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21 February 2024

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RATINGS

National Rural Utilities Coop. Finance Corp.

Domicile	Dulles, Virginia, United States
Long Term Rating	A2
Type	Senior Unsecured - Dom Curr
Outlook	Stable

Please see the ratings section at the end of this report for more information. The ratings and outlook shown reflect information as of the publication date.

Contacts

Clifford J Kim +1.212.553.7880
VP-Sr Credit Officer
clifford.kim@moodys.com

Julia Ponte +55.11.3043.7339
Lead Ratings Associate
julia.ponte@moodys.com

A. J. Sabatelle +1.212.553.4136
Associate Managing Director
angelo.sabatelle@moodys.com

National Rural Utilities Coop. Finance Corp.

Credit Update of Key Rating Factors

Summary

National Rural Utilities Cooperative Finance Corporation's (CFC; A2 senior unsecured; stable) credit profile reflects the strength of its unique franchise position as a dominant low-cost, tax-exempt lender, primarily to the creditworthy rural electric cooperative (REC) sector. The stability and resilience of CFC's loan portfolio and CFC's practice of normally lending on a senior secured basis has led to its long-demonstrated history of low net charge offs and problem loans within the REC sector, in addition to steady financial performance with adjusted TIER at or exceeding CFC's target of 1.1x since at least 2000. CFC's credit quality also benefits from multiple funding sources such as the member cooperatives, the Guaranteed Underwriter Program with Rural Utilities Service (RUS), an agency of the US Government (Aaa negative) and a revolving note purchase agreement with the Federal Agricultural Mortgage Corporation (Farmer Mac), a federally chartered private corporation.

That said, CFC's leverage remains persistently high at over 8.0x adjusted debt to equity since FY2021, as calculated by Moody's, and above CFC's internal target given its growing loan portfolio. Moreover, CFC's loan portfolio is concentrated in a single industry with ongoing, single obligor concentration. While this segment of the electric industry has strong fundamentals and its position as generally a senior secured lender are ongoing mitigants, events within the industry and within a region can impact CFC's loan portfolio for a period of time rather quickly. In that regard, CFC faces moderate carbon transition risk since some of the larger generation and transmission cooperatives in its loan portfolio still rely extensively on coal fired generation to meet members' energy demands. Furthermore, the inverted interest yield curve, if sustained, is likely to negatively pressure CFC's net interest margin over the longer term although we expect CFC to maintain its 1.10x adjusted TIER ratio.

Credit Strengths

» Around 95% of CFC's loan and guarantees portfolio are to the creditworthy REC sector and over 90% are secured

» History of low net charge offs and problem loans in the REC sector

» Unique franchise provides strong competitive position

» Continued access to multiple funding sources provides funding diversity

Credit Challenges

» Single industry and obligor concentration in the loan portfolio

» Persistent high leverage

» Moderate carbon transition risk

» Sustained inverted yield curve will pressure earnings

Rating Outlook

CFC's stable rating outlook reflects CFC's long-standing strategic commitment to focus on loans primarily to RECs, maintaining a diversified funding profile, and ongoing efforts to address its leverage ratio. CFC's high leverage, single industry concentration and single obligor concentration are persisting rating constraints.

Factors that Could Lead to an Upgrade

» Given relatively high and persistent leverage and single industry and single-obligor concentration, the likelihood of a rating upgrade for CFC is limited.

» Prospects for a positive rating action exist if the Moody's adjusted debt to adjusted capital funds metric improves to 6.0x on a sustained basis, liquidity remains strong, and alternatives to wholesale capital market funding increase in number and depth, while CFC continues to maintain a relatively clean portfolio with no new material non-performing assets, and continuing to demonstrate an ability to produce stable financial results which consistently exceed the 1.1x adjusted (TIER) target.

Factors that Could Lead to a Downgrade

» If new material problem loans surface within CFC's portfolio;

» If CFC's strategy strays toward increasing its loans to non-core electric cooperative markets;

» If CFC leverage continues to rise leading to Moody's adjusted debt to equity at or above 9.0x on a sustained basis;

» If CFC's access to private sources of long-term capital become constrained;

» If CFC fails to maintain an adequate liquidity profile, including ample access to multi-year bank credit facilities.

Key Indicators

CFC's key indicators

	2023	2022	2021	2020	2019
Loans ($billions) [1]	32.53	30.06	28.43	26.70	25.92
Adjusted Capital Funds ($billions) [1][2]	3.47	3.28	3.12	3.08	3.01
Adjusted TIER (x) [1][3]	1.25	1.30	1.23	1.17	1.19
Adjusted Debt / Adj. Capital Funds (NIC) x [1][2][4]	8.15	8.10	8.03	7.66	7.53
Loan Loss Reserve ($millions) [1][5]	68	68	86	53	18
Loan Loss Reserve / Loans (%) [1][5]	0.16%	0.22%	0.30%	0.20%	0.07%
Net Income / Average Managed Assets (%)	1.5%	2.6%	2.8%	-2.0%	-0.6%
Tangible Common Equity / Tangible Managed Assets	6.5%	7.6%	7.4%	7.3%	7.3%
Problem Loans / Gross Loans (%)	0.42%	0.76%	0.84%	0.67%	0.05%
Net Charge-Offs / Average Gross Loans (%)	0.1%	0.0%	0.0%	0.0%	0.0%
Debt Maturities Coverage (%)	41.1%	40.1%	42.0%	56.8%	60.1%
FFO / Total Debt (%)	1.1%	0.9%	0.9%	0.9%	0.8%
Secured Debt / Gross Tangible Assets (%)	51.2%	51.3%	56.0%	58.5%	58.4%

[1] Fiscal year ends May 31st
[2] Members' Equity is adjusted for derivative forward value and foreign currency adjustments
[3] Net margin adjusted to exclude derivative forward value and foreign currency adjustments. Cost of funds adjusted to include derivative cash settlements
[4] Members capital securities receive equity credit, as determined by Moody's. The Hybrid Equity Credit methodology published on February 1, 2024 applies to CFC's financial results starting with FY Q32024 and onward. For prior results, the Hybrid Equity Credit methodology applicable at the time applies.
[5] Excludes loss reserves for guarantee portfolio
Source: Moody's Investors Service, CFC SEC filings

Corporate Profile

Headquartered in Dulles, Virginia, CFC is a member-owned cooperative association, non-bank financial institution exclusively serving rural electric and telecommunication utilities. CFC was organized in April 1969 by RECs to provide an economical alternative to federally subsidized funds from the RUS of the U.S. Department of Agriculture.

Loans to telecommunication members are made through Rural Telephone Finance Cooperative (RTFC), a private cooperative association formed to provide financing for its rural telecommunications members and affiliates. Loans are also made through National Cooperative Services Corporation (NCSC), a member-owned cooperative association, which primarily provides specialized financing and services to entities owned, operated and controlled by RECs. On December 1, 2023, RTFC and NCSC were consolidated following the sale of RTFC's business to NCSC.

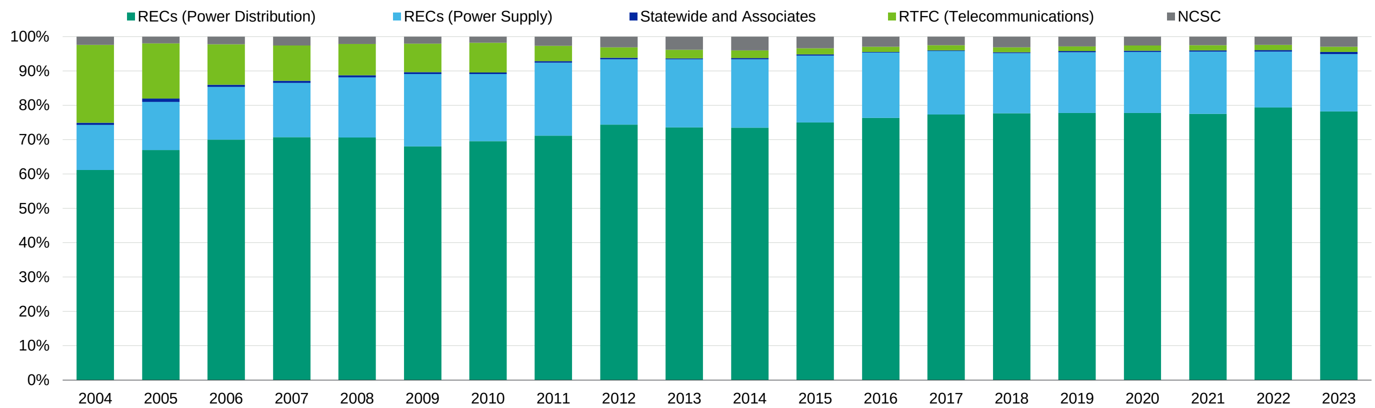
Detailed Credit Considerations

CFC's consolidated loan portfolio mostly comprises of the low-risk REC sector

CFC's principal lending market is the REC distribution segment, which we consider to be among the least volatile and most resilient across the electric power sector (see Exhibit 2 below).

Exhibit 2

Loans to the low risk REC distribution sector has grown to almost 80% of the portfolio



Source: CFC's audited financials

The REC distribution segment is a segment that we consider to have strong investment grade credit qualities. RECs generally conduct relatively low risk business activities, sell electricity to mostly residential customers, tend to have generally steady capital requirements, employ conservative capital structures, and the majority benefit from full flexibility in setting their customers' rates. As of FY 2023, around 78% of CFC's loan portfolio was to REC distribution utilities. When including loans to power supply RECs, most of which also have investment grade credit qualities as well, that rises to around 95% of CFC's loan portfolio.

CFC remains committed to its philosophy of minimizing its lending to the riskier telecommunications sector, a credit positive initiative, which began almost 20 years ago. At FY 2003, telecommunications loans represented around 25% of the total loan portfolio compared to around 1.5% at FY 2023. The decrease is credit positive since the telecommunications loan portfolio represented more than 80% of CFC's cumulative net charge offs since its inception through FY 2023.

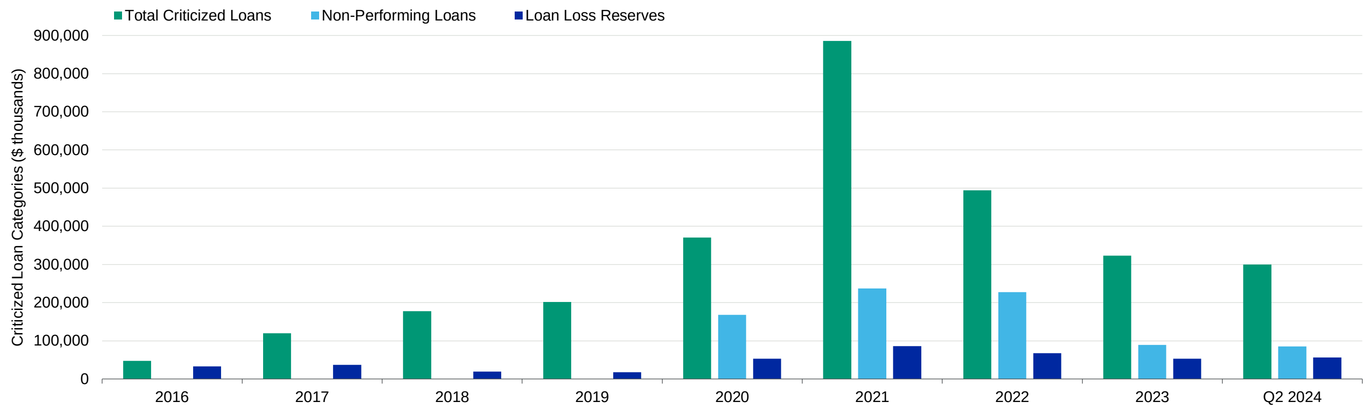
High credit quality of CFC's loan portfolio remains evident through low net charge offs

Since the cooperative's inception in 1969 through FY 2023, there have been 35 defaults and about $528 million of cumulative net charge-offs on its electric and telecom loan portfolio with the latter responsible for more than 80% of the total cumulative net charge offs. Eighteen defaults occurred in the electric portfolio, including the Brazos Electric Power Cooperative, Inc. (Brazos Electric) bankruptcy in March 2021 and Brazos Sandy Creek in March 2022, and seventeen to the telecom portfolio. Prior to Brazos Electric's bankruptcy filing in March 2021, CFC had not experienced any defaults or charge-offs in its electric utility and telecommunications loan portfolios since fiscal years 2013 and 2017, respectively. The overall low loan write-off history demonstrates the historically high credit quality of CFC's loan portfolio, the strength of the collateral typically pledged to CFC, the essentiality of the electric distribution business, and the ability of CFC to take a long-term view concerning debt restructurings due to its unique relationship with its customer base and the fact that CFC does not have profit-maximization goals. As of November 30, 2023, around 92% CFC's loans were secured which further supports CFC's low net charge off rate.

While historical net charge offs at CFC have remained low, the amount of loans in the criticized category and nonperforming rose sharply in 2021, but have since declined. CFC's nonperforming and criticized loans increased in the third quarter of FY 2021 due to extraordinarily high wholesale power costs in the Electric Reliability Council of Texas, Inc. (ERCOT: A1 stable) power market during winter storm Uri in February 2021 that caused the substantial financial deterioration of Brazos Electric and Rayburn Country Electric Cooperative, Inc (Rayburn, Baa3 stable), two generation and transmission cooperatives. Subsequently in February 2022, Rayburn completed a securitization transaction, resolved its outstanding costs from the winter storm, and CFC upgraded its loans to Rayburn into the 'pass' category. As of November 30, 2023, CFC no longer has any nonperforming loans to Brazos Electric nor Brazos Sandy Creek and incurred cumulative net charges for the Brazos entities totaled $14 million including $1 million of recorded loan recovery relative to approximately $114 million of outstanding exposure at the end of FY2022.

Exhibit 3

Loan quality weakened in 2021 due to winter storm Uri's direct and indirect impact on CFC's Texas borrowers
(In thousands USD)



Criticized category include loans classified as special mention, substandard and doubtful and includes nonperforming loans
Source: CFC's audited financials

At the end of fiscal Q2 2024, CFC reported total loans in the criticized category total almost $300 million and nonperforming loans totaled around $85 million. Approximately $199 million within the criticized loan category are performing loans to one borrower that experienced adverse financial impact from two successive hurricanes. The borrower has benefited from federal aid to fund restoration costs and the borrower remains current on its obligations. The only nonperforming loan is to a power supply electric borrower.

Industry and obligor concentration risks partially offset by strong risk management

While the REC sector is broadly low risk, CFC's primary focus on this sector represents single industry concentration. As such, trends in the rural electric utility's broadly affecting credit quality, such as carbon transition risk, or events broadly affecting RECs in a region, such as winter storm URI, can also directly impact CFC. The industry concentration also results in obligor concentration risk since CFC's top 20 largest borrowers composed of around 20% of the total loan portfolio as of November 30, 2023.

Partially offsetting these risks is CFC's strong risk management capabilities. The cooperative lender regularly maintains an internal risk rating system and sets exposure limits for each borrower, while also retaining an independent bank consulting firm to provide an annual third party assessment of the functioning of the risk rating system. Furthermore, as part of CFC's strategy to manage its credit risk exposure, the cooperative executed a long-term standby purchase commitment agreement with Farmer Mac effective August 31, 2015, as amended on May 31, 2016. This agreement allows CFC to designate certain loans to be covered under the commitment, subject to approval by Farmer Mac, and if any such designated loan subsequently goes into material default for at least 90 days, upon request by CFC, Farmer Mac must purchase such loan at par value. CFC designated, and Farmer Mac approved loans that had an aggregate outstanding principal balance of $421 million as of November 30, 2023. No loans had been put to Farmer Mac for purchase, pursuant to this agreement as of FYQ2 2024.

Strong competitive position benefits from CFC's unique franchise characteristics

As a member owned lender, CFC enjoys strong support from its member cooperatives as it provides those entities with attractive and customized financing alternatives. The value of the CFC franchise is evident through the broad participation by the RECs in CFC's offering of member capital securities as well as the steadily increasing members' investment amount that helps to fund CFC's operations. We consider the members' investments to be a “sticky” form of core funding. CFC's unique franchise position is magnified by the financial institution's status as a tax-exempt cooperative association with a primary operating objective to provide low cost funding to its members.

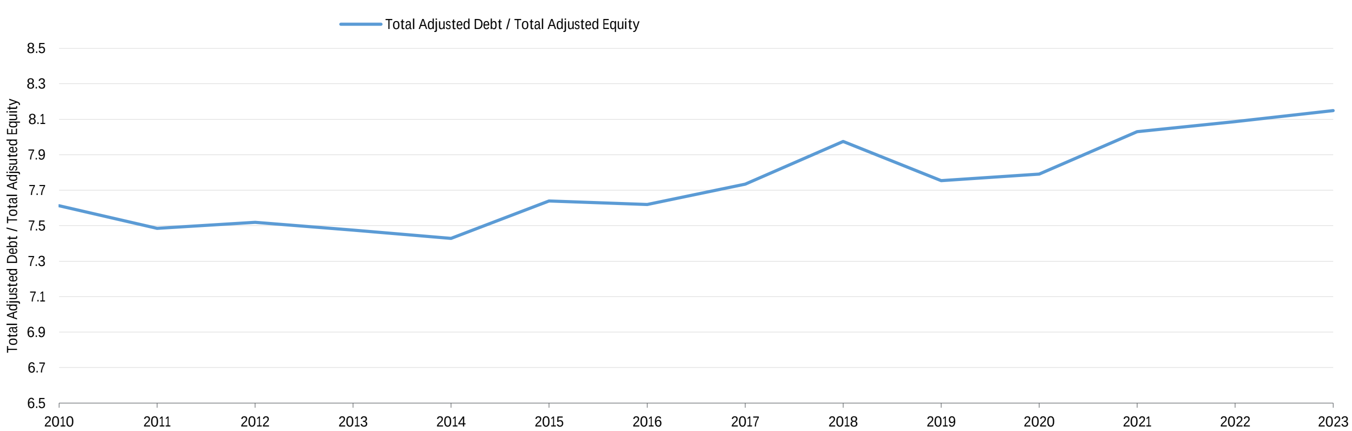
High leverage and extensive use of secured debt as funding source are weaknesses

Due to the nature of its ownership structure, CFC does not have common stock in its capital structure. Instead, CFC has Moody's adjusted members' equity in its capital structure (but excluding hybrid equity), which has historically grown although not as fast as its loan growth and totaled $2.21 billion as of May 31, 2023 according to Moody's calculations. Moody's adjustment disregards derivative gains and losses among other adjustments. Additionally, in recent years, CFC has supported its loan growth in its capital structure through publicly offered subordinated deferrable debt and retained earnings. As of FY 2023, these forms of equity composed $977 million of deeply subordinated members' capital term certificates, $246 million of members' certificates, and $1.283 billion of subordinated deferrable debt. According to the recently published hybrid equity credit methodology, Moody's assigns 50% equity credit to both the members' capital term certificates and subordinated deferrable debt in calculating CFC's leverage ratio after February 1, 2024. For financial ratios prior to this date, we assume 50% equity credit on the members' capital term certificates and 25% equity credit on the subordinated deferrable debt.

CFC's leverage ratio as represented by adjusted debt to adjusted capital funds (according to Moody's calculations that, among other items, adjusts for the effects of mark-to-market changes on CFC's derivatives which at times can be significant) has crept up over time since 2010 from a low of around 7.43x in 2014 to a recent high of 8.15x at the end of FY2023, a credit negative. The main driver of the increased leverage has been CFC's extensive loan growth that is primarily debt funded and patronage retirement according to CFC's policy which seeks to retire 50% of the prior year's allocated patronage capital and hold the remaining 50% for 25 years. We understand CFC plans to manage its leverage ratio growth through a variety of measures and in February 2024, CFC issued $100 million of subordinated deferrable debt. Given Moody's updated hybrid equity credit methodology, CFC's leverage ratio should decline from FY2023 all else equal starting with CFC's FYQ3 2024.

Exhibit 4

Moody's adjusted debt to equity ratio for CFC has increased through FY2023



Note: The figures in the exhibit above assume the Moody's hybrid methodology applicable at the time and do not incorporate Moody's Hybrid Equity Credit methodology published on February 1, 2024. The February 1, 2024 version will apply to CFC's financial results after FYQ2 2024.
Source: CFC audited financials

Since 2021, CFC's reported adjusted debt to equity ratio has also been above its policy target of 6.0x and as of November 30, 2023, CFC's adjusted debt to equity ratio was 6.38x compared to 6.04x at FY2023 and 6.24x in FY2022.

In addition to high leverage, CFC's extensive use of secured borrowings to fund its loan program is a weakness since it reduces overall financial flexibility although this ratio has come down over time. Over the last two years, secured borrowings relative to gross tangible assets represented an average of around 51% and this factor scores in the 'B' category in the methodology compared to 58% in 2020. As of November 30, 2023, CFC's secured borrowings comprised of $7.2 billion of collateral trust bonds (CTB), $6.9 billion under the GUP program, and $3.9 billion under the note purchase agreement with Farmer Mac. While the loan collateralization requirement is a credit negative, the GUP program and the note purchase agreement with Farmer Mac represent important sources of reliable funding diversity.

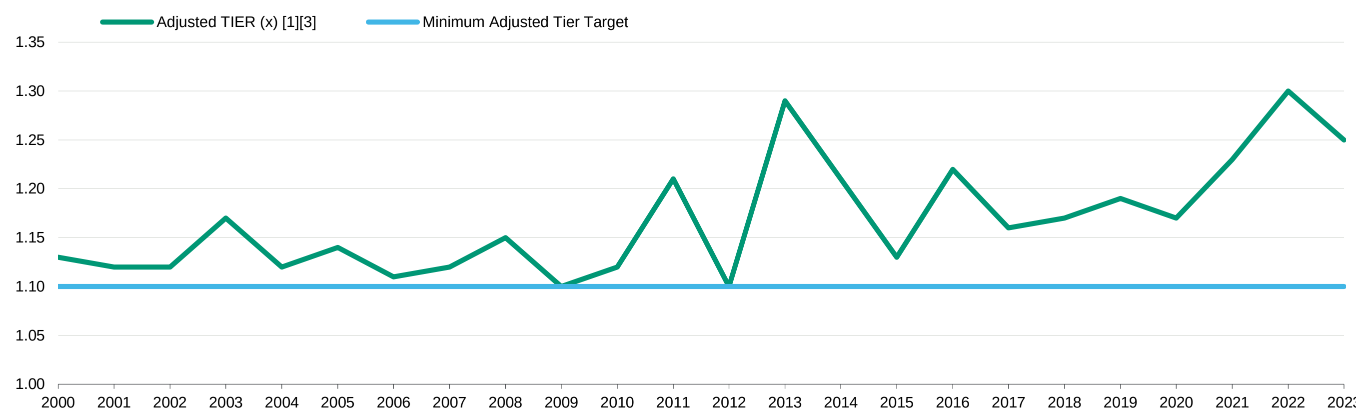
Weak financial metrics but steady financial performance relative to its financial targets

CFC is a member-owned cooperative lender with a goal to set rates that provide its members with the lowest cost financing while also earning a margin consistent with defined financial targets. As part of its strategy, CFC prices its members' loans and guarantees to cover its funding costs, general and administrative expenses, the loan loss provision, and a modest margin to maintain an adjusted TIER of at least 1.10x.

Given CFC's business model, CFC's profitability and cash flow to debt financial metrics are low relative to peers such as net income to average managed assets initially scoring in the mid 'Baa' category. That said, these factors have limitations when assessing CFC's credit risk profile given its cooperative model. Our assessment of CFC's credit profile incorporates a view that CFC will continue to set margins at levels that produce positive operating margins and cushion above minimum required internal targets enabling them to comfortably exceed any financial covenants in its debt documents as they have done since at least 2000 as shown in the exhibit below. For the six month period ending November 30, 2023, CFC reported an adjusted TIER of 1.23x compared to 1.23x over the same period a year ago.

Exhibit 5

CFC's Adjusted TIER has been at or above its 1.1x target since at least 2000

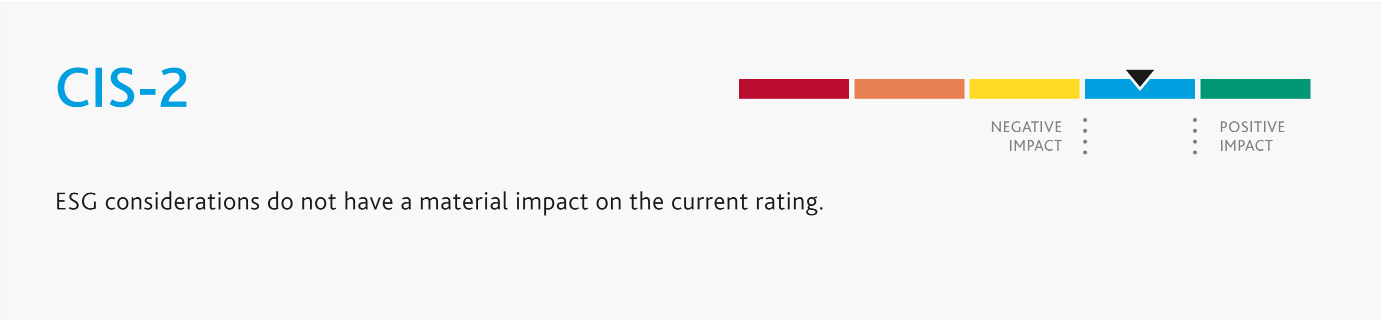


Source: CFC Audited Financial statements

ESG considerations

National Rural Utilities Coop. Finance Corp.'s ESG credit impact score is CIS-2

Exhibit 6
ESG credit impact score



Source: Moody's Investors Service

CFC's ESG Credit Impact Score is neutral (**CIS-2**) that considers CFC's history of low non-performing loans and net charge offs and unique cooperative business model but also board membership that mostly comprises of non-independent directors. It also considers moderately negative environmental risks due to carbon transition, waste & pollution, and physical climate risk of its electric cooperative borrowers.

Exhibit 7
ESG issuer profile scores

Source: Moody's Investors Service

Environmental

CFC's **E-3** issuer profile score largely reflects moderate risk to carbon transition risk and waste & pollution since some of its larger generation and transmission cooperatives borrowers rely extensively on coal fired generation to meet customer's energy demands. Physical climate risk is also a moderately negative risk since electric cooperatives can be susceptible to major weather events such as winter storm Uri and hurricanes. Electric cooperatives have access to Federal Emergency Management Agency (FEMA) funds following a hurricane which aids in the long-term recovery.

Social

CFC's **S-2** issuer profile score considers social risks that does not pose a particular credit risk especially since CFC transacts directly with rural cooperative utilities and do not have retail customers.

Governance

CFC's **G-2** issuer profile score considers a positive financial strategy and risk management given its history of low nonperforming loans ratio and net charge offs. While board structures and policies is moderately negative since CFC's board is almost entirely comprised of non-independent directors, we also consider CFC's unique cooperative ownership and alignment of interests. As member-owned cooperative lender to the rural electric cooperative sector, CFC does not operate to maximize profits but its objective is to price its member loans and guarantees to cover its funding costs, general and administrative expenses, its loan loss provision, and a modest margin to maintain an adjusted TIER ratio of at least 1.10x. Additionally, CFC's FY2024 incentive plan for senior management has a 50%

payout cap if CFC's long term unsecured rating is below A2/A by two or more rating agencies at the end of CFC's 2024 fiscal year (May 31, 2024).

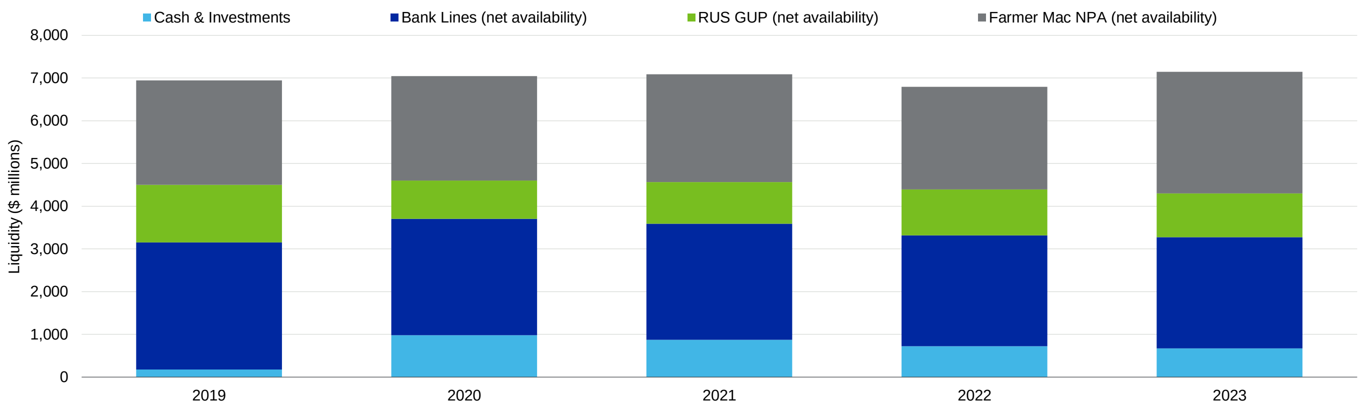
ESG Issuer Profile Scores and Credit Impact Scores for the rated entity/transaction are available on Moodys.com. In order to view the latest scores, please click here to go to the landing page for the entity/transaction on MDC and view the ESG Scores section.

Liquidity Analysis

CFC generally has very good liquidity, as shown in Exhibit 8, to support its commercial paper program, its variable rate tax-exempt demand bonds, and upcoming maturities.

Exhibit 8

CFC's availability liquidity



Fiscal year end is May 31.
Source: CFC's audited financials

CFC's primary source of liquidity are $2.8 billion of committed bank lines consisting of a $1.195 billion bank line maturing in November 2026, a $1.305 billion bank line maturing in November 2027, a $150 million line maturing in November 2025, and a $150 million line maturing in November 2026. These credit facilities do not contain a MAC clause but have financial covenants which are set at levels that provide substantial cushion. The agreements require an adjusted TIER average of 1.025x for the last six quarters, a minimum adjusted TIER for the most recent fiscal year of 1.05x, and a maximum senior debt to equity ratio to not be more than 10.0x, in all cases as defined in the agreements.

Supplementing CFC's liquidity is the $9.473 billion GUP program with RUS (up to $750 million available as to November 30, 2023) and $6 billion revolving note purchase agreement with Farmer Mac ($2.098 billion available as of November 30, 2023) that serve to diversify CFC's funding sources. On December 19, 2023, CFC increased the size of the GUP program by $450 million. While both programs represent important sources of funding for CFC, both of these programs require that CFC pledge as collateral eligible electric distribution or power supply system loans equal to at least 100% of the total outstanding borrowings and thus this and certain other conditions precludes the inclusion of these two sources of liquidity from our 'Debt Maturity Coverage' ratio, which results in a low average ratio of around 41%. Furthermore, the note purchase facility with Farmer Mac is available through June 30, 2027, with successive automatic one-year renewals without notice by either party. Beginning June 30, 2026, the revolving note purchase agreement is subject to termination of the draw period by Farmer Mac upon 425 days' prior written notice.

As of November 30, 2023, CFC's liquidity sources covered 89% of its upcoming debt maturity over the next 12 months including $3.6 billion of member short term investments. Moody's views the member short-term investments as akin to core funding as likely to be extended at maturity. CFC also benefits from scheduled amortizations and repayments on its loan portfolio over a 12 month period totaling $1.5 billion as of November 30, 2023.

Notwithstanding CFC's liquidity sources described above, CFC still remains dependent upon wholesale short-term and long-term funding. CFC's primary sources of long-term capital market funding include secured CTBs, unsecured medium term notes (MTNs), and subordinated deferrable debt.

Rating Methodology

The methodology for these ratings is Finance Companies Methodology. As depicted below scorecard indicated outcome for CFC is A2 scorecard which is in-line with CFC's senior unsecured rating. Please see the Credit Policy page on www.moodys.com for a copy of the methodology.

Finance Companies Methodology

Financial Profile	Factor Weights	Historic Ratio	Initial Score	Assigned Score	Key driver #1	Key driver #2
Profitability						
Net Income / Average Managed Assets (%)	10%	1.53%	Baa2	**Baa1**	Pro-forma adjustments	
Capital Adequacy and Leverage						
Tangible Common Equity / Tangible Managed Assets (%)	25%	6.40%	B2	**Baa1**	Other adjustments	
Asset Quality						
Problem Loans / Gross Loans (%)	10%	0.67%	A3	**Aaa**	Expected trend	Portfolio composition
Net Charge-Offs / Average Gross Loans (%)	10%	0.05%	Aaa	**Aaa**	Expected trend	
Weighted Average Asset Risk Score			**Aa3**	**Aaa**		
Cash Flow and Liquidity						
Debt Maturities Coverage (%)	10%	41.1%	B3	**Baa1**	Stress tests	Other adjustments
FFO / Total Debt (%)	15%	1.07%	Caa3	**Ba1**	Pro-forma adjustments	
Secured Debt / Gross Tangible Assets (%)	20%	51.2%	B2	**B2**	Expected trend	
Weighted Average Cash Flow and Liquidity Score			**Caa1**	**Ba2**		
Financial Profile Score	**100%**		**Ba3**	**Baa1**		
Operating Environment						
Home Country						
	Factor Weights	Sub-factor Score	Score			
Macro Level Indicator	0%		**Aa2**			
Economic Strength	25%	aaa				
Institutions and Governance Strength	50%	aa2				
Susceptibility to Event Risk	25%	a				
Industry Risk	100%		**A**			
Home Country Operating Environment Score			**A2**			
	Factor Weights			Score		
Operating Environment Score	**0%**			**A2**		
ADJUSTED FINANCIAL PROFILE				Score		
Adjusted Financial Profile Score				**Baa1**		
Financial Profile Weight	100%					
Operating Environment Weight	0%					
Business Profile and Financial Policy				Adjustment		
Business Diversification, Concentration and Franchise Positioning				1		
Opacity and Complexity				0		
Corporate Behavior / Risk Management				1		
Liquidity Management				0		
Total Business Profile and Financial Policy Adjustments				**A2**		
Sovereign or parent constraint				**Aaa**		
Standalone Assessment Scorecard-indicated Range				a1 - a3		
Assigned Standalone Assessment				**a2**		

Source: Moody's Investors Service

Source: Moody's Investors Service

Ratings

Exhibit 10

Category	Moody's Rating
NATIONAL RURAL UTILITIES COOP. FINANCE CORP.	
Outlook	Stable
Senior Secured	A1
Senior Unsecured	A2
Subordinate	A3
Commercial Paper	P-1

Source: Moody's Investors Service

REPORT NUMBER 1396632

CLIENT SERVICES

Americas	1-212-553-1653
Asia Pacific	852-3551-3077
Japan	81-3-5408-4100
EMEA	44-20-7772-5454

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