Utility Business Model of the Future
October 8th En Banc

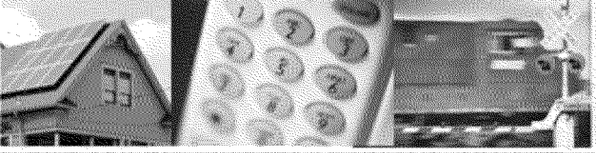
California Public Utilities Commission
Policy & Planning Division

Objective & Key Takeaways

I. On October 8th Market Experts and Utility CEOs will discuss the progression toward a new model.

- Is the existing business model of the utilities obsolete or soon to be obsolete?
- If yes, what is the cause?
- Alternatively, is this just progression of time and evolution of technology that every industry goes through?
- ~~Are we experiencing PURPA all over again?~~

II. This presentation will give you context for the issues that will be discussed throughout the October 8th en banc.



~~Timeline~~ Evolution of the Utility Business

	< 1990	2000 (pre-energy crisis)	Today	< 2020	2020 & beyond
Generation and Supply	Vertically Integrated	IPP's become dominate source of new supply	Competitive procurement by utilities	Competitive procurement by utilities; augmented with Customer Supply	Net Short Procurement by Utilities (who remains last resort)
Commodity Customer Choice	None	Pre 1998 – None 1998 to 2000 – Direct Access	Direct Access Capped Customer Owned Generation; Emergence of CCA	Direct Access Capped Customer Owned Generation; Active CCA	Customers Choice procurement (with robust indifference formulas)
Renewable Policy	PURPA and Standard Offer - 4	PURPA and BRPU	RPS 33% by 2020	Increased RPS with Green Tariffs	Increased RPS with Green Tariffs
Energy Efficiency	Decoupled Building Standards	Pre 1998 Decoupled 1998-2000 Recoupled	Decoupled DSM/Energy Efficiency Incentives	Decoupled DSM/Energy Efficiency Incentives	Decoupled Zero Net Energy
Affordability	Hidden cross subsidy of Care Rates	Care Rates subsidies funded by line item PGC	Low usage customers subsidized by high usage customers	Subsidies Transparent	Targeted Subsidies
Rate Design	Rates moved to long-run marginal costs	Unbundling of Commodity Distribution and Generation	Dominated by Tiered Rates with first two tiers set at 1996 levels.	Return to cost based unbundled rates; Time Variant Rates	Optional Tariffs and Time Variant Rates. PBR for T&D
Reliability	Utility acts as Balancing Authority	Pre 1998 Utility Balancing Authority 1998-2000 -= CAISO	CAISO Acts as Balancing Authority Integration of Utility Scale Renewables	CAISO Acts as Balancing Authority Integration of Intermittent Customer Supply	CAISO Acts as Balancing Authority Integration of Intermittent Customer Supply and PEVs

Utility Roles Across the Supply Chain

	Past 10 years	Today	Before 2020	2020 and beyond
"Centralized" Generation	Mostly UOG. Some IPPs.	Competitive (IPPs). Some UOG.	Competitive (IPPs). Some UOG.	Competitive (IPPs). Little UOG.
Centralized Transmission	Natural Monopoly.	Mostly Natural Monopoly.	Increasingly Competitive.	
Market Structure	Integrated. Cost Pass-through.	Competitive wholesale markets.	Competitive wholesale & capacity markets	Competitive wholesale & capacity markets; Utilities balance (power quality)
Commodity Services	De-coupled. Closed.	De-coupled. CCA open. Limited DA[2]	De-coupled. CCA active. Limited DA	De-coupled. CCA and DA expanded.
Distribution Infrastructure	Natural monopoly (1-way flow, labor).	Natural monopoly (Some 2-way flows, data).	Natural monopoly (2-way flows, data, coordination, trades).	
"Decentralized" Generation	Limited CHP opening.	CHP, Open Solar.	CHP, Solar, some batteries & fuel cells	Multi-technology nanogrids
Behind the Meter	None.	Limited role by utilities.	Utilities play a "fair" role, post permission	Utilities play an active "fair" role

Electric Utility Business Models

Business Models	Description	Advantages	Disadvantages
Traditional CA Investor Owned Utility	1. Transmission and distribution services under a monopoly franchise 2. Commodity services to all bundled customers[1] 3. Some UOG but small overall as compared to demand served by IPPs	1. Customers benefit from IOU's ability to attract cost effective capital given rate recovery and growth 2. IOUs manage customer programs and use BS[3] to anchor LTCs[4] 3. Customers get all services bundled	1. Pricing hinders the sustainable emergence of DER[6] technologies 2. Other players claim that IOUs hinder market competitiveness
Wires & Meters Operator	1. Focused only on transmission and distribution services under a monopoly franchise	1. Focus on safe and reliable supply 2. Costs to raise capital may increase over time	1. May be a shrinking business (PBR may be needed) 2. Indirect understanding of grid needs 3. Hard to unwind LTCs from IOUs BS
Energy Service Utility (ESU)	1. Provides customers with differentiated offers 2. Transmission and distribution services under a monopoly franchise 3. All other services as just another player[2]	1. More insightful understanding on the needs of the grid 2. Differentiated offers and NP&S[5] participation enrich market place and customer choice	1. Other players may claim ESUs hinder market competitiveness

Utility Business Models

Business Models	Traditional CA Investor Owned Utility	Wires & Meters Operator	Energy Service Utility (ESU)
Electric Generation	(4)		
Electric Transmission			
Commodity Supply	(5)		(7)
Electric Distribution			
Customer Programs			
Tariffed/NT(1) P&S(2)	(6)		(8)
BTM(3) P&S			(8)

Icons represent the level of utility involvement/participation

(1) NT: non-tariffed; (2) P&S: Products & Services; (3) BTM: Behind the Meter; (4) Most served by IPPs; (5) IOUs supply customers not in DA/CCA; (6) Very minor focus and regulatory support unclear; (7) DA/CCA active. ESU offers provide choice to customers; (8) ESUs serving customers in these areas and adding diversity to the market place ; regulatory support with approvals consistent with time to market needs.