

Fannie Mae's Multifamily Green Financing Program

February 2019

Highlights of Fannie Mae's Multifamily Business

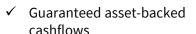


The Fannie Mae Multifamily DUS program has a 30-year proven track record

- ✓ Over \$270 billion in active DUS MBS trading
- ✓ Tight credit box with low delinquencies
- ✓ Security provides positive convexity and no extension risk



Fannie Mae DUS MBS and GeMS structured products trade daily in the secondary market



- ✓ 10-year, fixed-rate DUS trade more attractive on a relative basis to Green bond fixed-rate comps
- ✓ GeMS REMICs on the Barclays Global Aggregate Index



Fannie Mae Green Financing builds on the DUS program to help transition U.S. housing to a carbon neutral economy

- ✓ Finances reductions in energy and water consumption and energy generation
- ✓ Complies with ICMA Green Bond Principles
- Designated Light Green in a Second Opinion review by CICERO



Fannie Mae Green Bond Framework







	Financial	Social	Environmental
Benefits	Lower credit riskHigher cash flowsHigher property value	 Greater affordability for tenants Higher quality, more durable housing Healthier housing 	 Lower energy use Lower water use Generate clean energy Greater resiliency to natural disasters

As a result of financing over \$31 billion in Green Mortgage Loans through year-end 2017, Fannie Mae's portfolio is projected to:

Impact

 Save \$49,000 on average energy and water cost reduction annually per property

• Reduce utility bills by \$53 million

across portfolio

- Converted more than 248,000 units into improved, more comfortable homes
- Save \$131 on average annually on energy and water cost reduction per family
- Save enough electricity to power 80 million cell phones
- Save enough fuel to heat 27 million showers
- Save enough water to fill 42 billion glasses





Deep investments, long-term commitment to Green Financing

2010

Launched in 2010

2018

Milestones through 2018

- ✓ Piloted Green Financing products
- ✓ Launched first Green MBS
- ✓ Created industry tools with US EPA:
 - ✓ ENERGY STAR® 1 to 100 Score
 - ✓ Water Sense 1 to 100 Score
- ✓ Developed US standard for energy audits (2015)

- ✓ Green Portfolio grew to over \$51B through 2018
- ✓ Included in Bloomberg Barclay's MSCI Green Bond Index
- ✓ Largest Issuer of Green Bonds globally by Climate Bonds Initiative in 2017 and 2018
- ✓ Environmental Finance 2018 Green Bond Award for Biggest Issuer SSA
- ✓ Global Capital CMBS Deal of the year for FNA 2017-M15
- ✓ Global Capital Most Impressive SRI/ABS Issuer 2018
- ✓ EPA ENERGY STAR® Partner of the Year annually since 2015



CICERO Second Opinion on Fannie Mae Framework

CICERO, Center for International Climate and Environmental Research at Oslo University, provided a second opinion on Fannie Mae's Green Bond framework.

CICERO recognized the following strengths in Fannie Mae's Green Bond framework:

- Well-established governance and risk management procedures
- Internal annual review and revision by the Green Financing Business team
- Transparent reporting procedures
- In-house technical expertise and tools

CICERO Second Opinion is available at: www.fanniemaegreenfinancing.com



"Fannie Mae Multifamily Green Bond Framework provides a structured, sound and innovative approach to green financing for energy and water efficiency investments in the multifamily rental property market in the United States.... The Framework is aligned with the recommendations laid out in the Green Bond Principles and uses established green building certifications (GBCs) to inform its selection criteria for Green Mortgage Backed Securities (MBS)."

CICERO



Growth of Fannie Mae Green Financing

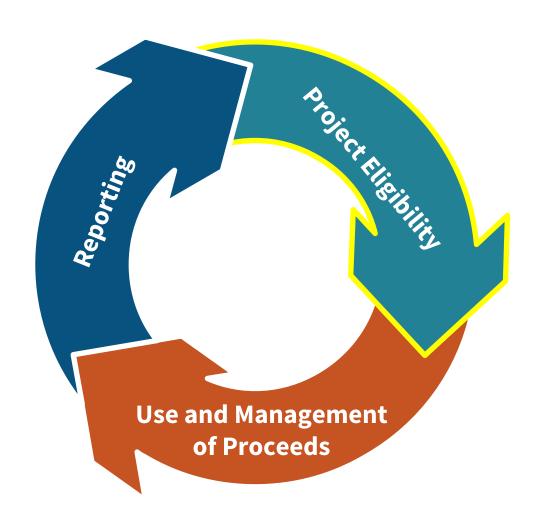
Fannie Mae Green Financing portfolio increased to over \$50 billion as the program developed incentives, aligned processes, and attracted more borrowers to the products. Green Bonds make up approximately 30% of the 2018 Multifamily MBS issuances.

Fannie Mae Green MBS Issuance and Cash Loans





Fannie Mae Green Bond Framework





Green Mortgage Loans Backing Green Bonds

Fannie Mae offers multiple Green Mortgage Loan products for the acquisition or refinance of existing multifamily properties in the U.S.

Each Green Mortgage Loan results in a Green MBS

Green Mortgage Loan Product	% of Multifamily Green Portfolio	Use of Proceeds	Eligibility	Bond
Green Rewards	80%	Mortgage includes energy and water efficiency retrofits or energy generation installations	Owner will install equipment projected to reduce energy and/or water consumption by 30% of which 15% is from energy efficiency and/or energy generation (solar)	Green Bond
Green Building Certification (GBC)	20%	Mortgage for property already awarded a GBC	Property must have one of the GBCs recognized by Fannie Mae before locking interest rate	Green Bond



Green Rewards and Green Preservation Plus Eligibility: High Performance Building Report

Property must have a High Performance Building (HPB) Report completed meeting ASHRAE Level II requirements and additional Fannie Mae standards

Energy Audit is ordered by lender, completed by an energy auditor, and requires a site visit

Borrower selects final scope of work by selecting from list of energy- and water-saving opportunities from the HPB Report

HPB Report can be completed up to 6 months prior to rate lock

Sample Improvement Opportunities	Estimated	Consur	nption	Projected Owner	Projected Tenant
100-unit property, \$10 million loan	\$197,400 \$34,840 \$100,600	Energy Savings		Annual Cost Savings	Annual Cost Savings
Replace Windows and Sliders – Double Pane, Nonmetal Frame	\$197,400	16%	-	-	\$18,266
Install 1.28 GPF toilets and 1.5 GPM showerheads	\$34,840	5%	15%	\$5,530	\$5,628
Replace Central Boiler	\$100,600	7%	-	\$9,211	-
Install Programmable Thermostats	\$34,770	4%	-	\$635	\$3,396
Total	\$367,610	32%	15%	\$15,376	\$27,290
			energy t least otal of r and ergy s to be	porti	write a on of d savings

Green Building Certification Eligibility

Fannie Mae publishes annually a list of the accepted Green Building Certifications

Owner must provide proof of the award to the Lender prior to locking in interest rate

Fannie Mae does not accept "interim" or "pending"

Detailed list of certifications available at: www.fanniemaegreenfinancing.com

* Refer to Form 4250 on www.fanniemae.com/greenfinancing.com

Fannie Mae accepts select certifications from the following organizations:













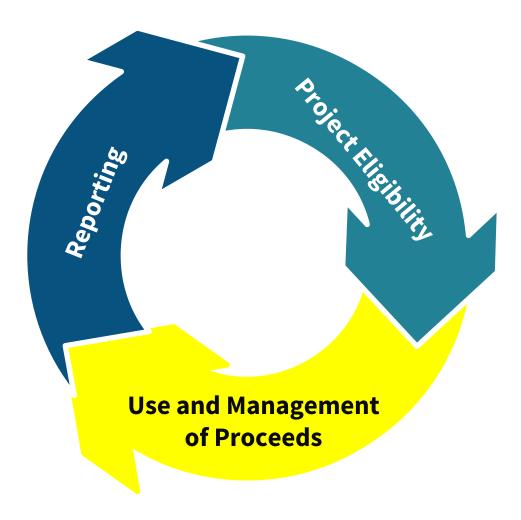








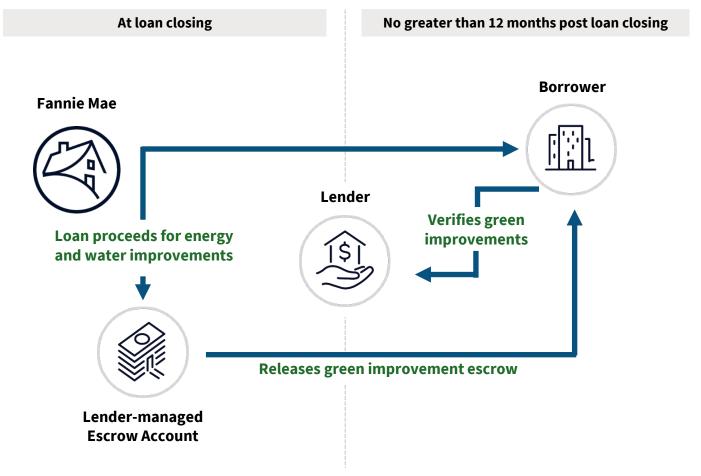
Fannie Mae Green Bond Framework





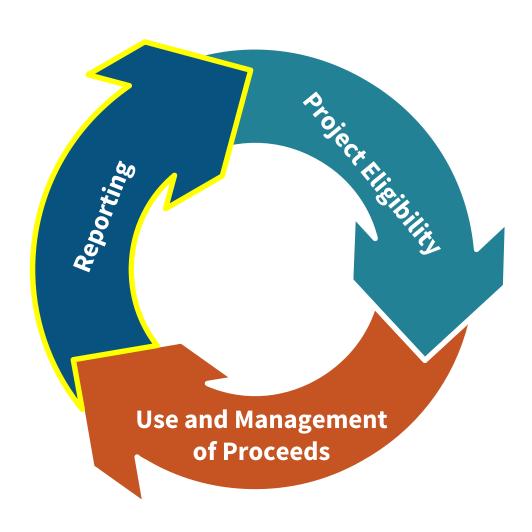
Use and Management of Proceeds

- Fannie Mae manages use of proceeds through its network of DUS Lenders
- DUS Lenders follow documented processes to release escrows only upon completion of the capital improvement





Fannie Mae Green Bond Framework





Reporting on Green Bonds

Fannie Mae is committed to reporting on the performance of its Green Bonds. Fannie Mae offers two methods to access data:

1. Annual reporting through the Fannie Mae Green Bond Impact Report, published online

Data available per CUSIP:

- Greenhouse Gas Reduction (MT)
- Energy Consumption Reduction (kBtu)
- Water Consumption Reduction (gallons)

2. At issuance disclosure through DUS Disclose, an online web-based system

Data available per CUSIP:

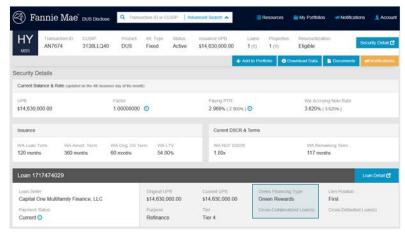
- Source Energy Use Intensity
- ENERGY STAR 1 to 100 Score
- ENERGY STAR Portfolio Manager ID
- Year Ending Date for the data
- EPA Water 1 to 100 Score*

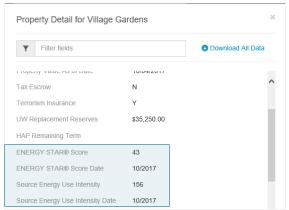


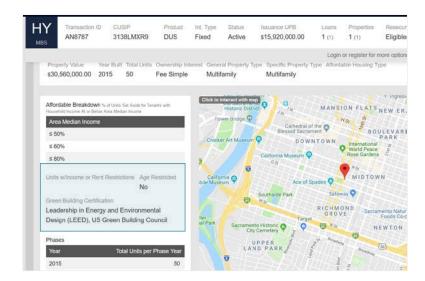
^{*}EPA's New Water Score will be available in a future enhancement of DUS Disclose https://mfdusdisclose.fanniemae.com/#/home

DUS Disclose At-Issuance Reporting

Fannie Mae's DUS Disclose website provides investors access to loan- and property-level reporting, including the type of Green financing, the ENERGY STAR score, and Source Energy Use Intensity.









GeMS REMIC Transaction: FNA 2019-M1

GeMS REMIC STRUCTURE

Class	Original Face	WAL	Coupon Type	Spread	Offer Price
A1	\$81,500,000	6.24	FIX	S+50	100.46
A2	\$915,087,256	9.54	WAC	S+72	98.87
X	\$81,500,000	6.22	WAC/IO	Not Offered	Not Offered
Total Fully Guaranteed	\$996,587,256				

Collateral Characteristics

GROUP 1

UPB \$996,587,256

USD Currency

Collateral 61 Fannie Mae DUS Green MBS

> (15 Green Rewards) 10-year term

9.5-year yield maintenance

Top 3 - California (24.9%), Georgia (22.1%), and Florida (19.8%) **Geographic Distribution**

Mortgaged properties located in 17 states

Weighted Average DSCR 1.46x **Weighted Average LTV** 66.20%

Settlement Date January 30, 2019

Lead Manager: Bank of America Merrill Lynch Managers

Co-Managers: Amherst Pierpont Securities, Mischler Financial Group, Morgan Stanley

Additional information on GeMS deals can be found on the Fannie Mae GeMS Archive website page: http://www.fanniemae.com/portal/jsp/mbs/mbsmultifamily/gems_archive.html

Structure

Growth of Green GeMS REMIC Issuance

- Fannie Mae began resecuritizing a portion of the Green MBS through its GeMS program in 2017.
- Created over \$7 billion in new investment opportunities for the Socially Responsible Investment (SRI) community through January 2019.
- Fannie Mae became the first Agency CMBS included in the Bloomberg Barclays MSCI Green Bond Index with the FNA 2017-M15 A2 tranche.

Issuance Month	Deal Name	Tranches	Green Collateral Group	Green Deal Size (USD\$ millions)
February-17	FNA 2017-M2	A1, A2	Group 2	\$611.7
August-17	FNA 2017-M10	AV1, AV2	Only group	\$873.0
November-17	FNA 2017-M13	A1, A2, X	Group 3	\$764.1
December-17	FNA 2017-M15	ATS1, ATS2, X2	Group 2	\$587.9
December-17	FNA 2017-M15	A1, A2*	Group 3	\$559.0
February-18	FNA 2018-M2	A1, A2, X	Only group	\$904.5
April-18	FNA 2018-M4	A1, A2, X	Only group	\$705.9
June-18	FNA 2018-M8	A1, A2, X	Only group	\$505.2
October-18	FNA 2018-M13	A2	Group 2	\$532.6
January-19	FNA 2019-M1	A1, A2	Group 1	\$996.5
TOTAL				\$7,040.4

^{*}Included in the Bloomberg Barclays MSCI Green Bond Index



Appendix



Typical Multifamily DUS Loan

Most DUS MBS are backed by a single loan on a standard multifamily asset.

A typical deal is a "10/9.5/30" with terms:

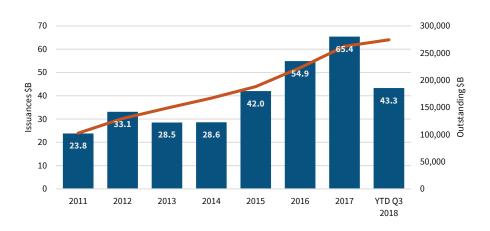


Key Features of Fannie Mae Multifamily Securities

GeMS are comprised of numerous DUS MBS. GeMS maintains the characteristics of DUS MBS with additional benefits, outlined below:

Fannie Mae GeMS	DUS MBS
 Backed by previously issued DUS MBS or other Multifamily MBS 	 Generally backed by a single multifamily loan
 Collateral selected with consistent credit quality and tight 	 Guaranty of timely payment of principal and interest
maturity profile	Lower spread volatility relative to other products with
 Structures offering block size, collateral diversity, and 	similar collateral
pricing close to par	 Liquidity enhanced by the large number of dealers engaged in market making
 A1 and A2 sequential classes offer customized cash flows protected by AB class 	
	 Stable cash flows that are easy to model
 AB classes offer spread pickup and discount pricing at issuance 	Superior call protection
 Floaters carry hard final maturities and no extension risk 	 Positive convexity
when compared to agency CMO Floaters	 Share the same weighting of 20% for bank risk-based capital
 Readily customized to accommodate reverse inquiry 	requirements as Fannie Mae single-family MBS
	 Definitive final maturities of 5, 7, and 10 years

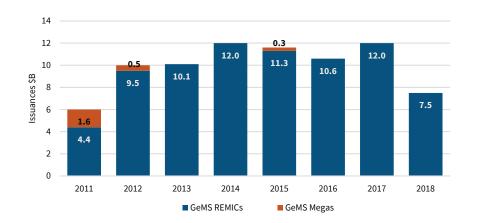
Fannie Mae's Multifamily MBS Issuance



Fannie Mae MBS Issuance

- Daily Issuance
- Typical Deal Terms:*
 - Single loan backs each pool
 - \$3-\$10 million Loan Size
 - 10-year Balloon
 - 9.5 Years of Call Protection
 - 30-year Amortization
 - No more than 80% LTV
 - Not less than 1.25 DSCR

¹Reflects unpaid principal balance of multifamily Fannie Mae MBS issued during the period. The number excludes Fannie Mae portfolio resecuritization transactions and conversions of adjustable-rate loans to fixed-rate loans and DMBS securities to MBS securities. Bond Credit Enhancements and Cash Credit Enhancements are also excluded.



Fannie Mae GeMS™ Issuance

- DUS MBS Collateral
- Executed via REMIC or Mega Structures
- Monthly Issuance
- Collateral Diversification
- Customizable Cash Flows
- Block Size
- Par Pricing
- Dealer Syndicate Distribution

Fannie Mae GeMS and DUS MBS offer different options for investing in the same multifamily collateral, providing similar cash flows, variations on structure, and slightly different risk profiles.

^{*}The terms of individual DUS may vary from the terms listed below.

Fannie Mae Multifamily Disclosure Websites

Name	Description	Web Link
DUS Disclose	Provides pool information, loan information, collateral information, and atissuance documents for a specific pool or CUSIP. Downloadable spreadsheets with all active DUS securities.	https://mfdusdisclose.fanniemae.com/#/h ome
Green MBS	Provides an excel file of all Green MBS issuances and additional information on green financing.	https://www.fanniemae.com/multifamily/green-initiative-green-mbs
MBSenger	References documents on Fannie Mae products and programs, including DUS MBS and Multifamily structured products.	http://www.fanniemae.com/portal/funding-the-market/mbs/news/mbsenger/index.html
Multifamily DUS Prepayment History Report	Provides prepayment activity by original balance and loan count presented in several different data categories. The report shows active loans and liquidated loans acquired from January 2000 to the stated calendar quarter for each given category. It also includes the type of prepayment, including voluntary and involuntary prepayment, as well as loans that have paid at maturity.	http://www.fanniemae.com/portal/funding-the-market/mbs/multifamily/dusprepayment-history.html
GeMS Collateral Performance Analysis Report	Provides performance data for the collateral backing Fannie Mae GeMS. The report includes the Yield Maintenance Factor, Paydown Record Date, and 60+ Day Delinquency information.	http://www.fanniemae.com/portal/fundin g-the-market/mbs/multifamily/gems- report.html
Yield Maintenance Factor File	Provides monthly factor information for use in calculating the amount of yield maintenance that will be passed through to investors in the current month.	http://www.fanniemae.com/portal/jsp/mbs/data/multifamily/yieldmaintenance.html
MBS Loan Level Delinquency 60-Plus Days Report	Provides a list of multifamily loans backing an MBS that are at least 60 days delinquent in payment of monthly principal and interest.	http://www.fanniemae.com/portal/jsp/mbs/data/multifamily/delinquencyreport.html
Remittance Report	Monthly Remittance Reports provide data on securities and underlying collateral including Principal and Interest Distributions, and Factors.	http://fanniemae.com/portal/jsp/mbs/data/remic/remittancereport.html



Fannie Mae Multifamily Disclosure **Websites (continued)**

Name	Description	Web Link
PoolTalk	Provides access to at-issuance documents including the prospectus, prospectus supplement and collateral information for structured products (MEGAs and CMOs) which are not included in the Multifamily Securities Locator service.	https://mbsdisclosure.fanniemae.com/Poo lTalk2/index.html
New Issues Pool Statistics (NIPS)	Provides daily issuance information, including the pool number, CUSIP, issue date, Fannie Mae pool prefix, pass-through rate (PTR), weighted-average coupon (WAC) weighted-average maturity (WAM), maturity date, unpaid principal balance (UPB), and loan-to-value ratio.	https://mbsdisclosure.fanniemae.com/PoolTalk2/index.html#New_Issues_Download
Securities Ineligible for Re-Securitization	Provides a list of MBS, Mega, SMBS, and REMIC securities which are ineligible for delivery into a new Fannie Mae Mega, REMIC, SMBS or other MBS backed Structured Transactions.	http://www.fanniemae.com/portal/jsp/mb s/data/mega/poolsineligible.html
MBS Prospectuses	Provides a link to all Fannie Mae MBS Prospectuses, both single-family and multifamily.	http://www.fanniemae.com/portal/jsp/mbs/documents/mbs/prospectus/index.html
Multifamily Master Trust Agreement	Provides a link to the Trust Agreements for Fannie Mae MBS, both single-family and multifamily.	http://www.fanniemae.com/portal/jsp/mbs/documents/mbs/trustindentures/index.html



Eligibility: Sample HPB Report

Allowable Underwritten Cost Savings

Summary of EWEM Selected for Implementation

Source Energy Savings 25.7% Water Savings 25.2%

Total Installed Cost \$ 836,450

	Owner	Tenant
Projected Energy Cost Savings	\$ 21,600	\$ 104,459
% that may be underwritten	75%	0%
Allowable UW Energy Cost Savings	\$ 16,200	\$ -
Projected Water Cost Savings	\$ -	\$ 46,375
% that may be underwritten	75%	25%
Allowable UW Water Cost Savings	\$ -	\$ 11,594
Subtotal	\$ 16,200	\$ 11,594
Total	\$	27,794

EWEM Selected for Implementation

Selected for	FWEM No FWEM Description			Installed Cost Owner Annual Cost Savings				Tenan	t An	nual Cost S	Source Energy	Water						
Implementation	EVVEIN IVO.	EVVEIII Description	IIIs	stalled Cost		Energy		Water Total		Energy		Water		Total		Savings	Savings	
Yes	1	Add 6-8" of blown in cellulose insulation	\$	199,750	\$	-	\$	-	\$	-	\$	6,400	\$	-	\$	6,400	1.4%	0.0%
Yes	2	Install Programmable Thermostats in Apartments	\$	116,000	\$	-	\$	-	\$	-	\$	22,200	\$	-	\$	22,200	4.6%	0.0%
No	3	Install condensing furnaces and high efficiency condensing units (AC)	\$	1,600,000	\$	1,500	\$	-	\$	1,500	\$	51,000	\$	-	\$	51,000	10.7%	0.0%
Yes	4	Insulate Domestic Hot Water Piping	\$	3,750	\$	1,100	\$	-	\$	1,100	\$	-	\$	-	\$	-	0.2%	0.0%
Yes	5	Upgrade Apartment Lighting to LEDs	\$	131,500	\$	-	\$	-	\$	-	\$	64,100	\$	-	\$	64,100	12.9%	0.0%
Yes	6	Upgrade Common Area Lighting and Controls	\$	121,250	\$	20,200	\$	-	\$	20,200	\$	-	\$	-	\$	-	4.2%	0.0%
Yes	7	Replace 239 apartment refrigerators	\$	100,250	\$	-	\$	-	\$	-	\$	6,300	\$	-	\$	6,300	1.3%	0.0%
Yes	8	Install Low-Flow Faucet Aerators and Showerheads	\$	60,250	\$	-	\$	-	\$	-	\$	5,459	\$	26,000	\$	31,459	1.1%	16.8%
Yes	9 adj.	Install 0.8 GPF toilets in 155 2-br apartments	\$	101,700	\$	-	\$	-	\$	-	\$	-	\$	20,375	\$	20,375	0.0%	8.4%
Yes	10	Install VSD on Pool Pump	\$	2,000	\$	300	\$	-	\$	300	\$	-	\$	-	\$	-	0.1%	0.0%
No	11	Install 190 kW Solar Photovoltaic System	\$	570,000	\$	19,000	\$	-	\$	19,000	\$	-	\$	-	\$	-	4.9%	0.0%
	11 EWEM F	Recommended	\$	3,006,450	\$	42,100	\$	-	\$	42,100	\$	155,459	\$	46,375	\$	201,834	41.3%	25.2%
	9 EWEM Se	elected	\$	836,450	\$	21,600	\$	-	\$	21,600	\$	104,459	\$	46,375	\$	150,834	25.7%	25.2%



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