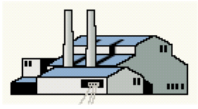
How it Works

THE BIG PICTURE –
How Electricity is Delivered When and Where it is Needed



Power Plants

Electricity is produced by a variety of resources, including natural gas-fired generators, hydroelectric units, nuclear stations, wind farms, geothermal fields, solar facilities and biomass plants.

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Wholesale Power Market

Utilities and other energy service providers use their own power plants or negotiate short- and long-term contracts for power deliveries. Most of the state's electricity is traded through these contracts prior to being scheduled on the California ISO grid.

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Scheduling Coordinators

Companies that schedule their electricity deliveries through the California ISO are called Scheduling Coordinators.

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The California ISO Grid

As the nerve center for the majority of California's power grid (some municipal utilities operate their own transmission lines), the California ISO routes electricity from power plants to substations using the wholesale transmission system.

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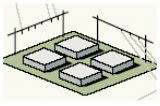

Substations/Utility Companies

Power is "stepped down" in voltage for distribution by local utilities to homes and businesses.

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Consumers

End-users of electricity create the "demand" for power, which can rise and fall depending on weather, time of day and economic conditions.
Consumers may be asked to conserve when demand is high or supply is low.

OUR PIECE OF THE PICTURE --

How the ISO Operates the Wholesale Superhighway for Electrons

1 – Forecasting power comes first. Via the internet, the California ISO publishes a forecast for the power consumers will need 24 hours in advance and then refines the forecast every hour …

2 – Never buying or selling electricity itself, the California ISO acts as an electronic clearinghouse for nearly 15,000 market transactions every hour between buyers and sellers, tracking prices and running sophisticated settlement systems …

3 – Schedules for electricity delivery are submitted to the California ISO the day before the power is needed.…

4 – The California ISO runs the schedules through a complex computer system to mitigate congestion and account for reserves necessary to make sure the "lights stay on". Less than five percent of the state's energy is traded in the California ISO markets; the majority by far is purchased via third party markets and contracts …

5 – Because electricity is the only commodity consumed the instant it is created, the California ISO takes a pulse of the power grid every four seconds to ensure there are enough electrons flowing to meet consumer demand for power …

6 – As controller of 20 transmission paths that crisscross the state, the California ISO acts as the gatekeeper to the grid, determining how much power can flow at all of the import/export points …

7 – If the California ISO sees the demand for power climbing higher than anticipated, it can add additional power from plants located both in and out the of the state to meet the need …

8 – Dispatched power comes from generating units that have bid into the California ISO's electronic auctions, which automatically set a market-clearing price aimed at fostering reasonable wholesale costs.