

BUSINESS PLAN

DRAFT VERSION 1.2

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For Communities, By Communities



**COMMUNITY
POWER COALITION
OF NEW HAMPSHIRE**

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EXECUTIVE SUMMARY

This report explains the business model and strategic objectives of the Community Power Coalition of New Hampshire (CPCNH); summarizes member recruitment activities; explains the agency's anticipated financing, accounting, risk management, and credit enhancement mechanisms; analyzes the current regulated market structure and parameters within which CPCNH and its Member Community Power Aggregation (CPA) programs may compete; provides an overview of the anticipated processes for the Joint Powers Agency's (JPA's) incorporation, competitive solicitation process and organizational development; discusses the results of an analysis estimating the margins of competitive suppliers providing utility default service; and presents an initial cashflow analysis for the agency based upon the business model assumptions described herein.

Additionally, Moody's credit rating methodology for US Municipal Joint Action Agencies, which has been attached as an appendix for reference, includes metrics for Community Choice Aggregators (CCAs, as CPAs are referred to in certain states), and discusses a variety of relevant risk factors and management best practices that have informed this business plan and CPCNH's cashflow modeling.

Agency Overview

CPCNH is an all-requirements Joint Powers Agency (JPA) under formation to provide municipalities that authorize Community Power Aggregation programs (CPAs) with the benefits of economy of scale, cost efficiencies, joint public advocacy, diversification of energy portfolio risk, and project development opportunities.

At present, nine (9) municipalities have voted to authorize executing the CPCNH Joint Powers Agreement. Additional communities are in the process of reviewing the Agreement and are expected to vote on adopting the Agreement and joining CPCNH in Summer and Fall of 2021.

The municipalities which have authorized entering into the Agreement anticipate incorporating the agency on October 1, 2021 and launching CPA programs in the second quarter of 2022.

- Under the terms of the Joint Powers Agreement, each member may determine the scope of services and extent of pooled procurement participation provided through the JPA.
- All initial members expect to rely on the JPA for all services necessary to launch CPA programs and provide retail customers with all-requirements power supplies.

At-Risk Contracting Strategy

New Hampshire law prohibits the use of any cost associated with CPA service being paid for by non-participating retail customers (with de minimis "incidental" exceptions). As such:



- The JPA will provide for the launch of CPA programs at no upfront costs to participating municipalities by contracting on an at-risk basis with third-party experts, service providers and financiers to launch and operate the agency.
- All initial start-up expenses will be amortized over the term of the initial service and credit support contracts and repaid with interest from a portion of revenues received from participating customers.
- A three-year contract and repayment term is anticipated for service providers.

CPCNH anticipates conducting the solicitation and concluding contract negotiations prior to the end of the calendar year.

Reliance on Industry Best Practice

To ensure that at-risk contractors are repaid, and that CPCNH is able to operate continuously as a competitive enterprise over the long-term, the design of the agency has incorporated a number of industry-standard financial requirements and best-practices pioneered by CPA JPAs operating in other states:

- CPCNH will employ a small team of highly qualified staff in managerial positions to provide oversight and initiative, including an experienced Chief Executive Officer and General Counsel who (1) may be hired as independent contractors on an at-risk, as-agent basis prior to launch and (2) will oversee the creation of the organizational documents, procedures, and systems necessary to govern the JPA and prepare for the launch of Member CPA programs.
- CPCNH's solicitation for services and credit support will allow for a variety of approaches and teaming arrangements, while ensuring transparency of cost drivers and preserving the agency's ability to select the most competitive service providers; proposals will be evaluated by a committee that includes CPCNH's CEO and additional industry experts who have operated CPAs and/or comparable competitive power enterprises. Ethical requirements, prohibitions against conflicts of interest and non-disclosure agreements will be enforced.
- CPCNH will continue to engage in the process of finalizing administrative rules for CPAs, and to actively monitor and intervene at the NH Public Utilities Commission (NHPUC) and Legislature to defend and expand CPA authorities and market-based mechanisms that promote customer and community choice.
- CPCNH will be governed under a 'one-member, one-vote' framework, with representatives of each Member CPA electing the agency's Board of Directors from amongst themselves and serving on a variety of ad-hoc and standing committees (e.g., executive, finance, audit, risk management, regulatory and legislative affairs, and governance committees).
- CPCNH's Cost Sharing Agreement will contain strong provisions that (1) guard against cross-subsidization by recovering costs equitably from Member CPAs, (2) ensure that Member CPA rates provide sufficient revenue on a forecasted basis



to recover operating and capital costs and maintain adequate liquidity for the agency, and (3) provide for rate changes to be implemented expeditiously and as necessary to cover any adverse material changes.

- CPCNH's Member CPA energy resource requirements will be met through the construction of an energy portfolio of physical and financial supply contracts with a diversity of contract terms, creditworthy counterparties, supply mix and asset quality.
- CPCNH and its members will adopt an Enterprise Risk Management Policy that includes an Energy Risk Management and Financial Reserves Policy, employ a secured revenue account managed by a third-party financial institution to manage the disbursement of customer receipts in accordance with agreed-upon contracts, and will ensure that sufficient funds are retained to satisfy all financial covenants and provide for strong liquidity.
- CPCNH will prioritize the accrual of additional reserves sufficient to support a credit facility and accelerate the agency's ability to (1) self-provide credit and collateral requirements, (2) register as a Load Serving Entity with ISO-NE and as a Publicly Owned Entity with NEPOOL, and (3) provide Members opportunities to contract for the development of physical assets (new energy projects) for integration into the agency's energy portfolio.
- CPCNH will fund marketing activities sufficient to ensure that customers and the media are accurately informed regarding Member CPA programs.
- CPCNH will maintain a strong level of customer engagement and quality of service and will develop a diversity of retail products and programs that are responsive to Member CPA and customer expectations.
- CPCNH will plan strategically for (i) the development of a cost-effective and reliable portfolio of wholesale, distribution-interconnected and distributed energy resources, and (ii) a scope of services that evolves to reflect the combined needs of its Member CPAs.
- CPCNH will continue to engage with municipalities interested in CPA to maintain political momentum and support membership expansion.
- Lastly, CPCNH will be subject to declines in membership if the agency fails to meet the expectations of participating CPAs:
 - CPCNH's Joint Powers Agreement permits members, subject to any contractual obligations agreed to in the Cost Sharing Agreement, to decrease the extent of their reliance upon the JPA for the provision of services and pooled procurement over time, including by terminating their membership in the JPA.
 - Additionally, CPCNH's debts and liabilities have no recourse to member unless expressly agreed to by a member.



Taken as a whole, the design of the agency is intended to:

- Allow the agency to launch under at-risk contract structures, with no recourse to taxpayer funds, which is only feasible if CPCNH's contracted service providers and financiers are confident in the agency's ability to perform as anticipated.
- Align decision-making and performance incentives across the members and within the JPA over the short- to long-term.
- Enhance the political cohesion and agility of decision-making within the agency and across its members' governing bodies while enforcing fiscal discipline within responsible risk management parameters informed by unbiased expertise.
- Implement a competitive IT and digital infrastructure along with staff skillsets that allow for tight control over commercial operations and risk management activities.
- Provide members with transparency and perspective across the integrated value chain of commercial operations.
- Build institutional capacity, a culture of entrepreneurialism, and a superior understanding of the market on an accelerated basis.
- Support a strategic and proactive approach to pursuing market-enabling reforms at the NH Legislature, NHPUC and other regulatory bodies.
- Provide for the financial strength and stability required to jointly develop new energy projects under long-term (10+ year) contracts and to participate fully in the ISO-NE market as a Load Serving Entity (LSE).
- Provide for the coordination and planning across Member CPAs, other local government agencies and distribution utilities required to implement multi-sectoral electrification programs and infrastructure development initiatives in ways that enhance local grid reliability (e.g., transportation electrification, microgrid developments, etc.).
- Ensure that the business model of the agency is able to evolve and scale on an agile basis in anticipation of market reforms, new commercial opportunities and expansions in membership service territory — so that CPCNH remains responsive to the requirements and expectations of its Member CPAs, communities and retail customers over the long-term.

Market Analysis

New Hampshire's electricity market is not fully restructured, and distribution utilities exercise undue market power over operational processes and infrastructure in ways that have disadvantaged and suppressed competition to date.

This provides an incumbent advantage for CPCNH at launch but will weaken the competitive position of Member CPAs over the medium-term absent reforms in law and regulation:



- Structural market flaws have limited competition, to the extent that levels of customer participation in utility-provided default service are relatively stable (and increasing, in certain utility territories); this indicates that CPCNH will benefit from a relatively stable default service customer base.
- Many of the same market flaws and incumbent powers have allowed distribution utilities to control the pace and extent of innovation in regard to retail customer services and Distributed Energy Resources (DERs), effectively suppressing the growth of in-state renewable resources; CPCNH will need to support targeted reforms to law and regulation in order to compete effectively, deliver innovative value-added services and satisfy its Member CPAs' local policy objectives.

CPCNH has demonstrated an ability to successfully engage community stakeholders to achieve targeted legislative reforms, indicating that the JPA will be able to sustain and advance its competitive advantage over the medium- to long-term.

Competitive Analysis

A five-year monthly cash-flow model was constructed to provide quantitative insight into the extent to which CPCNH could compete against the competitive suppliers providing service to utility default service customers.

- The analysis was based on a disaggregation and bottom-up modeling of operational, financial and energy cost drivers using the prior three years of historic data to construct an “average year” set of inputs.
- Load and energy calculations were performed on an hourly basis; outputs were aggregated by on- and off- peak periods each month for large and small customer groups and input into the monthly cashflow model.
- As a necessary simplifying assumption, which is not expected to impact the overall conclusions of the analysis, all CPCNH customers were assumed to be in Eversource's service territory.

The analysis progressed in three sequential stages:

- Two modeling runs (“Default Supplier Bid Margins” and “Default Supplier Realized Margins”) were first performed to estimate the margins charged by competitive suppliers above the cost of all-requirements power for utility default service contracts.
- In the final modeling run (“CPCNH Cashflow Analysis”), CPCNH was then assumed to need to recover its own operating costs, maintain its financial obligations, and accrue net revenues for Member CPA reserves while meeting utility default supply rates (i.e., operating the agency at or below the same margin charged by competitive suppliers).



The results indicate that CPCNH's business model is viable and is expected to perform competitively when benchmarked against utility default service rates. Each modeling run is described below:

- 1. Default Supplier Bid Margins:** as an initial first step of the analysis, the model calculated that — based on the forward price curves observed at the time of utility solicitations — suppliers include an average margin of 8.8% above the forecasted cost of all-requirements power in default supply contracts.

This result falls within the estimated range of 5% to 10%, and assumed average of 8%, provided by Synapse Energy Economics in the *“Avoided Energy Supply Components in New England: 2021 Report”*, which were based on a direct review of confidential supplier bids for select utility solicitations; this was deemed to provide a strong point of initial validation for the model.

- 2. Default Supplier Realized Margins:** The model then estimated what supplier margins would be if, instead of hedging the entire portfolio at the time of utility solicitations, suppliers instead transacted based on a simple hedging strategy that monitored forward price curve movements at the end of each month on a rolling basis.

Note that this modeling approach, while based on simplified assumptions, is intended to provide an indicative approximation of the competitive advantage that suppliers create through the active management of energy portfolios.

Based on these ‘basic portfolio management’ assumptions, supplier margins increased to 12.1% above the actual cost of power (an increase of ~140% relative to the Default Supplier Bid Margins modelling run). This result is directionally closer to the level industry experts would anticipate suppliers’ margin on default service contracts would be, and an additional point of validation for the model.

- 3. CPCNH Cashflow Analysis:** given that CPCNH will also rely on active energy portfolio management to lower price-risk and increase operating margins for Member CPAs, the ‘Default Supplier Realized Margins’ modeling run was assumed to be sufficiently accurate for the purposes of providing a conservative estimate of CPCNH’s performance relative to default service.

After accounting for the agency’s anticipated at-risk contracting, financing and business operations costs, the cashflow analysis results presented in this report indicate that CPCNH would accrue \$30 million in Member CPA reserves over the five-year modeling horizon. This is equivalent to an average rate decrease of ~7.5%, or an increase of 16% above the minimum required Renewable Portfolio Standard (purchasing Tier 1 Renewable Energy Credits).

The results are approximately comparable to the performance of the New Hampshire Electric Co-op, which also relies on active portfolio management to minimize supply costs and has offered rates that average 7% below the default rate charged by investor-owned utilities over the last three years (roughly the



same period as the historical data used in the cashflow model); this provided another point of validation indicating that the model is accurate.

In interpreting these results, it should be emphasized that:

- CPCNH is a startup power enterprise and as such the agency's service providers and financiers will require that sufficient surplus revenues are retained to ensure the financial stability of the agency's energy portfolio risk management activities. Until the point at which the JPA is able to achieve financial self-sufficiency, Member CPAs that elect to rely on the JPA to provide all-requirements power supply will therefore be required to devote surplus revenues sufficient to satisfy these risk management requirements.
- The use of an "average year" based on historical data was ideal for the purpose of this initial assessment. The results are therefore based on the assumption that market conditions over the next five years are comparable to those observed over the last three years on average. Conducting additional modeling runs to examine the year over year variability in market conditions and preparing forecast assumptions to use as inputs would serve to 'stress-test' and refine financing requirements going forward.
- Despite being based on historical data, the analysis required expert judgement to be relied upon in limited instances where data was not available and/or deemed inaccurate.
- The results reflect simplified assumptions that do not fully capture the anticipated benefits that accrue from actively managing an energy portfolio. Furthermore, the analysis additionally did not attempt to model the impact of retail product innovation, local programs, reforms to regulation and law that could expand commercial opportunities, the development of new energy projects management for integration into the agency's portfolio, or any of the other benefits CPA JPAs typically afford to participating members.

In these respects, the model relied upon is necessarily limited and likely to be conservative in its estimation of benefits for Member CPAs.

Refer to the section "*Limitation on Interpreting Modeling Results*" for additional discussion of these factors.



CPCNH MEMBER CPA RECRUITMENT STATUS

This section provides a status update on member recruitment, a brief overview of the CPCNH formation process, a timeline of educational events and activities, a narrative description of CPCNH's core framing and messaging to prospective members, and instances of media coverage and other outreach activities.

Recordings of CPCNH events and webinars, outreach presentations and other materials, 'Quarterly Updates' and news articles are available on CPCNH's website.¹

Member Recruitment Status

At present, nine (9) municipalities have voted to authorize execution of the CPCNH Joint Powers Agreement. Additional communities are in the process of reviewing the JPA and are expected to vote during the Summer and Fall of 2021.

CPCNH representatives have closely engaged with prospective members by providing educational materials, communicating on a regular basis with key decision-makers, and often by presenting to local energy committees and/or governing bodies evaluating the JPA.

CPCNH is currently devoting significant resources to this process and also continues to identify and engage additional communities interested in CPA across the state.

Founding Members of CPCNH

The CPCNH initiative began in the fourth quarter of 2019, shortly after legislation enabling CPA was signed into law. Local government staff, elected officials and volunteers formed an 'organizing group' that met on an ad-hoc basis. These CPCNH members subsequently:

- Participated in the informal drafting process for CPA administrative rules at the NHPUC, including by providing the initial and subsequent draft rules for discussion, arranging bilateral meetings with utilities and other stakeholders, and leading significant portions of the subsequent stakeholder workshops at the request of NHPUC staff.
- Intervened in regulatory proceedings and legislative hearings to represent the interests of communities and customers, such as by advocating for expanded data access in the Commission's Statewide Data Platform docket, DE 19-197, and successfully negotiating the clarification and expansion of key Community Power authorities in House Bill 315.
- Assessed CPA and JPA power agency design best practices — in terms of public governance and competitive operating models — by interviewing elected officials, senior staff and vendors operating CPA JPAs in other states, along with representatives from public power associations (such as the American Public

¹ Online at: <https://www.CPCNH.org>.



Power Association and the Vermont Public Power Supply Authority) and other industry experts.

- Executed legal, community engagement, and professional service contracts to finalize CPCNH's Joint Powers Agreement, create a website and logos, compile a contact list of several hundred community stakeholders to support outreach efforts, support municipalities throughout every stage of the JPA adoption, CPA Electric Aggregation Plan drafting and CPA local authorization process, and plan for the establishment and launch of CPCNH.

Member Recruitment Events

CPCNH's bilateral engagement with prospective members has been complemented by a number of events inviting prospective members to participate in summits, webinars and group calls with the CPCNH organizing group:

- May 2020: CPCNH's outreach to prospective communities commenced with a 1-hour webinar hosted by the New Hampshire Municipal Association, accompanied by an article in the organization's "Town and City" magazine.
- June 2020: CPCNH hosted a 3-hour virtual summit with 86 attendees from over 30 cities, towns and counties (representing ~25% of default service customers) that included:
 - An overview presentation and panel discussion with CPCNH members; and
 - A keynote by Girish Balachandran (CEO of Silicon Valley Clean Energy and former Board Member of the American Public Power Association), discussing how JPAs are able to lower costs and provide innovative services to their CPA retail customers.
- March 2021: after finalizing the Joint Powers Agreement and concluding a successful grassroots campaign to defend CPA from legislation that would have prevented any CPAs from launching, CPCNH hosted a virtual "Member Candidates Event" with ~70 representatives of municipalities considering CPA.
- May 2021: in partnership with the nonprofit Clean Energy New Hampshire, CPCNH presented and recorded two webinars for prospective members:
 - The first presentation discussed the step-by-step process to join CPCNH and authorize a CPA program, and concluded with an overview of the "next steps" for communities interested in receiving CPCNH support.
 - The second presentation surveyed how other states have implemented CPA programs, explained how CPCNH had been designed as a competitive power agency based on these industry best practices, provided an update regarding the formation process of the agency, discussed key sections of the CPCNH JPA, and concluded with an Energy Portfolio Risk Management tutorial.
- June 2021 to present day: CPCNH organizing group members began hosting calls and in-person meetings with groups of prospective members in geographic proximity to one another.



Core Framing and Messaging

In general, CPCNH's outreach activities have successfully recruited members by:

- Leveraging the reputations of the individuals involved in the initiative, as well as their broad network of relationships across local governments and organizations that coordinate at the local level such as New Hampshire Municipal Association and Clean Energy New Hampshire (the latter maintains relationships with the ~70 local energy committees established across the state).
- Demonstrating the political value of joint action by managing several successful campaigns to support legislative reforms, providing 'action alerts' that explained highly technical issues in a concise fashion, and keeping communities informed in regard to what their collective political efforts achieved.
- Emphasizing how participating in the JPA will enhance local control by strengthening the financial and operational performance of Member CPAs.
- Documenting how CPCNH's governance model and business model have been designed in accordance with energy industry best practices to ensure that participating Member CPAs benefit from transparent governance, unbiased advice and competitive services.
- Drawing on the success of CPA JPAs operating in other states, most notably California but also Ohio and Massachusetts, to document the broad value proposition that CPCNH has been designed to provide participating communities — such as long-term financial stability and the corresponding ability to contract for the development of new energy projects, the political coordination to achieve reforms in law and regulation, and the scope of innovation in local programs and retail customer services that has been achieved to-date under similar models.

Media Coverage & Other Outreach Activities

Over the course of member recruitment and in relation to legislative campaigns, CPCNH has also generated favorable media coverage. Examples include a debate between Eversource and members of CPCNH on New Hampshire Public Radio, several articles expressing support for Community Power and CPCNH written by the NH's Consumer Advocate, who was later interviewed by Utility Dive as well, and local newspaper coverage.

CPCNH began releasing 'Quarterly Updates' in 2021 to provide a status update and outlook on the JPA formation process, notable legislative or regulatory engagements, and member recruitment activities to prospective members.

Over the summer, CPCNH has partnered with the University of New Hampshire's Sustainability Fellows program to develop an educational film series addressing the "who, what, why and how" of Community Power and CPCNH that relies primarily on interviews with founding members. Screenings are anticipated in September 2021.



CPCNH FORMATION AND LAUNCH PROCESS

This section summarizes CPCNH's staffing and organizational development plan, provides the anticipated timeline and process for conducting competitive solicitations for services and credit support, and provides an overview of implementation milestones beginning with the incorporation of the JPA through the launch of Member CPA programs.

Organizational Development and Staffing Plan

Developing internal capacity, a culture of entrepreneurialism and a superior understanding of the market on an accelerated basis is a strategic priority for CPCNH.

CPCNH's at-risk contracting and financing strategy, as well as its ability to evolve and remain competitive over time, will require a small team of highly experienced staff in managerial positions to provide oversight, initiative and agile decision-making.

Staffing Plan

Shortly after incorporating the agency, the CPCNH Board will:

- Solicit and contract for Chief Executive Officer and General Counsel positions, employed as independent contractors working on an at-risk basis.
- CPCNH may decide to hire an 'Interim CEO' during this period, to afford additional time and flexibility in selecting a permanent CEO.
- CPCNH may also decide to retain additional advisory services during this period, and to continue to employ an independent contractor as General Counsel after the JPA has commenced operations.

Commencing just prior to launching Member CPA programs, CPCNH will solicit and begin the hiring process for:

- A Chief Financial Officer; and
- A Director of Policy and Regulatory Affairs, Director of Technology and Analytics, and a Director of Marketing and Customer Services.

CPCNH expects to refine this staffing plan in consultation with its CEO.

The anticipated positions, approximate market-rate salaries,² and hiring schedule for the staffing plan are provided in the table below:

² The approximate market-rate salaries will be refined going forward and were informed by a review of New Hampshire Electric Coop's compensation for key employees; see NHEC Form 990 (2020) at p. 19:

https://www.nhec.com/wp-content/uploads/2021/06/2020-Form990_amended.pdf

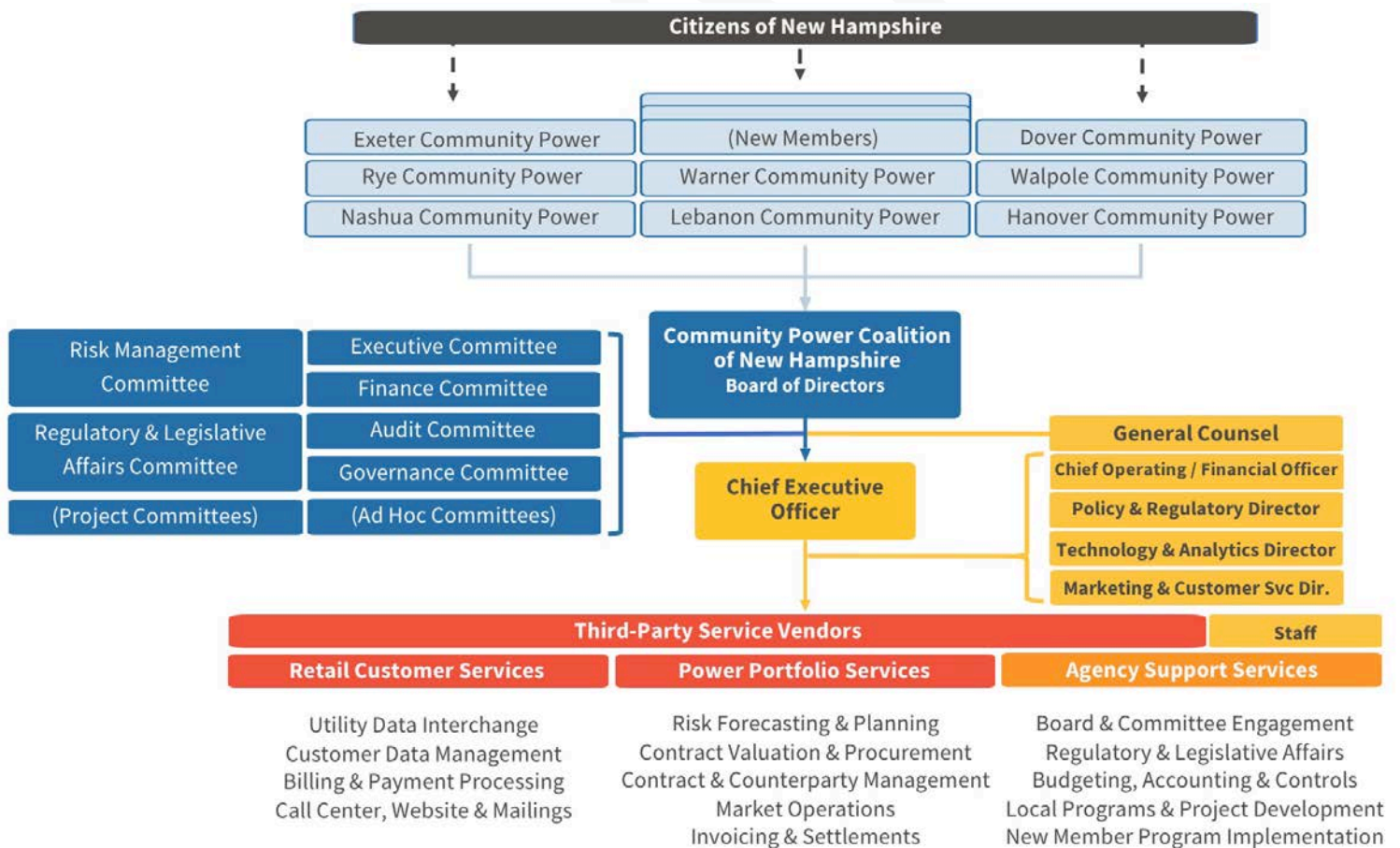


POSITION	SALARY (est.)	HIRING DATE
Chief Executive Officer	\$325,000	Q4 2021
General Counsel	\$300,000	Q4 2021
Chief Financial Officer	\$250,000	Q1-Q2 2022
Director of Technology & Analytics	\$225,000	Q2 2022
Director of Policy & Regulatory Affairs	\$200,000	Q2 2022
Director of Marketing & Customer Services	\$200,000	Q2 2022

Organizational Development

As an all-requirements power agency governed by CPAs, CPCNH is expected to provide Members with a high degree of transparency and quality of service while operating on a competitive basis and pursuing legislative and regulatory reform.

To meet these objectives, CPCNH has been designed to operate under a robust governance, management and business model framework, as reflected in the JPA's draft organization chart:





Startup Phase

During the initial startup phase, CPCNH's Chief Executive Officer and General Counsel will be relied on to oversee:

1. The solicitation and contract negotiations for at-risk services and credit support.
2. Engagement at the NHPUC to finalize administrative rules for CPAs, enable Purchase of Receivables for CPAs, and other matters deemed to be a priority.
3. Engagement with current and prospective members, including support for their Electric Aggregation Plan drafting and local CPA approval process.
4. The creation of the organizational documents, procedures, and systems necessary to govern the JPA and prepare for the launch of Member CPA programs, such as:
 - o Board Policies.³
 - o Committee structures and processes.
 - o Budget and Cost Sharing Agreements.⁴
 - o Business and operations plan and procedures.
 - o Recommendations that provide for the independent review and oversight of contractor and staff activities.

The CEO will be expected to exercise discretion and independent judgment, possess strong leadership, decision-making and executive level management skills, and ideally will have previously built and/or managed a competitive power enterprise.

The CPCNH Board will also elect officers and constitute committees from among its members, each of which will appoint a Director and may also appoint an Alternate Director (until the number of members grows to over 21, after which point member representatives will elect Board Directors by voting amongst themselves).

Providing for qualified leadership at the staff, Board and committee levels is a strategic priority for CPCNH in advance of the solicitation for services and credit support. Prospective service providers and financiers will evaluate CPCNH based on factors such:

³ Such as the Enterprise Risk Management Policy (inclusive of energy risk management, financial reserves, operations and cybersecurity), vendor communications, HR, member expansion policy, new member reserves, customer agreements, payment options, billing and fees, and other matters.

⁴ The Cost Sharing Agreement and related elements of the Enterprise Risk Management Policy (e.g., energy risk management and financial reserves) will need to be structured with input from service providers and will incorporate the fee structures and financial requirements of the contract negotiated to launch Member CPAs on an at-risk basis.



- The experience and reputation of the agency's leadership at the staff, Board and committee levels.
- The political cohesion of CPCNH members and strength of cost-recovery provisions (as provided for under CPCNH's Joint Powers Agreement).
- The overall quality of governance and preparatory activities, including documents that demonstrate a credible understanding and outlook regarding the JPA's organizational requirements (e.g., a budget, staffing plan, etc.).
- The capacity of CPCNH members to monitor and manage political risk at the Legislature and NHPUC (strategic priorities include the adoption of CPA Administrative Rules, implementation of Purchase of Receivables for CPA, the Statewide Data Platform settlement and passage of Senate Bill 91 Part IV).

Favorable assessments will lower CPCNH's risk profile as a counterparty and strengthen participation and competition during the solicitation process.

Implementation Phase

The process of soliciting and hiring additional staff is expected to commence in the period leading up to the launch of Member CPA programs, likely after customer notifications have been sent.

Expediting the hiring process for CPCNH's remaining staff positions will be a strategic priority for the agency, as a necessary precondition for the JPA to pursue cost-saving strategies for its Members as soon as possible. For example:

- CPCNH is assumed to negotiate a credit facility to replace the credit sleeve mechanism provided by at-risk service providers and is subsequently able to draw upon reserves to self-provide credit and collateral requirements.
- As discussed in the cashflow analysis presented in this report (see "*Summary of CPCNH Cashflow Model Results*"), this lowers the JPA's cost of financing by approximately \$1,000,000 a year thereafter.
- However, financial institutions are unlikely to view CPCNH as a credible counterparty in negotiations if the JPA does not possess the staff capacity needed to competently manage the competitive enterprise in practice.

Providing for qualified staff expertise across all of the functional domains that comprise CPCNH's governance and operations is also generally expected to:

- Strengthen decision-making at the Board and committee levels.
- Ensure effective oversight over CPCNH's service providers.
- Provide the internal capacity necessary to maintain situational awareness across all aspects of the business, manage risk and exploit commercial opportunities, and in general evolve over time in response to Member CPA requirements.



Solicitation Process

For a comprehensive overview of the anticipated solicitation process, CPCNH members may refer separately to the document "*RFP Evaluation Committee: Protocols for the Evaluation of Bid Submissions*".

- CPCNH will seek proposals that offer a comprehensive service that addresses its members' complete range of requirements to launch and operate CPA programs on an at-risk basis.
- An initial vendor survey will serve to elevate awareness of the forthcoming Request for Proposals (RFP) for services and credit support.
- An RFP Evaluation Committee (1) will be formed to finalize the RFP, review and evaluate bids submitted in response, and recommend the award of service contracts to one or more bid respondents, and (2) will include CPCNH's CEO as well as other experts who have relevant technical expertise, including one or more who have operated a competitive power enterprise comparable to CPCNH.
- Proposals will be solicited from qualified entities, and teaming arrangements will be allowed. In such cases, CPCNH will reserve the right to contract independently with some or all of the members of any proposal team, and to contract with one or more entities to provide some or all of the proposed services that would otherwise be provided by one or more members of any proposal team.

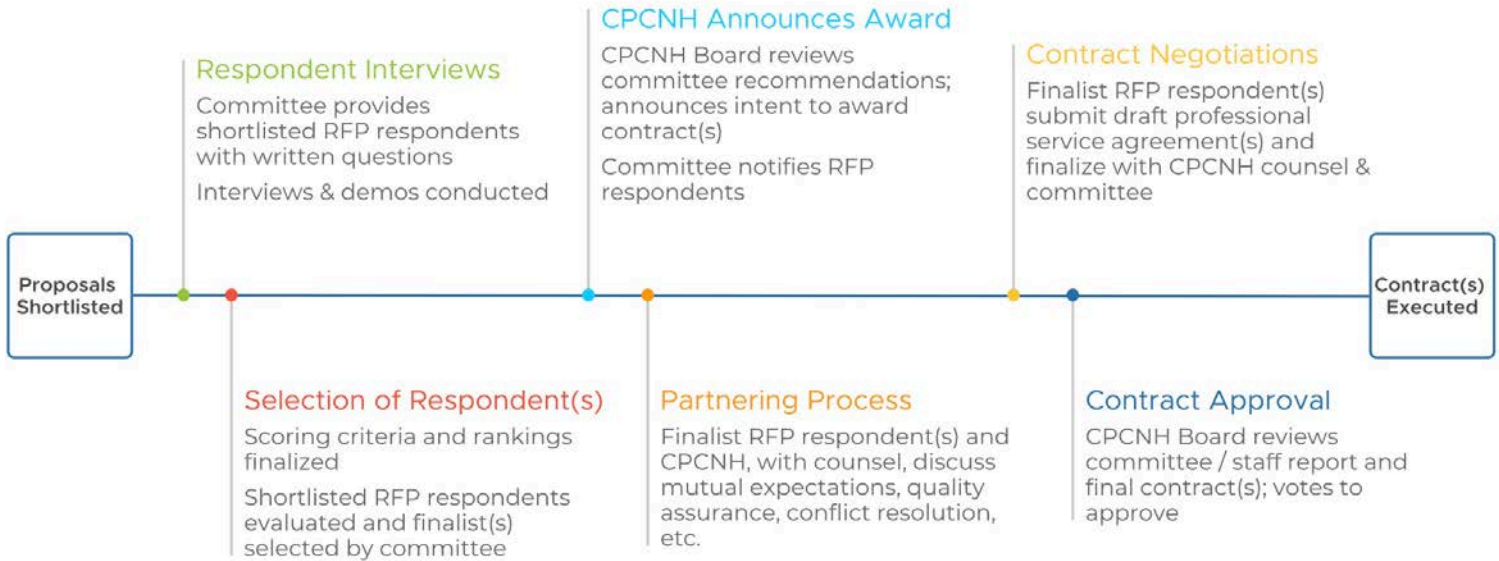
The timeline graphics below provide an overview of the anticipated process:

Vendor Survey & RFP Proposal Shortlist Process





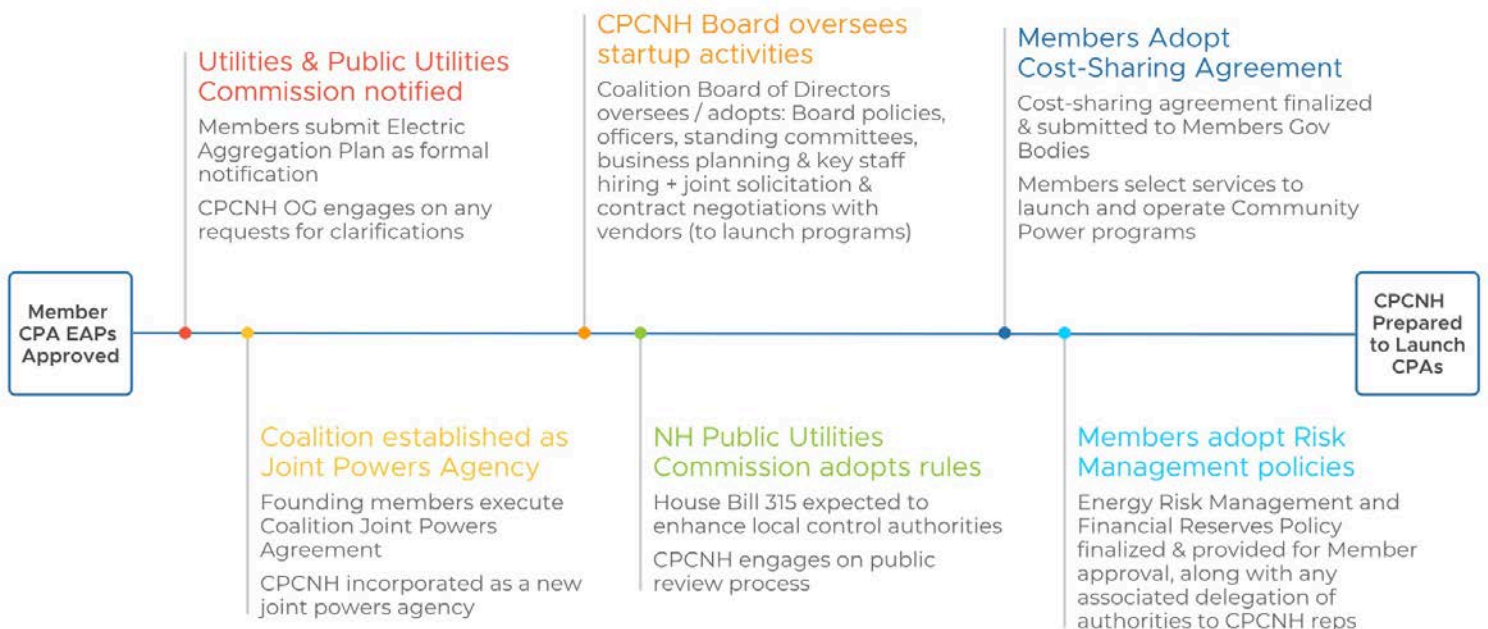
RFP Interview, Partnering & Award Process



Implementation Process

After the founding members execute the Joint Powers Agreement and incorporate the agency, the CPCNH Board will oversee startup activities, including contracting with staff, advisors and at-risk service providers, adopting policies and procedures, and engaging at the NHPUC to finalize the administrative rules governing the CPA market, and will finalize CPCNH's Cost Sharing Agreement along with an Energy Risk Management and Financial Reserve Policy for approval by the CPCNH Board and Member CPAs. Note that many activities in this section will rely upon contractors and service providers under at-risk contract structures.

CPCNH Startup, Rule Making and ERMP Approval Process

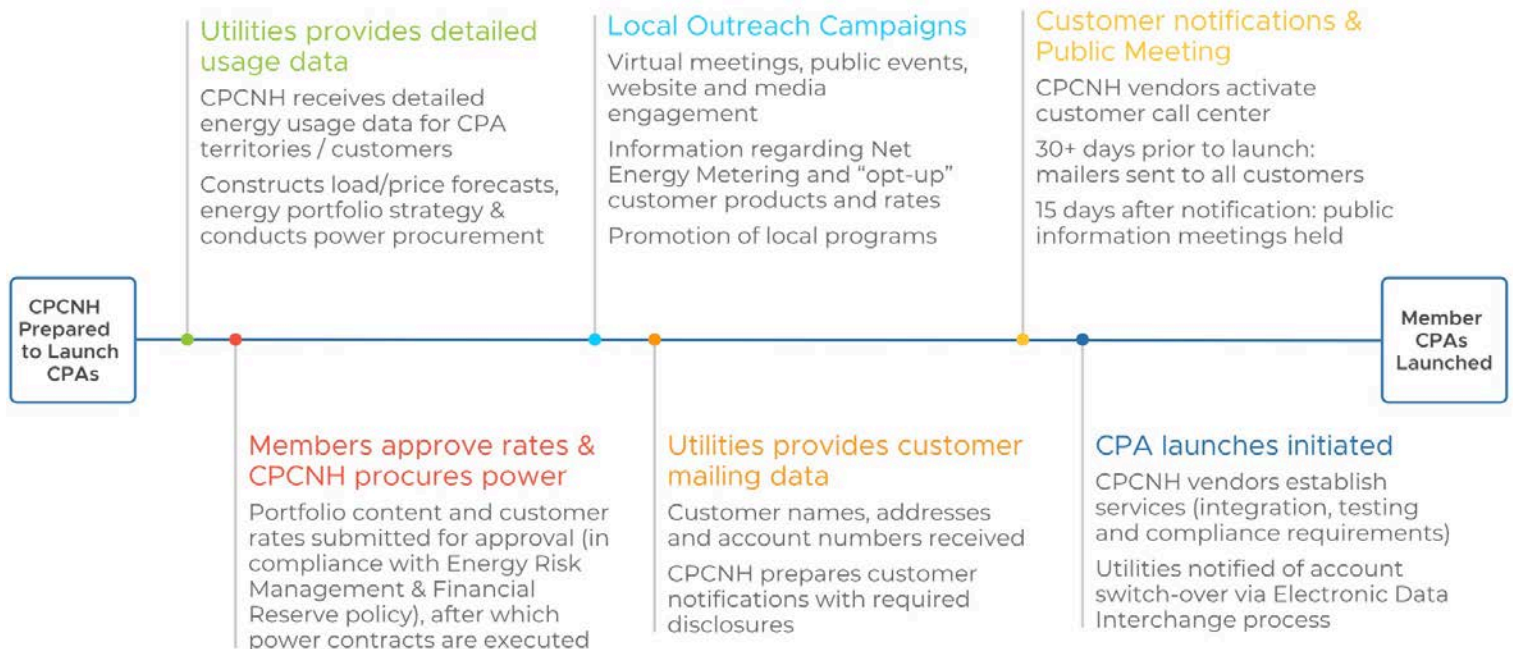




After the NHPUC adopts rules and opens the market, CPCNH will be allowed to launch Member CPA programs.

The milestones below summarize the process by which the JPA will structure and conduct data collection, forecasting, power procurement solicitations and rate setting exercises — in compliance with the Energy Risk Management and Financial Reserve Policy adopted by the CPCNH Board and Member CPAs — and the local outreach, customer notification mailings and public meeting process that culminates in the launch of Member CPA programs:

Member CPA Program Launch Process





MARKET ANALYSIS

This section provides an overview of the evolution of New Hampshire’s market structure, summarizes the status and implications of recent political reforms, and discusses notable barriers to competition and innovation that will: (1) impact CPCNH’s business operations and (2) largely define the parameters in which Member CPA programs will be able to achieve their local policy goals over time.

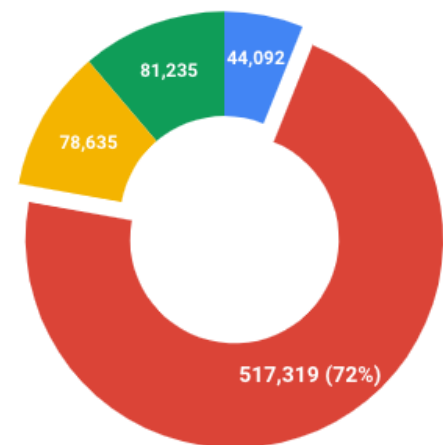
- Structural market flaws have suppressed competition, to the extent that levels of customer participation in utility-provided default service are relatively stable; this affords CPCNH a stable customer base and strong competitive advantage at launch.
- Many of the same market flaws and incumbent powers have allowed distribution utilities to control the pace and extent of innovation in regard to retail customer services and DERs, effectively suppressing the growth of in-state renewable resources; CPCNH will need to support targeted reforms to law and regulation in order to compete effectively, deliver innovative value-added services and satisfy its Member CPAs’ local policy objectives.

As general context for this section:

- Four entities provide electric distribution service: New Hampshire Electric Co-op and the investor-owned utilities Eversource, Unitil and Liberty Utilities.
- The largest utility (Eversource) scores low in the bottom quartile of industry rankings for customer satisfaction and customer value.
- There is evident friction between utilities and the NH Office of Consumer Advocate on certain high-profile issues.

Customers by Distribution Utility

● Liberty ● Eversource ● Unitil ● NHEC



Utility Restructuring

New Hampshire was the first state in the nation to authorize the restructuring of the electric utility industry in 1996 (NH RSA 374-F).⁵

Prior to this point, the NHPUC set retail customer rates to allow electric utilities to recover a return on their investments and prudently incurred costs for “vertically integrated” monopoly service — spanning wholesale electricity generation,

⁵ Clifton Below, Assistant Mayor of Lebanon, a leader of CPCNH and former State Representative, Senator, and PUC Commissioner, is one of original the co-authors NH’s Electric Utility Restructuring Act of 1996 (RSA 374-F) and primary author of the Community Power Act (Chapter 316, NH Laws of 2019 that modernized RSA 53-E and made opt-out municipal aggregation possible).



transmission, local distribution and retail customer services (metering, billing, collections, call center operations and so on).

Restructuring sought to increase competition and technological innovation in the markets for electricity supply and retail customer services, by requiring electric utilities to divest of their generation portfolios, creating a Federally regulated regional electricity market operated by the Independent System Operator of New England or (ISO-NE) and allowing Competitive Electric Power Suppliers (CEPs) to offer electricity supply rates and other services to retail customers.

Customers that did not choose a competitive supplier were left on “default service” provided by the electric utilities (afterwards referred to as “electric distribution utilities or companies”) which continue to be regulated by the NHPUC. The distribution utilities periodically hold auctions for CEPS to bid against one another for the right to supply electricity to default service customers in large groups (or “tranches”).

The Electric Utility Restructuring Act called for the *“development of competitive markets for wholesale and retail electricity services”* with decision-making carried out under *“a market framework for competitive electric service [that] should, to the extent possible, reduce reliance on administrative process”*.

Nearly a quarter-century has passed, and the market remains only partially restructured. Regulated distribution utilities continue to provide services that are not natural monopolies, and could therefore be available by competitive means, such as: default electricity supply, metering, meter data management, billing, and other retail customer services (such as load management programs for large customers and demand response and energy storage for smaller customers).

The continued reliance on utilities to provide these customer-facing services has necessitated state regulation over many aspects of the retail customer market. Utility regulation relies on administrative regulatory proceedings, which are necessarily more slow-moving and unable to respond to changing customer technologies and wholesale market dynamics (such as the increased price volatility caused by higher levels of renewable generation).

Utility regulation is also prone to ‘regulatory capture’, in which decision-making reflects the more of the interests of the utilities than of the public. As discussed below, there are notable instances that indicate the NHPUC has been somewhat dysfunctional in its oversight of New Hampshire’s investor-owned utilities.

Utility Control of Market Functions

To a large extent due to opposition from Eversource, restructuring was successfully delayed, and investor-owned utilities have retained control over customer-facing services as a consequence. At present, the utilities exercise significant autonomy over the market processes and infrastructure which directly determines (on a daily



basis) whether and to what extent competition for retail customers plays out on a fair basis.

Key factors that demonstrate the extent of utility market power include:

- Horizontal separation of generation and supply from distribution and retail was only recently completed (Eversource divested of wholesale generation in Q1 2018).
- Transmission costs are still charged by utilities directly to all customers based on volumetric usage (e.g., kilowatt-hours consumed), despite being allocated based on marginal cost (e.g., share of coincident peak demand).
- Utilities remain responsible for constructing load profiles and submitting settlement data to ISO-NE; additionally:
 - Only Liberty Utilities discloses the actual hourly difference between retail metered electricity usage (i.e., what customers consumed) and ISO-NE wholesale load settlements (which adds in distribution losses and “unaccounted for energy”, both of which the utility calculates).
 - Eversource and Unitil only publish static Distribution Loss Factors that are inexplicably higher than the loss factors used for load settlement (which are not explicitly disclosed). Taking the published loss factors at face value would lead an analyst — or a regulator — to conclude that market-based competition would be unlikely to beat utility default service based on price.
 - All utilities have been ‘accounting’ for any excess generation produced by customer solar photovoltaic systems in a given hour by lowering their effective distribution loss factors. This introduces significant volatility into the calculation, such that apparent “losses” can become negative in certain hours of the day.
- Grid modernization dockets have lagged behind policy directives, in part due to delayed regulatory decision-making. Utilities operate with an undue degree of latitude in regard to investment decisions⁶ and the availability of interval meter data is relatively low for mass market customers in the investor-owned utility territories as a consequence.

⁶ For example, Eversource unilaterally decided to deploy new Advanced Meter Reading (AMR) meters between 2012-2015 that are capable of delivering the interval data required to support Time-of-Use and more dynamic time varying rate options for customers. However, the utility chose not to install the communication network required to collect the data on an interval basis; instead, Eversource uses truck-mounted receivers to drive-by and record each customer’s total usage on a monthly basis.

Furthermore, Eversource failed to inform regulators of their decision until *after* the utility had commenced the deployment. This occurred after the NHPUC had directed Eversource, as a matter of policy in proceeding DE 06-061, to prepare for Advanced Metering Infrastructure (AMI) deployment to enable 3-part Time-of-Use and other time varying dynamic customer rates.



- None of the investor-owned utilities' Terms and Conditions and CEPS Agreement appear to comply with the NHPUC's "Supplier Guide" (which was released in the early stages of restructuring) in regard to the requirement that utilities should modify their billing systems upon request so that CEPS would be able to offer innovative rate structures to customers.⁷
- Similarly, Electronic Data Interface (EDI) standards (which govern the extent and method of transferring customer meter, account and billing data between utilities and CEPS) were adopted on what was supposed to be an interim basis after a working group process that concluded in 1998. At the time, it was assumed that the working group would continue to regularly convene to update the provisional standards. However, that process was never implemented by the NHPUC, and the data standards have not been updated in 23 years.

Weakening of Market Based Mechanisms

The above and other similar lapses of regulatory enforcement and structural market flaws have foreclosed the development of a unified, modern and competitive retail electricity market for New Hampshire. As a direct consequence:

- Utility default service levels have held relatively steady since ~2013 across all customer classes, and begun to grow in some cases (e.g., residential and small commercial customers have left the market to return to Eversource default service in recent years).
- Approximately four out of five customers remain on default service (larger customers on competitive supply account for about half of total electricity usage),
- Competition within NH's retail electricity market is relatively weak, most notably for the residential and small commercial classes, and also fragmented by utility territory — each of which has different metering, billing, business processes and other requirements for CEPS to navigate. Consequently:
 - Out of the 29 CEPS currently offering service in New Hampshire, only 9 offer service to residential customers and only 4 of those serve all four distribution utility territories.
 - Only 2 CEPS offer service to all customer classes across all utilities.
- Regulators do not appear to collect sufficient information or calculate metrics that would provide insight into market barriers or performance.

⁷ While there is language in each of the utilities' agreements that appears to comply with the Supplier Guide, a careful reading of the actual terms either provide the utility unilateral discretion to ignore such requests, or else require CEPS to use the same billing determinants as the utility (which forecloses new rate designs).



- Independently calculating standard market power metrics⁸ reveals that the competitive market is highly concentrated (i.e., likely not very competitive).

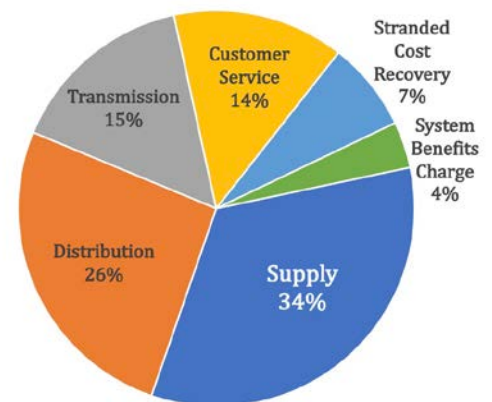
Growth of Utility Market Power: Distributed Energy

The competitive market has been unable to expand, evolve or compete on a level playing field with investor-owned utilities in regard to providing customers with innovative wholesale and retail services. This outcome has allowed the investor-owned utilities to legitimize the maintenance and gradual expansion of their market power over retail customers and distributed energy resources. As select examples:

- The limited circumstances provided for in NH's Electric Utility Restructuring Act in which distribution utilities were permitted to finance or own DERs has been steadily expanded over recent years. Legislation expected to be signed into law this year, for example, removes the cap that limited utility-owned or financed demand response resources and distribution-interconnected energy storage facilities. Additionally:

- Utilities justified this expansion of authority on the basis that the utility was capable of lowering transmission costs (by dispatching storage and demand response at the hour of system peak each month) and that the savings would justify the utility's investment as cost-effective for ratepayers.
- Simultaneously, the utilities successfully objected to allowing any non-utility entity from being able to lower transmission costs in the same way. (Utilities control how transmission costs are charged to customers, as discussed under "Utility Control of Market Functions"; see chart at right for rate allocation.)

Eversource Residential Rate Allocation



- Eversource recently testified that utility-administered demand response and load management programs obviate the need to provide customers with time-varying rates (as would be enabled by the collection of interval meter data).
- In recent legislative negotiations, Eversource indicated that maintaining utility control over metering, communication, data management systems and consolidated billing functions are a strategic priority for the company.
- Regulators recently approved a settlement under which Eversource was authorized to shift Net Energy Metering costs out of default supply rates (which are only recovered from customers on utility-provided default supply) and into

⁸ HHI Score (Herfindahl-Hirschman Index) and CR3 (concentration ratio of the three largest CEPS based on their percentage of load served).



Stranded Cost Recovery Charges (which are collected from all customers, regardless of their supplier).

This is troubling, because the mechanism was originally created to facilitate the utilities' divestment of wholesale generation but will now be used to provide utilities with an unfair competitive advantage in serving customers with distributed generation.

Recent Political Reforms

Beginning in 2019, legislators began to react against the general decline of market-based mechanisms and growing reliance on utilities to implement energy policy.

- The resulting legislation has set in motion a renewed liberalization of market operations and structural reformation over how it is governed.
- In an attempt to counter-act the reforms, legislation was introduced with Eversource's support that would have effectively prevented any CPAs from launching (House Bill 315). However, CPCNH members exerted sufficient public and political pressure such that the amended legislation results in an expansion of CPA authorities.

A summary of each reform bill, and the role of CPCNH members, follows below:

Senate Bill 284 (2019): Statewide Retail Energy Data Platform

Senate Bill 284 was authorized by the Legislature explicitly "*in order to accomplish the purposes of electric utility restructuring*" (NH RSA 374-F) and directed the NHPUC to establish a single statewide platform to facilitate access to retail customer electricity and natural gas usage and other data.

CPCNH members actively participated in the subsequent proceeding (DE-19-197) and recently submitted a Settlement Agreement with the Consumer Advocate, other stakeholders, and Eversource, Unitil and Liberty Utilities. Under the terms of the Settlement Agreement, the evolution of the data platform would be overseen by representatives of different market participants and consumer groups.

Community Power municipalities would be represented by CPCNH member Clifton Below (Assistant Mayor of the City of Lebanon) who was an intervenor in the proceeding.

Senate Bill 286 (2019): Community Power Aggregation

In order to re-start the growth of competitive market services in alignment with The Electric Utility Restructuring Act, Senate Bill 286⁹ authorized towns, cities and counties to launch CPA programs that supplant distribution utilities as default suppliers of electricity to retail customers on an opt-out basis.

The purpose of RSA 53-E is excerpted below:

⁹ Chapter 316, NH Laws of 2019 (which updated NH RSA 53-E).



“The general court finds it to be in the public interest to allow municipalities and counties to aggregate retail electric customers, as necessary, to provide such customers access to competitive markets for supplies of electricity and related energy services. The general court finds that aggregation may provide small customers with similar opportunities to those available to larger customers in obtaining lower electric costs, reliable service, and secure energy supplies. The purpose of aggregation shall be to encourage voluntary, cost effective and innovative solutions to local needs with careful consideration of local conditions and opportunities.”

To achieve this purpose, RSA 53-E:3 allows Community Power programs to enter into agreements and provide for:

“the supply of electric power; demand side management; conservation; meter reading; customer service; other related services; and the operation of energy efficiency and clean energy districts adopted by a municipality pursuant to RSA 53-F and as approved by the municipality’s governing body.”

RSA 53-E:3-a further provides Community Power programs with authorities and regulatory pathways to offer more advanced meters for customers, and to provide for alternative customer billing options. Both metering and billing services are important means by which CPCNH expects to better engage customers and offer more innovative valued-added services that lower the energy expenditures and carbon emissions for individual customers and communities.

House Bill 315 (2021): Expansion of NEM & CPA Authorities

Throughout the first quarter of 2021, CPCNH led a successful statewide effort to successfully amend legislation that would have precluded any CPA programs from launching in practice (House Bill 315)..

As a result of the CPCNH’s coordination, the mayors of ten cities, the NH Association of Counties, the NH Municipal Association and numerous other civic and business stakeholders from across the state coordinated efforts to oppose the bill as introduced.

The public opposition, including an opposition letter signed by over 700 voters, and associated high-profile media attention prompted the bill sponsor to convene a series of collaborative stakeholder work sessions to re-write the bill by amendment.

Compromise language negotiated by members of CPCNH (1) preserved CPA authorities, (2) clarified utility data sharing requirements, and (3) provided a significant credit enhancement by requiring a Purchase of Receivables program that ensures comparable financial protections for CPAs and utilities when customers do not pay their bills on-time.

The bill sponsor and chair of the NH Science, Technology and Energy Committee publicly voiced recognition and appreciation for CPCNH’s Clifton Below, Assistant Mayor of Lebanon, for playing a key role in the negotiations, and deferred to him



several times to explain the amendments. The bill then received a unanimous vote out of committee.

Subsequently, House Bill 315 was later amended to significantly expand Net Metering for public entities of various kinds. Under the new policy, a group of customers that are all “political subdivisions”¹⁰ will be able to receive net metering credits generated by local “behind the meter” energy systems up to 5 megawatts in capacity¹¹ — which may be owned by public or private entities — provided that all accounts in the group take service from the same electric distribution utility.

CPCNH members were again instrumental in negotiating compromise language on this issue, which is politically divisive at the NH Legislature.

Senate Bill 91 (2021): Omnibus Legislation on Renewable Energy and Utilities.

Senate Bill 91 was widely expected to be voted ‘inexpedient to legislate’ by the House Science, Technology and Energy Committee until CPCNH emailed an ‘action alert’ three days in advance of the public hearing.

Over 200 members of the public signed on to support the bill, which again allowed CPCNH members to successfully negotiate with the committee chair to pass compromise language.

Senate Bill 91 contained a number of provisions, one of which was later linked to House Bill 315 in regard to Net Metering. The bill requires the NHPUC to balance “*the interests of customer-generators with those of electric utilities and ratepayers to ensure that, except for minimal allowances for metering and billing, other customers do not shift costs to customer generators and customer generators do not shift costs to other customers.*”

CPCNH members again played a key role in crafting the above compromise language, and intends to engage at the NHPUC to ensure that Net Metering cost allocations are fairly constructed.

Other aspects of Senate Bill 91 liberalize customer storage and enhance equity, and Part IV could lead to a seminal, structural market change:

- Part I authorized “bring your own device” programs for customer battery storage systems and requires the NHPUC to “*investigate ways to enable energy storage projects to receive compensation for avoided transmission and distribution costs... while also participating in wholesale energy markets*”. This is a seminal, market-enabling bill considering that there was no prior mechanism in New Hampshire law that allows customers to benefit from energy storage systems.

¹⁰ A “*political subdivision*” means any city, town, county, school district, chartered public school, village district, school administrative unit, or any district or entity created for a special purpose administered or funded by any of the above-named governmental units.

¹¹ Net metering in NH is otherwise limited to 1 MW in capacity.



- Part III ensured that current benefits for low-moderate income customers receiving bill credits from Group Net Metering programs are maintained.
- Part IV established a commission to study the creation of an entirely new market structure to benefit energy generation and battery storage facilities built in New Hampshire, by creating an “intra-state” wholesale market under state jurisdiction.

Enabling the new market structure envisioned under Senate Bill 91, Part IV is CPCNH’s strategic priority. It has the potential to modernize the state’s energy market by accelerating the construction of new, cost-effective clean energy resources that are (1) in-state distributed energy resources (generators or storage with a capacity of 5 MW or less) and (2) do not participate in the FERC jurisdictional interstate market operated by ISO-NE. As context:

- Under current market rules, power bought from such in-state resources incurs the same transmission cost surcharges as generation outside New Hampshire does — even though these resources decrease the power customers have to buy and import from outside the state via the transmission grid.
- Transmission charges are significant (~15% to 20% of customer bills, on average) and levying the expense on these small-scale generators and battery storage facilities represents an unfair tax that makes generating power in-state more expensive than it should be.
- Removing the transmission charges for these resources, by accounting for how the power generated reduces monthly coincident peaks and transmission charges, would immediately make such power generated in New Hampshire much less expensive in competition with power imported from out-of-state — and allow CPCNH to buy more power from local clean resources for Member CPAs’ resale to their customers.

CPCNH will (1) devote substantial resources to engaging throughout the legislative committee study process and (2) support legislation next session to enable an intra-state wholesale market for small-scale resources under state jurisdiction.

Creation of the Department of Energy (NHPUC Reform)

Effective July 1st, the NHPUC has been reorganized as a subsidiary agency under the newly created Department of Energy. The enabling legislation was not a standalone bill, but rather a largely partisan addition to the budget trailer bill.

The reorganization is expected to have wide-ranging impacts in regard to shifting the responsibility for deciding matters of energy policy to the Department of Energy, which may serve to streamline the NHPUC in terms of focusing more exclusively on its adjudicative function.

- To-date, the NHPUC has exercised authority over energy policy areas, including in regard to energy efficiency funding, development of alternative net metering tariffs, execution of a Value of Distributed Energy Resources study; development of the Statewide Data Platform; and promulgation of administrative rules to



enable CPA. (Note that some, but not all, of these functions are being transferred to the new Department of Energy.)

- In part, this results from how NHPUC staff were permitted to appear before the Commission as though they were a party and can and do pursue their own policy agendas in such capacities, while simultaneously being allowed to advise the Commissioners directly and behind closed doors.

CPCNH will continue to monitor and engage to represent the interest of its Member CPAs, particularly in regard to:

1. Finalizing CPA administrative rules.
2. Enabling Purchase of Receivables for CPAs.
3. Adopting and implementing the Statewide Data Platform settlement agreement.

DRAFT



COMPETITIVE ANALYSIS

This section presents and explains (1) CPCNH'S analysis of default service supplier margins, against which the agency is assumed to compete, and (2) the results of CPCNH's cashflow model.

A five-year monthly cash-flow spreadsheet model was prepared in order to (1) assess the overall financial performance of operating Member CPA programs through CPCNH and (2) to identify the financial dynamics and requirements that CPCNH will be subject to at a level of granularity sufficient to inform this business plan and the forthcoming solicitation for services and credit support.

- The modeling was informed by the methodologies and structures relied upon by CPA JPAs in the California market to forecast operating and reserve budgets that are used to inform rate setting and strategic planning, and which are disclosed to third parties on a pro forma basis to support financing and power purchase negotiations.
- The cashflow model incorporates New Hampshire and ISO-NE market rules and requirements, as well as the business operations expenses, accounting structures, contract payment terms, credit and collateral requirements and other financial, regulatory and business process requirements under which CPCNH will launch and operate.
- A separate spreadsheet model for load and energy calculations on an hourly basis was constructed, with outputs binned by on- and off- peak periods each month for large and small customer groups for input into the monthly cashflow model.

Two modeling runs were performed to estimate the margins charged by competitive suppliers above the cost of all-requirements power for utility default service contracts.

CPCNH was then assumed to need to recover its own operating costs, maintain its financial obligations, and accrue net revenues for Member CPA reserves while meeting utility default supply rates (i.e., operating at or below the same margin).

The results indicate that CPCNH's business model is viable and is expected to perform competitively when benchmarked against utility default service rates.

Model Assumptions

The modeling results presented in this report:

- Assumed that Eversource's Small and Large customer load asset IDs for default energy service were representative of CPCNH's customer base.
- Relied upon historical data observed over the past three years (from June 2018 through May 2021), from which an "average year" was constructed by taking the average of all required modeling inputs across the period.



- Produced a five-year cash-flow simulation by repeating the “average year”.

These parameters were chosen for the analysis based on the following considerations:

- While the model could be readily employed to produce forecasts of expected performance under future market conditions (by replacing historical data with forecast data for various input assumptions), relying on forward-looking projections as inputs would introduce undue uncertainty and model error risk at this stage of the planning process.
- Relying on actual data was deemed preferable at this stage of the planning process, as doing so allowed model results to be verified against what actually happened — and significantly lowers the risk that the model is incorrectly benchmarking the performance of CPCNH’s business model against utility default service.
- Repeating an “average year” set of inputs — based on averaging multiple years of energy cost drivers (e.g., capacity, on- and off-peak forward and spot power prices, ancillary services, etc.), load volumes, and revenue inputs (e.g., utility default service rates) — preserves inter-relationships between these variables and month-over-month trends over the forecast horizon and serves as an accurate baseline that can later be stress-tested and refined with forecast assumptions.
- The data collection, transformation, analysis, and preparation of inputs to the level of granularity required to conduct a bottom-up calculation of energy supply cost drivers and power agency cash-flow dynamics is non-trivial and requires significant research and compilation of inputs that vary by utility.
- Eversource is the largest distribution utility in NH, and the load groups modeled represent the largest group of customers that will be provided default supply by CPCNH.
- 2018 was the year that Eversource completed generation restructuring (shifting certain costs out of energy supply and into their Stranded Cost Recovery Charges in April that year) and began procuring using a single procurement auction held every six months to provide power supply requirements; almost all inputs required for the modeling exercise were therefore disclosed and available for the analysis over this 36-month time period.¹²

Analysis of Utility Default Supplier Margins

As an initial first step in the analysis, two modeling runs were performed to estimate the margins charged by competitive suppliers above the cost of all-requirements power for utility default service contracts.

¹² Except for the RPS adder for June and July 2018, which was assumed to be the adder disclosed beginning in August 2018.



Default Supplier Bid Margins

The goal of the initial modeling run was to derive an accurate estimate of the profit margins, risk premiums and business model expenses of competitive suppliers which have been awarded default service contracts in recent years based upon the forward power prices observed at the time of Eversource's default solicitations.

- The model calculated that supplier's price in an average margin of 8.8% above the forecasted cost of all-requirements power into default supply contracts.
- These modeling results fall within the estimated range of 5% to 10% (and assumed average of 8%) provided by Synapse Energy Economics in the "*Avoided Energy Supply Components in New England: 2021 Report*", which were based on a direct review of confidential supplier bids for select utility solicitations.
- Along with cross-checking the results against various datapoints disclosed by Eversource in regulatory filings, this was deemed to indicate that the cashflow model adequately captured all of the various inputs, calculations and business model dynamics required to produce realistic results.

Estimating supplier margins was the first objective of the analysis because CPCNH will primarily be competing against the cost of utility-provided default service.

- CPCNH will therefore be expected to cover its own cost of operations, and to generate surplus revenues for Member CPAs, while keeping rates at or below utility default service levels.
- In turn, this means that CPCNH will have to operate under margins comparable to or lower than those charged by suppliers to cover their own business model expenses, risk premiums and profit (surplus revenue) targets.

However, the margin produced by the first modeling run (and the range estimated by Synapse) is not representative of the supplier's actual margin over the term of utility default supply contracts.

- The 8.8% figure is derived from basing the cost of energy on the forward market price curves observed at the time of utility default solicitations (as were Synapse's estimates, which is industry standard practice).
- Forward curves represent the market's expected future price of electricity based on surveys of contracts being transacted in the market going forward month over month — and are used to benchmark supplier bids against what the "fair price" of power should be assuming that those forecasted estimates are accurate.
- However, forward price curves shift continuously as the market adjusts prices in response to changing fundamentals (i.e., weather patterns, expected levels of electricity usage, natural gas prices, the performance of power plants across ISO-NE, etc.).



- Additionally, purchasing electricity on a forward basis includes risk premiums, sometimes referred to as the “cost of insurance”. The actual price of electricity purchased on the ISO-NE spot market (day-ahead or real time) is, on average, significantly less expensive than power purchased on a forward basis.
- Suppliers may therefore bid prices to utilities based on what the forward prices are on the day of the solicitation — but they do not fully hedge their positions by ‘locking in’ their entire portfolio of energy contracts at those prices.
- Instead, suppliers seek to increase their margin by engaging in active management of their energy portfolio, in the same way that CPCNH will: by continuously monitoring market fundamentals and how electricity and natural gas forward price curves are shifting, adjusting the extent of their exposure to ISO-NE spot prices in compliance with their internal Energy Risk Management Policy and availability of credit support, and entering into and out of forward contract positions of various physical and financial products of different term lengths in order to maximize surplus revenues (profit).
- During this time, if forward curve prices begin to rise, suppliers may hedge more of their exposures, and if prices begin to fall, suppliers may liquidate their positions and take on more market exposure.

Default Supplier Realized Margins

The active portfolio management that suppliers engage in, and which CPCNH is expected to engage in, was beyond the scope of the modeling analysis (and cannot be captured in a spreadsheet).

To provide an indicative and financially conservative estimate of the additional margin gained by suppliers through active portfolio management, the second modeling run:

- Analyzed how forward curve prices had changed each month leading up to and over the course of the utility default supply contracts; and
- Simulated a simple hedging strategy based on these price movements and what the actual market prices observed in ISO-NE were.

Average margins increased by ~140%, with a 12.1% margin above the actual cost of power (assuming the simple hedging strategy) charged to default supply customers.

CPCNH Cashflow Model

The second default supplier modeling run was assumed to be sufficiently accurate for the purposes of providing an initial estimate of CPCNH’s performance against utility default service. Note that:

- Certain inputs regarding the cost of services have been deemed to be confidential, in consideration of CPCNH’s anticipated solicitation for services.



- The cash-flow model spreadsheet, which provides a greater level of granularity than the results disclosed in this report, has been provided to CPCNH members for review.
- The results presented below do not represent a forecast, but rather a hypothetical of what would happen if CPCNH (1) launched in 2022, (2) operated under the “average year” market conditions and regulatory requirements observed over the prior three years, and (3) competed against default service suppliers on the same basis.
- CPCNH intends to review the model’s methodological assumptions and inputs, and to produce additional modeling runs based on forecasted inputs to further refine and ‘stress test’ the performance of the agency’s business model and financing strategy.

Narrative Overview of CPCNH Cashflow Assumptions

CPCNH’s cashflow model is based on the assumption that the agency will launch and operate relying on an at-risk contracting approach, business model, accounting structure, and financial strategy comparable to the one that has been used successfully by other CPA JPAs to launch services at no upfront cost for members.

To do so, CPCNH will be required to commit to industry-standard contracting provisions, financial controls and debt service covenants, and can expect to reach various financial milestones as it accrues net revenues (member reserves) to the level where it is able to register as a Load Serving Entity and self-provide the required credit and collateral obligations.

The section below provides a contextual discussion of these assumptions, which have been incorporated into CPCNH’s cashflow model, and provides context to interpret the model results.

The provision of electricity supply to retail customers on an operational basis requires CPCNH to contract with three types of service providers (though there are companies which provide a complete set of such services):¹³

- A Data Manager to provide for the regular transmission of retail customer meter, account and billing data to and from the distribution utility via Electronic Data Interchange (EDI).
- A Customer Care Manager to operate a call center and provide for direct communications with retail customers.
- An Energy Portfolio Manager to assess CPA member program electricity requirements, contract for the various products necessary to construct CPCNH’s energy portfolio on behalf of its members and thereafter actively manage the

¹³ There are an additional variety of ancillary support and advisory services inherent in operating a power enterprise, the cost of which has been incorporated into CPCNH’s cashflow model.



delivery of all-requirements electricity¹⁴ to customers in compliance with an Energy Risk Management and Financial Reserves Policy adopted by CPCNH and its members.

These service providers, particularly the Energy Portfolio Manager, are expected to provide or arrange for the credit support required to initially launch CPCNH:

- CPCNH's financial requirements prior to launch will be primarily determined by the credit support necessary for its counterparties to: (1) satisfy Load Serving Entity (LSE) creditworthiness and collateral requirements and pay for spot market settlements in the ISO-NE market and (2) to contract for electricity supply products on a forward-basis with suppliers, financial institutions and generators on behalf of Member CPAs.
- Credit support will also be needed to maintain liquidity during CPCNH's cash conversion cycle: the delay between the provision of electricity service, mailing of customer bills, and processing of customer payments is such that the revenues (on a cash basis) to cover operational expenses in a given month (on an accrual basis) will be received in full on a ~2 month lagging basis.

This 'cash conversion cycle' is particularly acute during the initial period of operations. Member CPA customers will be switched over to receive CPCNH service in tranches over the first month of operations on a rolling basis, depending upon their metering reading group schedule. (For reference, Eversource has 20 meter reading customer groups.) Beginning approximately ~6 weeks after the first customers are enrolled, CPCNH will begin to receive revenues from participating customers on the same rolling basis going forward.

- Notifications mailed to eligible retail customers incur an additional, relatively small upfront expense.

CPCNH anticipates that its Energy Portfolio Manager will be able to negotiate favorable payment terms with suppliers in order to more closely align payment for electricity with the timing of when revenues are received from customers and minimize credit support costs.

As a credit enhancement mechanism to support the aforementioned supplier negotiations, CPCNH anticipates that customer revenues will be deposited into a Secured Revenue Account managed by a neutral third-party financial institution. This 'lockbox' or 'waterfall' account structure:

- Ensures that seniority is honored in the disbursement of funds and that CPCNH maintains agreed-upon levels of liquidity sufficient to cover several weeks of power transactions.

¹⁴ All-requirements electricity is comprised of electrical energy, capacity, reserves, ancillary services, , transmission and distribution losses, congestion management, and Renewable Energy Credits sufficient to comply with New Hampshire's Renewable Portfolio Standard.



- Provides a high degree of assurance to CPCNH's Energy Portfolio Manager and power suppliers that the agency's financial obligations will be managed in accordance with agreed-upon contracts.
- Lowers CPCNH's counterparty default risk and the corresponding collateral requirements for CPCNH's Energy Portfolio Manager or price premium that suppliers would otherwise charge through to CPCPNH.

Revenues received from participating customers will be managed in accordance with an Energy Risk Management and Financial Reserve Policy adopted by CPCNH and Member CPAs.

Revenues in excess of required Secured Revenue Account levels will be deposited into CPCNH's Internal Operating Account, up to a level of reserves sufficient to cover two to three months of non-energy related operating expenses.

After the operating reserve is reached, excess funds will be deposited into CPCNH's Member Reserves Account and disbursed to supplement the Secured Revenue and Internal Operating Accounts as needed, to support and self-provide credit and collateral requirements, and for future rate relief and other uses prioritized by CPA members.

After operations have generated net revenues such that CPCNH is able to maintain a minimum Tangible Net Worth in excess of \$1 million, the agency anticipates joining NEPOOL as a Publicly Owned Entity and registering with ISO-NE as a Load Serving Entity.

In advance of this point, CPCNH expects to enter into a revolving credit agreement during its first year of operations. The credit facility will have a cash draw sublimit sufficient to begin self-supplying credit and collateral requirements and a Letter of Credit sublimit sufficient to cover ISO-NE Financial Assurance Requirements.

Throughout this period, CPCNH intends to achieve and maintain strong financial performance metrics sufficient to receive an investment-grade credit rating within three-to-five years after launch.

Summary of CPCNH Cashflow Model Results

Based on CPCNH's engagement with prospective members, 26 communities were assumed to join the JPA and launch CPA programs in either April of 2022 or 2023. A 10% opt-out rate was assumed for customers offered default service:

CPA LAUNCH SCHEDULE	PHASE 1 APRIL 2022	PHASE 2 APRIL 2023	TOTAL ELIGIBLE CUSTOMERS	OPT-OUT RATE	CUSTOMER COUNT
CPCNH Members	10	16	26		
Small Customers	96,970	52,328	149,298	10%	134,368
Large Customers	60	30	90		81
Total	97,030	52,358	149,388		134,449



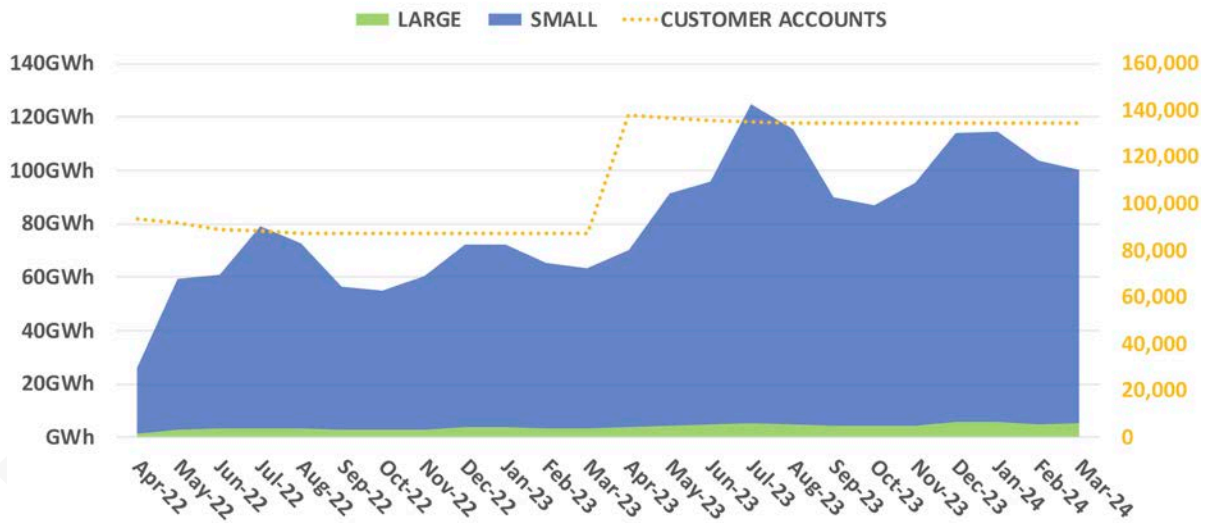
In the tables and charts that follow, note how CPCNH expands its customer base in April of 2022 and 2023, and is thereafter assumed to serve the same number of customers for the last three years of the analysis. This simplifying assumption, along with the repetition of the “average year” inputs, removes ‘noise’ and allows key financial dynamics to be readily observed and discussed here for planning purposes.

At full enrollment, CPCNH would serve 135,000 retail customers, manage an energy portfolio of ~1,200 GWh with a ~380 MW peak load collect ~\$100MM annually:

CPA ACCOUNTS, USAGE, RATES & REVENUES	2022	2023	2024	2025	2026
YE Customer Accounts	87,327	134,449	134,449	134,449	134,449
Annual Usage (MWh)	542,189	1,084,679	1,215,185	1,215,185	1,215,185
Peak MW	253.26	389.14	383.80	383.80	383.80
Average Retail Rate	\$0.0832	\$0.0842	\$0.0846	\$0.0846	\$0.0846
Annual Revenue	\$44,979,687	\$91,117,084	\$102,574,033	\$102,574,033	\$102,574,033

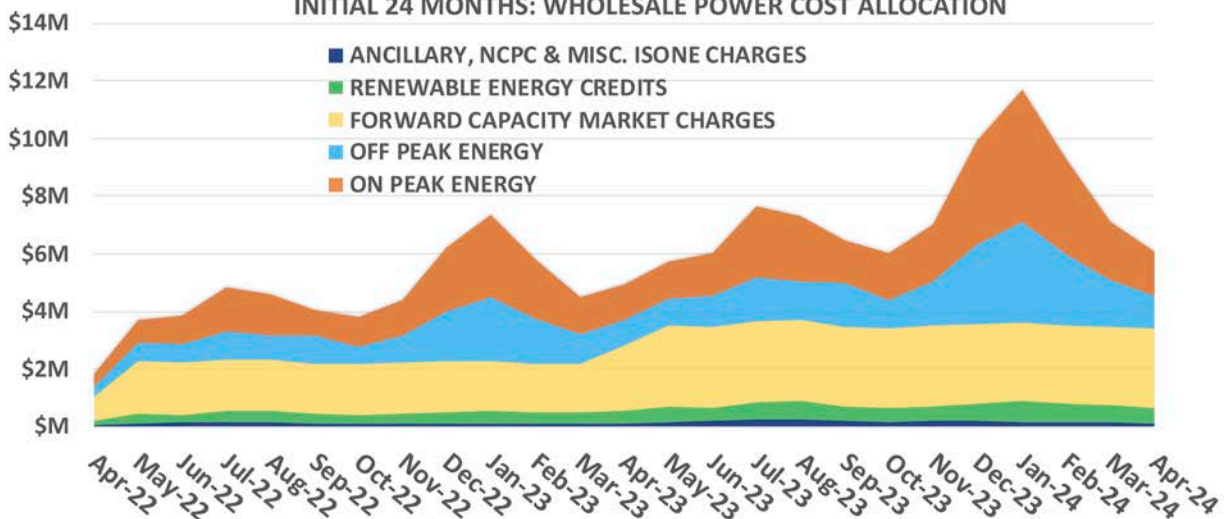
The graph below shows the growth, opt-outs and stabilization of CPCNH’s customer base over the course of the initial 24 months. While opt-outs appear to be less than 10%, this is because a certain number of customers opt-out prior to enrollment.

INITIAL 24 MONTHS: CUSTOMER ACCOUNTS & RETAIL USAGE (GWH)



Below are the energy-related costs incurred by the agency over the same period:

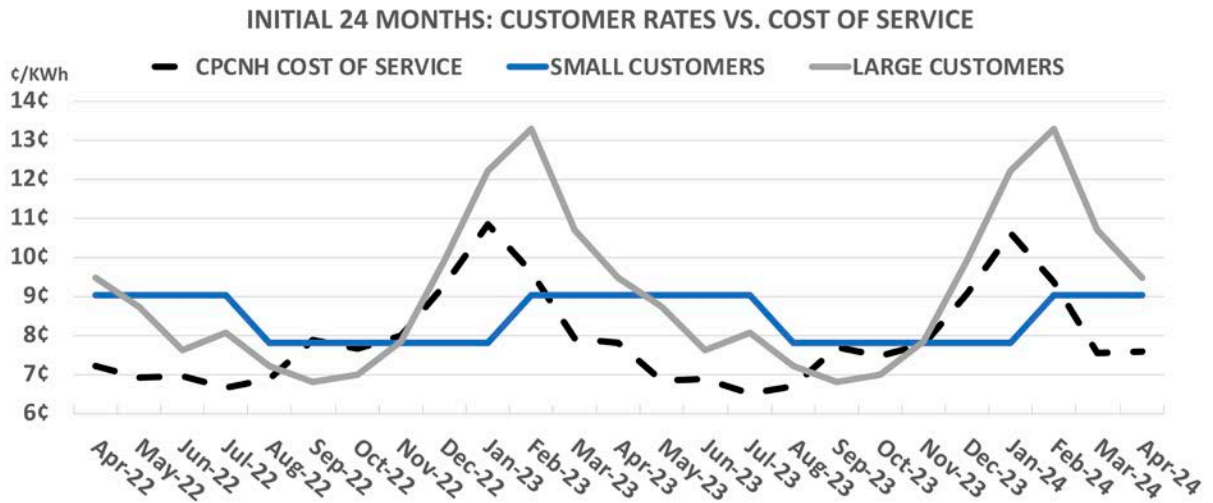
INITIAL 24 MONTHS: WHOLESALE POWER COST ALLOCATION



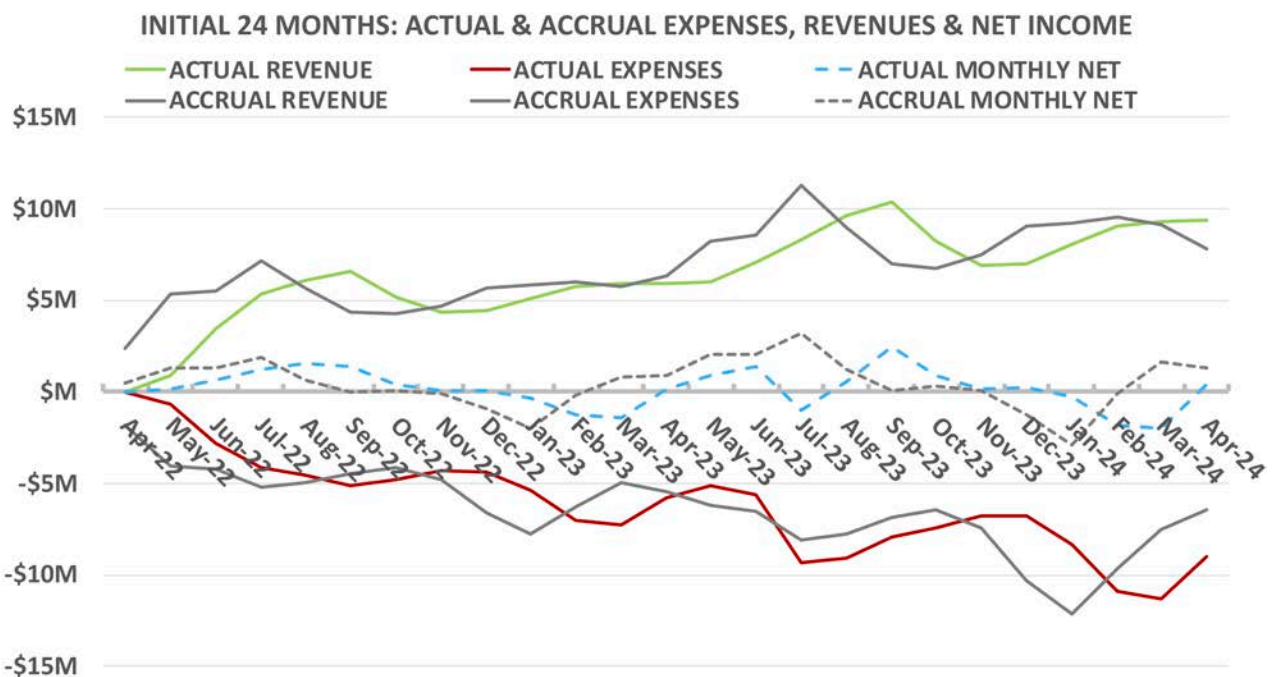


Note how winter energy costs are relatively high. Also, while Forward Capacity Market (FCM) charges are a significant percentage of supply costs, CPCNH will be able to accurately estimate FCM charges about one year in advance.

The next graph tracks CPCNH's total cost of service against default customer rates (on an accrual basis). Large customer rates more closely track the agency's costs, due to the fact that large customer rates vary by month. However, the majority of CPCNH's accounts are small customers, with rates fixed for 6-month periods.



Months in which CPCNH's cost of service falls below small customer rates indicate that the agency will accrue surplus revenues, and months in which CPCNH's cost of service rise above small customer rates indicate that the agency will operate at a loss. This next graph presents CPCNH's inflow of revenues, outflow of expenses, and net financial impact on both an accrual and actual (cash) basis over the same period:



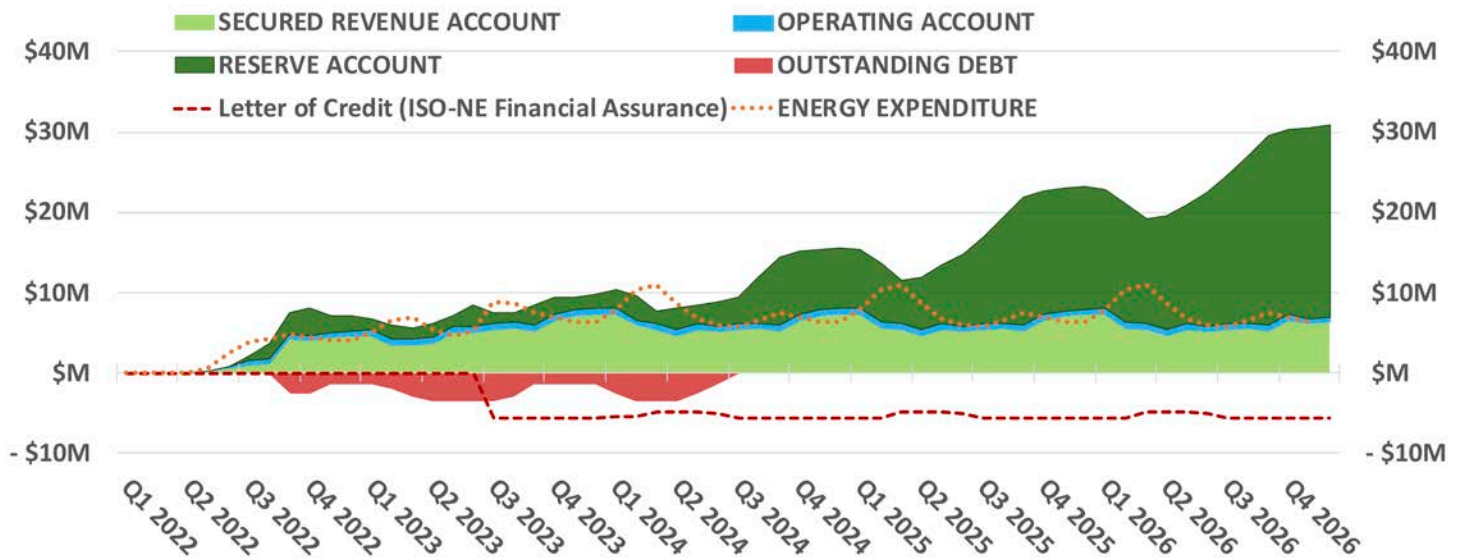


The results on a cash basis (the colored lines above) reflect the actual timing of when the agency's various expenses must be paid and when revenues from CPA customers are received.

This takes into account the ~2-month delay between when customers use electricity and when utilities deposit payments into CPCNH's account, and the strategies CPCNH expects will more closely align expenses with revenues in order to minimize financing requirements and costs.

The next graph shows the results of the five-year cashflow from a financial perspective. The accounting structure (secured revenue account, operating account and Member CPA reserves account), credit facility, timing and financial requirements for registering as a load-serving entity with ISO-NE reflect the assumptions described in the "Narrative Overview of CPCNH Cashflow Assumptions" section.

5 YEAR CASHFLOW ALLOCATION & DEBT SERVICE FORECAST



The dotted red line indicates when CPCNH registers as a Load Serving Entity in the ISO-NE market, using a ~\$5MM dollar letter of credit to satisfy the requisite Financial Assurance requirements.

The dotted orange line tracks energy expenditures; whenever it rises above the funds that in CPCNH's accounts, the agency draws on its credit facility to cover operating losses and remain in compliance with various requirements — such as liquidity, minimum balances in the secured revenue and operating accounts, etc. — and then pays the debt down in the months when surplus revenues are generated.

This 'cash crunch' cycle repeats until the agency has accrued sufficient funds to become self-sufficient.



At full enrollment, Member CPAs are generating ~\$7.5MM annually in surplus revenues. This assumes that no rate decreases have been provided to customers.

CPA MEMBER RESERVES	2022	2023	2024	2025	2026
YE Retained Net Revenues (accrual basis)	\$4,038,491	\$6,735,100	\$7,396,237	\$7,578,304	\$7,647,117
Equivalent Rate Decrease	9.0%	7.4%	7.2%	7.4%	7.5%
Equivalent Tier 1RECs (above RPS)	19%	16%	16%	16%	16%

The surplus is approximately equivalent to an average rate decrease of ~7.5% or an increase of 16% above the minimum required Renewable Portfolio Standard (purchasing Tier 1 Renewable Energy Credits).

Note, however, that CPCNH's service providers and financiers will require that sufficient surplus revenues are retained to ensure the financial stability of the agency's energy portfolio risk management activities. Until CPCNH achieves financial self-sufficiency, Member CPAs that elect to rely on the JPA to provide all-requirements power supply will therefore be required to devote surplus revenues sufficient to satisfy these risk management requirements.

In this and other regards, CPCNH members will face these types of trade-off decisions in regard to prioritizing the use of their net revenues. Surplus revenues could also be used to invest in new energy projects, for example, but this is not an efficient use of capital. CPA JPA members in other markets have instead chosen to pool a portion of their members' net revenues in order to create and sustain financial leverage for the enterprise as a whole.

The cashflow analysis assumes that Member CPAs adopt the same strategy and pool sufficient surplus revenues to strengthen the JPA's balance sheet. This is what allows the agency to demonstrate to lenders that it is being governed and managed responsibly, and to execute a credit facility with no guarantees apart from a right to be repaid from future revenues on that basis.

In turn, the additional liquidity and credit will strengthen the JPA's creditworthiness and long-term financial stability, accelerate the timeline on which CPCNH can begin operating as a Load Serving Entity, and also begin negotiating long-term contracts to develop new energy projects on favorable terms for participating Member CPAs.

The cost of capital under a credit facility also costs significantly less than the financing that was initially provided for by CPCNH's service providers, and the result is that the cost of service for all Member CPA programs declines (which increases surplus revenues). Similarly, financing charges continue to decline as the JPA is able to lessen its reliance on debt financing by drawing on accrued surplus revenues.

The net result of the above strategy is that the agency's financing charges decline by approximately \$1MM per year.

This decline can be seen in the "Financing Charges" line in the next table, which contains a key metrics regarding the efficiency of CPCNH's business model and its financial performance in terms of maintaining adequate liquidity and debt service ratios.



KEY METRICS	2022	2023	2024	2025	2026
Energy Expenses (% of revenues)	83.2%	86.5%	87.9%	87.9%	87.9%
Financing Charges	1.37%	0.76%	0.23%	0.18%	0.18%
Staffing & Overhead	2.2%	1.7%	1.5%	1.5%	1.5%
Services, Fees & Materials	4.2%	3.6%	3.2%	3.0%	3.0%
Net Margin	9.0%	7.4%	7.2%	7.4%	7.5%
Credit Facility Limit	\$10,000,000	\$10,000,000	\$10,000,000	\$10,000,000	\$10,000,000
<i>Cash Draw Sublimit</i>	<i>\$5,000,000</i>	<i>\$5,000,000</i>	<i>\$5,000,000</i>	<i>\$5,000,000</i>	<i>\$5,000,000</i>
<i>Letter of Credit Sublimit</i>	<i>\$6,000,000</i>	<i>\$6,000,000</i>	<i>\$6,000,000</i>	<i>\$6,000,000</i>	<i>\$6,000,000</i>
Yearly Peak Cash Draw	\$2,500,000	\$3,500,000	\$3,500,000	\$0	\$0
YE Outstanding Debt	\$1,500,000	\$1,500,000	\$0	\$0	\$0
Letter of Credit Issued	\$0	\$5,580,000	\$5,580,000	\$5,580,000	\$5,580,000
Debt Service Coverage Ratio (DSCR)	22.35	8.66	11.81	41.01	41.37
Liquidity (days OpEx cash on hand, annual av.)	35	44	57	90	120
Potential Credit Rating (liquidity)	B	B	B	Ba	A
YE Tangible Net Worth (cash net of debt)	\$5,338,947	\$7,961,455	\$15,349,359	\$22,910,460	\$30,557,577

CPCNH's Debt Service Coverage Ratio (of operating income available to pay debt service obligations) is very strong, indicating that lenders could provide the agency with additional financing without facing undue risk of default.

Liquidity, measured in days of average operating expenses able to be covered by cash on hand or accessible credit, is also relatively strong. This indicates that CPCNH will be able to better manage unexpected market volatility and disruptions, counterparty credit deteriorations, and other business risks that could otherwise place the agency in financial jeopardy.

Note that this assumes the credit facility may be drawn down to provide liquidity and serves to underscore the importance of negotiating financing agreements with creditworthy financial institutions and avoiding the inclusion of any covenants that might restrict the JPA from drawing cash during period of market instability (i.e., the moment when credit is most needed).

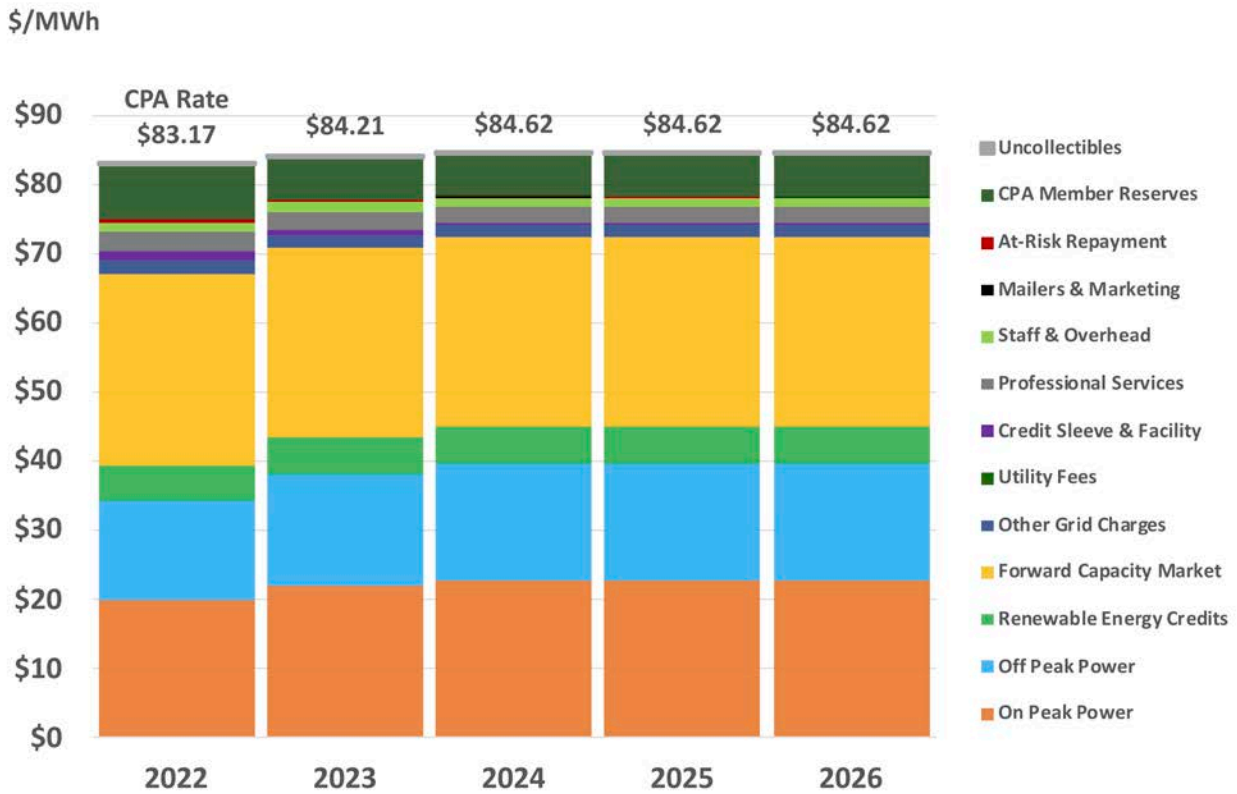
Based on Moody's credit rating metrics for CPA JPAs, CPCNH would be able to receive an investment-grade credit rating within 4-5 years after launch (rating agencies typically require a minimum of three years of financial statements).



The following chart and table provide a detailed disposition of CPCNH's costs and Member CPA reserves that are included in the rate charged to customers.

Note that the units are dollars per megawatt-hour instead of cents per kilowatt-hour (\$90/MWh is equivalent to nine cents per kilowatt-hour).

RETAIL RATE REVENUE ALLOCATION



RETAIL RATE REVENUE ALLOCATION (\$/MWH)	2022	2023	2024	2025	2026
On Peak Power	\$19.79	\$21.87	\$22.74	\$22.74	\$22.74
Off Peak Power	\$14.27	\$16.02	\$16.75	\$16.75	\$16.75
Renewable Energy Credits	\$5.32	\$5.48	\$5.54	\$5.54	\$5.54
Forward Capacity Market	\$27.65	\$27.39	\$27.28	\$27.28	\$27.28
Other Grid Charges	\$1.99	\$1.89	\$1.84	\$1.84	\$1.84
Utility Fees	\$0.10	\$0.10	\$0.09	\$0.09	\$0.09
Professional Services	\$2.85	\$2.60	\$2.37	\$2.37	\$2.37
Mailers & Marketing	\$0.04	\$0.08	\$0.02	\$0.02	\$0.02
Staff & Overhead	\$1.86	\$1.46	\$1.31	\$1.31	\$1.31
Credit Sleeve & Facility	\$1.13	\$0.64	\$0.19	\$0.16	\$0.16
At-Risk Repayment	\$0.52	\$0.26	\$0.17	\$0.06	\$0.00
CPA Member Reserves	\$7.45	\$6.21	\$6.09	\$6.24	\$6.29
Uncollectibles	\$0.21	\$0.21	\$0.21	\$0.21	\$0.21
CPA AVERAGE RATE (\$/MWH)	\$83.17	\$84.21	\$84.62	\$84.62	\$84.62
UTILITY AVERAGE DEFAULT SUPPLY RATE	\$83.17	\$84.21	\$84.62	\$84.62	\$84.62



The indicative financial pro forma below provides an annual summary of the monthly model results (on an accrual basis):

	2022	2023	2024	2025	2026
NET OPERATING REVENUE	\$4,085,346	\$6,954,696	\$7,630,092	\$7,767,717	\$7,836,529
REVENUE FROM OPERATIONS	\$44,979,687	\$91,117,084	\$102,574,033	\$102,574,033	\$102,574,033
COST OF OPERATIONS	\$40,894,342	\$84,162,389	\$94,943,941	\$94,806,316	\$94,737,503
<i>Energy Expenses</i>	<i>\$37,984,595</i>	<i>\$79,278,311</i>	<i>\$90,114,311</i>	<i>\$90,114,311</i>	<i>\$90,114,311</i>
<i>Non-Energy Expenses</i>	<i>\$2,909,746</i>	<i>\$4,884,078</i>	<i>\$4,829,630</i>	<i>\$4,692,005</i>	<i>\$4,623,193</i>
<i>Staffing & Overhead</i>	<i>\$1,148,500</i>	<i>\$1,658,958</i>	<i>\$1,588,000</i>	<i>\$1,588,000</i>	<i>\$1,588,000</i>
<i>Outreach & Materials</i>	<i>\$23,811</i>	<i>\$85,109</i>	<i>\$23,712</i>	<i>\$23,712</i>	<i>\$23,712</i>
<i>Operational Services</i>	<i>\$1,348,160</i>	<i>\$2,525,269</i>	<i>\$2,685,781</i>	<i>\$2,548,156</i>	<i>\$2,479,343</i>
<i>Support Services</i>	<i>\$333,333</i>	<i>\$500,000</i>	<i>\$400,000</i>	<i>\$400,000</i>	<i>\$400,000</i>
<i>Utility Fees</i>	<i>\$55,942</i>	<i>\$103,541</i>	<i>\$112,937</i>	<i>\$112,937</i>	<i>\$112,937</i>
<i>NEPOOL Expenses</i>	<i>\$0</i>	<i>\$11,200</i>	<i>\$19,200</i>	<i>\$19,200</i>	<i>\$19,200</i>
FINANCING ACTIVITIES	\$1,453,146	-\$219,596	-\$1,733,854	-\$189,413	-\$189,413
CREDIT FACILITY	\$2,500,000	\$2,000,000	\$2,000,000	\$0	\$0
<i>Cash Draw</i>	<i>\$2,500,000</i>	<i>\$2,000,000</i>	<i>\$2,000,000</i>	<i>\$0</i>	<i>\$0</i>
DEBT SERVICE	-\$1,046,854	-\$2,219,596	-\$3,733,854	-\$189,413	-\$189,413
<i>Principal</i>	<i>-\$1,000,000</i>	<i>-\$2,000,000</i>	<i>-\$3,500,000</i>	<i>\$0</i>	<i>\$0</i>
<i>Cash Repayment</i>	<i>-\$1,000,000</i>	<i>-\$2,000,000</i>	<i>-\$3,500,000</i>	<i>\$0</i>	<i>\$0</i>
<i>Interest</i>	<i>-\$26,667</i>	<i>-\$98,333</i>	<i>-\$56,667</i>	<i>\$0</i>	<i>\$0</i>
<i>Cash Draw</i>	<i>-\$26,667</i>	<i>-\$98,333</i>	<i>-\$56,667</i>	<i>\$0</i>	<i>\$0</i>
<i>Commitment Fees</i>	<i>-\$20,188</i>	<i>-\$121,263</i>	<i>-\$177,188</i>	<i>-\$189,413</i>	<i>-\$189,413</i>
<i>Credit Facility</i>	<i>-\$20,188</i>	<i>-\$72,438</i>	<i>-\$83,125</i>	<i>-\$95,000</i>	<i>-\$95,000</i>
<i>Letter of Credit</i>	<i>\$0</i>	<i>-\$48,825</i>	<i>-\$94,063</i>	<i>-\$94,413</i>	<i>-\$94,413</i>
NET RECEIPTS	\$5,538,491	\$6,735,100	\$5,896,237	\$7,578,304	\$7,647,117
<i>Cumulative Net Receipts</i>	<i>\$5,538,491</i>	<i>\$12,273,591</i>	<i>\$18,169,829</i>	<i>\$25,748,133</i>	<i>\$33,395,250</i>
NET REVENUES	\$4,038,491	\$6,735,100	\$7,396,237	\$7,578,304	\$7,647,117
<i>Cumulative Net Revenues</i>	<i>\$4,038,491</i>	<i>\$10,773,591</i>	<i>\$18,169,829</i>	<i>\$25,748,133</i>	<i>\$33,395,250</i>

Note that the seven line-items under “cost of operations” are aggregated totals of thirty separate budget line-items in the cashflow model provided to CPCNH members (and are to be treated as competitively sensitive confidential financial information, in consideration of CPCNH’s anticipated solicitation for services).



Limitation on Interpreting Model Results

The benefit of the modeling approach taken for this business plan is that it produces a relatively clear and defensible analysis of whether or not CPCNH's business model — taking into consideration all of the expected cost and capitalization requirements of launching a new power agency — performs competitively in comparison to the suppliers that have been awarded utility default service contracts.

The use of an “average year” based on historical data was ideal for this initial purpose. However, preparing additional modeling runs to examine the year over year variability in market conditions would serve to ‘stress-test’ and refine financing requirements, as would the preparation of forecast assumptions to use as inputs.

Additionally, despite the reliance on actual historical data, there were limited instances where expert judgement had to be applied to estimate data that was not publicly available.

The most notable instance is in regard to Eversource's Distribution Loss Factors, which the utility has apparently avoided disclosing (even when asked directly under discovery in a NHPUC proceeding by a member of CPCNH):

- Eversource discloses historic hourly load for default service Small and Large load asset IDs at the wholesale level (i.e., adjusted for losses and unaccounted for energy below the PTF, which the utility submits to ISO-NE for daily market settlements), but does not disclose the corresponding hourly load data recorded at the retail meter level (i.e., what customers actually consumed).
- Only Liberty appears to disclose both datasets, from which loss factors can be derived on an hourly basis (the granularity required for the load and energy model).
- Monthly totals of retail load reported by Eversource to the NHPUC in regulatory filings (e.g., quarterly Switching Report) were analyzed and found to be extremely inaccurate: several months reported retail usage that was 7% to 11% higher than the load reported by Eversource to ISO-NE (which is theoretically impossible if all load and generation is being accounted for).
- However, Eversource is required to report retail load to the US EIA; these datasets were analyzed and deemed to be moderately accurate on a monthly basis and highly accurate on an annual basis.
- Both Eversource and Liberty Utilities were found to have averaged ~4.6% losses annually in recent years. Consequently, Eversource's distribution loss factors were estimated based on:
 - The difference between (1) wholesale load Eversource reports to ISO-NE and (2) the retail load Eversource reports to the US EIA on an annual basis;
 - Which was afterwards allocated on a monthly on- and off- peak basis by load asset ID based on the hourly losses disclosed by Liberty Utilities; (i.e., in order



to blunt any significant difference in hourly loss patterns occurring from the difference in distribution grid topology, geography, weather and customer base between the two utilities, Liberty's hourly losses were aggregated up to on- and off- peak periods by month, separately for small and large load asset ID customer groups, and then applied to Eversource's load profiles).

- Regardless, that the lack of verifiable losses at an hourly level of granularity is a fundamental source of model error risk for these projections, albeit one tempered by the above analytical steps.

Additionally, it should be emphasized that the analysis assumed Member CPA surplus revenues would be devoted to accelerating the timeline for the agency to achieve financial self-sufficiency.

- CPCNH will be a startup power enterprise and the agency's service providers and financiers will require that sufficient surplus revenues are retained to ensure the financial stability of the agency's energy portfolio risk management activities.
- Member CPAs that elect to rely on the JPA to provide all-requirements power supply will therefore be required to devote surplus revenues sufficient to satisfy these risk management requirements.
- Until the point at which the JPA is able to achieve financial self-sufficiency, Member CPAs will face additional trade-off decisions in regard to the use of surplus revenues.
- Achieving financial self-sufficiency would minimize financing costs and enhance financial leverage for all Member CPAs. For example, assuming all surplus revenues are retained and pooled, the model indicates that CPCNH would be able to:
 - Register as a Load Serving Entity after operating for ~15 months.
 - Become largely financially self-sufficient within ~30 months.
 - Be eligible to receive an investment-grade credit rating within 4-5 years after launch (based on Moody's credit rating metrics for CPA JPAs).

Such an outcome would place CPCNH among of the most financially robust CPA JPAs in operation, further lower energy portfolio costs and enhance the agency's ability to develop new projects for Member CPAs while minimizing costs.

- Member CPAs will need to assess the desirability of these objectives against the use of surplus revenues to achieve local policy goals over the short-term.
- To inform decision-making and to refine expectations, additional modeling runs that examine the level of surplus revenues in excess of satisfying the minimum financial requirements of the JPA's counterparties could be conducted, as well as considering various rates of growth in CPCNH's membership and load served.



Finally, it should be emphasized that the results presented in this report may be conservative, given that:

1. The hedging assumptions are extremely simple compared to how CPCNH's energy portfolio and market exposure will be actively managed in practice; and
2. The internal costs assumed for CPCNH include expenses that are expected to result in cost-savings over time — but which have not been forecasted and included in this modeling run.

As such, the initial modeling results presented here largely disregard what are expected to be CPCNH's primary sources of competitive advantage in the market, which are:

1. Active energy portfolio risk management.
2. Innovative retail products, services and programs.
3. Effective regulatory and legislative engagement.
4. The ability to develop cost-effective new projects for integration into the agency's energy portfolio.

The model necessarily ignores these sources of strategic competitive advantage, as modeling the impact of each is speculative at this stage and would introduce model error risk that could undermine the validity of the results for planning purposes.



**COMMUNITY
POWER COALITION
OF NEW HAMPSHIRE**
For communities, by communities.

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MOODY'S

INVESTORS SERVICE

RATING METHODOLOGY

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US Municipal Joint Action Agencies Methodology

This rating methodology replaces the *US Municipal Joint Action Agencies Methodology* published in August 2019. In this update, we have made changes to the scorecard for US municipal joint action agency (JAA) take-or-pay projects, including converting the Competitiveness factor into a notching factor and rebalancing scorecard weights across the remaining factors. In the scorecard for all-requirement agencies, we have modified one factor and one sub-factor to provide more clarity on how we score community choice aggregators. In both scorecards, we have more explicitly incorporated the risks associated with environmental regulation, we have expanded the scoring categories down to Ca, and we have made some other minor modifications. We have also made editorial changes to enhance readability.

Introduction

In this rating methodology, we explain our general approach to assessing credit risk for municipal joint action agencies (JAAs) in the US, including the qualitative and quantitative factors that are likely to affect rating outcomes in this sector.

We discuss the scorecard used for this sector. The scorecard¹ is a relatively simple reference tool that can be used in most cases to approximate credit profiles in this sector and to explain, in summary form, many of the factors that are generally most important in assigning ratings to issuers in this sector. The scorecard factors may be evaluated using historical or forward-looking data or both.

We also discuss other rating considerations, which are factors that are assessed outside the scorecard, usually because the factor's credit importance varies widely among the issuers in the sector or because the factor may be important only under certain circumstances or for a subset of issuers. In addition, some of the methodological considerations described in one or more cross-sector rating methodologies may be relevant to ratings in this sector.² Furthermore, since ratings are forward-looking, we often incorporate directional views of risks and mitigants in a qualitative way.

As a result, the scorecard-indicated outcome is not expected to match the actual rating for each issuer.

¹ In our methodologies and research, the terms "scorecard" and "grid" are used interchangeably.

² A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

Our presentation of this rating methodology proceeds with (i) the scope of this methodology; (ii) the sector overview; (iii) the scorecard framework; (iv) a discussion of the scorecard factors; (v) other rating considerations not reflected in the scorecard; (vi) the assignment of issuer-level and instrument-level ratings; (vii) methodology assumptions; and (viii) limitations. In Appendix A, we describe how we use the scorecard to arrive at a scorecard-indicated outcome. Appendix B shows the full view of the scorecard factors, sub-factors, weights and thresholds for take-or-pay projects. Appendix C shows the full view of the scorecard factors, sub-factors, weights and thresholds for all-requirement agencies.

Scope of This Methodology

This methodology applies to US municipal joint action agencies. JAAs are typically formed by groups of US municipal utilities (participants) and are primarily³ engaged in providing energy or related services, such as electric generation, natural gas, electric transmission or telecommunications services, usually to utilities, although some may provide service directly to customers. Participants typically form or join a JAA in order to benefit from economies of scale, cost efficiencies and diversification.

JAA participants share an obligation, through long-term contracts, to pay for a JAA's operating, capital and debt service costs. Some JAAs issue debt for multiple, distinct projects, which are rated individually.

There are two broad types of JAAs, consisting of take-or-pay projects and all-requirement agencies, which are described below. In addition, this methodology applies to municipal community choice aggregators (CCAs), which are not-for-profit entities formed by a municipality or jointly by multiple municipal participants with the goal of giving utility customers a wider choice of power suppliers and to implement strategies such as increased use of renewable energy. This methodology also applies to other types of energy projects with contractual obligations that are substantially similar to those in a JAA. We use a similar approach to rating CCAs that we use for all-requirement agencies, with some small differences in the scorecard for CCAs.

Energy projects that lack the contractual obligations found in JAAs are rated under other methodologies. For example, a power generation project where payments are conditioned on performance, such as required levels of availability, or where there are material limitations on the obligations by its participants to purchase power, would be rated under our methodology that discusses power generation projects.⁴

Sector Overview

Take-or-Pay Projects

A JAA that operates as a take-or-pay project typically includes a contract that extends at least to debt maturity, has a defined asset or group of assets that produce or deliver energy, and has a fixed share for each participant. A typical take-or-pay contract requires participants to pay their respective share of all costs regardless of whether any energy is produced or delivered. A take-or-pay JAA project has no firm obligation to deliver any energy resource to its participants. Neither participants nor their shares typically change in a take-or-pay JAA project. In rare circumstances, a participant may be allowed to leave, although it would likely be required to continue to pay its share of the JAA's outstanding debt,

This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the ratings tab on the issuer/entity page on www.moody.com for the most updated credit rating action information and rating history.

³ The determination of a company's primary business is generally based on the preponderance of the company's business risks, which are usually proportionate to the company's revenues, earnings and cash flows.

⁴ A link to a list of our sector methodologies can be found in the "Moody's Related Publications" section.

either directly or by the assumption of the obligation by another purchaser acceptable to all of the JAA's participants.

All-Requirement Agencies

A JAA operating as an all-requirement agency generally has an obligation to meet all of its participants' energy resource needs, and participants pay for energy delivered. An all-requirement agency's energy resource portfolio typically consists of a changing mixture of supply contracts and physical assets to match participants' energy resource requirements. Additionally, a participant's share of a JAA can change depending on its energy resource needs relative to other members. Participants may be allowed to join an operating all-requirement agency, and in some cases may be allowed to leave it, although they would likely be required to pay a termination fee or fulfill their share of the obligations that the JAA incurred prior to the participants' exit.

Scorecard Framework

This rating methodology includes two scorecards, one for take-or-pay projects and one for all-requirement agencies.

The scorecard for take-or-pay projects is composed of four weighted factors. Some of the factors comprise one or more sub-factors. The scorecard also includes six notching factors, which may result in upward or downward adjustments in half-notch increments to the preliminary outcome.

EXHIBIT 1

US Municipal Joint Action Agencies Sector Take-or-Pay Scorecard Overview

Factor	Factor Weighting	Sub-factor	Sub-factor Weighting
Participant Credit Quality and Cost Recovery Framework	50%	--*	50%
Asset Quality and Exposure to Environmental Regulation	20%	--*	20%
Liquidity	10%	Adjusted Days Liquidity on Hand (3-year average)	10%
Leverage and Coverage	20%	Adjusted Debt Ratio (3-year average)	10%
		Fixed Obligation Charge Coverage Ratio (3-year average)	10%
Total	100%		100%

Preliminary Outcome

Notching Factor	Notching Range
Competitiveness	+1 to -1
Contractual Structure and Legal Environment	+2 to -2
Participant Diversity and Concentration	+1 to 0
Construction Risk	0 to -2
Financing Structure	+1 to -1
Unmitigated Exposure to Wholesale Power Markets	0 to -1

Scorecard-Indicated Outcome

*This factor has no sub-factors.

Source: Moody's Investors Service

The scorecard for all-requirement agencies is composed of six weighted factors. Some of the factors comprise one or more sub-factors. This scorecard also includes five notching factors, which may result in upward or downward adjustments in half-notch increments to the preliminary outcome.

EXHIBIT 2

US Municipal Joint Action Agencies Sector All-Requirement Agency Scorecard Overview

Factor	Factor Weighting	Sub-factor	Sub-factor Weighting
Participant Credit Quality and Cost Recovery Framework	25%	--*	25%
Resource Risk Management and Exposure to Environmental Regulation	10%	--*	10%
Competitiveness	15%	--*	15%
Liquidity	10%	Adjusted Days Liquidity on Hand (3-year average)	10%
Leverage and Coverage	15%	Adjusted Debt Ratio (3-year average)	5%
		Fixed Obligation Charge Coverage Ratio (3-year average)	10%
Willingness to Recover Costs with Sound Financial Metrics	25%	--*	25%
Total	100%		100%
Preliminary Outcome			
Notching Factors			Notching Range
Contractual Structure and Legal Environment			+2 to -2
Participant Diversity and Concentration			+1 to 0
Construction Risk			0 to -2
Financing Structure			+1 to -1
Unmitigated Exposure to Wholesale Power Markets			0 to -1
Scorecard-Indicated Outcome			

*This factor has no sub-factors.

Source: Moody's Investors Service

Please see Appendix A for general information relating to how we use the scorecard and for a discussion of scorecard mechanics. The scorecard does not include every rating consideration.⁵

Discussion of the Scorecard Factors

In this section, we explain our general approach for scoring each scorecard sub-factor or factor, and we describe why they are meaningful as credit indicators.

⁵ Please see the "Other Rating Considerations" and "Limitations" sections.

Factor: Participant Credit Quality and Cost Recovery Framework (Take-or-Pay Projects – 50% Weight, All-Requirement Agencies – 25% Weight)

Why It Matters

Participant credit quality is an important indicator of the credit strength of a JAA and the ability of a JAA's members to fulfill contractual obligations. Under a JAA take-or-pay contract, participants must pay for all costs, including operating expenses, capital expenditures and debt service requirements. Under an all-requirements contract, the JAA can set rates at a level that results in full cost recovery. Cost recovery framework is an important indicator of a JAA's authority to establish rates for participants at a level that allows it to meet operating expenses and pay debt service.

Participant Credit Quality

Participant credit quality has relatively greater importance for take-or-pay projects than for all-requirement agencies given the narrower business profile and stronger contract terms of take-or-pay projects. Because of the importance of participant credit quality, a typical JAA's rating is generally capped to no more than two notches higher than the weighted average participant credit quality because the participants are the primary source of cash flow. If the weighted average participant credit quality is Baa or below, the JAA's rating is likely to be capped at two notches above the weakest participants' credit quality for all requirement agencies or at the weakest participants' credit quality for a take-or-pay project (as described below).

Cost Recovery Framework and Governance

The extent of rate regulation is an important indicator of a JAA's ability to recover costs in a timely manner. External regulation of rates can impede a JAA's ability to increase revenue sufficiently to match expenses. JAA governance is also an important element of the cost recovery framework because poor governance may result in participants challenging their contractual obligations, which can disrupt timely cash flow and cost recovery for the JAA.

How We Assess It for the Scorecard

PARTICIPANT CREDIT QUALITY:

Weighted Average Credit Quality

We consider the weighted average credit rating of the participants in a JAA. We arrive at a weighted average credit rating by multiplying each participant's percentage share in the JAA by the expected loss indicated by the participant's credit rating (or equivalent) based on Moody's 10-year expected loss tables,⁶ and then by summing the results. This weighted average expected loss is then mapped back to a rating equivalent based on Moody's 10-year idealized expected loss tables.⁷

Rating Input and Evaluating Credit Quality in the Absence of a Rating

If the participant has an electric system revenue bond rating, we use it as the credit rating input.

If the participant does not have an electric system revenue bond rating but the general obligation (GO) of the municipality that owns the utility is rated, we typically use the municipality's GO rating as a starting point and make a downward notching adjustment. The downward adjustment is typically one

⁶ Please see *Rating Symbols and Definitions* for a link to a table of expected default and loss rates. Please see the "Moody's Related Publications" section for a link to that publication.

⁷ Cutoff points between alphanumeric equivalents are based on the geometric mean of their expected loss.

notch, or two notches in cases where the GO rating includes structural enhancements (e.g., an effective lockbox). Where we consider that the utility has heightened enterprise risk, we may use a rating equivalent that is two or more notches below the GO rating.

If the municipality is not rated and the participant's share in the JAA is more than 5% we may assign a credit estimate.⁸

If the municipality is unrated and the participant's share in the JAA is less than 5%, we may use a scorecard-generated, unpublished, point-in-time estimate of approximate credit quality, called a Q-score, to assess the municipality's credit quality. For the calculation of the weighted average credit quality, we make at least a one notch downward adjustment to the Q-score to reflect the limited and primarily historical information used in the assessment. In cases where the Q-score is used and the participant's share is 3% or greater, we make at least a two notch downward adjustment.

If the municipality is unrated and we do not have sufficient information to assess the credit quality of the municipality, we use an assumed rating of Ba2.

Capping Based on Weakest Participants' Credit Quality – Take-or-Pay

For take-or-pay projects, we generally cap the score for participant credit quality at the lower of (i) the weighted average participant credit quality; or (ii) two notches above the bottom (weakest) quintile participant credit quality. We typically consider the bottom quintile participant credit quality to be at the level of the participant with the highest credit quality (as described above) among the group that represents the lowest 20% of the pool's credit quality by combined proportionate share of the JAA obligation.⁹ For example, if the weighted average participant credit quality is Aa2 but the credit quality of the participant at or straddling the lowest quintile is A3, the JAA is likely to be scored at A1 for this factor.

We use this threshold because the typical 25% step-up provision in a take-or-pay contract means that participants with a combined share of 20% or less can default before increased revenue from the remaining participants becomes insufficient to cover operating and debt expenses. A step-up provision requires participants to increase their respective share to cover that of defaulted or exiting members.

The limit of two notches above the lowest quintile participant's credit quality for take-or-pay projects reflects the higher default probability of a JAA with participants of low credit quality, which may not be fully apparent in the weighted average.

If the step-up provision is lower than 25%, we may consider a different threshold. For example, a take-or-pay project with a 15% step up would allow for participants with an aggregate 13% share to default before the step-up obligation of non-defaulting members would be insufficient to cover the defaulters' obligations. Thus, in this example, we would factor in the credit quality of a participant at or straddling the boundary between the lower 13th percentile and upper 87th percentile of all participants ranked by

⁸ Please see our cross-sector methodology that describes our approach to the use of credit estimates in rated transactions. A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

⁹ Effectively, we sum the participation share of each participant in order, ranked from lowest to highest credit quality, until we reach 20%. The lowest quintile credit quality is the credit quality of the first participant whose share causes the sum to reach or exceed 20%. Normally, this is the participant that straddles the boundary between the credit quality of the top 80% and the bottom 20% of the pool.

credit quality, and the factor score would typically be capped at two notches above this level of credit quality.

Effect of Credit Quality Score on Other Factors – Take-or-Pay Only

The relative importance of participant credit quality for take-or-pay projects is also reflected in the scoring for the other factors. For these factors, we take the higher of either (i) the factor score or; (ii) the score for the Participant Credit Quality and Cost Recovery Framework factor. If we score the Participant Credit Quality and Cost Recovery Framework factor higher than the baseline factor or sub-factor assessments of the other factors for a take-or-pay project, participant credit quality effectively represents 100% of the weight in the scorecard before notching factors.

However, if a baseline factor assessment is at Ba or lower, we use the baseline factor assessment even if the Participant Credit Quality and Cost Recovery Framework factor receives a higher score. This approach reflects our view that speculative grade characteristics, such as poor asset quality or uncompetitive costs, increase the probability that participants will challenge their obligations to the take-or-pay contract.

For example, if we score the Participant Credit Quality and Cost Recovery Framework factor at A2 in a take-or-pay project, and the project has a 1.1x fixed obligation charge coverage ratio, which typically results in a baseline sub-factor assessment of Baa for this sub-factor, the final scoring for this sub-factor is typically an A2. For the same project, if the fixed obligation charge coverage ratio is 0.95x, the final scoring for this sub-factor is typically a Ba.

Considering Weakest Participants' Credit Quality in All-Requirement JAAs

For all-requirement agencies, we do not explicitly incorporate the weakest participant's credit quality in this factor score, because participants' proportionate share of the JAA obligation can change over time, driven by changing resource requirements or the entry or exit of participants. However, where there is a substantial differential between the bottom quintile participant credit quality and the weighted average, we may consider a lower cap for the score. Many all-requirement agency contracts do not cap non-defaulting member step-up obligations, so stronger participants may be asked to increase their payments if a participant fails to pay. Additionally, most all-requirement agency contracts allow a JAA to raise rates to recover costs, including raising rates as a result of a defaulting member. If an all-requirement agency does not have the authority to recover a defaulted participant's share of the JAA costs through rate increases, we may place greater weight on the weakest participant's credit quality in scoring for this factor.

COST RECOVERY FRAMEWORK:

In assessing a JAA's cost recovery framework, we typically consider if a JAA or its participants are rate regulated by a third party (as opposed to unregulated or self-regulated by the entity's governing body, e.g., board of directors) and the extent of any regulation. For example, if a JAA or a majority of its participants are fully rate regulated, the JAA may receive a lower score than would be indicated based on participant credit quality.

We typically consider other cost recovery framework and governance issues that may result in extensive delays to rate changes, insufficient recovery of costs, member challenges to contractual

obligations, or other outcomes. For example, we may score a JAA with participants that are challenging their contractual obligations as B or below, even if the participant credit quality is higher than B.¹⁰

In assessing a CCA's cost recovery framework, we typically consider the strength of the CCA's monopoly on service, including whether it includes automatic enrollment of customers and their ability to opt out, as well as the extent of any rate regulation, the strength of the service area economy, and the credit quality of its municipal participants.

¹⁰ There have been notable defaults by JAAs as a result of contractual disputes, including Washington Public Power Supply System's (WPPSS) Projects 4 and 5 defaults that resulted from members challenging their contractual obligations.

FACTOR

Take-or-Pay Projects: Participant Credit Quality and Cost Recovery Framework (50%)

Factor	Factor Weight	Aaa	Aa	A	Baa	Ba	B	Caa	Ca
Participant Credit Quality and Cost Recovery Framework	50%	Participant credit quality at cap is Aaa. AND JAA and participant rates are unregulated.	Participant credit quality at cap is Aa. AND JAA and participant rates are unregulated.	Participant credit quality at cap is A. AND JAA and participant rates are unregulated.	Participant credit quality at cap is Baa. OR JAA or majority of participant rates are regulated.	Participant credit quality at cap is Ba. OR Quality of governance or cost recovery is inconsistent.	Participant credit quality at cap is B. OR Consistent record of below-average governance or cost recovery.	Participant credit quality at cap is Caa. OR Consistent record of poor governance or cost recovery.	Participant credit quality at cap is Ca. OR Consistent record of very poor governance or cost recovery.

Source: Moody's Investors Service

FACTOR

All-Requirement Agencies: Participant Credit Quality and Cost Recovery Framework (25%)

Factor	Factor Weight	Aaa	Aa	A	Baa	Ba	B	Caa	Ca
Participant Credit Quality and Cost Recovery Framework	25%	Weighted average Aaa participant credit quality. AND JAA and participant rates are unregulated. For CCAs, robust monopoly position with automatic enrollment of all customers in service area with almost no customer opt-out history and proven unregulated rate setting; very strong customer base and service area economy; municipal participants are of the highest credit quality.	Weighted average Aa participant credit quality. AND JAA and participant rates are unregulated. For CCAs, quasi-monopoly with automatic enrollment of all customers in service area with narrow and very limited customer opt-out history; proven unregulated rate setting; strong customer base and service area economy; municipal participants have very high credit quality.	Weighted average A participant credit quality. AND JAA and participant rates are unregulated. For CCAs, quasi-monopoly with automatic enrollment of all customers in service area with limited customer opt-out history; proven unregulated rate setting; above-average customer base and service area economy; municipal participants have high credit quality.	Weighted average Baa participant credit quality. OR JAA or majority of participant rates are regulated. For CCAs, limited monopoly with automatic enrollment of all customers in service area but with some customer opt-out ability; self-regulated rates with limited history; more than 40% of total energy sales to Industrial and large commercial customers; municipal participants have average credit quality; average customer base and service area economy.	Weighted average Ba participant credit quality. OR Quality of governance or cost recovery is inconsistent. For CCAs, regulation of rates by state with some inconsistency or self-regulated rates with very limited history; service area has no automatic enrollment of all customers but competition is limited and customer growth and retention is moderate; more than 60% of total energy sales to Industrial and large commercial customers; municipal participants have below-average credit quality; weak customer base and service area economy.	Weighted average B participant credit quality. OR Consistent record of below-average governance or cost recovery. For CCAs, regulation of rates by state is unpredictable or ability to self-regulate rates is uncertain; no automatic enrollment of customers in service area, which is subject to competition, with weak customer growth and retention; municipal participants have weak credit quality; very weak customer base and service area economy.	Weighted average Caa participant credit quality. OR Consistent record of poor governance or cost recovery. For CCAs, regulation of rates is unpredictable or ability to self-regulate is highly uncertain; service area subject to intense competition, leading to material customer losses; municipal participants have low credit quality; extremely weak customer base or service area economy.	Weighted average Ca participant credit quality. OR Consistent record of very poor governance or cost recovery. For CCAs, regulation of rates is unpredictable, with material legal challenges; service area is subject to intense competition, leading to substantial customer losses; municipal participants have very low credit quality; weakest customer base and service area economy.

Source: Moody's Investors Service

Factor: Asset Quality and Exposure to Environmental Regulation (Take-or-Pay Projects - 20% Weight) or Resource Risk Management and Exposure to Environmental Regulation (All-Requirement Agencies - 10% Weight)

Why It Matters

Asset quality and resource risk management are important because they directly affect the quality of service. Exposure to environmental regulation is also important because it can result in significant additional capital costs that are likely to be passed on to participants through increased rates. Participant support for the JAA, which is largely based on customer satisfaction and the cost of service, can result in greater participant willingness to meet the revenue requirements that help the JAA maintain its financial condition.

Assets that use simple, proven technology and that require minimal reinvestment, such as transmission lines, typically pose less risk to a JAA's operations than assets that use more complex technology. While essentially all power generation entails more technological complexity than transmission, some types, such as nuclear power plants, are highly complex from a technical and operational perspective. Other types of plants may require significant reinvestment due to evolving environmental regulation, such as coal-fired power plants facing stringent emission standards.

Poorly operating JAA assets, poor resource risk management or the cost of compliance with environmental regulation can increase all-in costs for the energy resource while also potentially inducing participants to seek alternative energy resources outside of the JAA. A JAA's inability to deliver its resource at competitive rates may cause participants to challenge their contractual obligations.

All-requirement agencies typically meet their participants' resource requirements through a combination of owned assets and contractual agreements with energy suppliers. An all-requirement agency's broad energy resource risk management is a stronger indicator of credit quality than asset quality alone.

How We Assess It for the Scorecard

ASSET QUALITY AND EXPOSURE TO ENVIRONMENTAL REGULATION:

In assessing asset quality for take-or-pay projects, we consider the diversity of the project's energy assets, its technological complexity, the quality of the project operator and the project's exposure to environmental compliance costs. We consider whether a take-or-pay project consists of a single asset or whether it benefits from the operational diversity of having multiple assets. For example, having more power plants can reduce the potential impact of an outage at any one plant.

Take-or-pay projects scored in the Aaa and Aa categories generally have simple, proven assets with few (if any) moving components, such as electric transmission lines, and have limited or no exposure to environmental regulation. A take-or-pay JAA scored in the A category would typically have a diverse portfolio of assets with strong operating performance that covers a range of proven technologies and would typically have manageable exposure to environmental regulation. Where the take-or-pay JAA has a portfolio with limited diversification or a single asset, such as a gas-fired power plant with a good operating track record and moderate exposure to environmental regulation, it is typically scored in the Baa category. Assets that would typically be in the Ba or B categories could include those with operating challenges or projects that require sizable new investment to meet environmental compliance rules. A take-or-pay JAA with a poor operating history or new unproven technology would typically score in the Caa or Ca categories.

Additionally, we typically consider the resource operator's ability to ensure cost-effective and reliable operations. We typically review statistics such as availability factor (percentage of time a unit is operational); capacity factor (percentage of rated capacity the generation unit runs); and heat rates (efficiency of a generator to convert fuel into electrical energy) for power generation assets.

For a take-or-pay project whose baseline asset quality is at Baa or higher, the scoring for this factor is the higher of (i) the score assessed for the Participant Credit Quality and Cost Recovery Framework factor; or (ii) the baseline factor assessment. This reflects our view that strong asset quality reduces the likelihood that JAA participants may challenge their obligations. If asset quality is at least moderately strong (i.e., in the Baa category or better), a take-or-pay project with stronger participant credit quality mitigates somewhat weaker asset quality.

RESOURCE RISK MANAGEMENT AND EXPOSURE TO ENVIRONMENTAL REGULATION:

In assessing this factor for all-requirement agencies, we typically consider a JAA's overall energy resource supply mix, asset quality, energy resource supply contract terms and counterparties, exposure to environmental compliance costs, and the JAA's strategic plans to ensure an affordable and reliable energy resource for participants.

We also typically consider whether the diversity of a JAA's energy resource mix enhances the JAA's flexibility to manage resource demand and limit its exposure to volatile commodity and energy market prices, disruptions in the delivery of a resource or increased costs associated with a particular energy asset, such as the cost of environmental compliance.

Where an all-requirement agency relies heavily on energy from third-party resource suppliers through contracts, we typically consider the diversity and credit quality of the energy resource suppliers, typically as reflected in their ratings.¹¹ We also typically consider key terms of the supply contracts, such as maturity, payment provisions and the amount of the contracted resource.

For all-requirement agencies, the score for this factor is typically based on the weakest element in the JAA's resource risk management. For example, if a JAA has a single asset, or the concentration of the type of fuel it provides ranges from 56% to 75% but it purchases 10% of its fuel on the wholesale market, or it faces moderate environmental regulation, the JAA is likely to receive a score in the Baa category for this factor because the asset or fuel concentration, or costs related to compliance with environmental rules is the dominant risk.

¹¹ Where the supplier is unrated, we may assign a credit estimate. In cases where the contract with the supplier could be easily replaced on similar commercial terms or if the JAA's exposure to the supplier is modest due to a diverse supply portfolio, we may consider that the credit quality of the supplier is not material to the analysis.

FACTOR

Take-or-Pay Projects: Asset Quality and Exposure to Environmental Regulation (20%)

Factor	Factor Weight	Aaa	Aa	A	Baa	Ba	B	Caa	Ca
Asset Quality and Exposure to Environmental Regulation	20%	Diversified portfolio of technologically simple, proven assets, with minimal reinvestment requirements and virtually no moving parts; no exposure to environmental regulation.	Diversified portfolio of technologically simple, proven assets with limited reinvestment requirements and minimal moving parts; very limited exposure to environmental regulation.	Diversified portfolio of largely simple, proven assets across technologies; modest, predictable reinvestment requirements; limited exposure to environmental regulation.	Portfolio or single asset that is commercially proven but somewhat technologically complex; ongoing capital investment requirements; moderate exposure to environmental regulation.	Single asset with some technological complexities and some operating challenges; potentially material maintenance and reinvestment requirements; moderately high exposure to environmental regulation.	Single asset with significant technological complexities or significant operating challenges; major reinvestment requirements; high exposure to environmental regulation.	Single asset with largely unproven technology or poor performance; significant reinvestment requirements; very high exposure to environmental regulation.	Single asset with unproven technology or very poor performance; requires substantial additional investment to operate; compliance with environmental regulation in doubt.

Source: Moody's Investors Service

FACTOR

All-Requirement Agencies: Resource Risk Management and Exposure to Environmental Regulation (10%)

Factor	Factor Weight	Aaa	Aa	A	Baa	Ba	B	Caa	Ca
Resource Risk Management and Exposure to Environmental Regulation	10%	Exceptional energy resource risk management; less than 10% from power market purchases. OR Diverse, proven assets; single asset or fuel less than 20% of energy resource mix. OR Long-term, competitive supply contract with Aaa rated supplier; no exposure to environmental regulation.	Very strong energy resource risk management; 10%-20% from power market purchases. OR Somewhat diverse, proven assets; single asset or fuel comprises 20%-40% of the energy resource mix. OR Long-term, competitive supply contract with Aa rated supplier; limited exposure to environmental regulation.	Strong energy resource risk management; 20%-30% from power market purchases. OR Some proven assets; single asset or fuel comprises 41%-55% of the energy resource mix. OR Well-managed portfolio of supply contracts with moderately strong suppliers; manageable exposure to environmental regulation.	Average energy resource risk management; 30%-40% from power market purchases. OR Single asset or fuel provides 56%-75% of the energy resource mix. OR Adequately managed supply portfolio with suppliers of average strength; moderate exposure to environmental regulation.	Below-average energy resource risk management; 40%-60% from power market purchases. OR Single asset or fuel provides over 76%-100% of the energy resource mix. OR Adequately managed supply portfolio with moderately weak suppliers; moderately high exposure to environmental regulation.	Relatively weak energy resource risk management; 60%-70% from power market purchases. OR Assets with unproven technology. OR Adequately managed supply portfolio with weak suppliers; high exposure to environmental regulation.	Poor energy resource risk management; 70%-80% from power market purchases. OR Assets with unproven technology or history of problems. OR Poorly managed supply portfolio with very weak suppliers; very high exposure to environmental regulation.	Very poor energy resource risk management; more than 80% from power market purchases. OR Assets with unproven technology or history of problems. OR Very poorly managed supply portfolio with Ca or lower rated suppliers; compliance with environmental regulation in doubt.

Source: Moody's Investors Service

Factor: Competitiveness (All-Requirement Agencies - 15% Weight)

Why It Matters

The competitiveness of a JAA's energy resource is an important indicator of its ability to attract and retain participants. A JAA with more competitive energy prices or a strong monopoly position has greater flexibility to raise rates compared with one whose rates are already high or that faces significant competition.

How We Assess It for the Scorecard

In assessing cost competitiveness, we consider an all-requirement agency's rates relative to those charged by comparable energy resource providers in the region on a historic and forward-looking basis, typically over a three-year period. For power all-requirement agencies, we consider rates charged by other power all-requirement agencies, generation and transmission (G&T) cooperatives or other comparable energy service providers. To the extent wholesale energy market information or peer rate data is unavailable, we may assess JAA participants' retail rates against regional competitors as an indirect measure of the JAA's competitiveness because energy costs typically represent a sizable component of retail rates.

Competitiveness may effectively receive a greater weight in our analysis if it is scored Ba or lower.

FACTOR

All-Requirement Agencies: Competitiveness (15%)

Factor	Factor Weight	Aaa	Aa	A	Baa	Ba	B	Caa	Ca
Competitiveness	15%	Extremely competitive current and expected rates in the region or compared with neighboring utilities on a consistent basis (e.g., average rates more than 25% below regional average); virtually no material prospective cost pressures that could lead to higher rates.	Very competitive current and expected rates in the region or compared with neighboring utilities on a consistent basis (e.g., average rates range from 10%-25% below regional average); very low likelihood of material prospective cost pressures that could lead to higher rates.	Competitive current and expected rates in the region or compared with neighboring utilities on a consistent basis (e.g., average rates range from 10% below regional average to 10% above regional average); modest likelihood of material prospective cost pressures that could lead to higher rates.	Current and expected rates in the region or compared with neighboring utilities are sometimes competitive or moderately uncompetitive (e.g., average rates range from 10%-30% above regional average); high likelihood of material prospective cost pressures that could lead to higher rates.	Uncompetitive current or expected rates in the region or compared with neighboring utilities on a consistent basis (e.g., average rates range from 30%-50% above regional average); or high likelihood of imminent, material prospective cost pressures that could lead to higher rates.	Very uncompetitive current or expected rates in the region or compared with neighboring utilities on a consistent basis (e.g., average rates range from 50%-70% above regional average); or very high likelihood of imminent, material prospective cost pressures that could lead to higher rates.	Extremely uncompetitive current or expected rates in the region or compared with neighboring utilities on a consistent basis (e.g., average rates range from 70%-90% above regional average); or extremely high likelihood of imminent, material prospective cost pressures that could lead to higher rates.	Irreparably uncompetitive current or expected rates in the region or compared with neighboring utilities on a consistent basis (e.g., average rates more than 90% above regional average); or currently in a period of persistent cost pressures that are causing material rate increases.

Source: Moody's Investors Service

Factor: Liquidity (Take-or-Pay Projects – 10% Weight, All-Requirement Agencies –10% Weight)

Why It Matters

Liquidity is an important indicator of a JAA's ability to manage business risks, maintain financial operations and pay debt service. Strong liquidity enables a JAA to better withstand unexpected events, such as outages and commodity price volatility as well as economic downturns, deterioration in participant credit quality and disputes among participants. Liquidity also provides a JAA with time to phase in rate changes when needed.

The all-requirement agencies scorecard has different thresholds for adjusted days liquidity on hand for CCAs, reflecting somewhat higher volatility and seasonality for CCA cash flows than for all-requirement agencies.

This factor comprises one sub-factor:

Adjusted Days Liquidity on Hand

Adjusted days liquidity on hand is an important indicator of a JAA's ability to meet day-to-day operating cash flow requirements and to have access to cash for unforeseen events.

How We Assess It for the Scorecard

ADJUSTED DAYS LIQUIDITY ON HAND:

The numerator is a JAA's unrestricted cash and investments and eligible bank lines of credit multiplied by 365 (the number of days in a year), and the denominator is the JAA's annual operating and maintenance expenses, less depreciation and amortization costs. In considering this metric on a historical basis, we typically use a three-year average of the annual ratios for the three most recent fiscal years.

In assessing the eligibility of a JAA's bank credit line, we typically consider the tenor of the agreement and restrictions or covenants that can affect the bank line's availability during unexpected market events or JAA credit stress. We typically exclude bank lines from counterparties with weak credit quality, or when the bank lines expire in less than a year, from the numerator of the ratio. We may include bank lines that expire in less than a year where renewal or replacement is likely.

We also typically review a JAA's bank line documentation to identify any language that may potentially block a borrower's access to credit, including any material adverse change (MAC) clauses. A MAC clause is a legal provision within a credit agreement that gives lenders the right to refuse to fund a commitment should the borrower experience sufficiently adverse business or economic developments. Adverse conditions may include many undefined points that a bank may cite to delay or avoid a funding requirement. We include a bank credit line in our assessment only if we consider that its terms contain no material restrictions on the line's availability during a potential draw on the facility.

If a take-or-pay project's baseline liquidity assessment scores Baa or higher, the final score for that sub-factor is the higher of (i) the score used in the Participant Credit Quality and Cost Recovery Framework factor or; (ii) the baseline sub-factor score. This reflects our view that stronger Participant Credit Quality and Cost Recovery Framework factor scores are generally more important than financial metrics, unless those metrics are quite weak.

FACTOR

Take-or-Pay Projects: Liquidity (10%)

Sub-factor	Sub-factor Weight	Aaa	Aa	A	Baa	Ba	B	Caa	Ca
Adjusted Days Liquidity on Hand (3-year average) ¹	10%	≥ 250	175 - 250	100 - 175	30 - 100	15 - 30	10 - 15	5 - 10	< 5

*1 For the linear scoring scale, the Aaa endpoint value is 400. A value of 400 or better equates to a numeric score of 0.5. The Ca endpoint value is zero. A value of zero equates to a numeric score of 20.5.

Source: Moody's Investors Service

FACTOR

All-Requirement Agencies: Liquidity (10%)

Sub-factor	Sub-factor Weight	Aaa	Aa	A	Baa	Ba	B	Caa	Ca
Adjusted Days Liquidity on Hand (3-year average) ²	10%	JAA: ≥ 250	JAA: 150 - 250	JAA: 90 - 150	JAA: 45 - 90	JAA: 30 - 45	JAA: 20 - 30	JAA: 10 - 20	JAA: < 10
		CCA: ≥ 300	CCA: 200 - 300	CCA: 120 - 200	CCA: 90 - 120	CCA: 60 - 90	CCA: 30 - 60	CCA: 15 - 30	CCA: < 15

*2 For the linear scoring scale for all-requirement agencies, the Aaa endpoint value is 400. A value of 400 or better equates to a numeric score of 0.5. The Ca endpoint value is zero. A value of zero equates to a numeric score of 20.5. For the linear scoring scale for **CCAs**, the Aaa endpoint value is 450. A value of 450 or better equates to a numeric score of 0.5. The Ca endpoint value is zero. A value of zero equates to a numeric score of 20.5.

Source: Moody's Investors Service

Factor: Leverage and Coverage (Take-or-Pay Projects – 20% Weight, All-Requirement Agencies – 15% Weight)

Why It Matters

Leverage and coverage measures are important indicators of a JAA's ability to pay debt service. High leverage or low coverage may pressure a JAA to make more frequent and larger rate increases in order to meet debt obligations while maintaining sufficient operating and capital funding.

The difference in financial metric thresholds for take-or-pay projects and all-requirement agencies reflects the different business risks that these JAAs undertake.

This factor comprises two sub-factors:

Adjusted Debt Ratio

The ratio of debt to assets is an important measure of a JAA's balance sheet leverage.

Fixed Obligation Charge Coverage Ratio

The coverage of debt by net revenue is an important indicator of a JAA's ability to pay interest and other fixed charges from its operating cash flow.

How We Assess It for the Scorecard

If we assess a take-or-pay project's baseline sub-factor assessment at Baa or higher, the final score for that sub-factor is the higher of (i) the score used in the Participant Credit Quality and Cost Recovery Framework factor; or (ii) the baseline sub-factor assessment. This reflects our view that stronger

Participant Credit Quality and Cost Recovery Framework factor scores are generally more important than financial metrics, unless those metrics are quite weak.

ADJUSTED DEBT RATIO:

The numerator is total debt (net of debt service funds and debt service reserve funds) plus the adjusted net pension liability (ANPL),¹² and the denominator is total capital assets (net of accumulated depreciation) plus net working capital. We use a three-year average of the annual ratios for the most recent three fiscal years.

FIXED OBLIGATION CHARGE COVERAGE RATIO:

The numerator is gross revenue minus operating expenses (excluding depreciation, amortization and the debt portion of the take-or-pay contractual payment, when applicable),¹³ and the denominator is debt service on all JAA debt plus the debt portion of the take-or-pay contractual payment, where applicable. In considering this metric on a historical basis, we typically use a three year average of the annual ratios for the most recent three fiscal years.

We reclassify the debt portion of the take-or-pay contractual payment from an operating expense to a debt expense to better compare a JAA that finances its generation assets on its balance sheet with one that finances its assets off balance sheet through a separate take-or-pay project.

We may apply adjustments to the fixed obligation charge coverage ratio calculation for accounting adjustments, timing of payments or other technical issues that could obscure an accurate assessment of coverage. For example, we adjust debt service to include interest on bank loans and capital lease obligations.

FACTOR

Take-or-Pay Projects: Leverage and Coverage (20%)

Sub-factor	Sub-factor Weight	Aaa	Aa	A	Baa	Ba	B	Caa	Ca
Adjusted Debt Ratio (3-year average) ^{*3}	10%	≤ 25%	25 - 50%	50 - 75%	75 - 150%	150 - 225%	225 - 250%	250 - 275%	> 275%
Fixed Obligation Charge Coverage Ratio (3-year average) ^{*4}	10%	≥ 3x	2.2 - 3x	1.6 - 2.2x	1 - 1.6x	0.9 - 1x	0.75 - 0.9x	0.5 - 0.75x	< 0.5x

^{*3} For the linear scoring scale, when total capital assets (net of accumulated depreciation) plus ANPL is positive, the Aaa endpoint value is 0%. A value of 0% or better equates to a numerical score of 0.5. The Ca endpoint value is 300%. A value of 300% or worse equates to a numeric score of 20.5. When total capital assets (net of accumulated depreciation) plus net working capital is negative or zero, the numeric score is 20.5.

^{*4} For the linear scoring scale, the Aaa endpoint value 3.5x. A value of 3.5x or better equates to a numeric score of 0.5. The Ca endpoint value is 0x. A value of 0x equates to a numeric score of 20.5.

Source: Moody's Investors Service

¹² For an explanation of our adjustments related to pensions, please see our methodology that discusses adjusting reported pension data for public entities such as states and local governments.

¹³ Operating expenses are adjusted to exclude non-cash pensions and other post-employment benefit (OPEB) expenses. For an explanation of ANPL and our standard adjustments, please see our methodology that discusses adjusting reported pension data for US public entities such as states and local governments.

FACTOR

All-Requirement Agencies: Leverage and Coverage (15%)

Sub-factor	Sub-factor Weight	Aaa	Aa	A	Baa	Ba	B	Caa	Ca
Adjusted Debt Ratio (3-year average) ^{*5}	5%	≤ 50%	50 - 70%	70 - 100%	100 - 150%	150 - 200%	200 - 250%	250 - 275%	> 275%
Fixed Obligation Charge Coverage Ratio (3-year average) ^{*6}	10%	≥ 2x	1.4 - 2x	1.2 - 1.4x	1.1 - 1.2x	1 - 1.1x	0.75 - 1x	0.5 - 0.75x	< 0.5x

*5 For the linear scoring scale, when total capital assets (net of accumulated depreciation) plus ANPL is positive, the Aaa endpoint value is 25%. A value of 25% or better equates to a numerical score of 0.5. The Ca endpoint value is 300%. A value of 300% or worse equates to a numeric score of 20.5. When total capital assets (net of accumulated depreciation) plus net working capital is negative or zero, the numeric score is 20.5.

*6 For the linear scoring scale, the Aaa endpoint value is 2.5x. A value of 2.5x or better equates to a numeric score of 0.5. The Ca endpoint value is 0x. A value of 0x equates to a numeric score of 20.5.

Source: Moody's Investors Service

Factor: Willingness to Recover Costs with Sound Financial Metrics (All-Requirement Agencies - 25% Weight)

Why It Matters

An all-requirement agency's willingness to recover costs through sufficient and timely rate increases provides important indications of its ability to maintain its financial strength and pay debt service.

We consider this factor only for all-requirement agencies, whose business models are typically broader and more complex than those of take-or-pay projects and whose contractual relationships with participants are typically on a take-and-pay basis, with participants paying the rates set by the JAA for energy delivered.

How We Assess It for the Scorecard

In assessing this factor, we typically consider the JAA governing board's rate-setting process for its timeliness and effectiveness in setting rates and charges that are required to recover operating and capital costs, provide sufficient revenue for the fixed obligation charge coverage ratio and maintain sound liquidity on a prospective basis, including the effect on metrics and liquidity of the JAA's capital program. We also typically consider the board's demonstrated record of willingness to increase rates and the typical time it takes to implement new rates and collect the additional revenue.

Additionally, we typically consider the likelihood that the JAA's rate-setting process and history of rate increases indicate that it is likely to maintain its financial operations at current levels. The score for this factor may be somewhat higher than indicated by the financial metrics themselves where (i) the JAA has a track record of consistently meeting management's financial targets; or (ii) the JAA and participants have demonstrated their commitment and ability to maintain the JAA's financial stability and resiliency, for example, by instituting an automatic monthly adjustment at both the JAA and its participants for changes in energy resource costs or by ensuring that the JAA increases its liquidity in advance of a construction project to mitigate incremental construction risk.

FACTOR

All-Requirement Agencies: Willingness to Recover Costs with Sound Financial Metrics (25%)

Factor	Factor Weight	Aaa	Aa	A	Baa	Ba	B	Caa	Ca
Willingness to Recover Costs with Sound Financial Metrics	25%	Strong rate-setting record; rates likely to result in maintenance of financial metrics consistent with the Aaa category.	Above-average rate-setting record; rates likely to result in maintenance of financial metrics consistent with the Aa category.	Adequate rate-setting record; rates likely to result in maintenance of financial metrics consistent with the A category.	Below-average rate-setting record; rates likely to result in maintenance of financial metrics consistent with the Baa category.	Rate-setting record that is well below average; rates likely to result in maintenance of financial metrics consistent with the Ba category.	Weak rate-setting record; rates likely to result in maintenance of financial metrics consistent with the B category.	Very weak rate-setting record; rates likely to result in maintenance of financial metrics consistent with the Caa category.	Insufficient rate-setting and history of inadequate cost recovery.

Source: Moody's Investors Service

Notching Factors

The scorecard includes notching factors. Our assessment of these factors may result in either upward or downward adjustments to the preliminary outcome that results from the Participant Credit Quality and Cost Recovery Framework, Asset Quality and Exposure to Environmental Regulation, Resource Risk Management and Exposure to Environmental Regulation, Competitiveness (for all-requirement agencies), Liquidity, Leverage and Coverage, and Willingness to Recover Costs with Sound Financial Metrics (for all-requirement agencies) factors. Adjustments may be made in half-notch increments, based on the notching factors listed in the table below. In aggregate, the notching factors can result in a total of up to five upward notches for take-or-pay projects and up to four upward notches for all-requirement agencies. Notching factors can also result in up to seven downward notches for take-or-pay projects and six downward notches for all-requirement agencies from the preliminary outcome to arrive at the scorecard-indicated outcome. In cases where we consider that the credit weakness or credit strength represented by a notching factor, or by these factors in aggregate, is greater than the scorecard range, we incorporate this view into the issuer's rating, which may be different from the scorecard-indicated outcome.

Notching Factor	Notching Range
Competitiveness (take-or-pay projects)	+1 to -1
Contractual Structure and Legal Environment	+2 to -2
Participant Diversity and Concentration	+1 to 0
Construction Risk	0 to -2
Financing Structure	+1 to -1
Unmitigated Exposure to Wholesale Power Markets	0 to -1

Source: Moody's Investors Service

Competitiveness (Take-or-Pay Projects)

Why It Matters

A take-or-pay JAA's cost competitiveness is an important indicator of its ability to attract and retain participants. Most take-or-pay JAAs face moderate competition that may impede their ability to increase rates. Occasionally, a take-or-pay JAA may face significantly more or less competition than its peers. A JAA with considerably more competitive energy prices or a strong monopoly position has greater flexibility to raise rates compared with one whose rates are already much higher than peers.

How We Assess It for the Scorecard

In assessing cost competitiveness, we consider the rates paid by a take-or-pay project's participants. Where reliable, equivalent data is available, we consider the project's rates relative to those charged by comparable energy resource providers in the region on a historic basis, typically over a three-year period, and on a forward-looking basis. For assets with a monopoly position, we consider the underlying strength of the monopoly and how this may change over time, the essentiality of the project to participants over the long term and the potential for material changes in the project's economic value to participants.

Contractual Structure and Legal Environment

Why It Matters

The contractual structure and legal environment of a JAA are important because they provide the framework under which a JAA recovers its costs from participants. For example, an all-requirement agency contract may have strong provisions to recover participant costs, similar to those in a take-or-pay contract. A JAA project may also benefit from a larger organization, which may provide additional liquidity and oversight. Conversely, a JAA's contracts may have weak features, such as a lack of a participant step-up provision, or there may be other limitations, such as a state-mandated cap on rate increases, e.g., based on inflation.

How We Assess It for the Scorecard

We typically assess the provisions of a JAA's contracts that allow it to recover costs as well as its legal ability to do so under state or local laws. This notching factor may result in an upward or downward adjustment of up to one notch to the preliminary outcome.

Considerations that could result in an adjustment of up to two upward notches include a court-validated offtake contract that incorporates a general obligation pledge of the municipal city in addition to the participant municipal utility's revenues or an all-requirement contract with exceptionally strong provisions, such as take-or-pay features.

Considerations that could result in an adjustment of up to two downward notches include (i) weak contractual features such as a lack of a participant step-up or similar feature in a multi-party contract; (ii) a limitation in the offtake contract that reduces the effectiveness of a cost pass-through mechanism, such as an inflation-indexed annual payment cap; or (iii) a situation where a JAA has an undivided ownership interest in a project with co-owners that are of significantly weaker credit quality. For take-or-pay projects, the flexibility to add assets by increasing leverage or to partially or fully commingle funds with other businesses may result in downward notching.

Participant Diversity and Concentration

Why It Matters

A diverse participant pool with a low concentration of participants is an important indicator of a JAA's revenue stability. High participant diversity and low concentration mitigate the effects of a participant default or exit. For participants in a more diverse pool, the cost of fulfilling their step-up obligations to a JAA if a participant defaults is likely to be lower than for participants in a less diverse pool. Thus, participants in a more diverse pool are more likely to meet step-up obligations if they arise.

How We Assess It for the Scorecard

In assessing participant diversity and concentration, we consider three equally weighted notching sub-factors: the total number of participants, the aggregate share of participants with less than 2% share of the JAA and the aggregate share of the five largest participants. This notching factor generally results in an upward adjustment of one notch to the preliminary outcome for a JAA where the sub-factor scores are mostly in the strong category or a half notch where the average of the sub-factor scores is in the medium category.

Notching Factor: Participant Diversity and Concentration

Participant Diversity and Concentration	Weight	Strong	Medium	Low
Total Number of Participants	1/3	More than 30	20 to 30	Less than 20
Aggregate Share of Small Participants (participants with 2% or less share of a JAA)	1/3	Greater than 20%	10% to 20%	Less than 10%
Aggregate Share of Five Largest Participants	1/3	Less than 35%	35% to 55%	More than 55%

Source: Moody's Investors Service

Construction Risk

Why It Matters

Construction risk is an important indicator of a JAA's ability to complete its project on schedule and on budget. Construction delays and cost overruns can result in the need for additional debt financing, increasing financial pressure on the project to recover costs, including debt service. In cases where the JAA fails to complete an expensive construction project, it faces an even greater financial burden that may incentivize participants to leave the JAA or challenge their obligations.

How We Assess It for the Scorecard

In our assessment of construction risk, we typically review third-party feasibility studies and independent engineers' reports. We typically consider the contractor's experience and financial strength, the JAA's management of comparable construction projects, including its track record with the contractor, and the overall project construction risks. Overall construction risk varies based on the size and complexity of the project. For example, power projects range from simple cycle gas turbines to nuclear power plants.

We also generally consider typical construction risk mitigants, such as engineering, procurement and construction contracts that set a fixed price and completion date for the project and contain a provision to pay liquidated damages in case contract terms are not fulfilled. Performance and payment

bonds or a letter of credit backing a contractor's obligations may be an important consideration, especially for contractors with moderate-to-low credit quality. This notching factor may result in a downward adjustment of up to two notches to the preliminary outcome for a JAA project with significant construction risk.

Financing Structure

Why It Matters

A JAA's financing structure provides important indications of its exposure to and management's tolerance for risk. A lack of standard bondholder protections in transaction documents, such as a fully funded debt service reserve sized to one year of maximum annual debt service, exposes investors to increased risks. A debt service reserve fund helps mitigate the potential for payment delays under a JAA's contractual arrangements and business risks related to the asset concentration that is typical for a JAA project. A meaningful rate covenant in the transaction documents, i.e., one that requires the JAA to set rates at a level to meet a minimum net revenue coverage level, is another common bondholder protection.

Non-standard debt structures add financial complexity and may expose the JAA to large, unexpected drains on liquidity that hamper the JAA's ability to meet its obligations. Some examples include non-amortizing debt or back-loaded amortization schedules, variable rate debt and interest rate swaps (which may hedge interest rate risk but expose the JAA to cash collateral calls).

How We Assess It for the Scorecard

We consider financing structures that may impair the JAA's ability to recover costs. This notching factor may result in a downward adjustment of up to one notch to the preliminary outcome. In unusual cases, the financing structure may provide better financial protections than is typical, which may lead to an upward adjustment of up to one notch.

In cases where the structure does not include a debt service reserve fund, where the debt service reserve fund covers less than six months of debt service, or where the reserve is in the form of a letter of credit or surety bond provided by a low-rated or unrated financial institution, we typically apply a full downward notch. We typically make a half notch downward adjustment where the debt service reserve fund covers six months of debt service but less than 12 months.

We may not notch down where the JAA has a sufficient level of other liquidity beyond normal working capital requirements. We assess the JAA's internal and external liquidity as sufficient if total internal and external liquidity plus any debt service reserve is enough to cover annual debt service and also provides for 30 days of unrestricted liquidity on hand.

Other structural elements that may result in downward notching include lack of a sum-sufficient rate covenant (typically leading to a full downward notch), a non-amortizing debt structure, exposure to variable debt and interest rate swaps, requirements to post collateral related to hedging agreements, or counterparty termination rights in the event the JAA's credit ratings fall below a certain level. Diminished internal or external liquidity, for example as a result of volatility in credit markets may also result in downward notching.

Unmitigated Exposure to Wholesale Power Markets

Why It Matters

Unmitigated exposure to wholesale power markets is an important indicator of a JAA's financial stability and its ability to recover costs. Unmitigated exposure to wholesale power markets can expose a JAA to rapid price fluctuations, which can result in volatility to a JAA's cash flow and the rates that participants pay. This notching factor typically affects all-requirement agencies that have material excess energy resource supply or that were established to supply the energy resource on a wholesale basis. Some all-requirement agencies seek to use margins from selling excess power into wholesale energy markets to limit the rise in rates charged to participants. Take-or-pay projects are typically not exposed to wholesale power markets, but a take-or-pay project could have wholesale exposure indirectly through its participants.

How We Assess It for the Scorecard

We typically consider the overall exposure the JAA has to the wholesale power markets and the tools it uses to mitigate that exposure. For example, a JAA may enter into wholesale power contracts with strong counterparties, maintain sufficient liquidity to withstand a period of lower wholesale margins and maintain a timely and transparent rate-setting process. This notching factor may result in a downward adjustment of one notch to the preliminary outcome if a JAA has significant unmitigated exposure to the wholesale power markets.

Other Considerations

Ratings may include additional factors that are not in the scorecard, usually because the factor's credit importance varies widely among the issuers in the sector or because the factor may be important only under certain circumstances or for a subset of issuers. Such factors include financial controls and the quality of financial reporting; legal structure; the quality and experience of management; assessments of governance as well as environmental and social considerations; exposure to uncertain licensing regimes; and possible government interference in some jurisdictions. Regulatory, litigation, liquidity, technology and reputational risk as well as changes to consumer and business spending patterns, competitor strategies and macroeconomic trends also affect ratings.

Following are some examples of additional considerations that may be reflected in our ratings and that may cause ratings to be different from scorecard-indicated outcomes.

Regulatory Considerations

Issuers in the JAA sector are subject to varying degrees of regulatory oversight. Effects of these regulations may entail limitations on operations, higher costs, and higher potential for technology disruptions and demand substitution. Regional differences in regulation, implementation or enforcement may advantage or disadvantage particular issuers.

Our view of future regulations plays an important role in our expectations of future financial metrics as well as our confidence level in the ability of an issuer to generate sufficient cash flows relative to its debt burden over the medium and longer term. Regulatory considerations also play a role in our assessment of an issuer's cost recovery framework, competitiveness and willingness to recover costs with sound financial metrics. In some circumstances, regulatory considerations may also be a rating factor outside the scorecard, for instance when regulatory change is swift.

Environmental, Social and Governance Issues

Environmental, social and governance (ESG) considerations may affect the ratings of issuers in the JAA sector. For information about our approach to assessing ESG issues, please see our methodology that describes our general principles for assessing these risks.¹⁴

Environmental regulations are incorporated into the scoring of the Asset Quality and Exposure to Environmental Regulation and Resource Risk Management and Exposure to Environmental Regulation factors, and governance is incorporated into the scoring of the Participant Credit Quality and Cost Recovery Framework and Willingness to Recover Costs with Sound Financial Metrics factors. However, strengths and weaknesses related to ESG may also be considered outside of the scorecard.

There is a wide regional variation in fuel mix in this sector, and some JAAs have a very material exposure to risks related to coal-fired generation and to the credit effects of carbon regulation. JAAs are also exposed, to a lesser extent, to other fossil fuels. JAAs are subject to changes in the federal regulatory landscape, including changes in enforcement policies resulting from successive presidential administrations, and from state-level regulations, including changes in renewable energy standards. Market dynamics and technology risks also play a role in our assessment of a JAA's carbon transition risks. JAAs have a long track record in handling evolving and stringent environmental regulations, and they typically have a strong ability to pass through costs to participants, including fuel and purchased power, costs of investments (including for environmental remediation), and plant abandonment costs. For the majority of JAAs that are not subject to rate regulation, their willingness to raise rates and any resultant affordability issues for participants are the main concerns. Where JAAs or their participants are regulated, they may be subject to oversight regarding tariffs and investment decisions, and they may face pressures to limit rate shocks for end-use customers. Most thermal generation requires large amounts of water for cooling and is thus also exposed to water regulations and shortages.

Social considerations, such as occupational and community-related health and safety, may affect JAAs. Governance issues may also affect JAAs or their participants.

Other Pension Related Considerations

In addition to including pension liabilities in calculating or estimating certain scorecard metrics, we may incorporate pension-related considerations into our analysis in other ways.

For example, we may estimate the pension contribution necessary to prevent unfunded pension liabilities from growing, year over year, in nominal dollars, if all actuarial assumptions are met. This estimate, which we refer to as the tread water indicator, can provide an important indication of the strength or weakness of a utility's pension contributions relative to reported plan funding needs. For scorecard metrics that include cash pension contributions, we may consider how an alternate version of the metric using the tread water indicator would affect the scorecard-indicated outcome.

In addition, we may consider the impact of the long-term liabilities of other post-employment benefits (OPEB) by imputing a debt equivalent to assess how it would affect scorecard metrics.¹⁵

¹⁴ A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

¹⁵ Please see our methodology that discusses our adjustments to reported pension data for US state and local governments, which provides more information about the tread water indicator. A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

We may also consider the tread water indicator or OPEB liabilities as part of our qualitative analysis, including for peer comparisons.

Financial Controls

We rely on the accuracy of audited financial statements to assign and monitor ratings in this sector. The quality of financial statements may be influenced by internal controls, including the proper tone at the top, centralized operations, and consistency in accounting policies and procedures. Auditors' reports on the effectiveness of internal controls, auditors' comments in financial reports and unusual restatements of financial statements or delays in regulatory filings may indicate weaknesses in internal controls.

Management Strategy

The quality of management is an important factor supporting a JAA's credit strength. Assessing the execution of business plans over time can be helpful in assessing management's business strategies, policies and philosophies and in evaluating management performance relative to performance of competitors and our projections. Management's track record of adhering to stated plans, commitments and guidelines provides insight into management's likely future performance, including in stressed situations.

Liquidity

Liquidity is an important rating consideration for all JAAs, although it may not have a substantial impact in discriminating between two issuers with a similar credit profile. Liquidity can be particularly important for JAAs in highly seasonal operating environments where working capital needs must be considered, and ratings can be heavily affected by extremely weak liquidity. We form an opinion on likely near-term liquidity requirements from the perspective of both sources and uses of cash. Useful information about general principles of liquidity assessment can be found in our liquidity cross-sector methodology.¹⁶ While liquidity is specifically considered in the scorecard for JAAs, when it is very weak, the impact it has on ratings may be much greater than the standard scorecard weight would imply.

Additional Metrics

The metrics included in the scorecard are those that are generally most important in assigning ratings to issuers in this industry; however, we may use additional metrics to inform our analysis of specific companies. These additional metrics may be important to our forward view of metrics that are in the scorecard or other rating factors. For example, we may consider operational metrics, such as forced outage rates, and trends in maintenance costs.

Event Risk

We also recognize the possibility that an unexpected event could cause a sudden and sharp decline in an issuer's fundamental creditworthiness, which may cause actual ratings to be lower than the scorecard-indicated outcome. Event risks — which are varied and can range from sudden regulatory changes or liabilities from an accident — can overwhelm even a stable, well-funded issuer. Some other types of event risks include natural disasters or terrorism that cause a disruption in service, pandemics, and significant cyber-crime events.

¹⁶ A link to a list of our cross-sector methodologies can be found in the "Moody's Related Publications" section.

Seasonality

Seasonality is an important driver of customer demand and can cause swings in cash balances and working capital positions for issuers. Higher volatility creates less room for errors in meeting customer demand or operational execution.

Assigning Issuer-Level and Instrument-Level Ratings

After considering the scorecard-indicated outcome, other rating considerations and relevant cross-sector methodologies, we typically assign an instrument-level rating. We may also assign an issuer rating.

Occasionally, a JAA may issue a debt series with different liens, which may be notched down from the senior instrument-level rating. Senior debt has a first lien on revenue and subordinate debt has a junior lien; a JAA could also issue an additional series of debt with a third or lower lien. We assess the effect of subordination starting from an analysis of the fixed obligation charge coverage for all debt classes. We then consider the fixed obligation charge coverage of individual debt classes (senior and subordinate). In considering this ratio for subordinate liens, we subtract the debt service on each prior lien from both the numerator and denominator. We may notch subordinate debt down by one notch or more per debt class if our analysis shows material increased risk of loss upon default to debt with subordinate liens.

Key Rating Assumptions

For information about key rating assumptions that apply to methodologies generally, please see *Rating Symbols and Definitions*.¹⁷

Limitations

In the preceding sections, we have discussed the scorecard factors, many of the other rating considerations that may be important in assigning ratings, and certain key assumptions. In this section, we discuss limitations that pertain to the scorecard and to the overall rating methodology.

Limitations of the Scorecard

There are various reasons why scorecard-indicated outcomes may not map closely to actual ratings.

The scorecard in this rating methodology is a relatively simple tool focused on indicators for relative credit strength. Credit loss and recovery considerations, which are typically more important as an issuer gets closer to default, may not be fully captured in the scorecard. The scorecard is also limited by its upper and lower bounds, causing scorecard-indicated outcomes to be less likely to align with ratings for issuers at the upper and lower ends of the rating scale.

The weights for each sub-factor and factor in the scorecard represent an approximation of their importance for rating decisions across the sector, but the actual importance of a particular factor may vary substantially based on an individual company's circumstances.

¹⁷ A link to *Rating Symbols and Definitions* can be found in the "Moody's Related Publications" section.

Factors that are outside the scorecard, including those discussed above in the "Other Considerations" section, may be important for ratings, and their relative importance may also vary from company to company. In addition, certain broad methodological considerations described in one or more cross-sector rating methodologies may be relevant to ratings in this sector.¹⁸ Examples of such considerations include the following: how sovereign credit quality affects non-sovereign issuers and the assessment of credit support from other entities.

We may use the scorecard over various historical or forward-looking time periods. Furthermore, in our ratings we often incorporate directional views of risks and mitigants in a qualitative way.

General Limitations of the Methodology

This methodology document does not include an exhaustive description of all factors that we may consider in assigning ratings in this sector. Issuers in the sector may face new risks or new combinations of risks, and they may develop new strategies to mitigate risk. We seek to incorporate all material credit considerations in ratings and to take the most forward-looking perspective that visibility into these risks and mitigants permits.

Ratings reflect our expectations for an issuer's future performance; however, as the forward horizon lengthens, uncertainty increases and the utility of precise estimates, as scorecard inputs or in other rating considerations, typically diminishes. Our forward-looking opinions are based on assumptions that may prove, in hindsight, to have been incorrect. Reasons for this could include unanticipated changes in any of the following: the macroeconomic environment, general financial market conditions, industry competition, disruptive technology, or regulatory and legal actions. In any case, predicting the future is subject to substantial uncertainty.

¹⁸ A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

Appendix A: Using the Scorecard to Arrive at a Scorecard-Indicated Outcome

1. Measurement or Estimation of Factors in the Scorecard

In the "Discussion of the Scorecard Factors" section, we explain our analytical approach for scoring each scorecard sub-factor or factor,¹⁹ and we describe why they are meaningful as credit indicators.

The information used in assessing the sub-factors is generally found in or calculated from information in the issuer's financial statements or regulatory filings, derived from other observations or estimated by Moody's analysts. We may also incorporate non-public information.

Our ratings are forward-looking and reflect our expectations for future financial and operating performance. However, historical results are helpful in understanding patterns and trends of a company's performance as well as for peer comparisons. Financial ratios, unless otherwise indicated, are typically calculated based on a three year average. However, the factors in the scorecard can be assessed using various time periods. For example, rating committees may find it analytically useful to examine the most recent one year historical period and expected future performance for shorter or longer periods. We use three-year average results to assess financial metrics in order to mitigate one-time factors that might skew results.

The quantitative credit metrics used in this methodology may also incorporate analytical adjustments that are specific to a particular JAA financing.

2. Mapping Scorecard Factors to a Numeric Score

After estimating or calculating each sub-factor, the outcomes for each of the sub-factors are mapped to either an alphanumeric Moody's rating category (Aaa, Aa1, Aa2, Aa3, A1, A2, A3, Baa1, Baa2, Baa3, Ba1, Ba2, Ba3, B1, B2, B3, Caa1, Caa2, Caa3 or Ca) or a broad alpha category (Aaa, Aa, A, Baa, Ba, B, Caa or Ca) and to a numeric score.

Qualitative sub-factors are scored based on the description by broad rating category in the scorecard. The numeric value of each alpha score is based on the scale below.

Aaa	Aa	A	Baa	Ba	B	Caa	Ca
1	3	6	9	12	15	18	20

Source: Moody's Investors Service

For the scoring of participant credit quality, we use the interpolated numeric value that corresponds to the applicable participant credit quality. For example, participant credit quality of A1 would be scored at the interpolated numeric score of 5.

Quantitative factors are scored on a linear continuum. For each metric, the scorecard shows the range by alpha category. We use the scale below and linear interpolation to convert the metric, based on its placement within the scorecard range, to a numeric score, which may be a fraction. As a purely theoretical example, if there were a ratio of revenue to interest for which the Baa range was 50x to 100x, then the numeric score for an issuer with revenue/interest of 99x, relatively strong within this

¹⁹ When a factor comprises sub-factors, we score at the sub-factor level. Some factors do not have sub-factors, in which case we score at the factor level.

range, would score closer to 7.5, and an issuer with revenue/interest of 51x, relatively weak within this range, would score closer to 10.5. In the text or table footnotes, we define the endpoints of the line (i.e., the value of the metric that constitutes the lowest possible numeric score, and the value that constitutes the highest possible numeric score).

Aaa	Aa	A	Baa	Ba	B	Caa	Ca
0.5-1.5	1.5-4.5	4.5-7.5	7.5-10.5	10.5-13.5	13.5-16.5	16.5-19.5	19.5-20.5

Source: Moody's Investors Service

The scorecard for take-or-pay projects includes a mechanism to adjust scores for the Asset Quality and Exposure to Environmental Regulation and Liquidity factors, and the Adjusted Debt Ratio and Fixed Obligation Charge Coverage Ratio sub-factors, to the higher of the alpha score for the baseline assessment for these factors and sub-factors and the alphanumeric score for the Participant Credit Quality and Cost Recovery Framework factor. This mechanism makes this adjustment only when the score inputs for these factors and sub-factors are Baa or higher. For example, if we score Participant Credit Quality and Cost Recovery Framework at A1, which maps to a numeric value of 5, and our baseline factor assessment for Asset Quality and Exposure to Environmental Regulation is Baa, which maps to a numeric value of 9, the scorecard adjusts the Asset Quality and Exposure to Environmental Regulation factor score to A1 and maps to a numeric value of 5. If we score the Participant Credit Quality and Cost Recovery Framework factor at Baa1, which maps to a numeric value of 8, and our baseline factor assessment for the Asset Quality and Exposure to Environmental Regulation factor is Baa, which maps to a numeric value of 9, the scorecard adjusts the factor score to Baa1 and maps to a numeric value of 8.

3. Determining the Overall Scorecard-Indicated Outcome

The numeric score for each weighted sub-factor (or each weighted factor, when the factor has no sub-factors) is multiplied by the weight for that sub-factor (or factor), with the results then summed to produce an aggregate numeric score before notching factors (the preliminary outcome). We then consider whether the preliminary outcome that results from the weighted factors should be notched upward or downward²⁰ in order to arrive at an aggregate numeric score after notching factors, based on Competitiveness (for take-or-pay projects), Contractual Structure and Legal Environment, Participant Diversity and Concentration, Construction Risk, Financing Structure and Unmitigated Exposure to Wholesale Power Markets. In aggregate, the notching factors can result in a total of up to five upward notches for take-or-pay projects and up to four upward notches for all-requirement agencies. Notching factors can also result in up to seven downward notches for take-or-pay projects and six downward notches for all-requirement agencies from the preliminary outcome to arrive at the scorecard-indicated outcome.

The aggregate numeric score before and after notching factors is mapped to an alphanumeric. For example, an issuer with an aggregate numeric score before notching factors of 11.7 would have a Ba2 preliminary outcome, based on the ranges in the table below. If the combined notching factors totaled two upward notches, the aggregate numeric score after notching factors would be 9.7, which would map to a Baa3 scorecard-indicated outcome.

²⁰ Numerically, a downward notch adds 1 to the score, and an upward notch subtracts 1 from the score.

EXHIBIT 3

Scorecard-Indicated Outcome

Scorecard-Indicated Outcome	Aggregate Numeric Score
Aaa	$x \leq 1.5$
Aa1	$1.5 < x \leq 2.5$
Aa2	$2.5 < x \leq 3.5$
Aa3	$3.5 < x \leq 4.5$
A1	$4.5 < x \leq 5.5$
A2	$5.5 < x \leq 6.5$
A3	$6.5 < x \leq 7.5$
Baa1	$7.5 < x \leq 8.5$
Baa2	$8.5 < x \leq 9.5$
Baa3	$9.5 < x \leq 10.5$
Ba1	$10.5 < x \leq 11.5$
Ba2	$11.5 < x \leq 12.5$
Ba3	$12.5 < x \leq 13.5$
B1	$13.5 < x \leq 14.5$
B2	$14.5 < x \leq 15.5$
B3	$15.5 < x \leq 16.5$
Caa1	$16.5 < x \leq 17.5$
Caa2	$17.5 < x \leq 18.5$
Caa3	$18.5 < x \leq 19.5$
Ca	$19.5 < x \leq 20.5$
C	$x > 20.5$

Source: Moody's Investors Service

In general, the scorecard-indicated outcome is oriented to a debt instrument with a senior pledge on JAA revenue.

Appendix B: US Municipal Joint Action Agencies Sector Take-or-Pay Scorecard

Factor or Sub-factor Weight		Aaa	Aa	A	Baa	Ba	B	Caa	Ca
Factor: Participant Credit Quality and Cost Recovery Framework (50%)									
Participant Credit Quality and Cost Recovery Framework	50%	Participant credit quality at cap is Aaa. AND JAA and participant rates are unregulated.	Participant credit quality at cap is Aa. AND JAA and participant rates are unregulated.	Participant credit quality at cap is A. AND JAA and participant rates are unregulated.	Participant credit quality at cap is Baa. OR JAA or majority of participant rates are regulated.	Participant credit quality at cap is Ba. OR Quality of governance or cost recovery is inconsistent.	Participant credit quality at cap is B. OR Consistent record of below-average governance or cost recovery.	Participant credit quality at cap is Caa. OR Consistent record of poor governance or cost recovery.	Participant credit quality at cap is Ca. OR Consistent record of very poor governance or cost recovery.
Factor: Asset Quality and Exposure to Environmental Regulation (20%)									
Asset Quality and Exposure to Environmental Regulation	20%	Diversified portfolio of technologically simple, proven assets, with minimal reinvestment requirements and virtually no moving parts; no exposure to environmental regulation.	Diversified portfolio of technologically simple, proven assets with limited reinvestment requirements and minimal moving parts; very limited exposure to environmental regulation.	Diversified portfolio of largely simple, proven assets across technologies; modest, predictable reinvestment requirements; limited exposure to environmental regulation.	Portfolio or single asset that is commercially proven but somewhat technologically complex; ongoing capital investment requirements; moderate exposure to environmental regulation.	Single asset with some technological complexities and some operating challenges; potentially material maintenance and reinvestment requirements; moderately high exposure to environmental regulation.	Single asset with significant technological complexities or significant operating challenges; major reinvestment requirements; high exposure to environmental regulation.	Single asset, with largely unproven technology or poor performance; significant reinvestment requirements; very high exposure to environmental regulation.	Single asset with unproven technology or very poor performance; requires substantial additional investment to operate; compliance with environmental regulation in doubt.
Factor: Liquidity (10%)									
Adjusted Days Liquidity on Hand (3-year average) ^{*1}	10%	≥ 250	175 - 250	100 - 175	30 - 100	15 - 30	10 - 15	5 - 10	< 5
Leverage and Coverage (20%)									
Adjusted Debt Ratio (3-year average) ^{*2}	10%	≤ 25%	25 - 50%	50 - 75%	75 - 150%	150 - 225%	225 - 250%	250 - 275%	> 275%
Fixed Obligation Charge Coverage Ratio (3-year average) ^{*3}	10%	≥ 3x	2.2x - 3x	1.6x - 2.2x	1x - 1.6x	0.9x - 1x	0.75x - 0.9x	0.5x - 0.75x	< 0.5x

*1 For the linear scoring scale, the Aaa endpoint value is 400. A value of 400 or better equates to a numeric score of 0.5. The Ca endpoint value is zero. A value of zero equates to a numeric score of 20.5.

*2 For the linear scoring scale, when total capital assets (net of accumulated depreciation) plus ANPL is positive, the Aaa endpoint value is 0%. A value of 0% or better equates to a numerical score of 0.5. The Ca endpoint value is 300%. A value of 300% or worse equates to a numeric score of 20.5. When total capital assets (net of accumulated depreciation) plus net working capital is negative or zero, the numeric score is 20.5.

*3 For the linear scoring scale, the Aaa endpoint value 3.5x. A value of 3.5x or better equates to a numeric score of 0.5. The Ca endpoint value is 0x. A value of 0x equates to a numeric score of 20.5.

Notching Factors	Notching Range
Competitiveness	+1 to -1
Contractual Structure and Legal Environment	+2 to -2
Participant Diversity and Concentration	+1 to 0
Construction Risk	0 to -2
Financing Structure	+1 to -1
Unmitigated Exposure to Wholesale Power Markets	0 to -1

Source: Moody's Investors Service

Appendix C: US Municipal Joint Action Agencies **All-Requirement Agency Scorecard**

	Factor or Sub-factor Weight	Aaa	Aa	A	Baa	Ba	B	Caa	Ca
Factor: Participant Credit Quality and Cost Recovery Framework (25%)									
Participant Credit Quality and Cost Recovery Framework	25%	Weighted average Aaa participant credit quality AND JAA and participant rates are unregulated. For CCAs , robust monopoly position with automatic enrollment of all customers in service area with almost no customer opt-out history and proven unregulated rate setting; very strong customer base and service area economy; municipal participants are of the highest credit quality.	Weighted average Aa participant credit quality. AND JAA and participant rates are unregulated. For CCAs , quasi-monopoly position with automatic enrollment of all customers in service area with narrow and very limited customer opt-out history; proven unregulated rate setting; strong customer base and service area economy; municipal participants have very high credit quality.	Weighted average A participant credit quality. AND JAA and participant rates are unregulated. For CCAs , quasi-monopoly position with automatic enrollment of all customers in service area with limited customer opt-out history; proven unregulated rate setting; above-average customer base and service area economy; municipal participants have high credit quality.	Weighted average Baa participant credit quality. OR JAA or majority of participant rates are regulated. For CCAs , limited monopoly with automatic enrollment of all customers in service area but with some customer opt-out ability; self-regulated rates with limited history; more than 40% of total energy sales to Industrial and large commercial customers; municipal participants have average credit quality; average customer base and service area economy.	Weighted average Ba participant credit quality. OR Quality of governance or cost recovery is inconsistent. For CCAs regulation of rates by state with some inconsistency or self-regulated rates with very limited history; service area has no automatic inclusion of all customers but competition is limited and customer growth and retention is moderate; more than 60% of total energy sold to Industrial and large commercial customers; municipal participants have below-average credit quality; weak customer base and service area economy.	Weighted average B participant credit quality. OR Consistent record of below-average governance or cost recovery. For CCAs , regulation of rates by state is unpredictable or ability to self-regulate rates is uncertain; no automatic enrollment of customers in service area, which is subject to competition, with weak customer growth and retention; municipal participants have weak credit quality; very weak customer base and service area economy.	Weighted average Caa participant credit quality. OR Consistent record of poor governance or cost recovery. For CCAs , regulation of rates is unpredictable or ability to self-regulate is highly uncertain; service area subject to intense competition, leading to material customer losses; municipal participants have low credit quality; extremely weak customer base or service area economy.	Weighted average Ca participant credit quality. OR Consistent record of very poor governance or cost recovery. For CCAs , regulation of rates is unpredictable, with material legal challenges; service area is subject to intense competition leading to substantial customer losses; municipal participants have very low credit quality; weakest customer base and service area economy.

Factor: Resource Risk Management and Exposure to Environmental Regulation (10%)

Resource Risk Management and Exposure to Environmental Regulation	10%	Exceptional energy resource risk management. Less than 10% power market purchases. OR Diverse, proven assets. Single asset or fuel less than 20% of energy resource mix. OR Long-term, competitive supply contract with Aaa rated supplier. No exposure to environmental regulation.	Very strong energy resource risk management. 10%-20% from power market purchases. OR Somewhat diverse, proven assets. Single asset or fuel comprises 20%-40% of the energy resource mix. OR Long-term, competitive supply contract with Aa rated supplier. Limited exposure to environmental regulation.	Strong energy resource risk management. 20%-30% from power market purchases. OR Some proven assets. Single asset or fuel comprises 41% - 55% of the energy resource mix. OR Well-managed portfolio of supply contracts with moderately strong suppliers. Manageable exposure to environmental regulation.	Average energy resource risk management. 30%-40% from power market purchases. OR Single asset or fuel provides 56% - 75% of the energy resource mix. OR Adequately managed supply portfolio with suppliers of average strength. Moderate exposure to environmental regulation.	Below-average energy resource risk management. 40%-60% from power market purchases. OR Single asset or fuel provides over 76% - 100% of the energy resource mix. OR Adequately managed supply portfolio with moderately weak suppliers. Moderately high exposure to environmental regulation.	Relatively weak energy resource risk management. 60%-70% from power market purchases. OR Assets with unproven technology. OR Adequately managed supply portfolio with weak suppliers. High exposure to environmental regulation.	Poor energy resource risk management. 70%-80% from power market purchases. OR Assets with unproven technology or history of problems. OR Poorly managed supply portfolio with very weak suppliers. Very high exposure to environmental regulation.	Very poor energy resource risk management. More than 80% from power market purchases. OR Assets with unproven technology or history of problems. OR Very poorly managed supply portfolio with Ca or lower rated suppliers. Compliance with environmental regulation in doubt.
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Factor: Competitiveness (15%)

Competitiveness	15%	Extremely competitive current and expected rates in the region or compared with neighboring utilities on a consistent basis (e.g., average rates more than 25% below regional average); virtually no material prospective cost pressures that could lead to higher rates.	Very competitive current and expected rates in the region or compared with neighboring utilities on a consistent basis (e.g., average rates range from 10% to 25% below regional average); very low likelihood of material prospective cost pressures that could lead to higher rates.	Competitive current and expected rates in the region or compared with neighboring utilities on a consistent basis (e.g., average rates range from 10% below regional average to 10% above regional average); modest likelihood of material prospective cost pressures that could lead to higher rates.	Current and expected rates in the region or compared with neighboring utilities are sometimes competitive or moderately uncompetitive (e.g., average rates range from 10% to 30% above regional average); high likelihood of material prospective cost pressures that could lead to higher rates.	Uncompetitive current or expected rates in the region or compared with neighboring utilities on a consistent basis (e.g., average rates range from 30% to 50% above regional average); or high likelihood of imminent, material prospective cost pressures that could lead to higher rates.	Very uncompetitive current or expected rates in the region or compared with neighboring utilities on a consistent basis (e.g., average rates range from 50% to 70% above regional average); or very high likelihood of imminent, material prospective cost pressures that could lead to higher rates.	Extremely uncompetitive current or expected rates in the region or compared with neighboring utilities on a consistent basis (e.g., average rates range from 70% to 90% above regional average); or extremely high likelihood of imminent, material prospective cost pressures that could lead to higher rates.	Irreparably uncompetitive current or expected rates in the region or compared with neighboring utilities on a consistent basis (e.g., average rates more than 90% above regional average); or currently in a period of persistent cost pressures that are causing material rate increases.
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Factor: Liquidity (10%)

Adjusted Days Liquidity on Hand (3-year average) ^{*4}	10%	JAA: ≥ 250	JAA: 150 - 250	JAA: 90 - 150	JAA: 45 - 90	JAA: 30 - 45	JAA: 20 - 30	JAA: 10 - 20	JAA: < 10
		CCA: ≥ 300	CCA: 200 - 300	CCA: 120 - 200	CCA: 90 - 120	CCA: 60 - 90	CCA: 30 - 60	CCA: 15 - 30	CCA: < 15

Factor: Leverage and Coverage (15%)

Adjusted Debt Ratio (3-year average) ^{*5}	5%	≤ 50%	50 - 70%	70 - 100%	100 - 150%	150 - 200%	200 - 250%	250 - 275%	> 275%
Fixed Obligation Charge Coverage Ratio (3-year average) ^{*6}	10%	≥ 2x	1.4x - 2x	1.2x - 1.4x	1.1x - 1.2x	1x - 1.1x	0.75x - 1.0x	0.5x - 0.75x	< 0.5x

Factor: Willingness to Recover Costs with Sound Financial Metrics (25%)

Willingness to Recover Costs with Sound Financial Metrics	25%	Strong rate-setting record. Rates likely to result in maintenance of financial metrics consistent with the Aaa category.	Above-average rate-setting record. Rates likely to result in maintenance of financial metrics consistent with the Aa category.	Adequate rate-setting record. Rates likely to result in maintenance of financial metrics consistent with the A category.	Below-average rate-setting record. Rates likely to result in maintenance of financial metrics consistent with the Baa category.	Rate-setting record that are well below average. Rates likely to result in maintenance of financial metrics consistent with the Ba category.	Weak rate-setting record. Rates likely to result in maintenance of financial metrics consistent with the B category.	Very weak rate-setting record. Rates likely to result in maintenance of financial metrics consistent with the Caa category.	Insufficient rate-setting and history of lack of cost recovery.
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*4 For the linear scoring scale for all-requirement agencies, the Aaa endpoint value is 400. A value of 400 or better equates to a numeric score of 0.5. The Ca endpoint value is zero. A value of zero equates to a numeric score of 20.5. For the linear scoring scale for CCAs, the Aaa endpoint value is 450. A value of 450 or better equates to a numeric score of 0.5. The Ca endpoint value is zero. A value of zero equates to a numeric score of 20.5.

*5 For the linear scoring scale, when total capital assets (net of accumulated depreciation) plus ANPL is positive, the Aaa endpoint value is 25%. A value of 25% or better equates to a numerical score of 0.5. The Ca endpoint value is 300%. A value of 300% or worse equates to a numeric score of 20.5. When total capital assets (net of accumulated depreciation) plus net working capital is negative or zero, the numeric score is 20.5.

*6 For the linear scoring scale, the Aaa endpoint value 2.5x. A value of 2.5x or better equates to a numeric score of 0.5. The Ca endpoint value is 0x. A value of 0x equates to a numeric score of 20.5.

Notching Factors	Notching Range
Contractual Structure and Legal Environment	+2 to -2
Participant Diversity and Concentration	+1 to 0
Construction Risk	0 to -2
Financing Structure	+1 to -1
Unmitigated Exposure to Wholesale Power Markets	0 to -1

Source: Moody's Investors Service

Moody's Related Publications

Credit ratings are primarily determined through the application of sector credit rating methodologies. Certain broad methodological considerations (described in one or more cross-sector rating methodologies) may also be relevant to the determination of credit ratings of issuers and instruments. An list of sector and cross-sector credit rating methodologies can be found [here](#).

For data summarizing the historical robustness and predictive power of credit ratings, please click [here](#).

For further information, please refer to *Rating Symbols and Definitions*, which is available [here](#).

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