Energy Demand Forecasting

## Cortana Intelligence Suite

Trends and Business Requirement

Internet of Things (IoT), alternative energy sources, and big data have merged to create vast opportunities in the utility and energy domain

The utility and the entire energy sector have seen consumption flattening out with consumers demanding better ways to control their use of energy

Utility & Smart Grid companies are in great need to innovate & renew themselves & find ways to forecast future energy demand

Balances
Supply and Demand
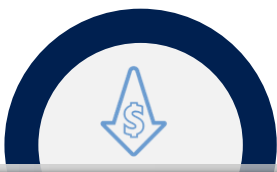
Controls
Cost
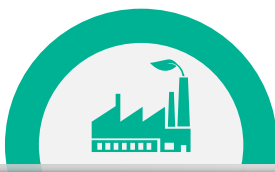
Determines
Production Volumes

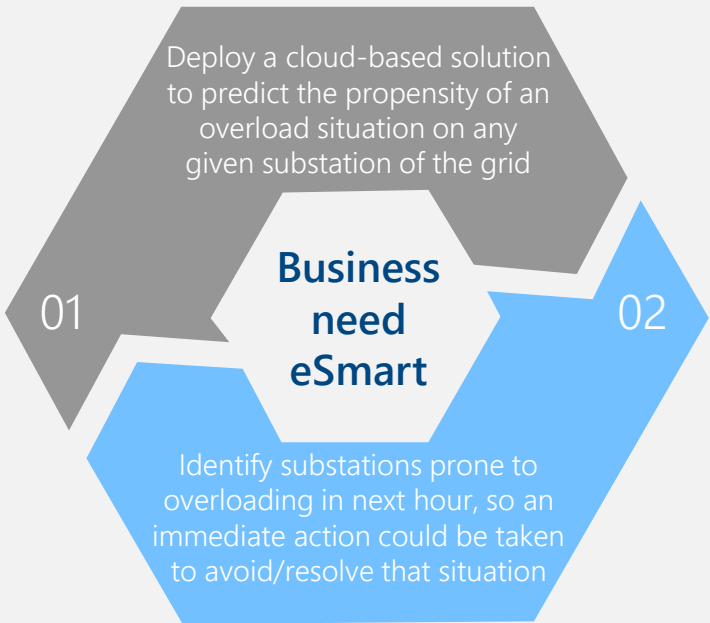## Benefits of Energy Demand Forecasting

Reduces
Greenhouse Gas Emission

Prevents
Energy Wastage

Forecasts
Future Demand & Price

Use Case | eSmart Systems – Overload optimization

eSmart SYSTEMS

Solution

To achieve the business need, an accurate and fast performing prediction is needed which requires implementation of three predictive models:

01 Deploy a cloud-based solution to predict the propensity of an overload situation on any given substation of the grid

Business need eSmart

02 Identify substations prone to overloading in next hour, so an immediate action could be taken to avoid/resolve that situation

Long term model
that enables forecasting of power consumption on each substation during the next few weeks or months

Short term model
that enables forecasting of power consumption on each substation during the next few weeks or months

Temperature model
that provides forecasting of future temperature over multiple scenarios
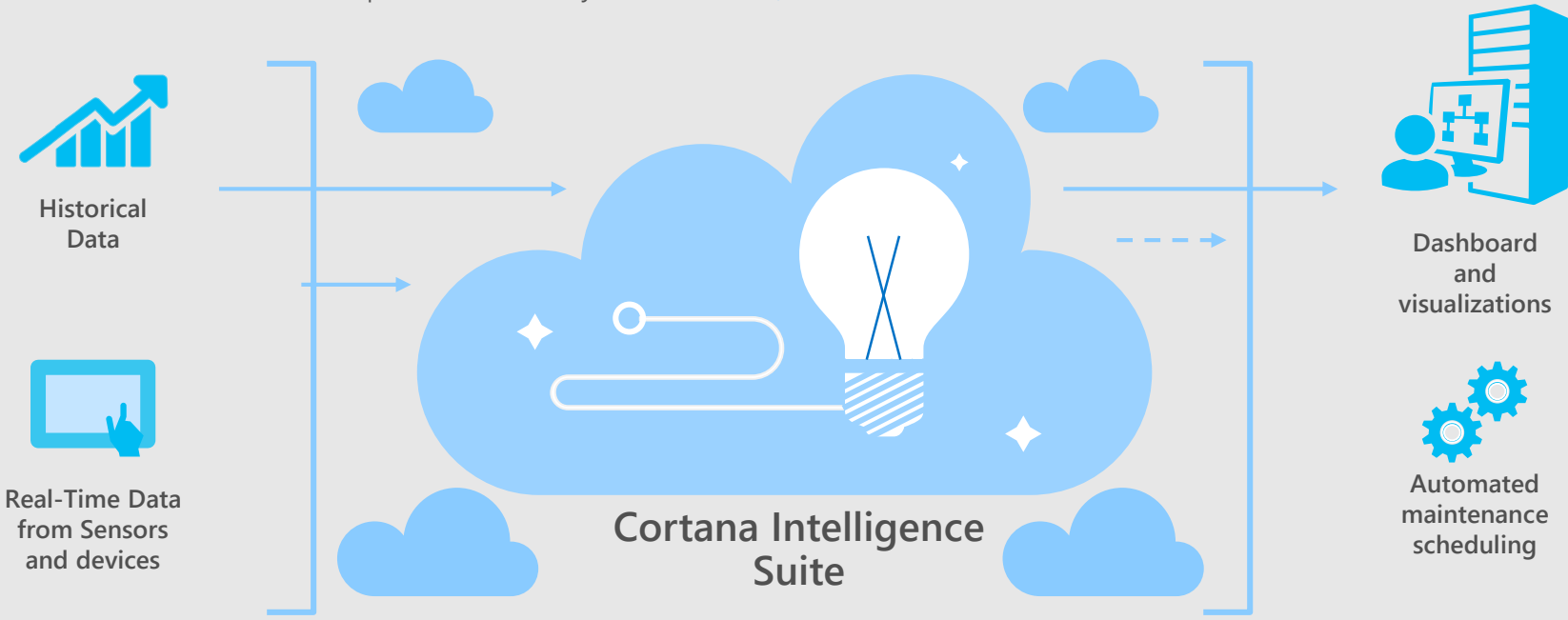
Cortana Intelligence Suite
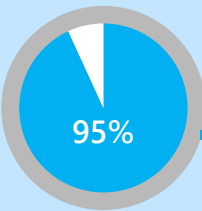## Solution Overview
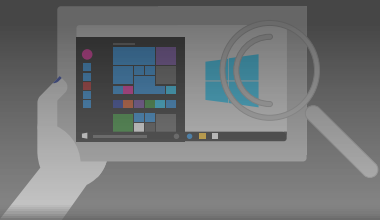
Demand forecasting can help solve critical business problems in many ways and can be considered the foundation for many core use cases in the industry. New abilities to trade power between utilities have brought in a great need to forecast future demand and future price of electricity.

Cortana Intelligence Suite offers advanced capabilities for data ingestion, storage, and processing, and advanced analytics allowing our customers to build robust energy demand forecasting solutions.

Historical Data

Real-Time Data from Sensors and devices

Cortana Intelligence Suite

Dashboard and visualizations

Automated maintenance scheduling

Data ▶▶▶▶▶ Intelligence ▶▶▶▶▶ Action

Demand Forecasting

Short Term Demand Forecasting

95%

MAPE* of **95% or better**

Typical Accuracy

MAPE* of **75% or better**

75%

Long Term Demand Forecasting

Produced every hour or every 24 hours

Forecast Frequency
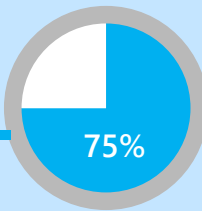
Produced once a week, monthly or quarterly