Ontario Global Adjustment Charge: Forecasting System Coincident Peak Load

10.02.2018

IHI Corporation
Energy Storage Division

IHI ENERGY STORAGE

10MW / 20MWh
Sarnia, Ontario
Ontario GA

Developer:
CONVERGENT
ENERGY + POWER

Read more here

IHI

Agenda

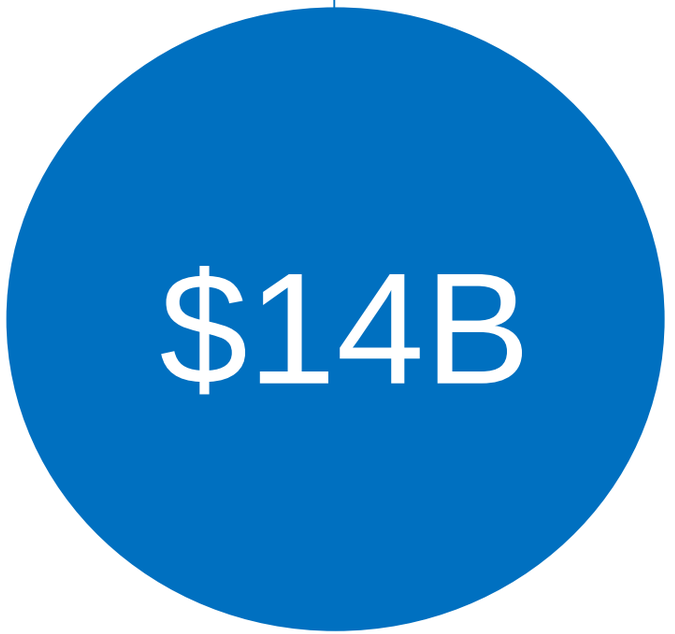
1. IHI Energy Storage
2. Ontario Global Adjustment
3. Forecasting Models & Techniques
4. Results from 2018

About IHI Corporation

160 years of operation experience, since 1853

86GW of energy experience in boiler towers, oil & gas, etc.

$14 Billion in revenue with asset over $16.5B. $1B in cash



IHI Energy Storage

Solutions:

- Advanced software
- System integration with various technologies
- Performance guarantee from bankable brand
- O&M services

Core technology – ESWare™ software:

A true end-to-end energy storage enabler

IHI Core Technology: ESWare® Software

ESWare®

- Simulation → Real-time forecast → Autonomous operation
  - Neural network algorithm
- Enabling optimal dispatch and advanced performance guarantee

ES ANALYZER

Optimal Dispatch
Strategy & Sizing

ES OPTIMIZER

Realtime Dispatch
Autonomous Ops

ES PILOT

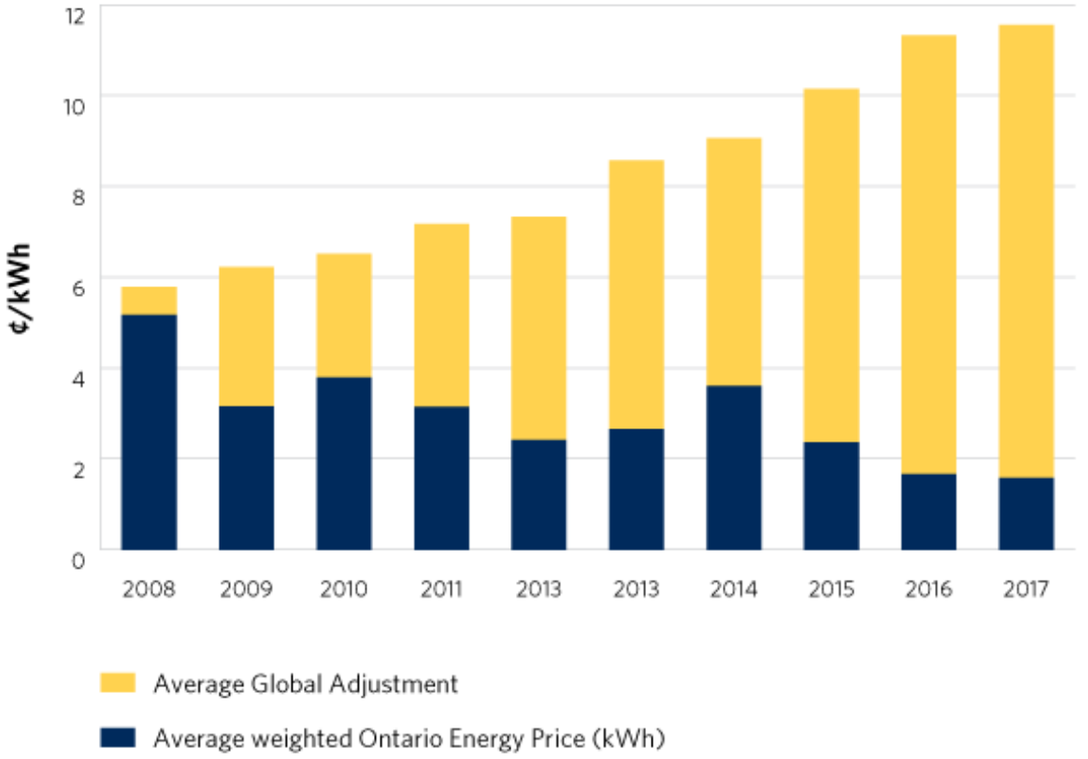
Scalable Site
Control Platform

ES/Analyzer™ licenses are now available. Register here for a fifteen-day free trial.

Ontario Global Adjustment Charge

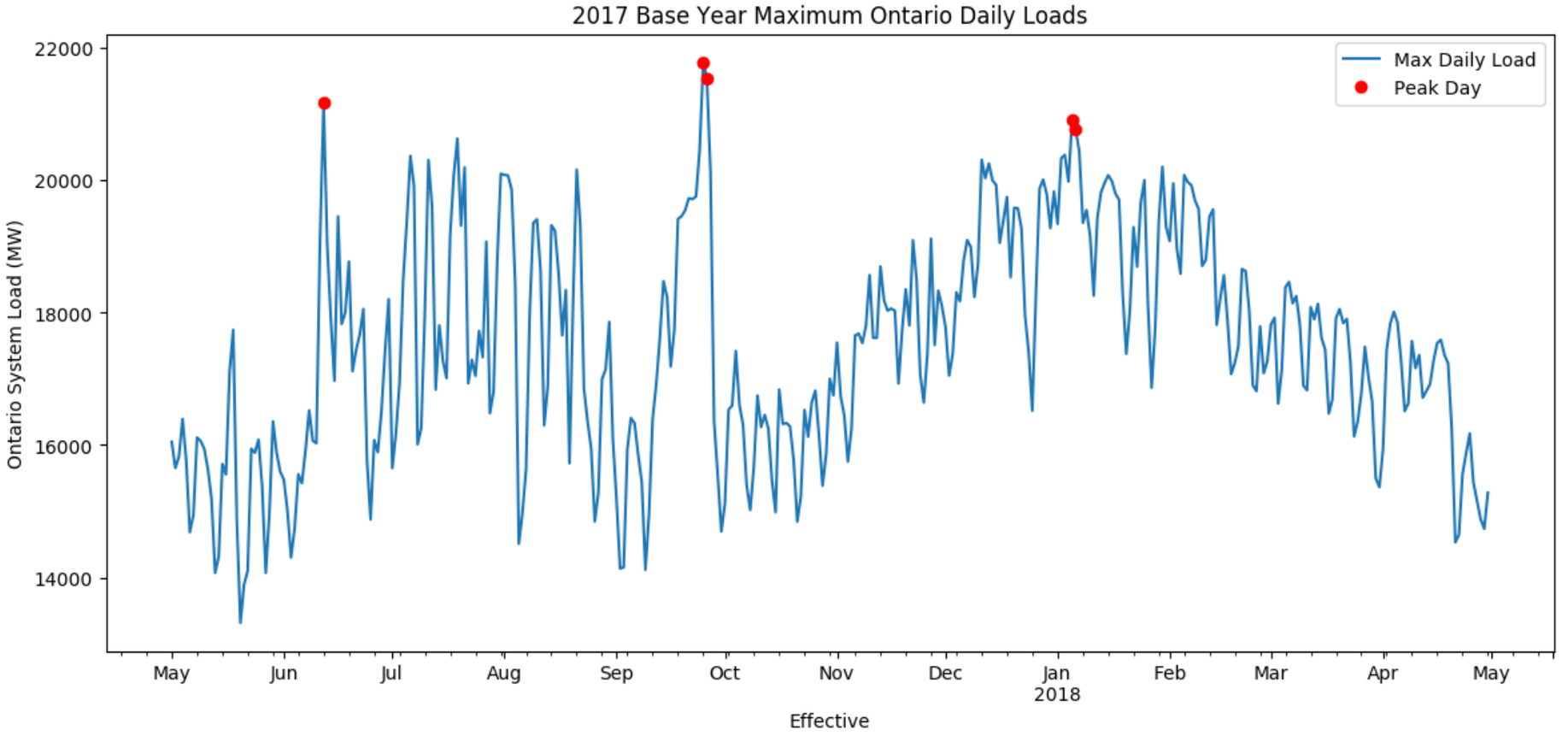
Ontario Global Adjustment (GA)

Problem	The hourly wholesale energy price in Ontario does not fully capture the cost of generating electricity.
Solution	Assess an extra charge to customers in order to make up the difference. This charge incentivizes demand reduction during peak hours.



Source: IESO

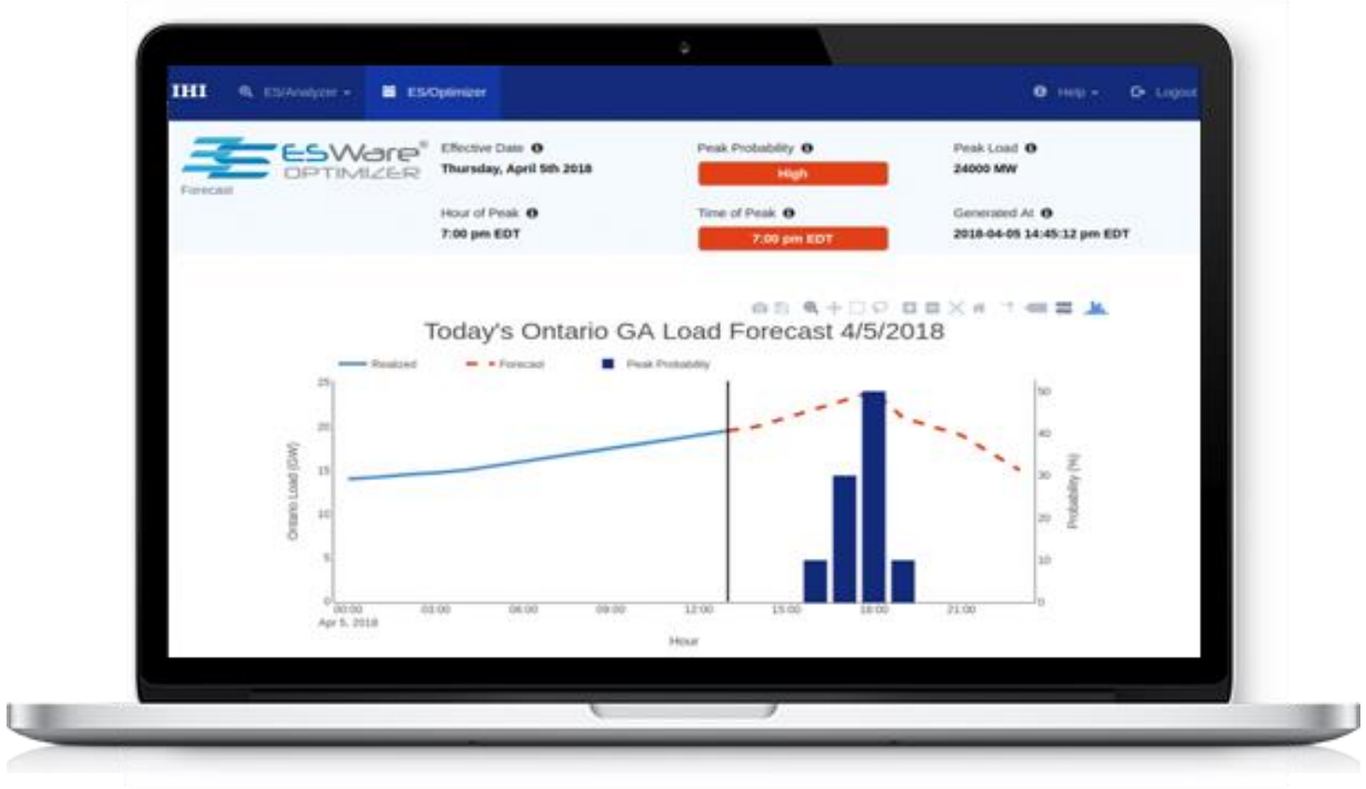
Ontario GA – Class A Customers



- Customer Type: Large (>500kW average monthly peak load)
- Charge Structure: Customer load during 5 yearly coincident peaks
- Value: **$400-500/kW/year**

Forecasting Models & Techniques

ES/Forecaster Interface



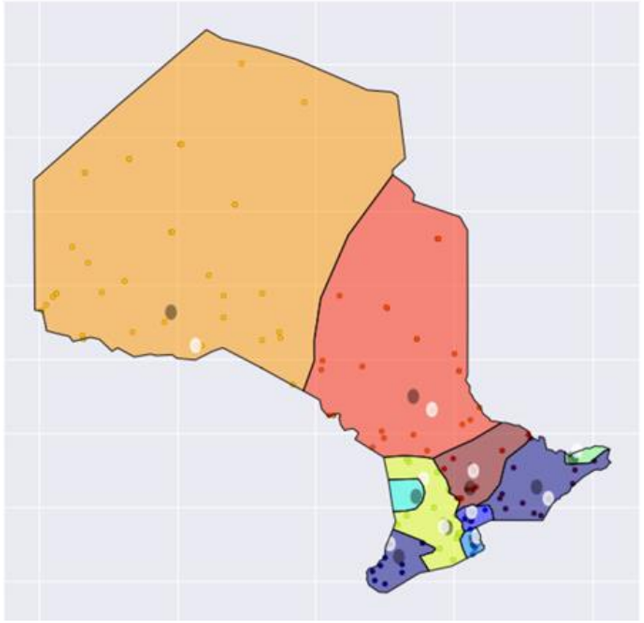
Alerts on high potential peak days

Daily demand forecasting

Hourly peak probability prediction

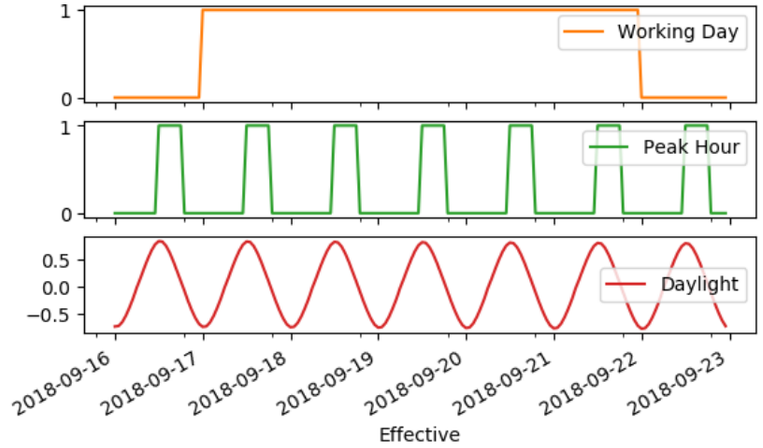
Intraday alerts on high demand days

Forecasting Inputs



Weather Data

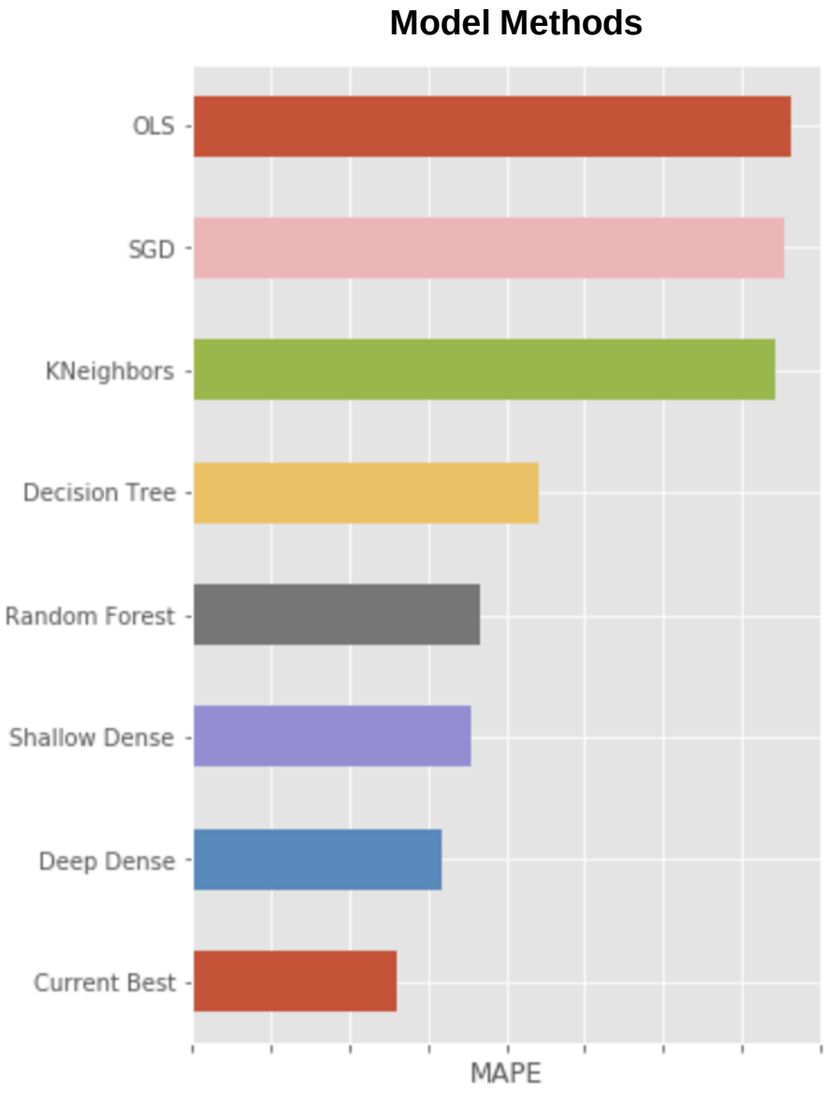
Market & Load Data

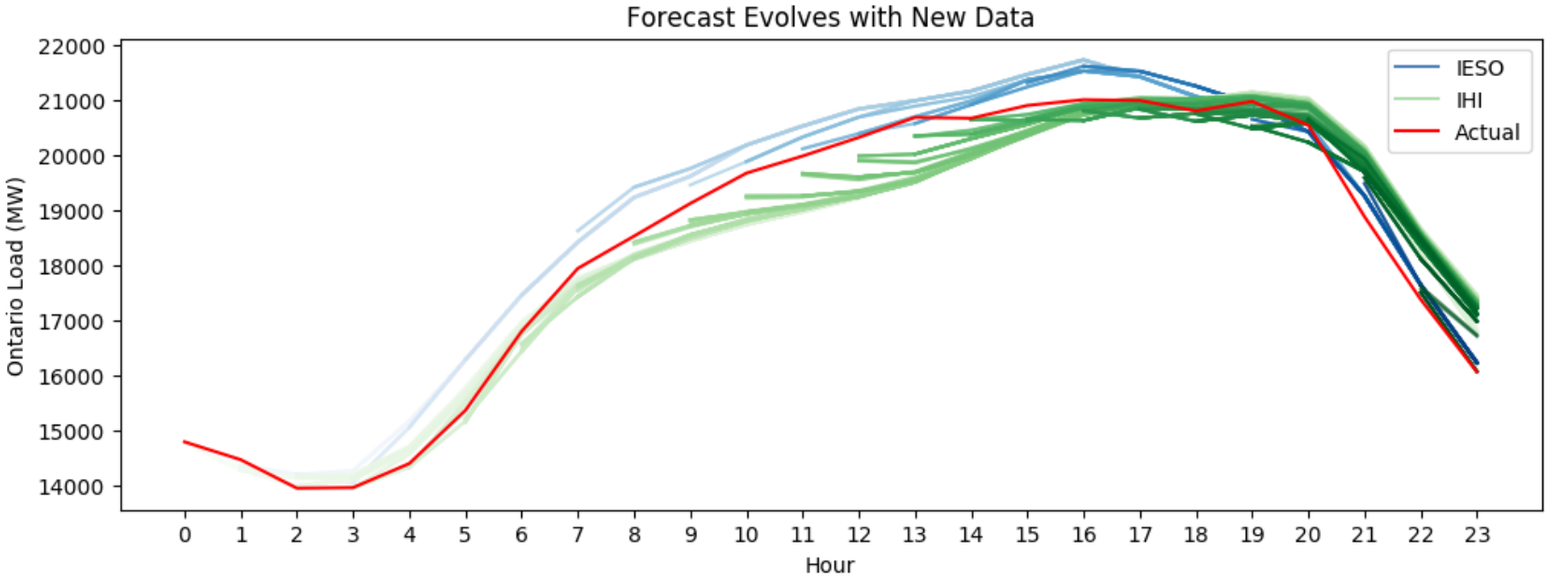


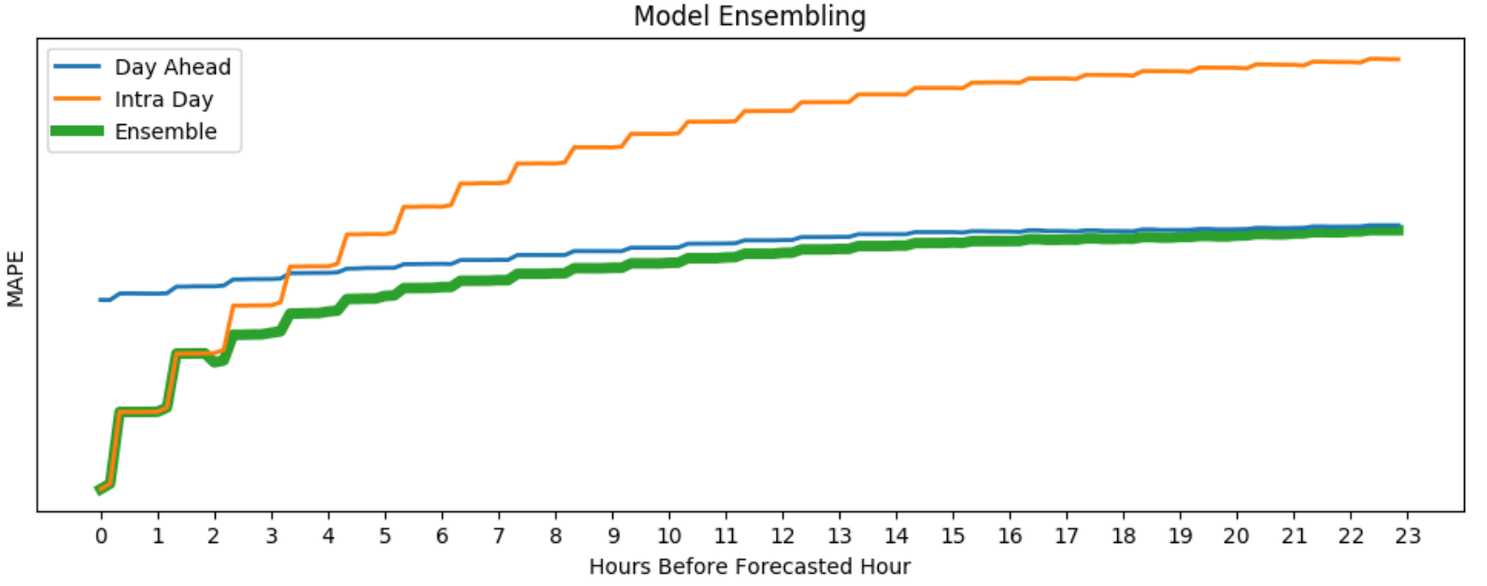
Seasonal Indicators

Forecasting Engine

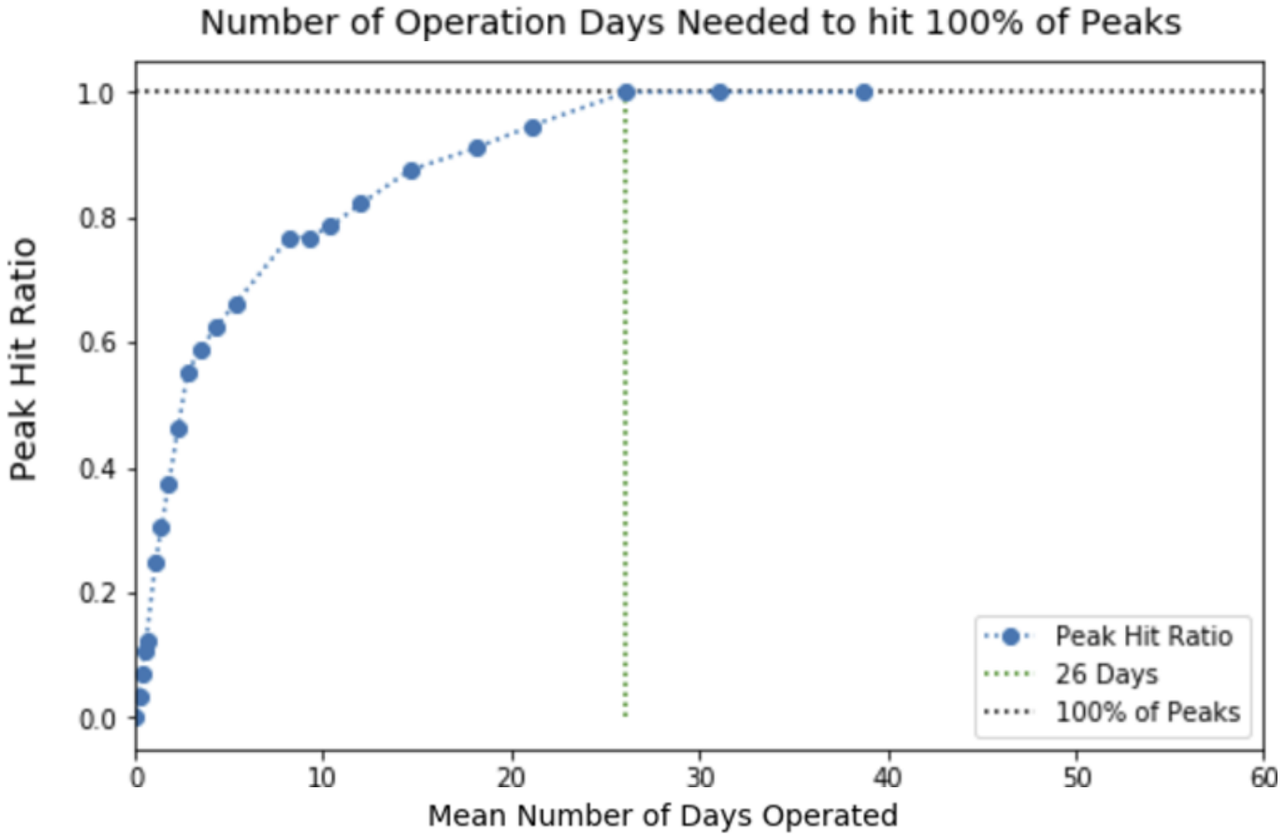
Forecasting Models

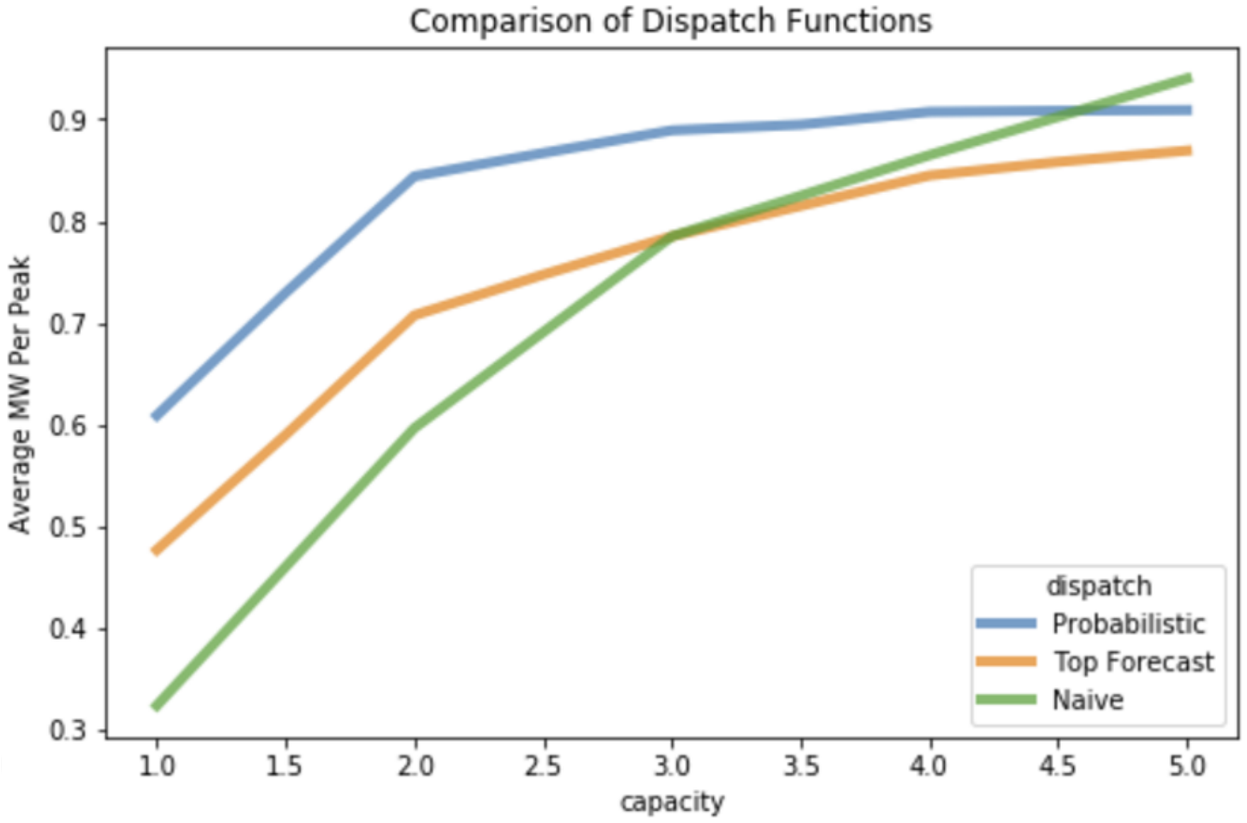






Day-Ahead vs Intraday Operations

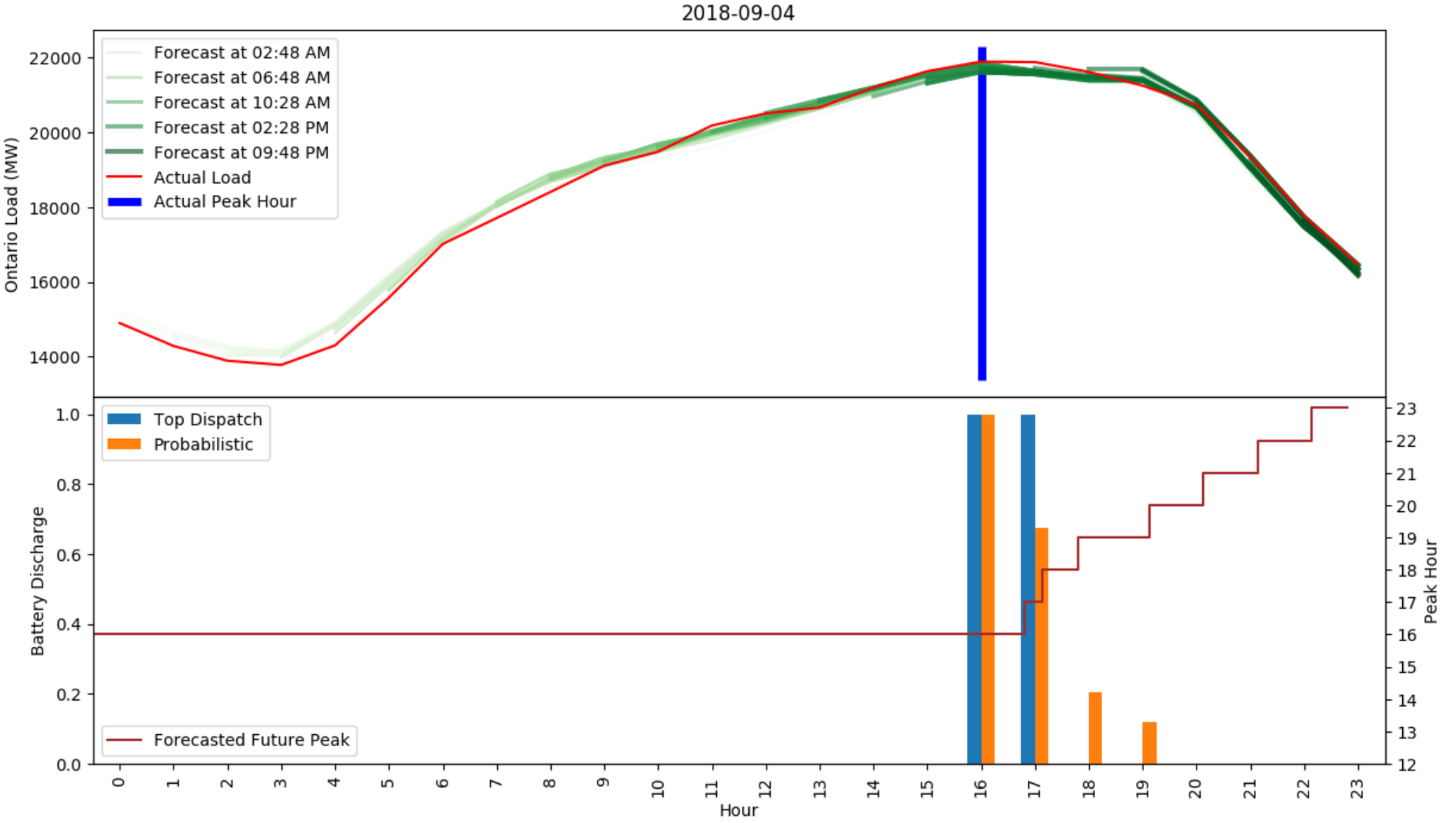




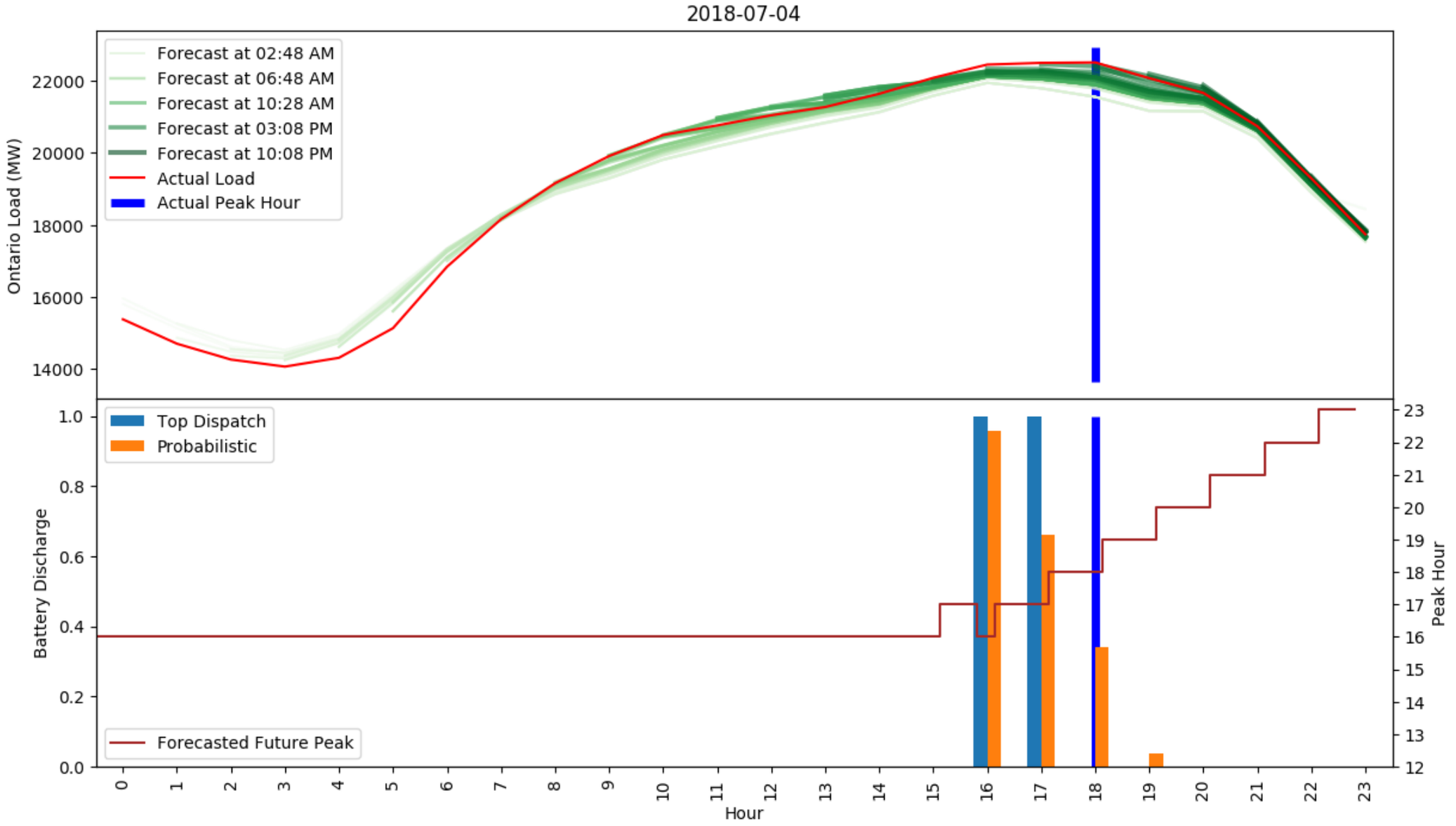
*Performance according to model backtest

2018 Results

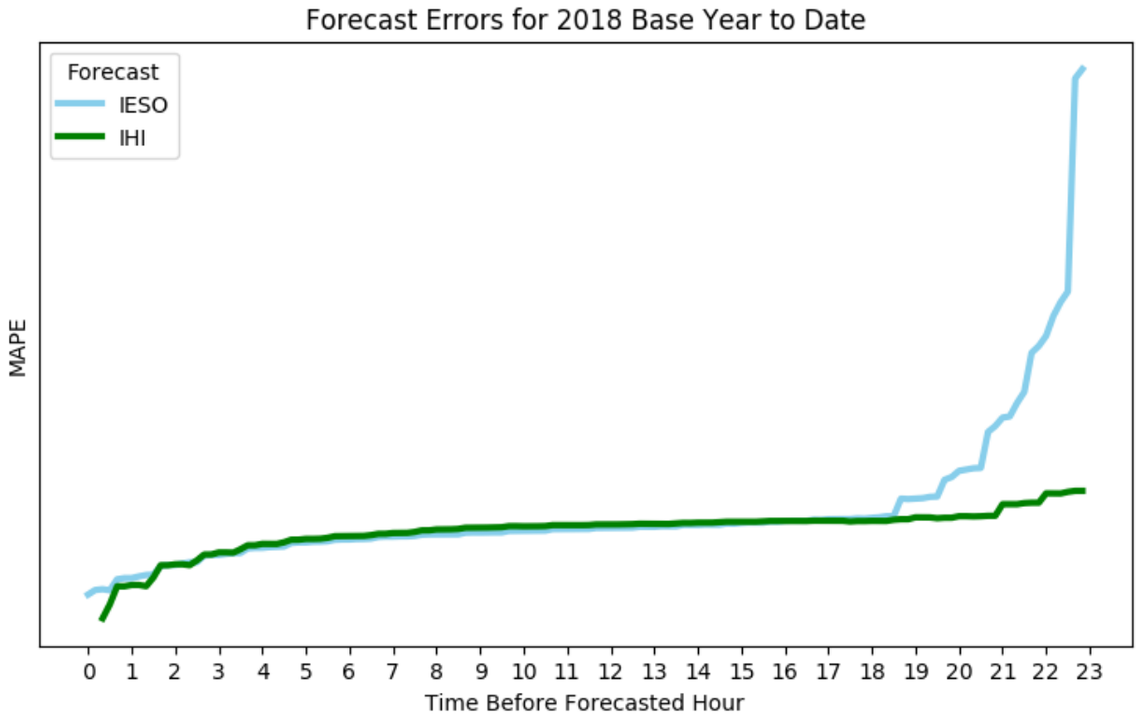
Daily Performance Example 1

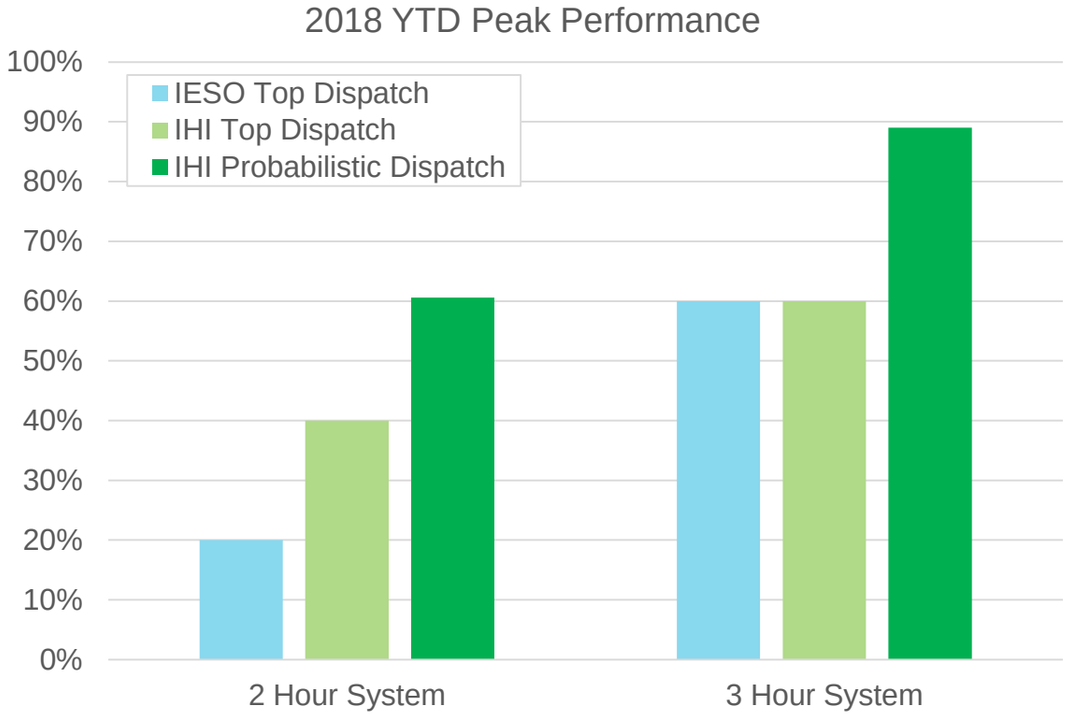


Daily Performance Example 2



2018 YTD Performance





IHI Forecast beats IESO day-ahead and very short-term

Probabilistic forecasts enable probabilistic dispatch, which captures significantly more value

Q&A

Thank you!