

Taking Energy Cost Analysis to the Next Level

*Calculate Your True Energy Costs with
SkySpark's Rate Modeler and Tariff Engine*





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Taking Energy Cost Analysis to the Next Level

SkySpark's Rate Modeler and Tariff Engine

Improving financial results is the prime driver in applying data analytics to facilities and equipment systems. The role of analytics in reducing energy and operational costs is well proven with thousands of successful implementations. In addition, independent studies have also verified that more efficient facilities have higher overall financial performance.

A critical element of using analytics to drive these financial benefits is the ability to assign costs to energy and other resources (water, oil, natural gas, etc.), and to be able to correlate the costs associated with operational issues identified by analytic rules. One of the great challenges in assigning costs to energy use and analytic findings is the complexity of energy rates. It's reported that there are over 30,000 different electric rate programs in the US alone!

In order to address the need to calculate energy costs based on real world, complex energy rates SkySpark includes a Rate Modeler and Tariff Engine. This capability allows you to calculate the actual costs associated with electrical energy (and other metered resources) and apply those costs to analytic results – “sparks” - identified by SkySpark rules.

The Tariff Engine builds on SkySpark's cost calculation features, which allow cost factors and cost calculation formulas to be added to analytic rules, energy meter data and KPIs.

Could you end up paying more for using less energy?
Could you use the same amount of energy and pay less?

For most facilities the cost of energy is not a simple calculation of kwh times a fixed number like \$0.12/per kwh. Electric energy costs are calculated based on complex tariff rates. SkySpark includes a Tariff engine that calculates real energy costs based on your true tariff rates.

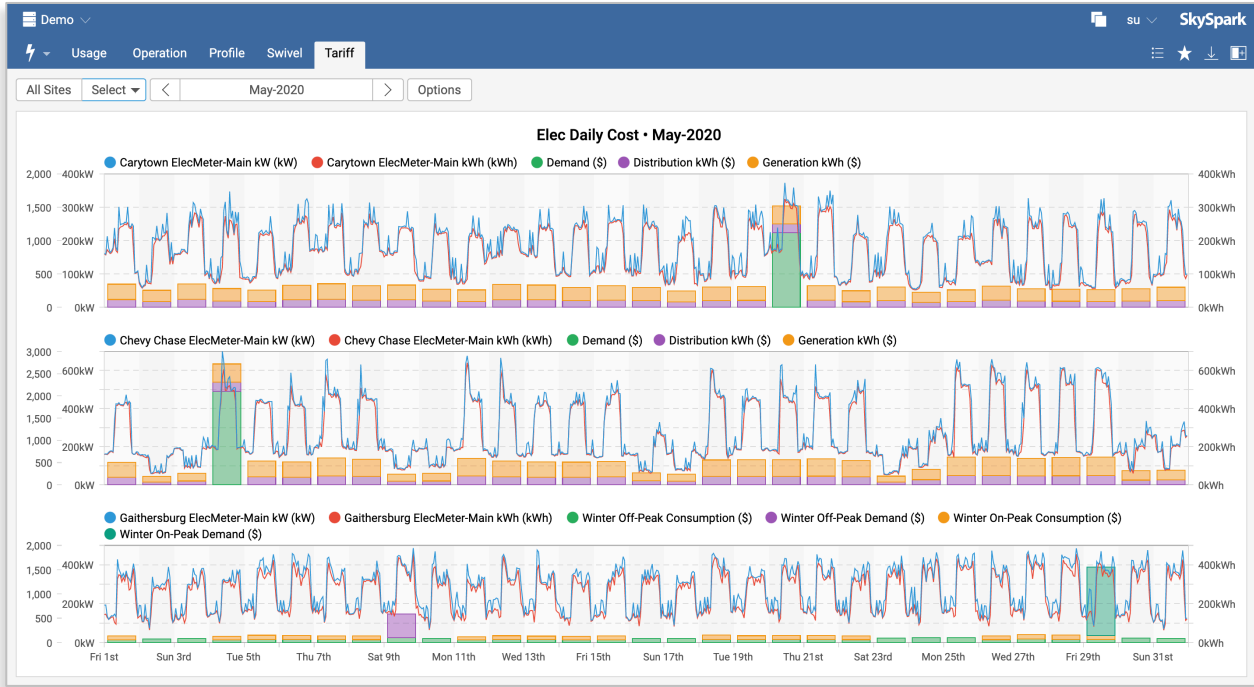
Rate Modeler Supports Real World, Complex Energy Rate Structures

The rate modeler allows rates to be defined based on a wide range of billing “charges” including:

- Consumption
- Demand
- Service and equipment charges (both fixed rate and percentage-based)
- Minimum contract charges
- Distribution and Generation charges
- Ratchets
- Time of Use including both time of day and monthly use factors
- Ranges (or blocks)
- Currency
- Custom charges which can be expressed as math functions
- Definition of billing periods (including support for variable billing periods)
- Variable fees based on data retrieved from external systems

Once the “charges” that make up a tariff rate are defined the next step is to assign the tariff to equipment such as meters. The SkySpark Tariff Engine then calculates costs based on those charges. The result is precise calculation of cost associated with electric and other energy resources.

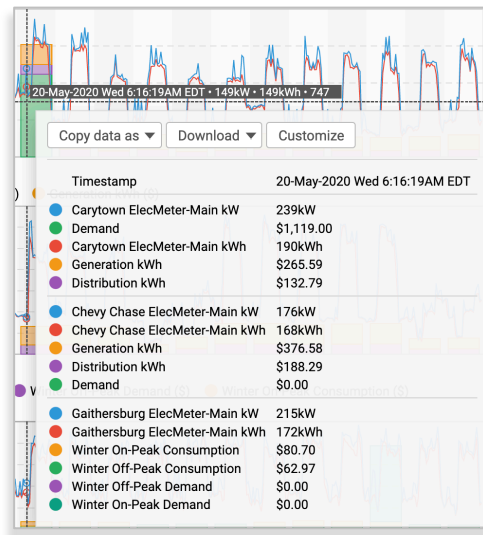
The view on the following page shows an example of cost based on a rate with multiple charges: a basic charge, distribution charge for kWh, generation charges for kWh, a demand charge and state taxes.



In the view above the line graphs represent the consumption and demand values from the meters. The vertical bar graphs represent the costs calculated based on the charges associated with the Tariff rate. SkySpark automatically correlates these data and the Tariff View overlays them to provide operators with a clear view of how energy consumption and demand impact actual energy costs.

By clicking anywhere on the chart, the user is provided with a popup showing all details of the energy and cost data →

With another click users can export all of the data in a range of formats (CSV, JSON, JSON-LD, Trio, Turtle, XML and Zinc), and download the view as an image (svg and png formats are supported).



The Rate Modeler has been tested with rates from around the world and is extremely flexible to address unique charges and structures. And, it supports rates where charges change over time by tracking charges as a history record.

The Tariff Engine can also be used in conjunction with SkySpark's scheduling features to create schedule-aware tariffs that take into account Time of Day, and Monthly and seasonal tariff elements.

In addition, SkySpark's open API allows for direct integration with Tariff Rate services and databases offered by third party providers.

Cost Information Enhances Understanding and Supports Better Investment Decisions

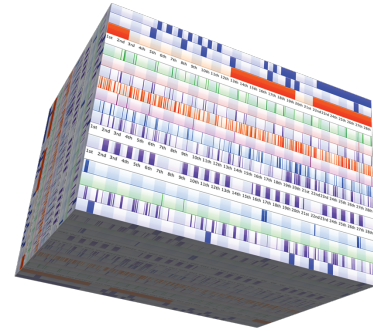
While it's true that not all analytic findings can be directly associated with costs, a significant portion of analytic results can have costs associated with them. Being able to present cost data enables facility managers to:

- Develop more comprehensive proposals and justifications for upgrades, repairs and improvements
- Better evaluate and select energy rates
- Plan operating and capital budgets
- Increase organizational awareness of the financial implications of operational systems
- Present operational data in the language of financial managers

In our experience one of the key benefits of SkySpark analytics is the clarity and visibility it brings to the financial impact of operational issues and resource use. SkySpark's analytics and visualization tools give facility managers and operators financial and reporting tools on par with the tools used in other departments.

SkySpark® – Analytics for a World of Smart Devices

The past decade has seen dramatic advances in automation systems and smart devices. From IP connected systems using a variety of standard protocols, to support for web services, and the emergence of the IoT, it is now possible to access the data produced by the wide range of devices found in today's smart devices and equipment systems.



Access to this data opens up new opportunities for the creation of value-added services to help businesses reduce energy consumption and operational costs and to identify opportunities to enhance operations through improved control, and replacement or repair of capital equipment.

Access to the data is just the first step in that journey, however. The new challenge is how to manage and derive value from the exploding amount of data available from smart and connected devices. SkyFoundry's SkySpark® directly addresses this challenge.

The new frontier is to efficiently manage and analyze data to Find What Matters™.

ABOUT SKYFOUNDRY

SkyFoundry's mission is to provide software solutions for the age of "the Internet of things". Areas of focus include:

- Facility Automation and Management
- Remote device and equipment monitoring
- Energy management, utility data analytics
- Asset management

SkyFoundry products help customers derive value from the data in smart systems. Contact us to learn more.

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