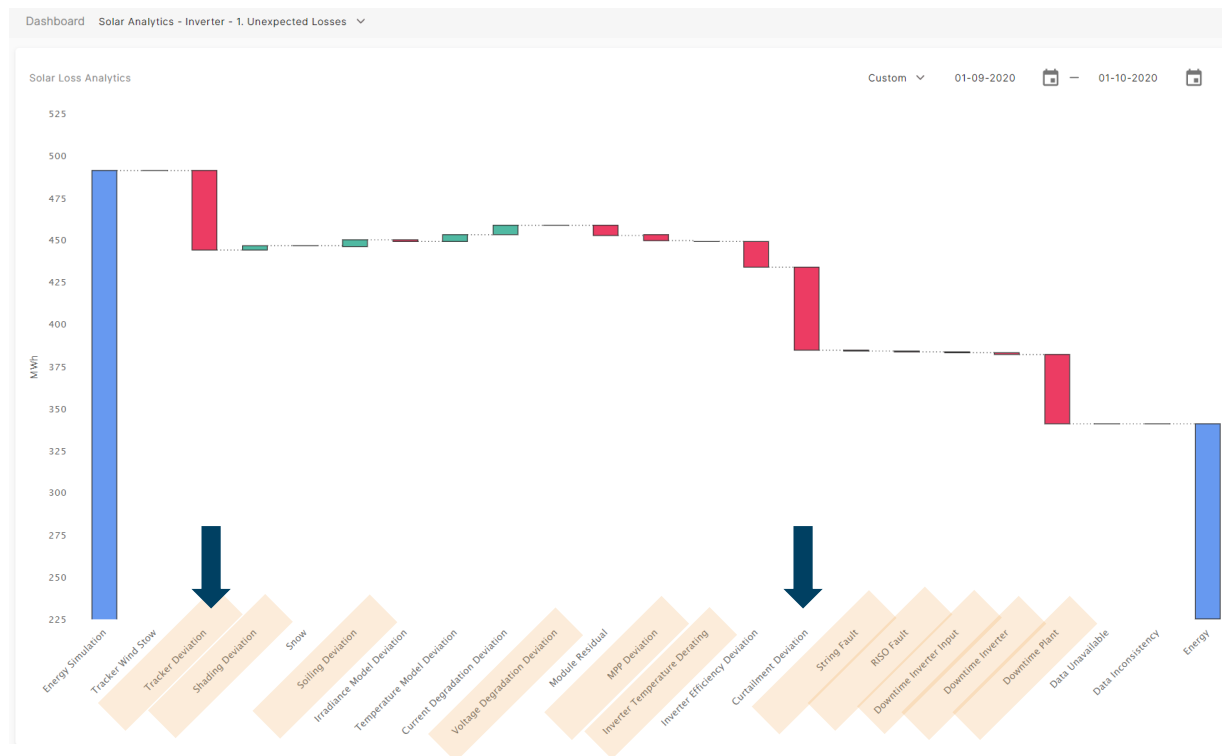
Advanced Solar Analytics

From descriptive to prescriptive



Loss breakdown: What can SynaptiQ detect?

With 21 loss categories, advanced analytics allow underperformance detection below 1%



Potentially Recoverable

Case-study

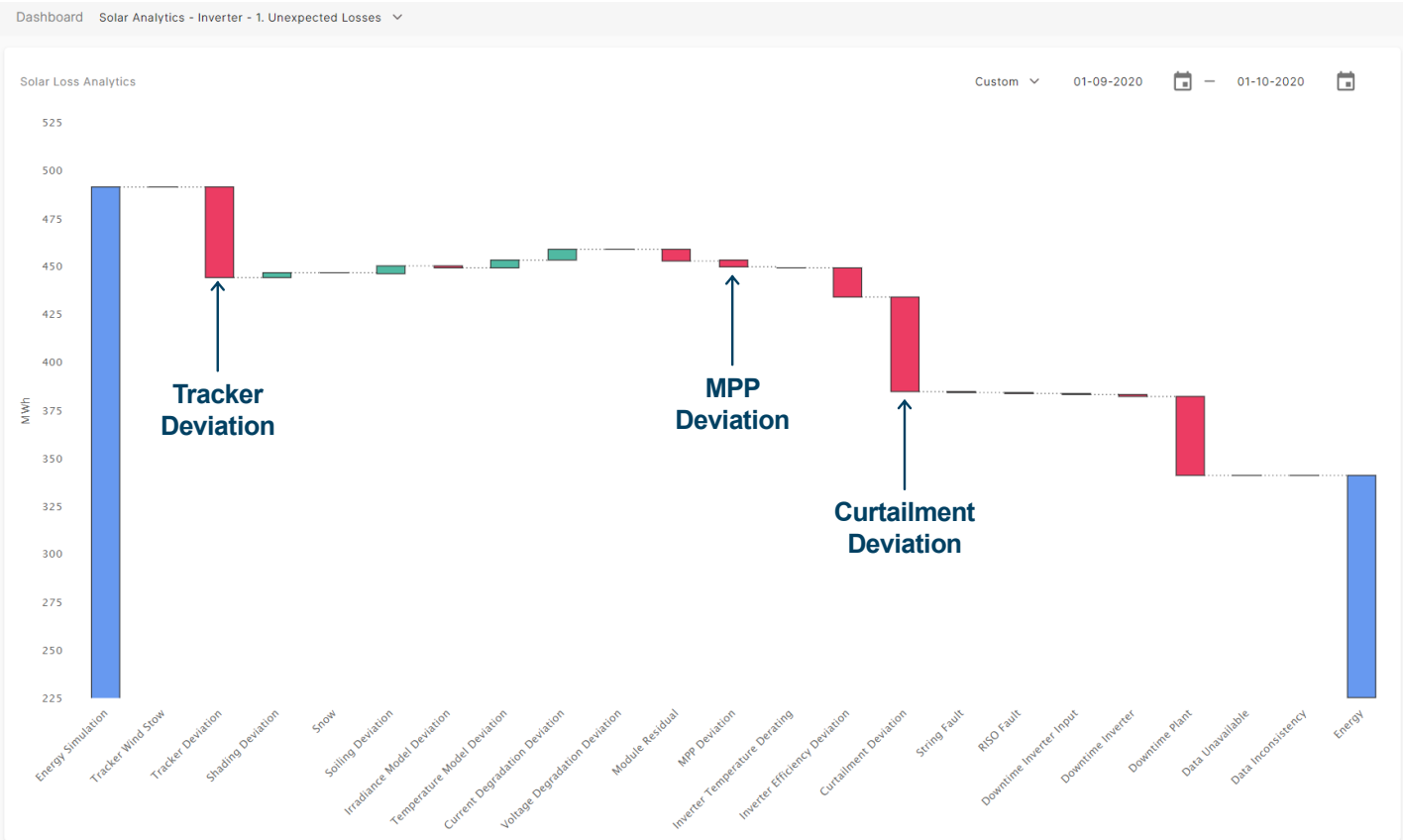
Tracker + Curtailment Deviation



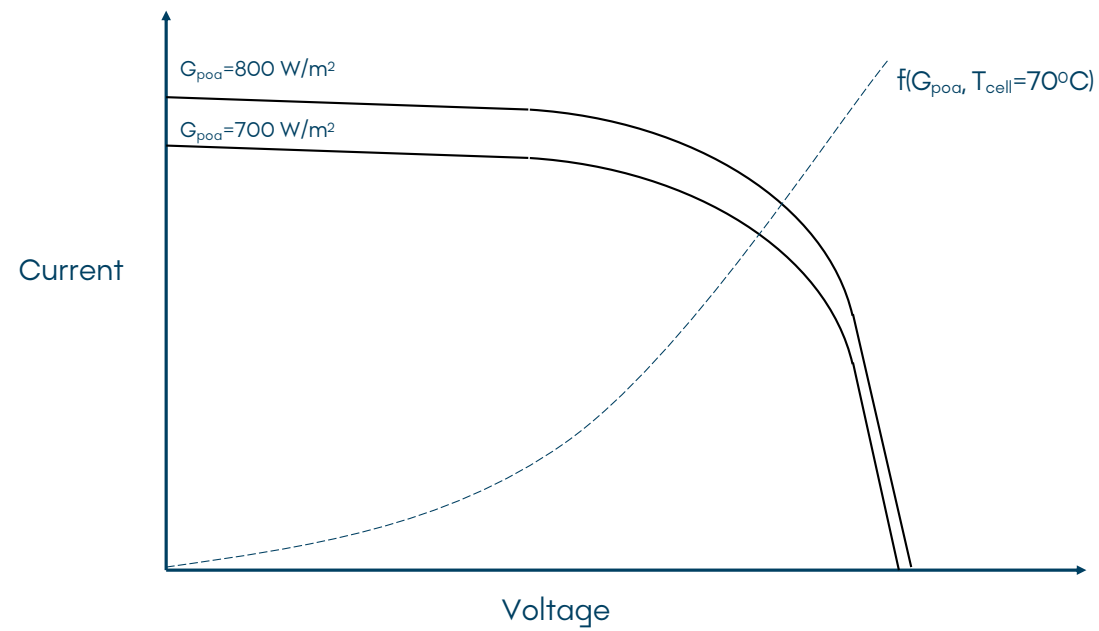
Case Study

- Utility scale plant
 - Ground – mounted
 - Single axis trackers
 - Subject to regular curtailment
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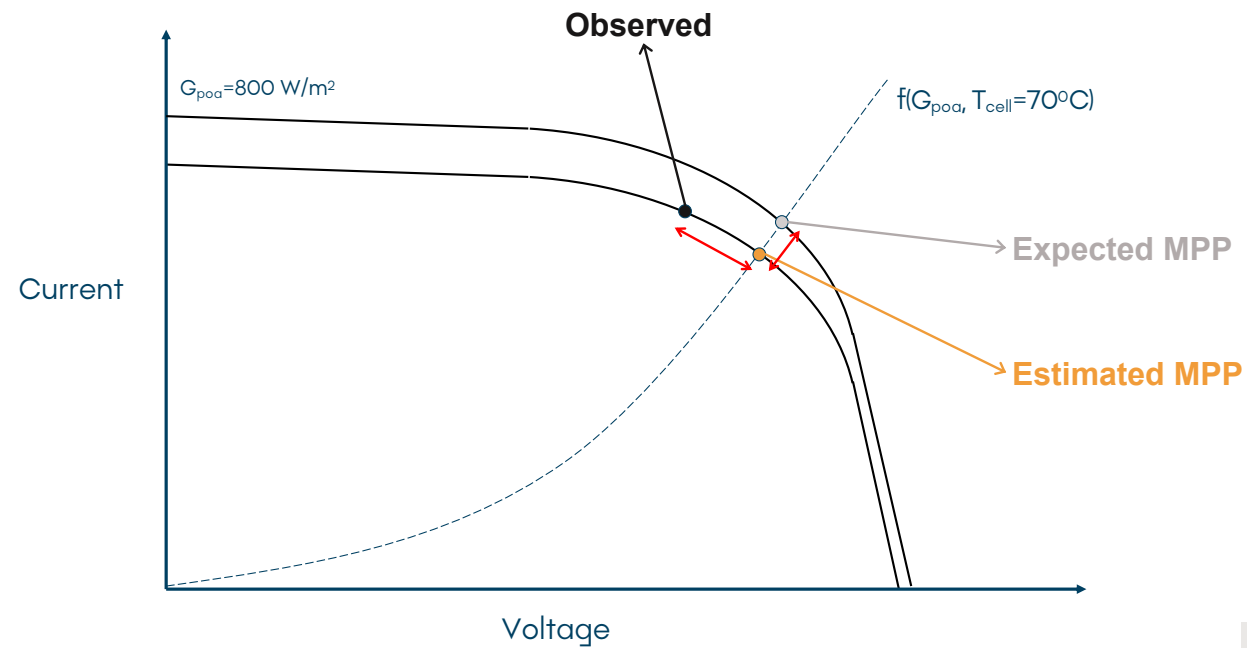
Loss Breakdown



Curtailment – MPP Estimation

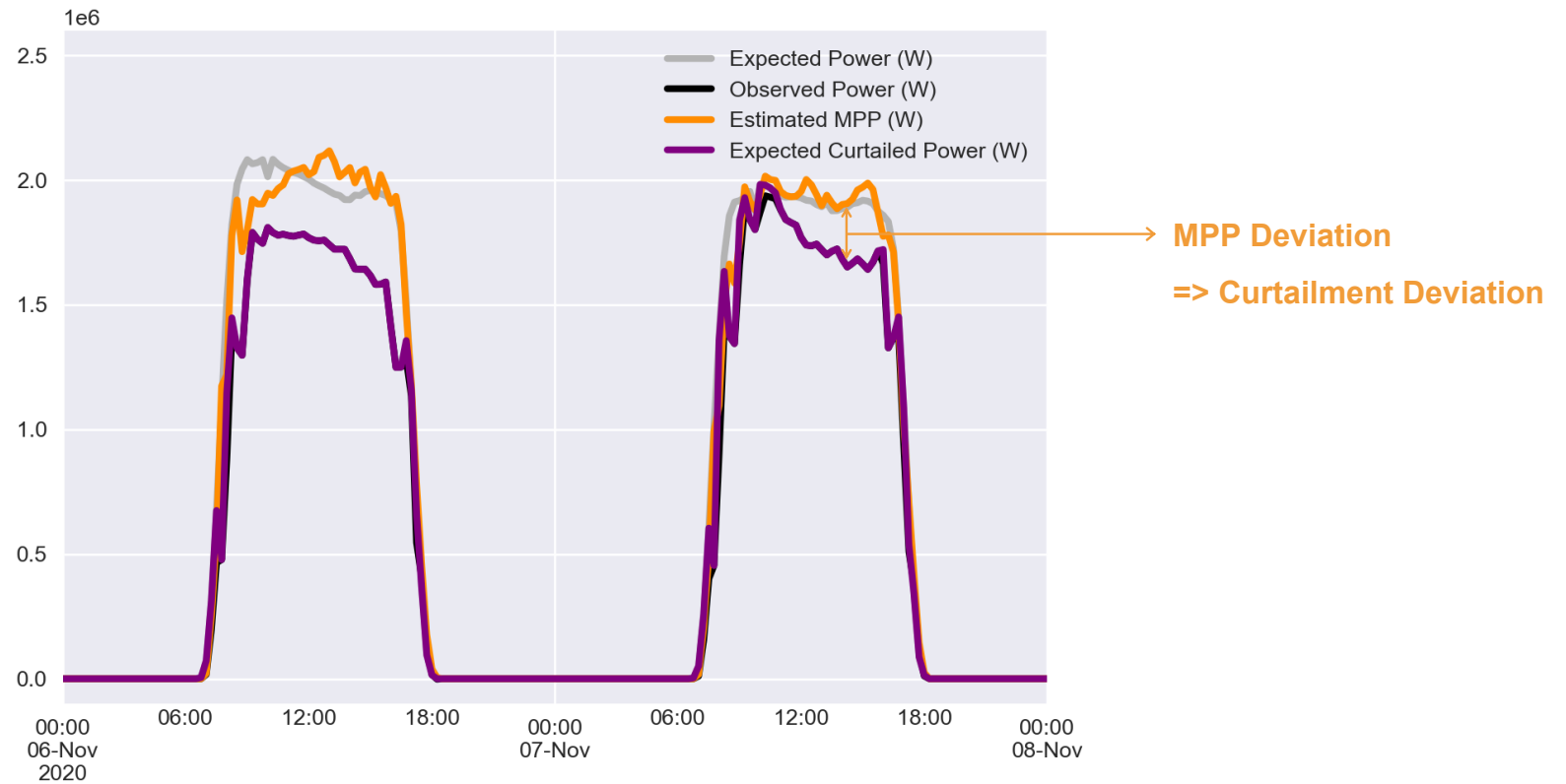


Curtailment – MPP Estimation



Integrated approach

Curtailment – MPP Estimation

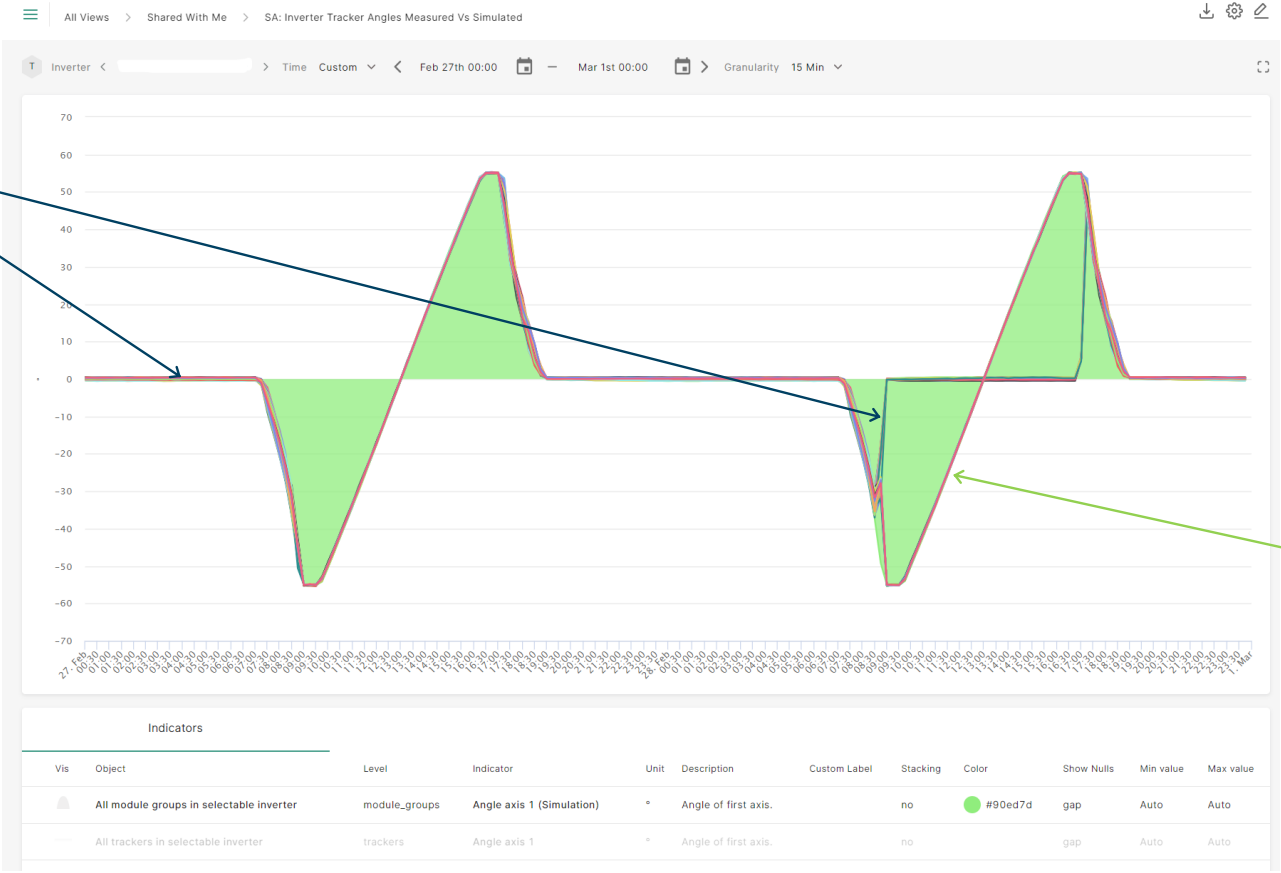


Curtailment deviation



Tracker deviation

Actual angles



Curtailment + Tracker deviation



Key Takeaways

- Estimation of MPP allows to split curtailment from other losses
 - Integrated approach needed to have combined loss estimation
 - Loss hierarchy important to quantify losses
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