Time of Use Pricing

FACT SHEET

ena
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This is one of series of fact sheets to inform pricing practioners within the electricity industry. It should be read alongside the ENA's pricing guideline for electricity distibutors.

Time of Use (ToU) pricing method refers to prices that vary based on the time of consumption (or use).

ToU pricing plans have a higher price during "peak demand" and lower prices during the "off-peak times". There can also be a "Shoulder" price which is the time leading into, or out of, the peak demand period. A shoulder price will be higher than the off-peak but lower than the peak.

Determining the peak, off-peak, and shoulder

Ideally, the time bands for peak, shoulder, and off-peak correspond to the actual times that peaks occur on the distributors' network. Peaks can be identified using historical network averages; while less precise, this approach can be useful where a distributor lacks metering information or needs to smooth unusual network volatility. Distributors can use more precise approaches, such as low voltage metering and heat maps of their networks, to signal when and where the peaks and shoulder periods occur or are likely to occur.

Pricing can signal to consumers an existing or emerging constraint and encourage shifting load to off-peak periods, where it is effective. For example, where congestion is peaking one or two times a day, a ToU price can be used to encourage consumers to shift some of their load into off-peak times.

ToU pricing plans are supported by half-hour metering

A pre-defined network peak period is notified to customers before the start of the pricing year. The period may be limited to specified hours throughout the day, days of the week, or months of the year. Most distributors use pre-defined periods for their network-peak demand prices.

ToU prices are not a new concept for electricity consumers as Day/Night prices and Night Only and Night Boost prices have been available for Residential consumers for quite some time. The time of use periods are generally set on arbitrary times such as Day–7 am to 11 pm and Night–11 pm to 7 am. These "simple" ToU pricing plans can be based on non-half-hour data.

More sophisticated ToU price plans base the time periods on network peaks and rely on half-hourly metering (and data provision) to capture kWh quantities for each pricing period. Distributors may choose to signal peak periods in their network load by applying differing prices across periods. For example, a distributor with a peak period between 5 pm and 9 pm might implement a higher kWh ToU price. The price differential incentives consumers to shift consumption outside the peak period.

With half-hour metering resolution, the chargeable network peak period is appropriately restricted to the whole real-time half hours that fall within the signalled peak period.

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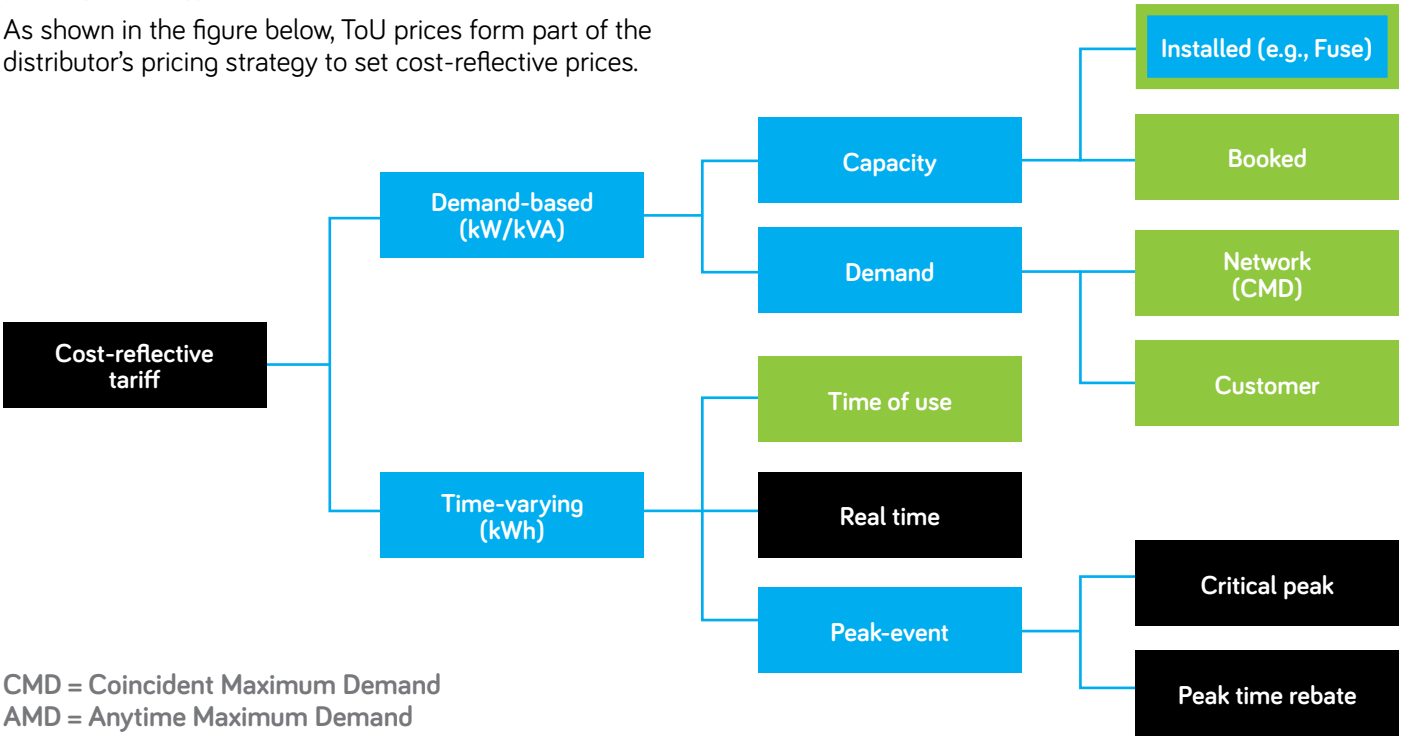
ToU Prices form part of the distributor's pricing strategy

As shown in the figure below, ToU prices form part of the distributor's pricing strategy to set cost-reflective prices.



CMD = Coincident Maximum Demand
AMD = Anytime Maximum Demand

ToU is not by default considered cost-reflective

"Cost-reflective pricing" is the setting of prices to recover the economic costs of electricity distribution services. Prices are cost-reflective when they reflect the underlying drivers (i.e., causes) of the costs to serve.

ToU pricing is effective where a distributor can demonstrate an existing or emerging constraint on the network driven by consumer behaviour. For example, a rapidly growing EV penetration causes a sharp and unsustained peak in an area of a distributor network.

ToU prices can be 'inefficient" where prices are not reflective of existing or emerging network constraints. Inefficient prices can have unintended consequences, such as shifting the peaks instead of reducing demand during the peaks.

Authority's expectations for ToU pricing

"We expect distributors, over the coming year, to understand whether their ToU implementation has reduced network congestion and therefore had the effect of 'cooling' heat maps of utilisation and congestion and whether this effect can be tied to an Asset Management Plan change that has delayed or avoided future network investment."