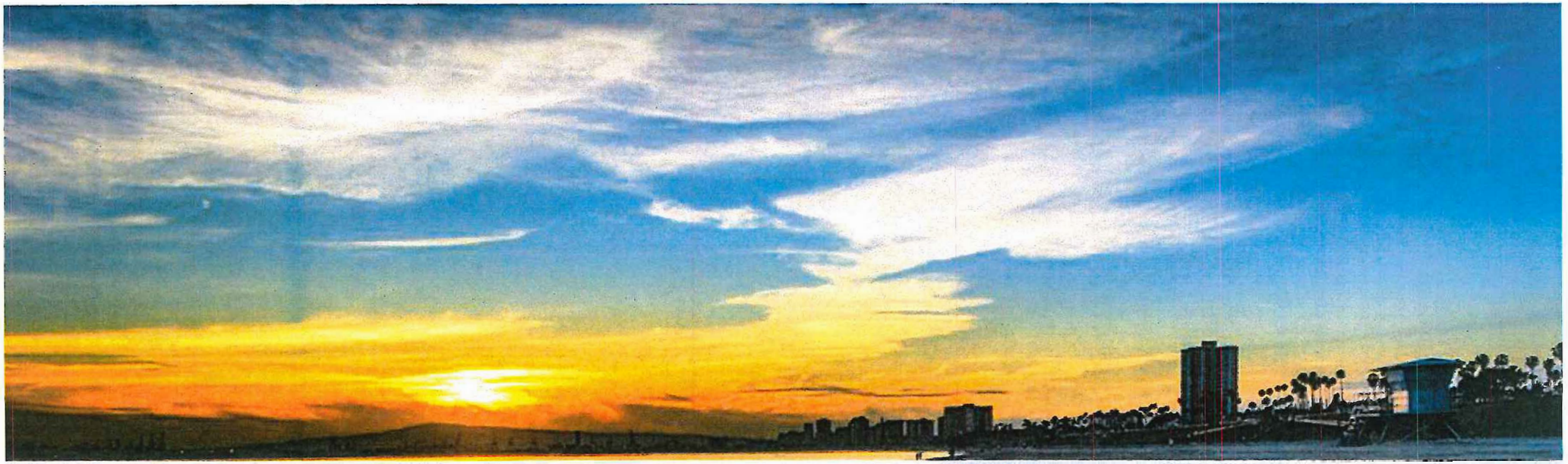


Long Beach Community Choice Aggregation Feasibility Study
Status Update
April 23, 2019

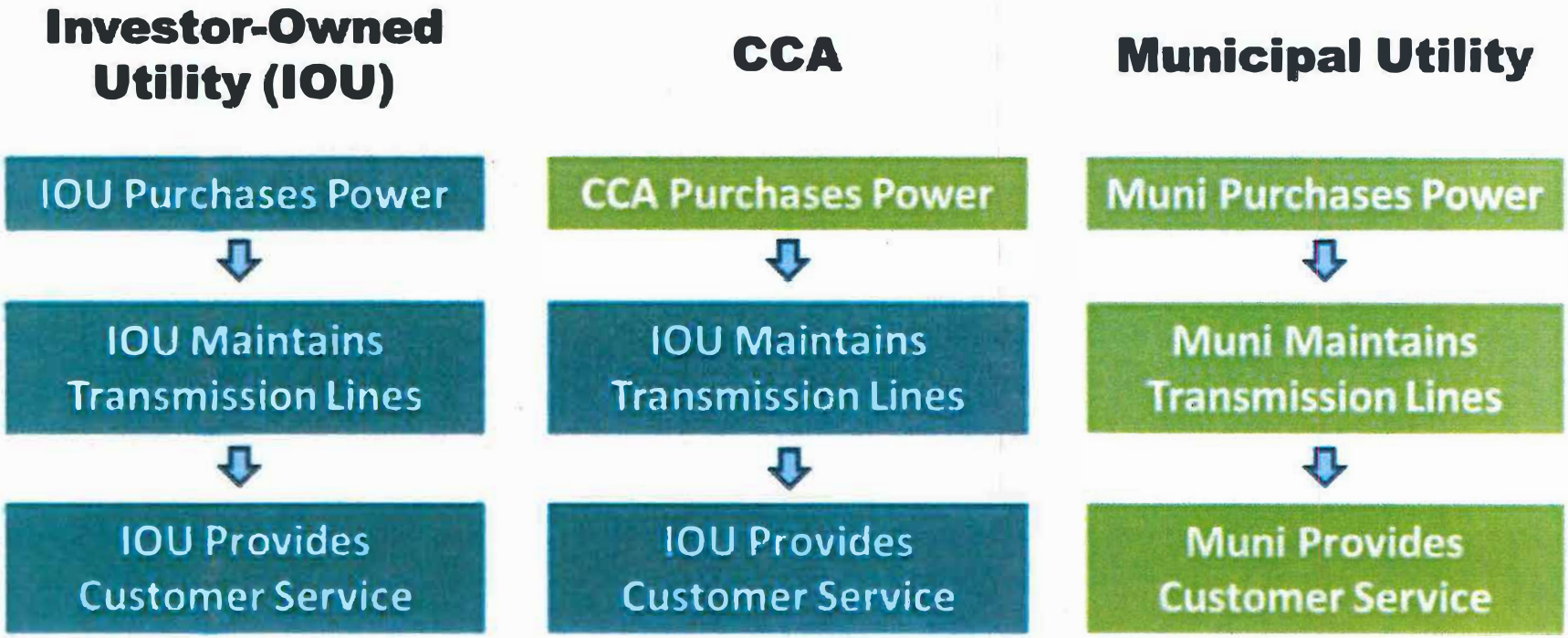
LONG BEACH ENERGY RESOURCES

CITY OF LONG BEACH

What is Community Choice Aggregation (CCA)?

- **Community Choice Aggregation** (CCA) is an alternative to the Investor Owned Utility (IOU) in which local entities aggregate the buying power of individual customers within a defined jurisdiction in order to secure alternative energy supply contracts
- By aggregating purchasing power, CCA's are able to create large contracts with generators, something individual buyers are unable to do
- CCA's choose the power generation source on behalf of the consumers and typically offer "greener" generation portfolios than local utilities

What is Community Choice Aggregation (CCA)?



CCA Feasibility Study

- **Primary goal** - Accurately forecast costs, identify the benefits and risks associated with implementing a CCA program for the City of Long Beach
- **At the outset** - Identify and overcome known data and modeling challenges
- **Along the way** - Capture Long Beach's unique considerations
  - Macro-economic benefits (jobs & dollars for local economy)
  - Custom retail products to benefit large industrial customer base
  - Distributed Energy Resources and services
- **Conclusion** - Do the benefits of implementing a CCA program for the City of Long Beach outweigh the risks?

CCA Feasibility Study Team

MRW & Associates	Assists communities assess CCA feasibility, options, benefits and risks. Clients include the cities of San Diego, Richmond and Palmdale, and Alameda, Contra Costa, Marin, San Mateo and Santa Barbara counties
Community Choice Partners	8+ years California CCA experience. Clients include EBCE, SCP, UCAN, SFPUC, LA County. Advising on data issues and project management
ZGlobal	Specialist in power market operations and risk management analysis
GridX	Smart Meter data manager contributing to modeling time-of-use rate structure impact on electricity usage patterns
Rincon Associates	GIS modeling, GHG accounting, and climate action planning
Economic Development Research Group	Performed employment and economic impact analyses for Port of Long Beach and various municipal clients throughout S. California and the U.S.

Projected Feasibility Study Cost: $285,000

CCA Feasibility Study - Challenges and Solutions

Challenges	Solutions
Smart Meter data is not available from SCE	Use load profiles for residential and small commercial customers from Clean Power Alliance CCA
COLB has a small # of high-usage customer meters (118 out of 189k) accounting for 45% of non-DA usage	Interview largest customers: (1) How facility electrical usage may change (2) Which retail rates and services would benefit their business
Modeling tasks are very complex	Retain multiple contractors with proven operational experience in required tasks
CCA is accelerating	Use sophisticated models to estimate impact on SCE's costs and rates (to compare "apples to apples")
Key regulations, cost-allocation rules and market dynamics are changing	Model distinguishes between temporary (rule-driven effects) vs fundamental (underlying causes) costs and benefits of CCA
Operating models of CCA's are evolving as industry expands	Evaluate evolving CCA operating models and governance options; all consultants have "working relationships" with operational CCA's

CCA Feasibility Study - Summary

In Progress:

- Overcoming Smart Meter "Data Gap"
- "Key Account" survey and Smart Meter data direct request
- Model integrations and data preparation
- Tracking of regulatory changes and market dynamics
- Tracking of CCA operational model and governance options

In Future:

- Pro-forma and rates analysis
- Risks assessment
- Local Jobs and Economic Impact Assessment

Smart Meter "Data Gap" is being overcome

Residential and Small Commercial

- Profile data provided by Clean Power Alliance

Large Commercial and Industrial

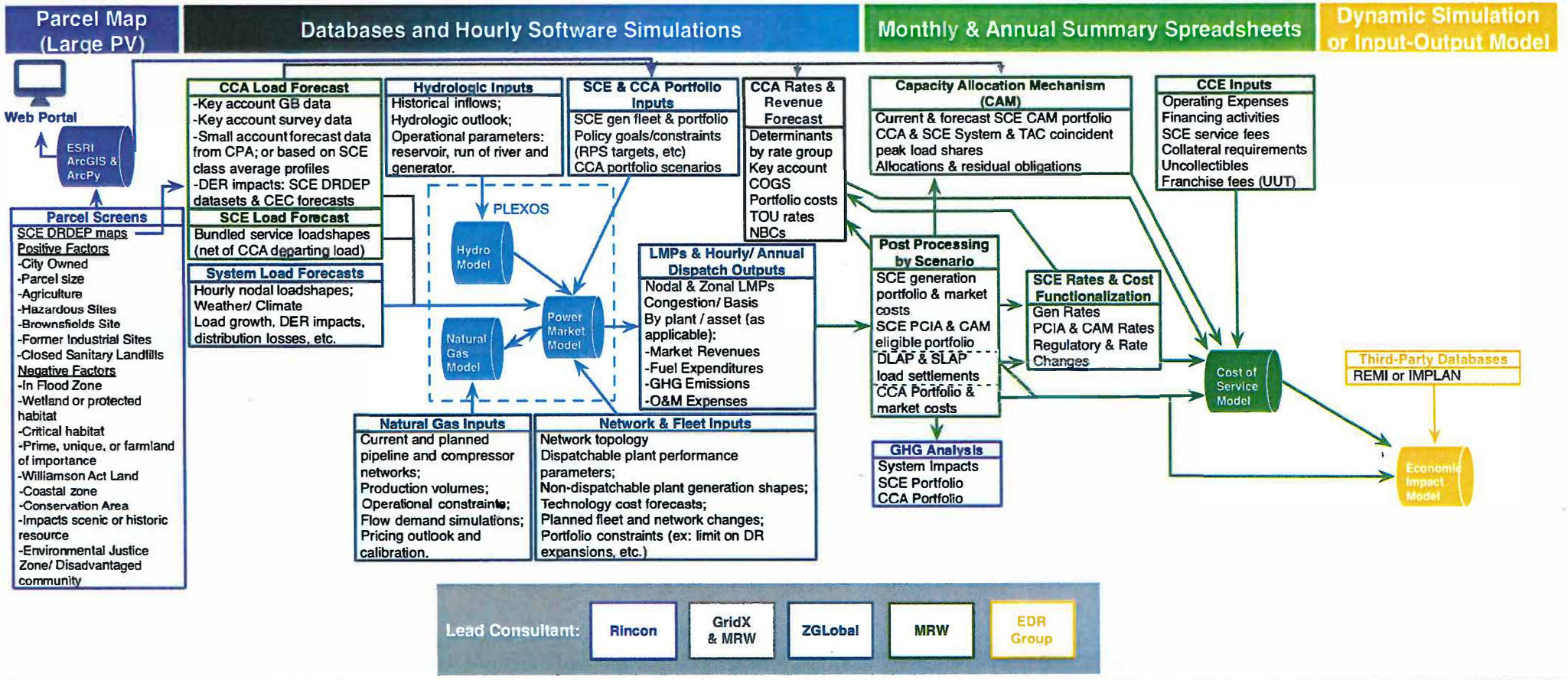
- "Key Account" survey and Smart Meter data request is underway:
  - Identified 69 largest customers with 118 high-usage facilities (TOU-8 rates)
  - Cross-referenced with Long Beach Energy Resources data
  - Drafted 25-question survey
  - Deployed UtilityAPI load data analysis software engine

Current Status: Interviews and data authorizations are underway

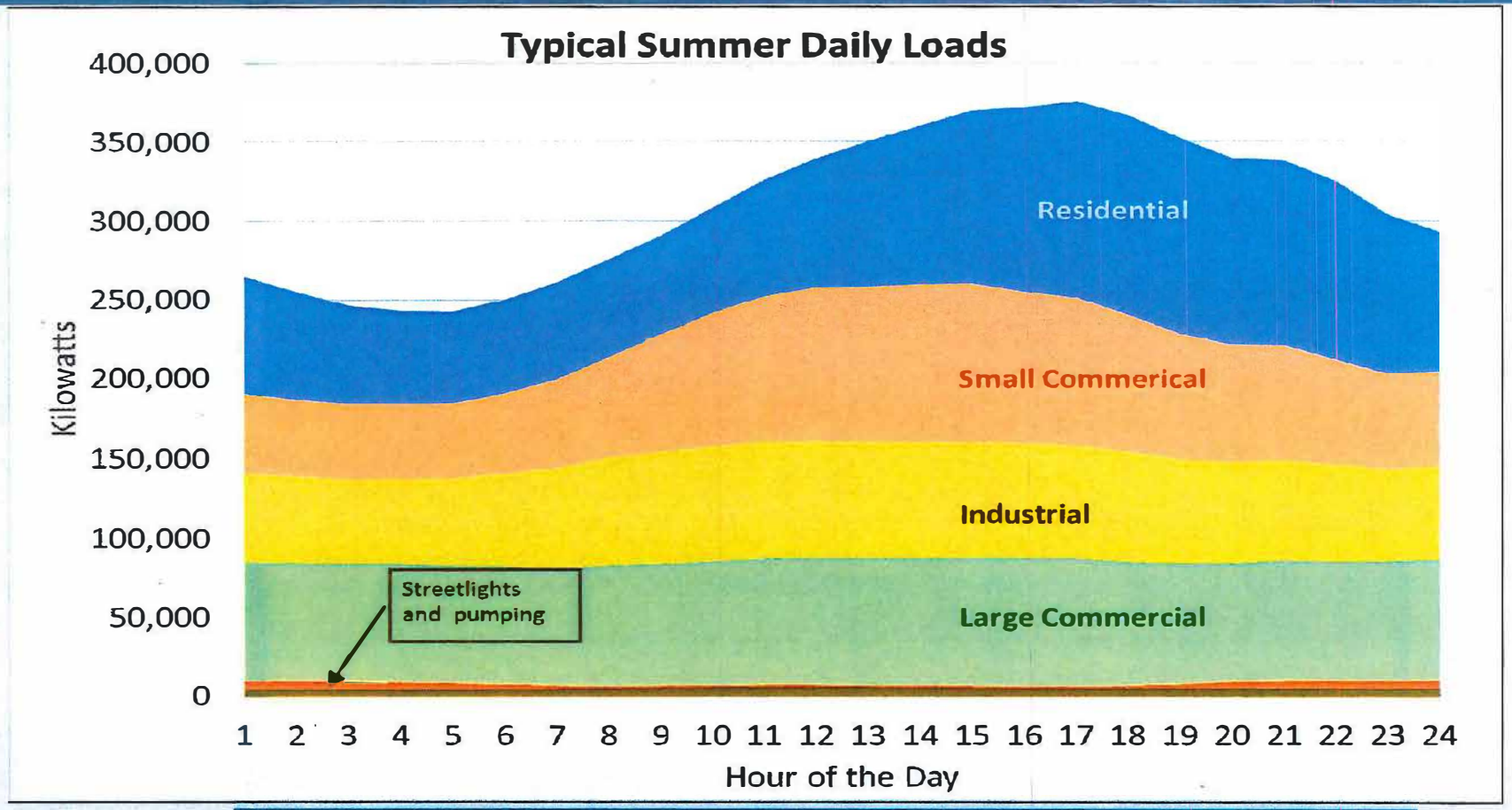
Model Integrations and Data Preparation

- Load Analysis
- Solar/Distributed Energy Generation Integration
- CCA Resource Plan
- CCA Costs and SCE Rates
- Pro Forma
- Risk and Sensitivity Analysis
- Macroeconomic Model

Modeling Tasks - Responsibilities and Integrations



Load Analysis



Tracking of Regulatory Changes & Market Dynamics

- Rules established by CA Legislature/CPUC/CEC change continually and have significant impacts on the economics of CCA's such as:
  - Power Charge Indifference Adjustment (PCIA)
  - Integrated Resource Plan/Long Term Procurement Plan (IRP-LTPP) and Resource Adequacy (RA) process – under debate
- SCE's "Time of Use" (TOU) Rate Structures
- California Independent System Operators (CAISO) Wholesale Market Dynamics
- Pacific Gas & Electric (PG&E) Bankruptcy
- Natural Gas Storage Issues

Risks To Be Considered

- Market Price Risks – What if prices are not as forecast?
- Funding Source Risks – Startup Costs, City Staffing and Capital Requirements?
- Volume Risks – What if a large fraction of the load departs the CCA?
- Legal/Regulatory Risks
  - Exit Fee (PCIA) is higher than forecast
  - New rules and regulations make it more costly/difficult to operate
  - Changes to California power market structure
- Management Risks – Can the CCA get seasoned management and sound advice?
- Political Risks – Will CCA program deliverables meet stakeholder expectations?

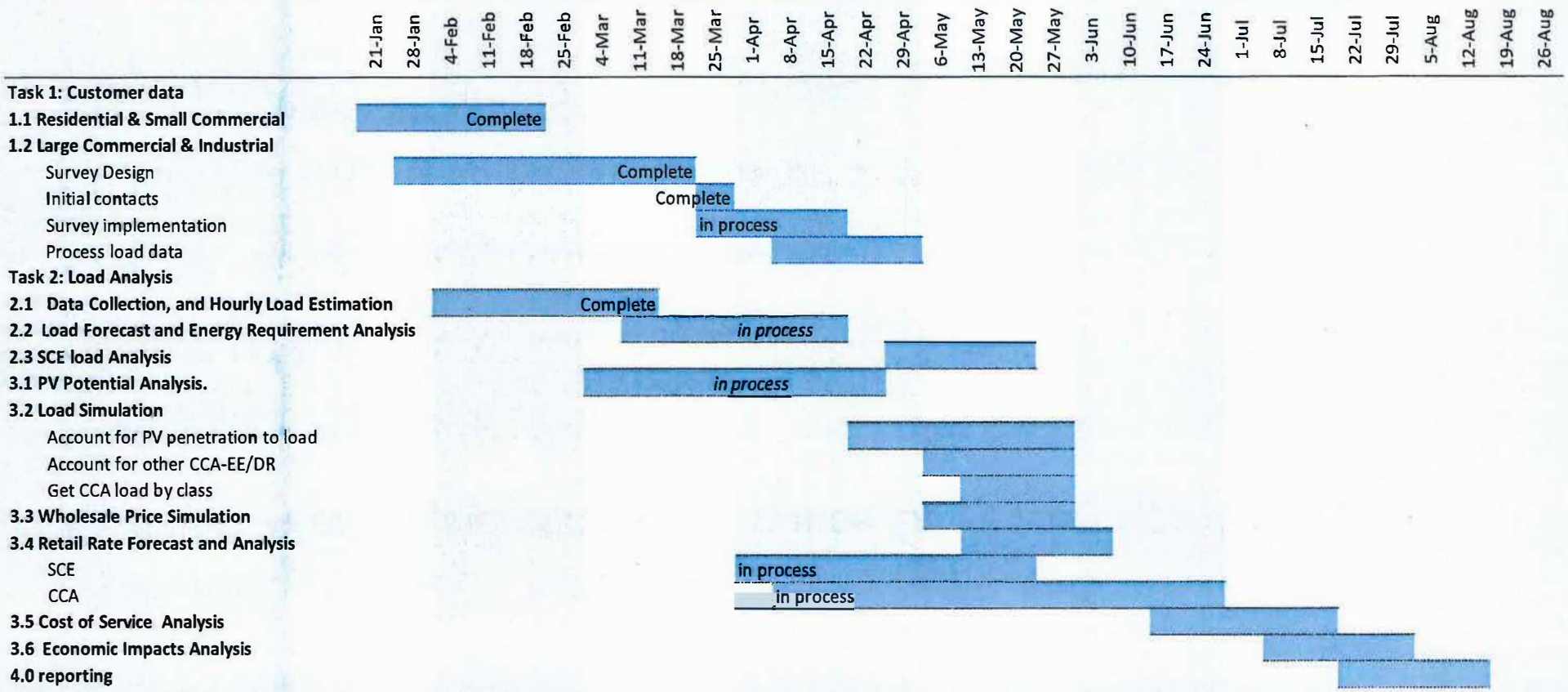
CCA Operating Models Are Evolving

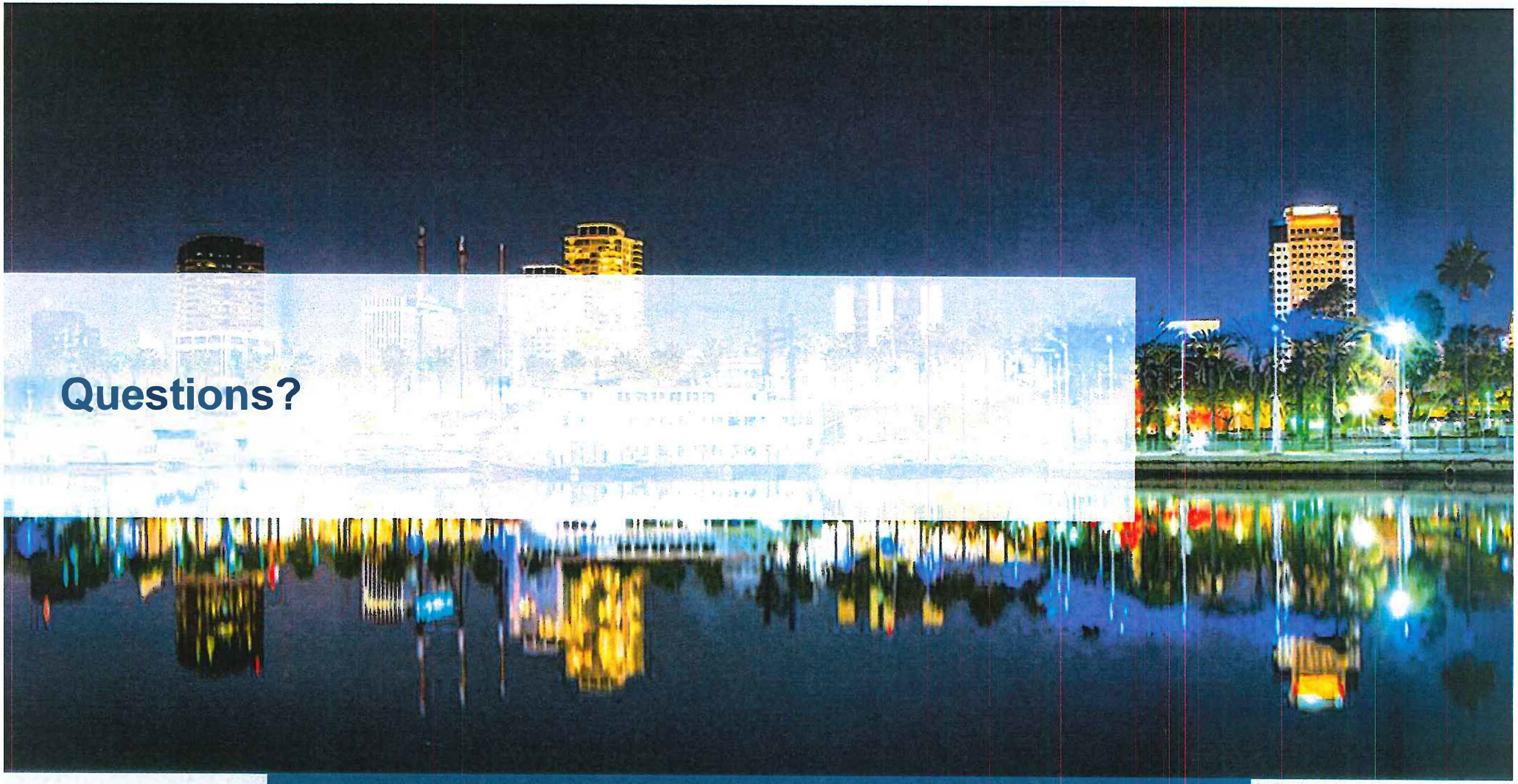
- Energy Risk Management
- Innovations and Retail Rates and Services for Key Accounts (Commercial and Industrial)
- Local Programs and Infrastructure Development
- Partnerships with IOU's
- Joint-Action is accelerating (collaborations across CCA's)

New vs Established CCA's - What Has Changed?

- Balancing of Variable Resources
- SB 100 - Zero Generation Greenhouse Gas Emissions by 2045
- Integrated Resource Planning
- Baseload and Intermittent Resources
- AB 56 - Backstop Procurement Entity
- IOU's Not Procuring New Generation due to Departing Load
- New CCA Financial and Organizational Foundations

CCA Feasibility Study Timeline





Questions?