



imo
Independent Market Operator

Dispatch of a Generator vs DSM





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Market Customer increases consumption, generator dispatched

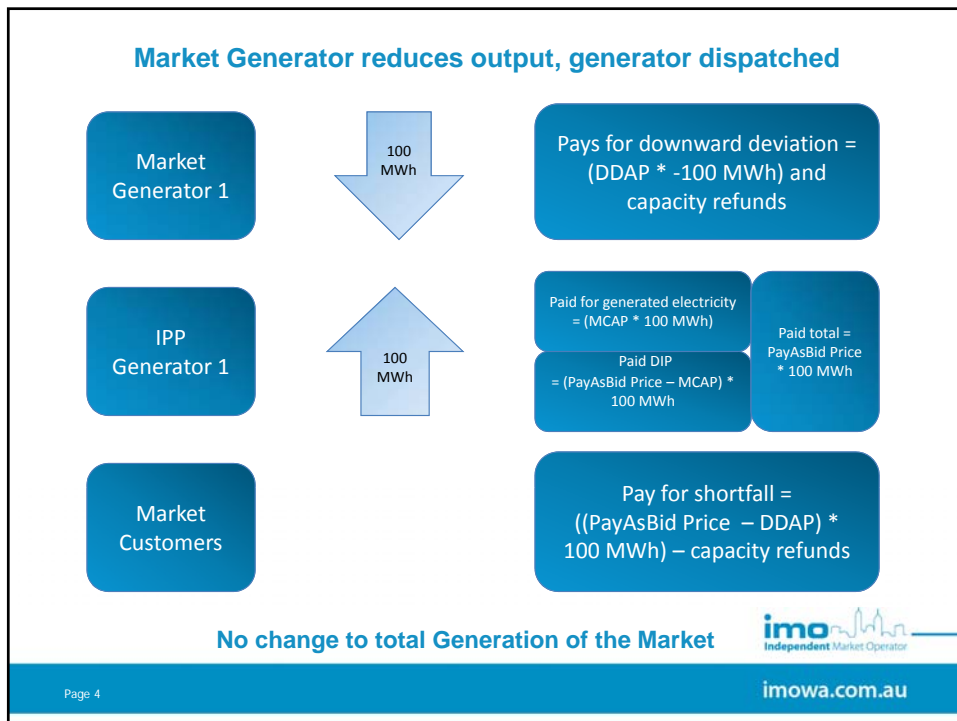
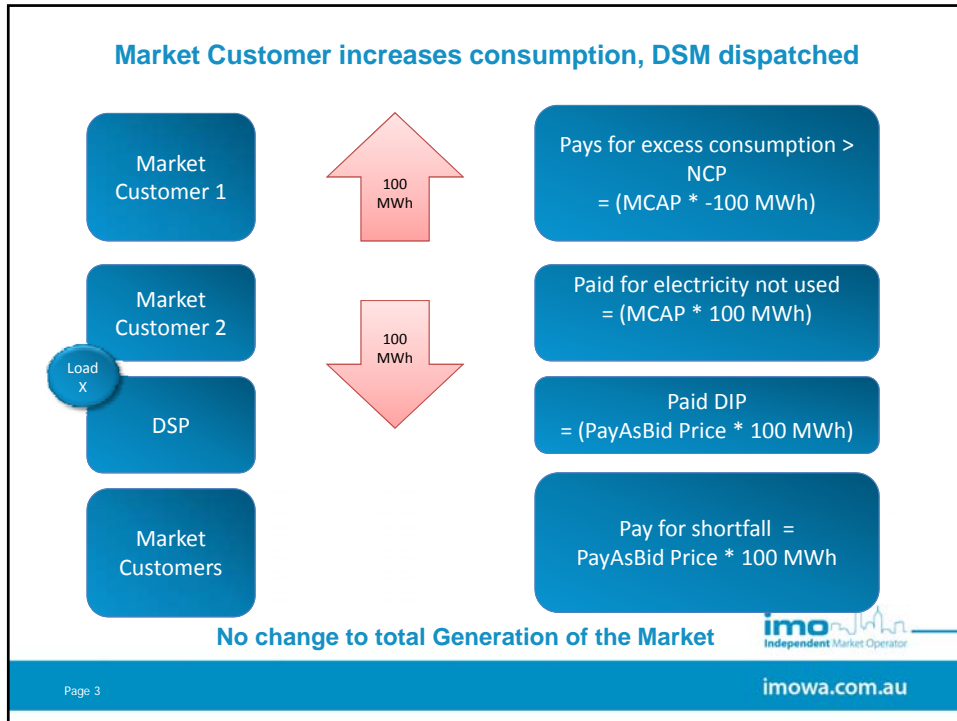
<div style="background-color: #0070C0; color: white; padding: 10px; border-radius: 10px;">Market Customer 1</div>	<div style="color: red; font-size: 2em;">↑</div> <div style="background-color: red; color: white; padding: 5px; border-radius: 5px;">100 MWh</div>	<div style="background-color: #0070C0; color: white; padding: 10px; border-radius: 10px;">Pays for excess consumption > NCP = (MCAP * -100 MWh)</div>
<div style="background-color: #0070C0; color: white; padding: 10px; border-radius: 10px;">IPP Generator 1</div>	<div style="color: blue; font-size: 2em;">↑</div> <div style="background-color: blue; color: white; padding: 5px; border-radius: 5px;">100 MWh</div>	<div style="background-color: #0070C0; color: white; padding: 10px; border-radius: 10px;">Paid for generated electricity = (MCAP * 100 MWh)</div> <div style="display: flex; justify-content: space-between; align-items: center;"> <div style="background-color: #0070C0; color: white; padding: 10px; border-radius: 10px;">Paid DIP = (PayAsBid Price - MCAP) * 100 MWh</div> <div style="background-color: #0070C0; color: white; padding: 10px; border-radius: 10px;">Paid total = PayAsBid Price * 100 MWh</div> </div>
<div style="background-color: #0070C0; color: white; padding: 10px; border-radius: 10px;">Market Customers</div>		<div style="background-color: #0070C0; color: white; padding: 10px; border-radius: 10px;">Pay for shortfall = (PayAsBid Price - MCAP) * 100 MWh</div>

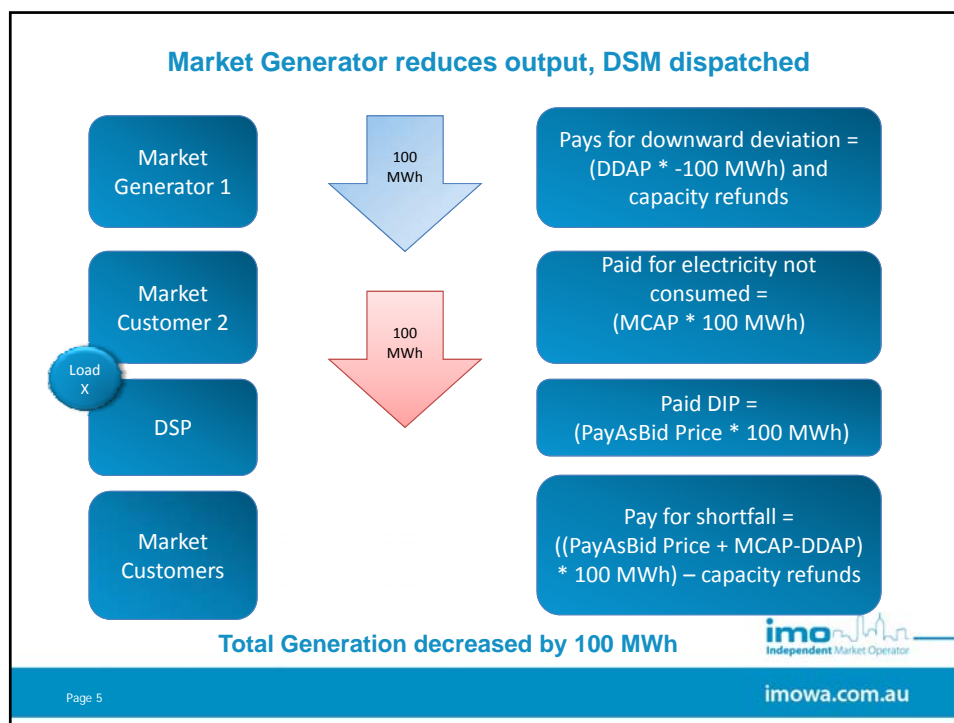
Total Generation increased by 100MWh



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Summary

- Generator and DSP are both paid Pay As Bid Price for Dispatch Quantity
- Shortfall paid by Market Customers is greater if DSM dispatched
- Difference is $MCAP * \text{Dispatch Quantity}$
- Why?
 - Generator produces energy for which one or more Market Participants will pay (at least MCAP)
 - DSM produces no energy, so no contribution from an individual Market Participant to cover MCAP component