



# THE TROUBLE WITH TARIFFS

SIMPLE ACCURATE REPORTING ACROSS GEOGRAPHIC BOUNDARIES

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**ABSTRACT: THIS DOCUMENT DESCRIBES THE CHALLENGES ENCOUNTERED WHEN TRYING TO REPRESENTATIVELY REPORT COST AND CARBON SAVINGS ACROSS GEOGRAPHICAL BOUNDARIES AND HOW NIGHTWATCHMAN 6 ADDRESSES THEM.**

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## What is a Tariff?

The price charged to the customer by electricity utility companies is usually referred to as a tariff. This is due to the way that electricity markets developed in the early years of the 20th century. They were deemed at the time, to be best run as a monopoly with "regulation" by the state. Because of this, the amount that could be charged by the electricity companies could only be priced within state regulations. These types of government-approved price schedules are known as tariffs.

Over the years, the monopolies were broken up and the electricity was priced according to free market principles, where the laws of supply and demand dictate the price. However the name used for the price of electricity has remained a tariff.

## Why are Tariffs important

The price that is charged for electricity can vary dramatically from place to place based upon many factors, including; the capacity for electricity production in the area, the cost of producing the electricity, local demand for electricity etc...

For example, even within the USA the price of electricity can vary from 6.87c/kWh in Idaho, to 17.27c/kWh in New York, to 26.14c/kWh in Hawaii<sup>1</sup>.

The same is of course true for international locations, from the equivalent of 6c/kWh in Korea to the equivalent of 36c/kWh in Denmark<sup>2</sup>.

When calculating the cost of electricity use, or more importantly the savings made by using electricity more efficiently (i.e. through PC power management), it is important that the correct price is used for savings from each location.

## What about carbon?

The amount of carbon dioxide emitted by the generation of electricity can also vary dramatically from location to location.

Nuclear, hydro, solar and wind emit very little carbon dioxide when generating electricity. Conversely coal, natural gas, biomass etc. emit much higher levels of carbon dioxide when used to generate electricity.

The amount of carbon dioxide emitted per kWh will therefore vary, based upon the mix of the types of electricity generation facilities used.

In the USA this can be from as little as 1.08 lb CO<sub>2</sub>/kWh in California through to 2.16 lb CO<sub>2</sub>/kWh in Kansas<sup>3</sup>.

When reporting on carbon emissions, either for internal sustainability initiatives, or more commonly in future for legislation, it is therefore important to have the correct carbon conversion factors for each location (also known as the greenhouse gas conversion factor).

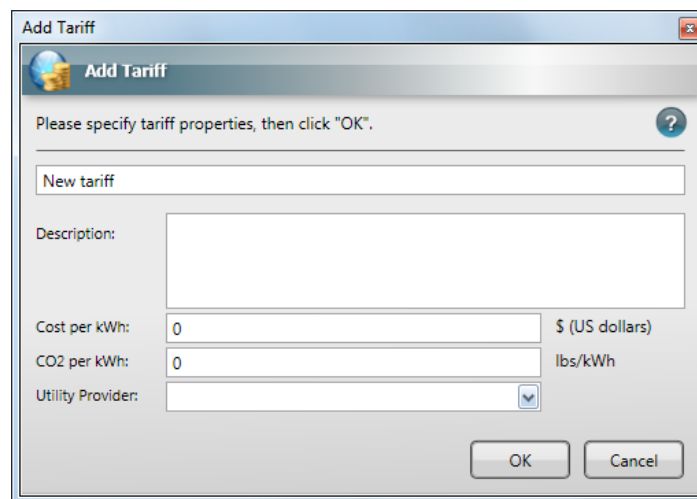
## Don't forget the rebates

An increasing number of energy utility companies, especially in capacity constrained areas, are offering rebates to customers who implement energy efficiency measures, which of course includes the installation of PC power management software.

However in order to obtain the rebate, customers must produce a report showing, for each location, how many PCs have energy efficiency software installed, and that it is actually saving energy.

## The solution – NightWatchman Tariffs

NightWatchman v6 now includes the ability to create a tariff, consisting of a cost per kWh of electricity (in your central management currency), a conversion rate for CO<sub>2</sub>, and the utility provider.



The screenshot shows a Windows-style dialog box titled "Add Tariff". Inside the dialog, there is a subtitle "Add Tariff" and a help icon. The main instruction says "Please specify tariff properties, then click 'OK'". Below this, there is a text input field labeled "New tariff". Underneath, there is a "Description:" label followed by a larger text area. Then, there are two rows of input fields: "Cost per kWh:" with a numeric field containing "0" and a unit selector "\$ (US dollars)", and "CO2 per kWh:" with a numeric field containing "0" and a unit selector "lbs/kWh". Below these is a "Utility Provider:" label with a dropdown menu. At the bottom right, there are "OK" and "Cancel" buttons.

This tariff can then be applied to a location group at any level within the NightWatchman Management Center console (i.e. Country, State etc...). Any PCs contained within that location will automatically have that tariff applied for all cost, emissions and savings reports.

In this way, NightWatchman can provide very accurate cost, emissions and savings reports across geographic boundaries, with each PC being assigned the correct electricity price and carbon conversion factor for the geographic location in which they reside.

There is also a new Utility Provider report, which provides all of the information that utility providers require for their rebate schemes, making it very simple to apply for rebates and receive them.

## Simple accurate reporting across geographical boundaries

The new Tariff support in NightWatchman v6 provides consolidated reports covering multiple locations, without the need to run multiple reports and manually add them together. This saves you time and effort, making it easier to obtain the maximum benefit from your investment in PC power management software.

## References

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<sup>1</sup> Average Retail Price of Electricity to Ultimate Customers by End-Use Sector, by State – Commercial Pricing June-10.  
[http://www.eia.doe.gov/cneaf/electricity/epm/table5\\_6\\_a.html](http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_a.html)

<sup>2</sup> Energy Prices & Taxes – Quarterly Statistics: Table 22 – Electricity Prices for Households in US Dollars/kWh  
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<sup>3</sup> eGRID2007 Version 1.1 Year 2005 GHG Annual Output Emissions Rates. Annual non-baseload output emission rates,  
<http://cfpub.epa.gov/egridweb/ghg.cfm>