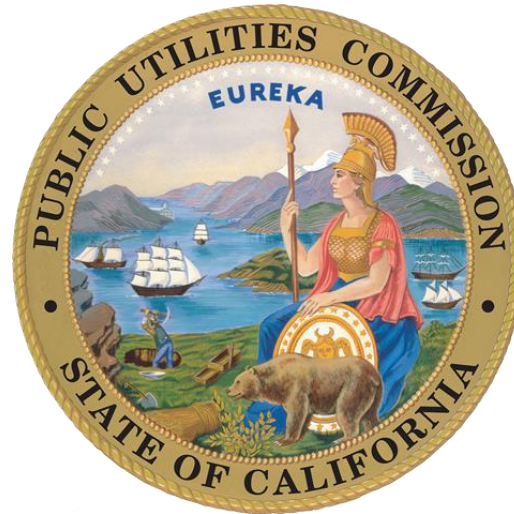




California Customer Choice

Briefing/Webinar



**Draft Green Book
for Public
Discussion**

**An Evaluation of Regulatory Framework
Options for an Evolving Electricity Market**

California Public Utilities Commission

May 3, 2018





Logistics

- California Customer Choice **Presentation**
- **Q&A**
 - Send questions throughout the presentation to customerchoice@cpuc.ca.gov
- **Presenters**
 - Diane Fellman, Project Lead, Policy & Planning Division
 - Michael Colvin, Senior Analyst, Policy & Planning Division
 - Raisa Ledesma Rodriguez, Special Consultant, Executive Division





California Customer Choice Project

Problem Statement: How does increased customer choice occurring in the electric sector impact California's ability to achieve its policy objectives of affordability, decarbonization, and reliability?

Mission Statement: Assist the CPUC in making strategic, timely and informed decisions regarding California's current electricity market transformation.

Study Approach:

- Scope Core Principles and Key Questions
- Establish the problem statement
- Study California's electricity market history
- Research other markets
- Identify lessons learned for California
- Extensive Stakeholder Conversations on the Draft Green Book





Core Principles of California's Energy Policy

- Ensuring affordable electricity rates
- Achieving decarbonization goals
- Maintaining reliability





Key Questions

How does California continue to:

- ensure **consumer protections**?
- support development and incorporation of **innovations** driven by customer demand?
- ensure **universal electric service**?
- leverage investment necessary to **finance the evolution of the electric grid**?
- consider the transition of **utility obligations**?
- have **competitively neutral rules** among market participants?
- ensure customers are **informed to participate** at their desired level?
- impact and benefit **local communities**?





What's the Issue?

- The last time California looked at choice, it had a plan, *however flawed*.
- Now, we are seeing disaggregation of the electricity market through dozens of different decisions and legislative actions, but we do not have a plan.
- If we are not careful, we can drift into another crisis.





Evolution of CA Electricity Market: Competition to Crisis

1976-1986: Qualifying Facilities

- 5,000 MW of Renewables & 5,000 MW of Cogeneration

1993-1999: Deregulation

- 1993: Yellow and Blue Books:
CPUC plan for retail and wholesale competition
- 1996: AB 1890 accelerates competition
- 1998: Market opens

2000-2001: California's Energy Crisis

Post-2001: California had to retrench





Post-Crisis Legislative Solutions: Foundation of Today's Grid

- Build conventional power plants
- Renewable procurement targets (RPS)
- Long-term power purchase agreements
- Suspended additional direct access
- Resource adequacy for reliability
- Freeze retail rates to keep bills affordable
- Maintain protections for low-income ratepayers
- Fund public purpose programs
- Community Choice Aggregation created





Current Policy Shifts Are Reshaping California's Electricity Markets

- **Changing role of the IOUs**
 - Provider of last resort?
 - Grid investment and reliability?
 - Creditworthiness as an investment platform?
 - Public program administration?
 - Decarbonization?
- **Greater choices for customers**
 - Expansion of Community Choice Aggregation
 - Increased Distributed Energy Resources
 - Direct Access at the cap
- **Reliability and procurement disaggregated**





Electricity Market: Providers

IOUs

+

Self-Generators



CCAs

Municipal (POUs)





Supply & Services

Nuclear



Hydro



Natural Gas



Utilities maintain and operate the distribution grid for all types of supply & services

&

Automation



Energy Efficiency



Renewables



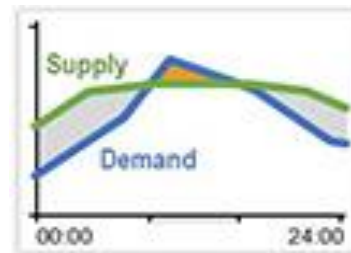
Electric Vehicles



Storage



Demand Response Programs





Market Assessments

- **New York:** Reforming the Energy Vision (REV)
- **Illinois:** Municipal Energy Aggregators (MEAs)
- **Texas:** Deregulation and Competition
- **Great Britain:** Revenue = Innovation + Inputs + Outputs (RIIO)





2016 Market Features

	California	New York	Illinois	Texas	Great Britain
Average Monthly Residential Consumption	547 kWh	595 kWh	733 kWh	1,156 kWh	316.67 kWh
Average Electricity Rates	17.39 cents/kWh	17.58 cents/kWh	12.54 cents/kWh	10.99 cents/kWh	22.17 cents/kWh
Average Monthly Residential Bill	\$95.20	\$104.58	\$91.83	\$127.10	\$70.01
Decarbonization Goals	2030 GHG reduction target 40% below 1990 levels, renewable electricity procurement goal 50% by 2030, doubling energy efficiency savings from electricity end uses by 2030	2030 GHG emissions reduction 40% below 1990 levels, 50% renewable energy target by 2030, and 600 trillion Btu increase in statewide energy efficiency	Renewable Portfolio Standard goal of 25% by 2025-2026 compliance year	Renewable Portfolio goal of 10,000MW by 2025 (was met in 2009), energy efficiency resource standard: reduce energy use by 0.4% of peak demand, or by the prior year's goals, whichever is greater	2050 GHG reduction 80% below 1990 levels, 15% renewable energy target by 2020, coal phase out by 2025
Target Reserve 13 Margins	15%	18.2%	~16%	13.75%	10.3%





New York: Select Findings

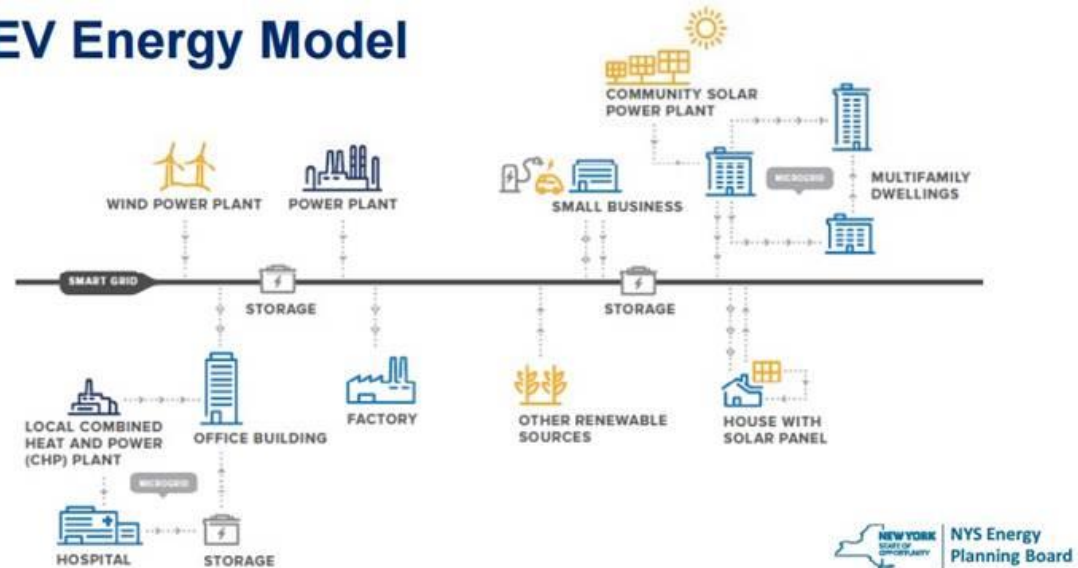
Procurement

- NYSERDA purchases RECs or LSEs behalf and enters into long-term contracts with generators.
- New York CCAs procure energy and energy services on behalf of its customers from an ESCO

Consumer Protection

- Uniform Business Practices and the Home Energy Fair Practices Act govern the interactions between utilities, ESCOs, and customers. The PSC adopted aspects of the Uniform Business Practices to DER.

REV Energy Model



Utility Role




- As Distribution System Platform Providers, utilities are expected to update their technical capabilities in managing a dynamic distribution grid and to facilitate DER deployment.





Illinois: Select Findings

Snapshot of Price Comparison website:

Supplier	Price in cents per kWh	Additional Monthly Fees	Current Monthly Cost			Term (Mo.) Termination Fees	Description
			500 kWh	1000 kWh	1800 kWh		
 Ameren ILLINOIS 1-800-755-5000	Fixed Price 6.167	\$0	\$30.84	\$61.67	\$92.51		This Price to Compare is in effect from October 2017 through May 2018 and uses the supply rate for usage up to 800kWh. See Understanding the Utility's Electric Supply Price for a detailed explanation of the various charges that make up the utility's price, including a new Renewable Energy Adjustment charge.
 Realty Energy Services 877-300-6747 Illinois ManagedPrice™ - AMEREN <input type="checkbox"/> Compare	Variable Price 6.1870	\$3.75	\$34.69	\$65.62	\$96.56	24 \$50	The Illinois ManagedPrice™ is a variable rate with a 24 Month Term. Realty Energy Services is a full-service energy marketer providing natural gas and electricity services.
 AMBIT ENERGY (877) 282-6248 Illinois Select Green Term <input type="checkbox"/> Compare	Fixed Price 7.4500	\$0	\$37.25	\$74.50	\$111.75	12 \$0	Illinois Select Green 12 Month Term (Rate Zone 1): Power your energy needs while making the world a cleaner place.

Market History

- Illinois has a de-regulated market where incumbent utilities offer a “price to beat”
- Municipalities bulk enrolled with retailers; several did not remain as price differential diminished (e.g. Chicago elected to no longer provide MEA service when the price became too high)

Procurement

- The Illinois Power Authority procures energy and allocates costs to all market participants including the incumbent utilities and retail suppliers.

Consumer Protections

- Customers could be informed about enrollment options through a state-sponsored website.





Texas: Select Findings

Affordability & Customer Choice

- Highly engaged customers benefit from the lowest rates available. In practice, many customers remain on the month-to-month rate option and are unaware that they have to reselect a better plan for themselves.

Reliability

- Texas maintains grid reliability through wholesale market mechanisms and without a capacity market or central planning. Scarcity pricing is used to incent new build.

Consumer Protection

- Regulators established templates including electricity facts labels, consumer bill of rights, and terms of services to ensure customer can compare options across retailers.
- Regulators have strict financial, technical, and administrative requirements for retailers.

Adopted Increase in Texas Wholesale Price Caps 2012-2015



Source: ERCOT, December 2012





Great Britain: Select Findings

Decrease in Total GHG Emissions

Million tonnes carbon dioxide equivalent (MtCO₂e)



■ Legislated carbon budgets (on-track) — Outturn GHG emissions
■ Legislated carbon budgets (current shortfall) ⋯ Required path for reductions with least cost to consumers
■ 2050 target emissions ⋯ Expected path for emissions based on current policy

Decarbonization

- A carbon price floor, emissions performance standard, and contracts for difference help reduce carbon emissions and incentivize renewable build.

Innovation

- Smart meters are currently being deployed through suppliers.

Provider of Last Resort

- Ofgem conducts a “Supplier of Last Resort” process where suppliers bid to take over stranded customers.

Customer Choice

- Community-based energy including aggregators, local projects, and other models, are an emerging trend.





Observations Across Markets

None of these markets can act as a “cookie cutter” for the California market.

Affordability: Customer engagement and price transparency are critical to keep rates low where retail competition exists

Decarbonization: Climate and environmental policies are significant elements of the energy sector transformation across all markets, except Texas.

Reliability: Each market, except Illinois, relies on a wholesale energy market and bilateral contracts to meet demand.





Next Steps

- **May 3:** Draft Green Book release date
- **June 4:** Public comments due
 - Submit comments to customerchoice@cpuc.ca.gov
- **Mid-June:** California Customer Choice *En Banc*
- **Summer 2018:** Final Paper Release





Thank you!

For Additional Information:

Visit: <http://www.cpuc.ca.gov/customerchoice/>

Contact: customerchoice@cpuc.ca.gov

