

# Oranges and Energy – Prices

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Consider the lowly orange in the local grocery and how its price is set. What does the local grocer charge? In general, people can buy groceries in various places, so an individual grocer needs to be sensitive to that reality. Also, the grocer wants to sell the oranges before they go bad and if the price is set too high people will purchase elsewhere or buy another food as a substitute. When all the dust settles, a grocer will charge the price consistent with maximizing the grocer's profit. Why would a grocer charge less?

Such is the case with virtually all products and services in a competitive free economy. Suppliers set prices consistent with a buyer having options (competitive market) and maximizing their own profit. The US economy is based on this approach and first year economics students can show how this approach efficiently maximizes the value of overall production and distribution of products and services.

Free markets are not only mathematically attractive to economists, but the US economy has demonstrated the value of free markets and serves as an existence proof for the world. Of course the idea of a free market system where prices are set dependent on what the market will support is not new and not unique to the US. Frederic Bastiat was a French economist, author and lecturer who died in 1850. The extended quote below helps put the concept of free markets in perspective for those that do not aspire to the math of marginal cost curves and supply and demand intersections:

“On coming to Paris for a visit, I said to myself: Here are a million human beings who would all die in a few days if supplies of all sorts did not flow into this great metropolis. It staggers the imagination to try to comprehend the vast multiplicity of objects that must pass through its gates tomorrow, if its inhabitants are to be preserved from the horrors of famine, insurrection, and pillage. And yet all are sleeping peacefully at this moment, without being disturbed for a single instant by the idea of so frightful a prospect. ”

“How does each succeeding day manage to bring to this gigantic market just what is necessary—neither too much nor too little? What, then, is the resourceful and secret power that governs the amazing regularity of such complicated movements, a regularity in which everyone has such implicit faith, although his prosperity and his very life depend upon it? That power is an absolute principle, the principle of free exchange. We put our faith in that inner light which Providence has placed in the hearts of all men, and to which has been entrusted the preservation and the unlimited improvement of our species, a light we term self-interest, which is so illuminating, so constant, and so penetrating, when it is left free of every hindrance. “

“Where would you be, inhabitants of Paris, if some cabinet minister decided to substitute for that power contrivances of his own invention, however superior we might suppose

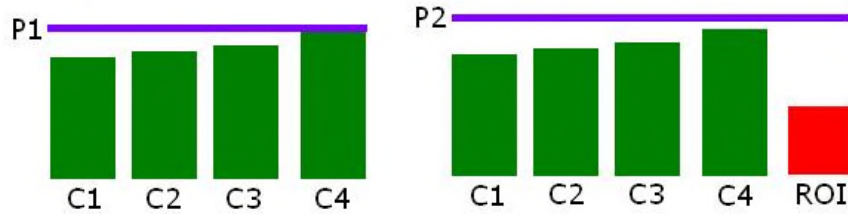
them to be; if he proposed to subject this prodigious mechanism to his supreme direction, to take control of all of it into his own hands, to determine by whom, where, how, and under what conditions everything should be produced, transported, exchanged, and consumed? Although there may be much suffering within your walls, although misery, despair, and perhaps starvation, cause more tears to flow than your warm-hearted charity can wipe away, it is probable, I dare say it is certain, that the arbitrary intervention of the government would infinitely multiply this suffering and spread among all of you the ills that now affect only a small number of your fellow-citizens.”

Getting back to the orange – the grocer does not consider the cost of the oranges in setting the price except to assert that the price must be greater than the cost of the orange. If the supply comes from a supplier that charges 10 cents per orange and the supply is supplemented by the local farmer that charges 8 cents an orange – the grocer’s price is set at the single price the market will support - not at different prices depending on the 2 different costs.

Such is the case with energy in wholesale (RTO/ISO) markets. A process mathematically identical to the orange example above is used. Wholesale energy is priced to customers (distribution companies that supply the end customers – the final consumers of energy) the same as oranges. Wholesale prices are set at the intersection of supply and demand. At any moment the price is equal to what the market will support – if more is demanded the price will rise, if less is demanded, the price will fall. Of course the process to manage this magic is not the same as oranges – but the Federal Energy Regulatory Commission (FERC) oversees a process to ensure this is the case. The FERC process (enacted as tariffs that govern the RTOs/ISOs) mimics the processes at work to price the orange and every other product governed by competitive markets.

The process includes paying every generator the highest price in the market at any point in time regardless of their individual actual cost. This situation is outlined in the left side of Diagram 1 below where price is set at P1 and every generator (that is generating) with a lower cost (C1, C2, and C3) is paid cost of C4 – which is where the price to the wholesale customers is set. Some have argued that this is inherently unfair – although like oranges – it can be shown that this is the most efficient system for the customer to obtain the lowest price.

Diagram 1



Those who argue that energy should not be priced like other products and services – tend to prefer a hands on model like the one on the right in Diagram 1 above where the average price (P2 above) is set at the actual costs of C1+C2+C3+C4, however, they also agree that the company's owning C1, C2, C3, and C4 would go out of business without a profit and so a Return On Investment (ROI) component is added. A mathematical comparison of the models is more of a graduate school exercise and beyond the scope of this paper – but P2 will be greater than P1.

Of course those who choose not to have faith in the economist's proofs – still have the Paris food quote to consider.

If one were to agree with the Economist's proofs, or the productivity of the US economy, or even the Paris food example – but still be against pricing energy like oranges – they must argue that energy is somehow different in ways that nullify the orange approach.

Of course, energy is different – like cars are different than oranges but just a physical difference is not grounds to abandon a proven efficient system for price determination. Differences that actually cancel the ability of market mechanisms to perform must be shown. The main target then becomes an observation that the energy generators are monopolies and make inflated bids into the market – or that the buyers of energy have no choice and therefore cannot exert normal market pressures. These factors are tightly controlled under FERC rules and each of the markets employ independent professionals charged with monitoring the markets and each market participant to ensure markets are followed.

The resulting system at work in the US Energy industry at the wholesale level in the RTOs/ISOs is one where generators compete based on their marginal costs (like all other commodities in the economy) and are paid based on the generator at the margin (like all other commodities in the economy). The FERC maintains authority to establish fair and reasonable wholesale electricity prices - and implements a policy of competition managed by the RTOs/ISOs to achieve that competition and provide resulting prices.

Without competition there are monopolies that regulators must somehow find a way to directly manage. A famous quote by John Stuart Mill comes to mind:

"With moral conceptions in many respects far ahead of the existing arrangements of society, they have in general very confused and erroneous notions of its actual working, and one of the greatest errors, as I conceive, is to charge upon competition all the economic evils which at present exist. They forget that wherever competition is not, monopoly is, and that monopoly, in all its forms is the taxation of the industrious for the support of the indolence, if not plunder."<sup>1</sup>

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<sup>1</sup> John Stuart Mill in *New Kinds Of Knowledge*, page 144.