# VONOVIA

# Asia Roadshow

**Company Presentation** 

October 2023

## Agenda

1. 2. 3.

# Residential Market Fundamentals

Vonovia

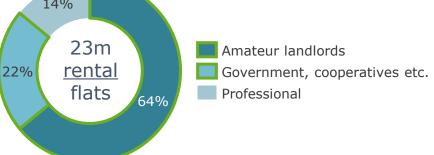
Appendix

# **High Tenant Ratio and Fragmented Ownership Structure**

Rules-based System to Reconcile Interest between Landlords and Tenants

### Germany is home to the largest housing market in Europe and the majority of Germans are tenants





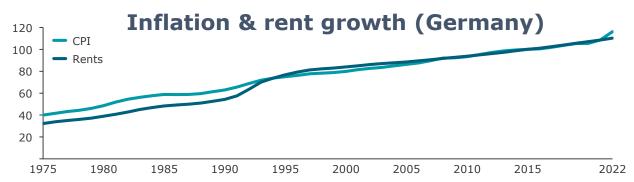
# Rules-based rent growth system to reconcile interests of landlords and tenants

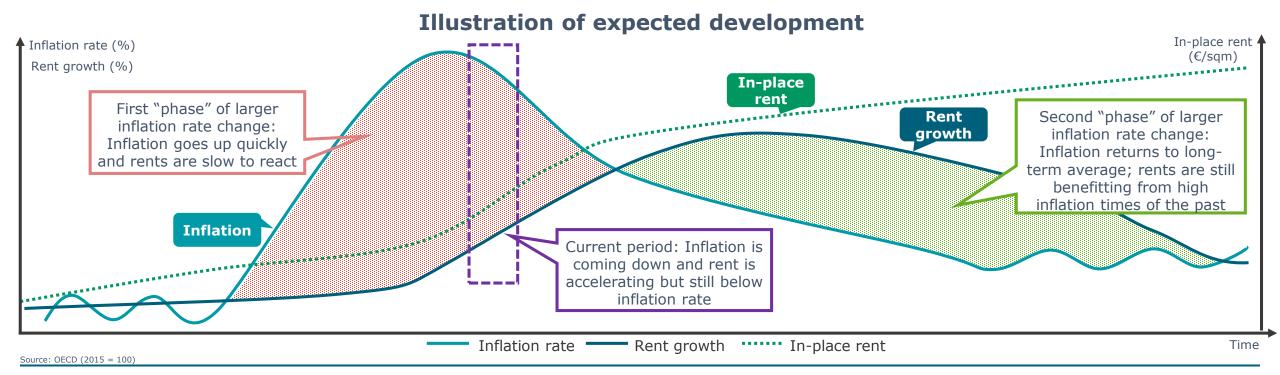
- Rules apply to basically all rental units and are the same for all landlords, creating an advantage for professional players as rules always need to work for the average.
- Residential rental agreements are evergreens without bilateral renegotiations between sitting tenants and landlords.
- Instead, rent growth for sitting tenants is based on market data for newly agreed rents; this leads to robust and continuous rent growth but with a lag due to six-year look-back period.
- While the speed of underlying market growth can vary, the general trajectory is upward, and in-place rents do not go down.

### **Rent & Inflation**



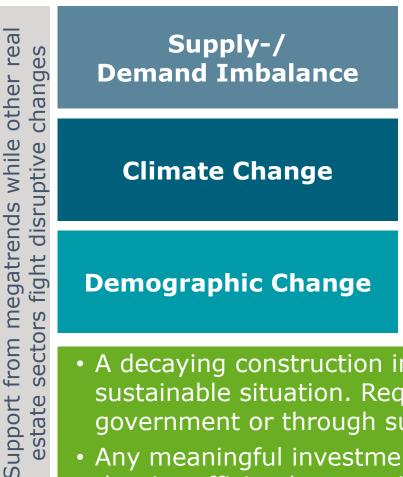
 When inflation shows meaningful acceleration, rent growth cannot keep up initially due to regulatory constraints that delay implementation but rents are expected to grow faster and for longer once inflationary pressure has subsided.







# **Megatrends**



**€100bn investment** volume every year to complete 400k apartments per year.<sup>1</sup>

Up to **€120bn investment** volume every year to decarbonize Germany's housing stock.<sup>2</sup>

Shortage of **2 million apartments** suitable for elderly people.<sup>3</sup>

- A decaying construction industry and an ever-growing supply/demand gap are not a sustainable situation. Required investment volumes are much too high to be delivered by government or through subsidies.
- Any meaningful investment volume will require an investment and regulatory environment that is sufficiently attractive for private funding.

Government target. Investment volume based on assuming 60sqm and €4,000/sqm construction costs.<sup>2</sup> GdW (Association of German Housing Companies). <sup>3</sup> IW German Economic Institute.

## **Support from Megatrends Instead of Disruptive Threats**

Positive Fundamentals Drive Long-term Structural Growth

### **Office & Retail**

People do not have to work in an office, and there are viable alternatives to shopping in stationary retail outlets...

### Residential

...but people do need a place they call home.







### <u>Low</u> supply driven by

- Construction costs
- Financing costs
- High level of regulation
- Lack of construction capacity
- "Not-in-my-backyard" (NIMBY)

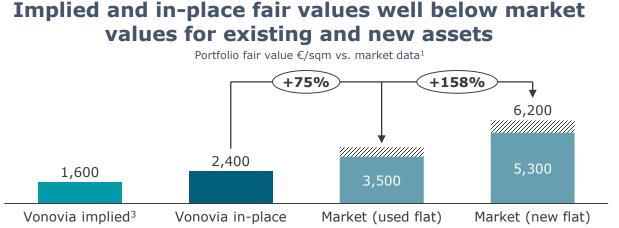
### High demand driven by

- ✓ Urbanization
- ✓ Refugees
- ✓ Labor migration
- ✓ Growing number of households
- ✓ Increasing sqm per capita

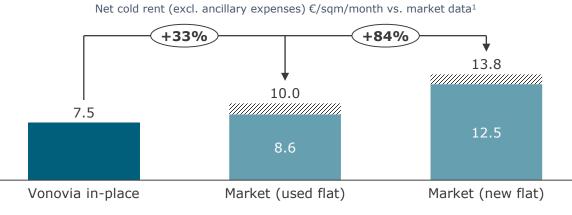
Estimated annual completion rate in Germany less than 30% of required levels.

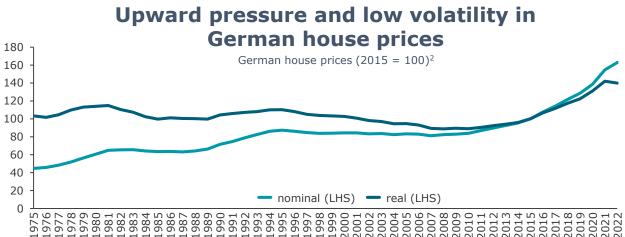
# **Key Facts about the German Multifamily Market**

High Visibility on Future Rent Growth but Gradual Implementation As Regulation Creates Delay

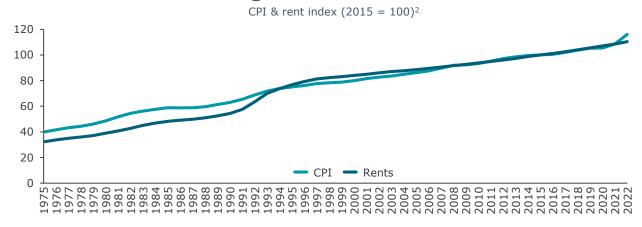


### Market rents offer substantial growth potential...





... and strong correlation with inflation



<sup>1</sup> Market data based on Value Data Insights (formerly empirica-systeme). Lower data point refers to median; higher data point refers to average within top third, H1 2023. <sup>2</sup> Source: OECD. <sup>3</sup> Total sqm in relation to net debt plus market cap

### Agenda

2. 3.

1.

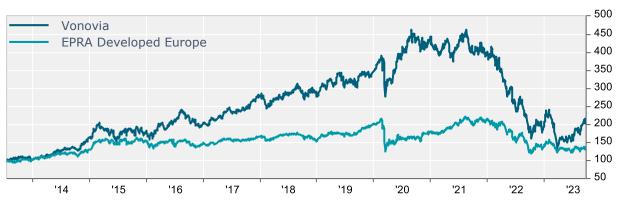
# **Residential Market Fundamentals**

Vonovia

Appendix

# Vonovia at a Glance

Best Investment Opportunity in Multi-family Housing



### Performance since IPO

# Europe's largest real estate company and pure-play residential landlord

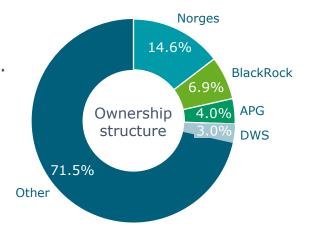
- Providing a home to 550,000 low-to mid-income households.
- 90% of portfolio in Germany in 15 urban growth regions plus 10% in largest urban markets in Sweden and Austria.
- 90% of Total EBITDA generated in rock solid Rental Segment; remaining 10% from additional services, apartment sales, and new construction.

### Interest rate hike has led to massive distortions between in-place yields and implied yields

	In-place	Implied
Gross portfolio yield <sup>1</sup>	3.9%	5.3%
Net portfolio yield <sup>2</sup>	3.1%	4.3%
Earnings yield <sup>3</sup>	4.6%	10.1%

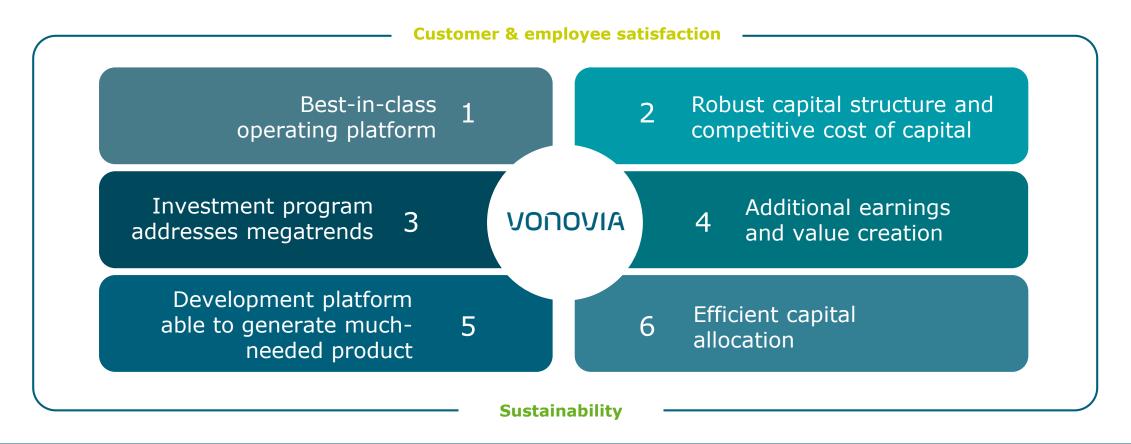
### Vonovia shares

- Largest European real estate stock with €18bn market cap.
- Only real estate stock in German blue chip DAX 40 index.
- ADTV of ~€70m.
- Fully independent board.



<sup>1</sup> In-place gross portfolio yield = rental income / fair value. Implied gross portfolio yield = rental income / (net debt + market cap). <sup>2</sup> Net portfolio yield = gross portfolio yield with 80% margin. <sup>3</sup> In-place earnings yield = mid point 2023E Group FFO/NTA. Implied earnings yield = mid-point 2023E Group FFO/NTA. Implied earnings yield = mid-point 2023E Group FFO / market cap). <sup>2</sup> Net portfolio yield = gross portfolio yield with 80% margin. <sup>3</sup> In-place earnings yield = mid point 2023E Group FFO/NTA. Implied earnings yield = mid-point 2023E Group FFO / market cap. All implied metrics based on  $\mathcal{E}$ 22.5 share price.

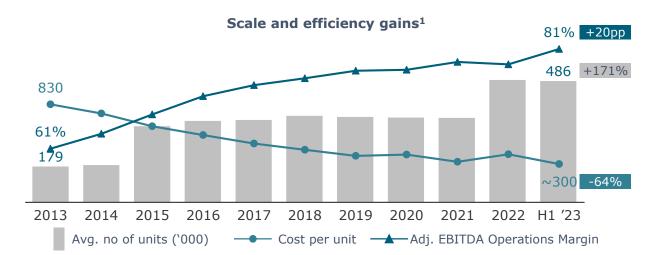
Vonovia is uniquely positioned as the best-in-class operator and sustainability leader in a structurally undersupplied asset class.

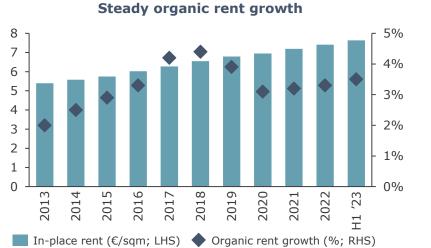


# **Operations**

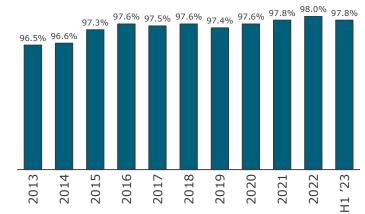
Best-in-class Operator with Strong Market Fundamentals

- Operating business benefits from rock-solid fundamentals with accelerating market rent growth, record-high occupancy levels and full collection rates.
- Vonovia has developed a unique digital operating platform with fully integrated operational and financial processes.
- Best-in-class operator with lowest operating costs.

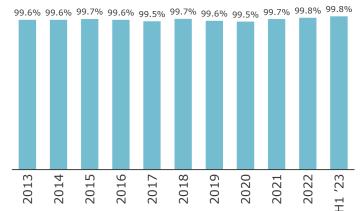




#### Almost full occupancy rate (eop, %)



#### **Basically full rent collection<sup>2</sup> (%)**



<sup>1</sup> German portfolio. Adj. EBITDA Operations margin (Adj. EBITDA Rental + Adj. EBITDA Value-add – intragroup profits) / Rental revenue. Margin 2019 and beyond includes positive impact from IFRS 16. Cost per unit is defined as (Rental revenue – EBITDA Operations + Maintenance) / average no. of units. 2022 incl. Deutsche Wohnen. H1 2023 CPU annualized. <sup>2</sup> Rental income and all ancillary expenses.



# **Population Growth In Germany In Urban Areas**

Vonovia Has Actively Managed Its Geographic Exposure to Urban Areas

The Future of housing is in urban areas...

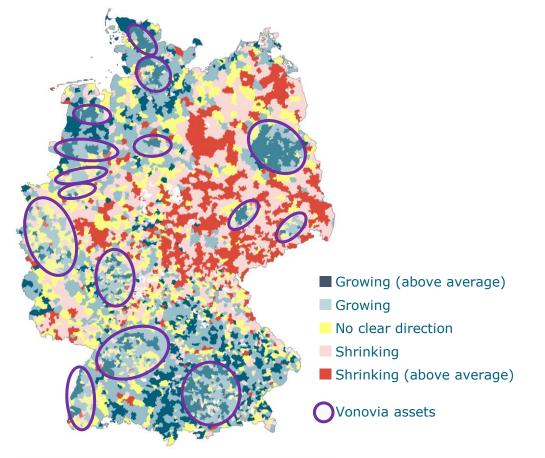
...and that is where Vonovia has concentrated its portfolio

- Current demographic forecasts estimate an overall population growth of as much as 6% by 2050<sup>1</sup> including the required 400k labor immigrants p.a. to balance the negative impact from Germany's adverse age demographics<sup>2</sup>.
- However, the demographic development is very different between urban and rural areas.

 Following the IPO in 2013, Vonovia pro-actively managed its geographic exposure, and today's portfolio of 550k<sup>3</sup> apartments is located in urban growth areas as a result of

- nine large acquisitions and the seamless integration of >450k<sup>3</sup> apartments;
- >100k units sold to focus the portfolio on urban growth regions.

### Germany's housing market<sup>4</sup> and Vonovia's exposure



<sup>1</sup> German Federal Statistics Office. Scenario 3, assuming moderate development for birth & life expectancy and high migration balance. <sup>2</sup> Federal Labor Agency. <sup>3</sup> Of which 60k outside Germany. <sup>4</sup> The German Federal Office for Construction and Urban Development (BBSR) has analyzed all cities and continue to the second of the average development in terms of population growth, net migration, working population (age 20-64), unemployment rate and trade tax revenue: Source: BBSR.

# Sustainability

Key Differentiator of the Future

Vonovia is ahead of the market as a result of comprehensive

**Kev measures** for CO<sub>2</sub> neutrality Target 0.1% 1.1% 2.0% co. 33.0 kg 2022 <5 kg 2045 for 4.0% 2045 12.1% Carbon intensity in kg CO2e/m2a\* Heating system 12.0% A+ powered by **Conversion of the** renewable Α energy sector to Photovoltaic systems energy carbon-free district **Replacement of** 25.0% on all suitable roofs 17.0% В heating and green conventional heating electricity units with hybrid С systems and heat pumps Heating system 19.0% D powered by renewable 27.2% F energy comprehensive F 15.0% energy efficient refurbishment Comprehensive G modernization Power to X of building 19.0% 15.0% H envelope VA I Regulation 9.0% requires 10.5% upgrade 7.0% 3.4% } 5% by 2030 Multifamily Homes Germany AIVONOVIA (market)<sup>1</sup> Establishment of a local heating network in the neighborhood

... as well as a science-based strategy and a dedicated

commitment to become nearly  $CO_2$  neutral until 2045.

with renewable energies

Α

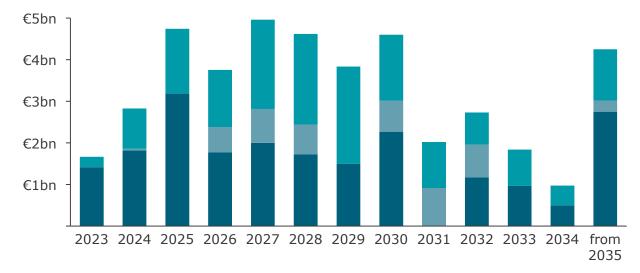
investments since the IPO...

<sup>1</sup> Agora Energiewende (2023): "Die Energiewende in Deutschland: Stand der Dinge 2022. Rückblick auf die wesentlichen Entwicklungen sowie Ausblick auf 2023." Data based on EPCs. \* Includes scopes 1 & 2 as well as scope 3.3 "Fuel- and energy-related activities upstream;" referring to German building stock (incl. Deutsche Wohnen). Development of energy sector according to Scenario Agora Energiewende KNDE 20245; For comparison: CRREM pathway MFH 1.5° DE 2045=5.4kg CO2e/sqm per year (07/2021); Climate pathway development supported by Fraunhofer ISE. Per-sqm values based on rental area, not total floor space. Data refers to year end.

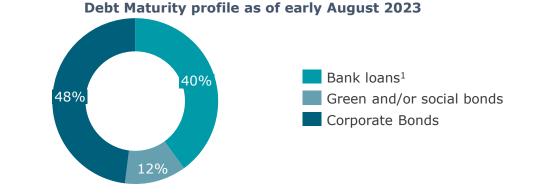
# Financing

### Well-balanced and Long-term Maturity Profile with Diverse Funding Mix

- Impact of higher interest rates on financing cost is cushioned by 7year average maturity.
- Financial debt KPIs currently outside of target ranges but unwavering commitment to bring them back into the target zone by way of disposals and capital discipline.



#### Maturity profile as of early August 2023



KPI / criteria	Aug. 2023	Dec. 31, 2022	Internal target
Corporate rating (Scope) <i>Outlook: <u>negative</u></i>	A-	A-	Maintain
Corporate rating (S&P) <i>Outlook: <u>stable</u></i>	BBB+	BBB+	good
Corporate rating (Moody's) <i>Outlook: <u>stable</u></i>	Baa1	Baa1	IG rating
Fixed/hedged debt ratio	96%	96%	
Average cost of debt	1.6%	1.5%	
Weighted avg. maturity (years)	6.9	7.4	~7 years
LTV	46.8%	45.1%	40-45%
Net debt / EBITDA	15.7x	15.7x	14-15x
ICR	<b>4.8</b> x	5.5x	>3.5x

<sup>1</sup> Bank loans in Germany, Sweden, and Austria. Including Schuldscheindarlehen (promissory notes), Inhaberschuldverschreibungen (bearer bonds), and NSV = Namensschuldverschreibungen (registered bonds)

# **Consequences of a Higher Interest Rate World**

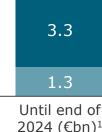
Continued Access to Liquidity But at Higher Cost. Increased Disposals

- Continued access to secured and unsecured debt but at higher cost (avg. cost of debt 1.6% vs. 4%+ for new debt).
- 7-yr average maturity ensures smooth transition over time as rental growth accelerates.

### Cost of debt has increased but liquidity not a concern

Loan amount 2023 YTD <sup>3</sup>	Loan type	Avg. interest rate
0.8	Loans rolled over (secured) <sup>1</sup>	4.0%
0.6	New loans (secured) <sup>1</sup>	3.8%
0.8	New loans (unsecured) <sup>1</sup>	3.5%
0.9	Additional new loans lined up <sup>2</sup>	tbd
3.1		

### All refinancing needs until end of 2024 covered

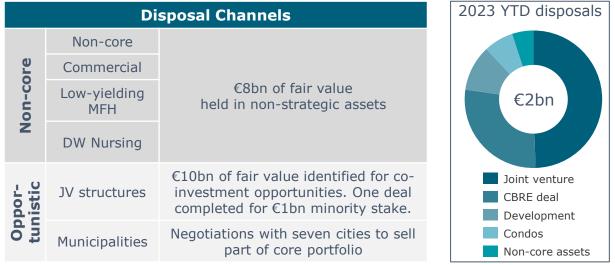


To be repaid with operating CF and disposal proceeds (plus new bank financing as back-up)

To be rolled over with existing lenders

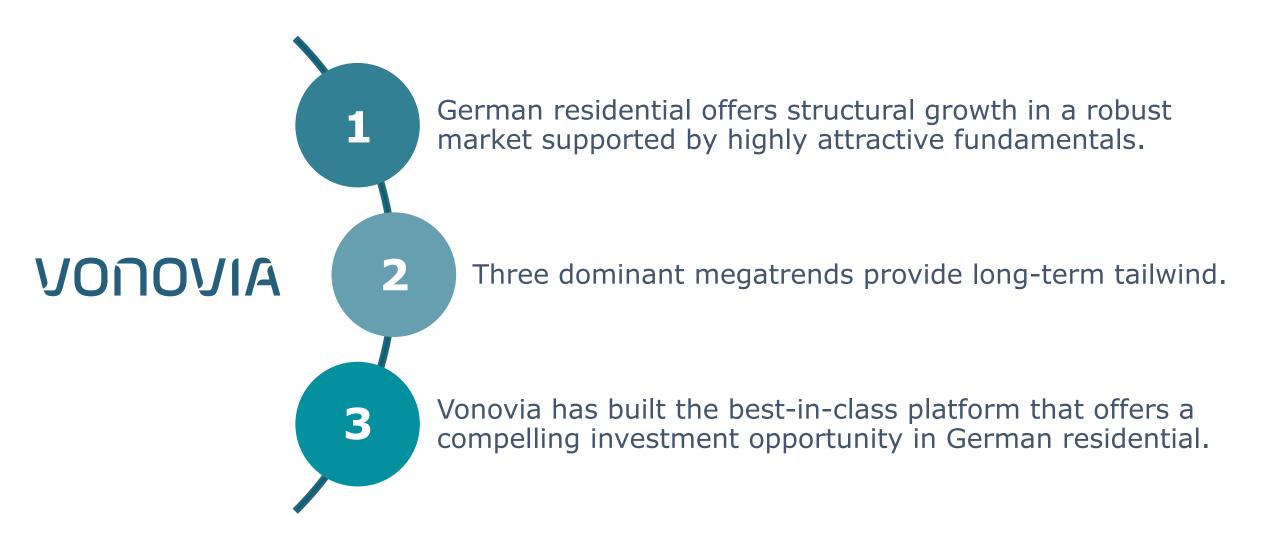
2024 (€bn)<sup>1</sup>

### Uniquely wide range of products provides flexibility even in a soft transaction market



<sup>1</sup> Signed. <sup>2</sup> To be signed in the near term. <sup>3</sup> As of early August 2023

### Wrap-up



### Agenda

1. 2. 3.

# **Residential Market Fundamentals**

Vonovia

Appendix

## **Regional Markets**

### Balanced Exposure to Relevant Growth Regions

	Fair	value <sup>1</sup>			In-place rent							
Regional Markets (Jun. 30, 2023)	(€m)	(€/sqm)	Residential units	Vacancy (%)	Total (p.a., €m)	Residential (p.a., €m)	Residential (€/sqm/ month)	Organic rent growth (y-o-y, %)	Multiple (in-place rent)	Purchase power index (market data) <sup>2</sup>	Market rent increase forecast Valuation (% p.a.)	Average rent growth (LTM, %) from Optimize Apartment
Berlin	25,502	2,868	143,916	1.1	798	760	7.43	1.8	32.0	84.0	2.3	34.1
Rhine Main Area (Frankfurt, Darmstadt, Wiesbaden)	6,933	2,924	36,594	2.6	261	250	9.25	3.4	26.6	103.3	2.2	33.8
Dresden	5,365	1,949	45,024	2.7	221	206	6.76	3.1	24.3	85.8	2.1	24.0
Southern Ruhr Area (Dortmund, Essen, Bochum)	5,290	1,960	43,027	2.5	223	217	6.99	4.3	23.7	100.4	1.9	31.4
Rhineland (Cologne, Düsseldorf, Bonn)	5,245	2,450	31,718	1.9	209	199	8.10	3.0	25.1	89.0	2.1	30.6
Hamburg	3,432	2,654	20,122	1.0	124	119	7.97	3.9	27.6	97.5	2.0	39.1
Munich	3,000	4,152	10,737	1.6	83	78	9.56	8.3	36.2	89.8	2.3	49.1
Hanover	3,022	2,095	22,091	2.4	127	120	7.35	3.9	23.8	75.7	2.0	33.3
Kiel	2,876	1,919	25,298	1.8	129	123	7.20	3.0	22.3	119.2	2.0	37.7
Stuttgart	2,389	2,798	13,319	1.7	89	86	8.78	3.6	26.8	102.6	2.2	28.5
Northern Ruhr Area (Duisburg, Gelsenkirchen)	2,122	1,393	24,463	2.6	116	112	6.38	3.2	18.3	80.4	1.6	25.9
Leipzig	2,011	1,989	14,273	3.2	78	71	6.54	2.1	25.7	77.6	2.0	22.5
Bremen	1,493	2,040	11,732	1.7	58	56	6.61	4.1	25.7	83.1	2.1	31.7
Westphalia (Münster, Osnabrück)	1,137	1,822	9,439	2.0	52	51	7.02	3.2	21.8	89.6	2.0	27.5
Freiburg	748	2,696	4,035	1.5	28	27	8.35	3.5	26.8	86.3	2.0	35.1
Other Strategic Locations	3,539	1,985	27,584	3.0	155	150	7.40	2.8	22.8		2.0	33.5
Total Strategic Locations	74,101	2,420	483,372	1.9	2,752	2,626	7.52	3.1	26.9		2.1	32.3
Non-Strategic Locations	442	1,706	3,590	3.1	23	19	6.92	2.0	19.0		1.9	38.7
Total Germany	74,542	2,415	486,962	1.9	2,775	2,645	7.51	3.1	26.9		2.1	32.3
Vonovia Sweden <sup>3</sup>	6,184	2,017	39,618	3.7	334	309	9.50	5.2	18.5		2.1	-
Vonovia Austria <sup>3</sup>	2,931	1,684	21,500	4.7	121	97	5.37	10.1	24.2		1.7	-
TOTAL	83,657	2,345	548,080	2.2	3,230	3,051	7.58	3.5	25.9		2.1	n/a

<sup>1</sup> Fair values excluding €4.5bn for undeveloped land, inheritable building rights and undeveloped land granted (€0.4bn), assets under construction (€0.4bn), development (€2.2bn), nursing and assisted living (€1.1bn) and other (€0.4bn). <sup>2</sup> Source: GfK (2023). Data refers to the specific cities indicated in the table, weighted by the number of households where applicable. <sup>3</sup> Based on the country-specific definition. In-place rents in Austria and Sweden are not fully comparable to Germany, as Sweden includes ancillary costs and Austria includes maintenance and property improvement contributions from tenants. The table above shows the rental level unadjusted to the German definition.

### **Portfolio Clustering**

	Ju	ın. 30, 2023	Resi units	In-place rent (€m p.a.)	In-place rent (€/sqm)	Vacancy rate	Fair value (€bn)	Fair value (€/sqm)	Gross yield
esults	Strategic	Urban quarters & clusters (Germany)	421,631	2,338	7.44	1.8	62.8	2,389	3.8%
in Segment Results and FFO	Stra	Sweden	39,618	334	9.50	3.7	6.2	2,017	5.7%
<u>ided</u> in Se and	ng Sales	Germany	28,125	173	7.42	2.8	4.8	2,415	3.8%
Included	Recurring	Austria	21,500	121	5.37	4.7	2.9	1,684	4.4%
Disposals <u>not</u> <u>included</u> in Segment Results and FFO	Disposals	MFH Sales	23,218	175	9.38	1.5	5.4	3,481	3.3%
Disposals <u>r</u> cluded in Seg Results and		Non Core	13,988	89	6.58	4.0	1.6	1,486	6.0%
Di <u>includ</u> Res	Additional	DW Nursing	72 propertie	25			1.1	n/a	6.7% <sup>1</sup>
		Total <sup>2</sup>	548,080	3,230	7.58	2.2	83.7	2,345	4.0%

(Includes >€10bn fair value for further potential JV structures)

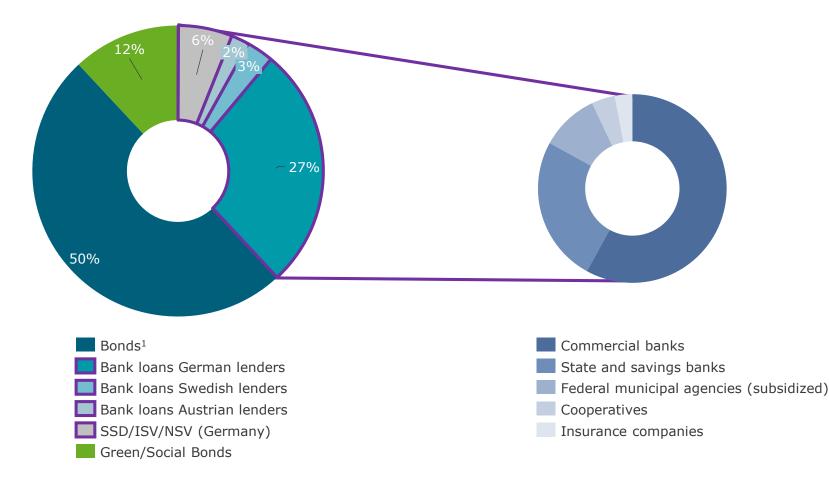
 German portfolio comprises of strategic assets in 15 urban growth regions that are held in larger urban quarters (~ 3/4) and smaller urban clusters (~ 1/4).

• Swedish Properties are located in Sweden's three large urban areas Stockholm, Gothenburg, and Malmö.

- $\boldsymbol{\cdot}$  EBITDA contribution is shown in Recurring Sales Segment.
- $\boldsymbol{\cdot}$  Single-unit disposals to owner-occupiers and retail investors.
- Outside of Core Business Segments and included in Other Income
- Focus on cash generation.
- MFH: low yielding assets outside urban quarters.
- $\boldsymbol{\cdot}$  Non-core: non-strategic residential and commercial properties.
- DW Nursing: Vonovia is supportive of disposal efforts at acceptable terms.

<sup>1</sup> Calculated as H1 2023 Segment EBITDA annualized / fair value (June 30, 2023). <sup>2</sup> Excl. DW Nursing.

### Who Are Vonovia's Lenders Outside the Bond Market?



#### **Top Five Lenders:**

- Berlin Hyp AG
- Deutsche Pfandbriefbank AG
- HVB/UniCredit
- Bayerische Landesbank
- Berliner Sparkasse

### **Bonds & Ratings**

Name	Tenor & Coupon	ISIN	Amount	Issue price	Current Price <sup>3</sup>	Yield <sup>3</sup>	Coupon	Final Maturity Date	Moodys	Scope	<b>S&amp;</b>
Bond 028A (EMTN)	2 years 0.000%	DE000A3MP4S3	EUR 351,9m	100,484%	99,19%	5,16%	0,000%	01-Sep-2023	Baa1	A-	BBB
Bond 004 (USD-Bond)	10 years 5.000%	US25155FAB22	USD 250,0m	98,993%	99,50%	6,81%	4,580% <sup>2</sup>	02-Okt-2023	NR	A-	BBB
Bond 010C (EMTN)	8 years 2.250%	DE000A18V146	EUR 876,8m	99,085%	98,80%	5,08%	2,250%	15-Dez-2023	Baa1	A-	BBB
Bond 017A (EMTN)	6 years 0.750%	DE000A19UR61	EUR 328,6m	99,330%	97,84%	4,54%	0,750%	15-Jan-2024	Baa1	A-	BBB
Bond 023A (EMTN)	4 years 1.625%	DE000A28VQC4	EUR 336,1m	99,831%	97,62%	4,53%	1,625%	07-Apr-2024	Baa1	A-	BBB
Bond 030A (EMTN)	2 years 3mS+95bps	XS2368364522	SEK 500,0m	100,000%	98,57%	6,76%	3mS+95bps	08-Apr-2024	Baa1	A-	BBE
Bond 027A (EMTN)	3.25 years 0.000%	DE000A3E5MF0	EUR 278,3m	100,192%	94,30%	4,77%	0,000%	16-Sep-2024	Baa1	A-	BBE
Bond 013 (EMTN)	8 years 1.250%	DE000A189ZX0	EUR 871,0m	99,037%	94,90%	4,72%	1,250%	06-Dez-2024	Baa1	A-	BBB
Bond 009B (EMTN)	10 years 1.500%	DE000A1ZY989	EUR 485,4m	98,455%	94,23%	4,57%	1,500%	31-Mrz-2025	Baa1	A-	BBI
Bond B. 500-2 (DW)	5 years 1.000%	DE000A289NE4	EUR 589,7m	98,910%	93,15%	4,99%	1,000%	30-Apr-2025	Baa1	NR	BB
Bond 020 (EMTN)	6.5 years 1.800%	DE000A2RWZZ6	EUR 429,2m	99,836%	93,97%	4,67%	1,800%	29-Jun-2025	Baa1	A-	BBB
Bond 015 (EMTN)	8 years 1.125%	DE000A19NS93	EUR 429,8m	99,386%	91,70%	4,85%	1,125%	08-Sep-2025	Baa1	A-	BBB
Bond 028B (EMTN)	4.25 years 0.000%	DE000A3MP4T1	EUR 1.250,0m	99,724%	88,08%	4,89%	0,000%	01-Dez-2025	Baa1	A-	BBB
Bond 029A (EMTN)	3.85 years 1.375%	DE000A3MQS56	EUR 610,5m	99,454%	91,19%	4,75%	1,375%	28-Jan-2026	Baa1	A-	BBI
Bond 018B (EMTN)	8 years 1.500%	DE000A19X8A4	EUR 652,0m <sup>1</sup>	101,119%	90,45%	4,89%	1,500%	22-Mrz-2026	Baa1	A-	BB
Bond 011B (EMTN)	10 years 1.500%	DE000A182VT2	EUR 444,2m	99,165%	90,47%	4,73%	1,500%	10-Jun-2026	Baa1	A-	BB
Bond 024A (EMTN)	6 years 0.625%	DE000A28ZQP7	EUR 673,0m	99,684%	87,08%	5,10%	0,625%	09-Jul-2026	Baa1	A-	BB
Bond 014B (EMTN)	10 years 1.750%	DE000A19B8E2	EUR 500,0m	99,266%	88,77%	5,01%	1,750%	25-Jan-2027	Baa1	A-	BE
Bond 030B (EMTN)	5 years 3mS+140bps	XS2368364449	SEK 750,0m	100,000%	93,27%	7,33%	3mS+140bps	08-Apr-2027	Baa1	A-	BE
Bond 031A (EMTN)	4.5 years 4.750%	DE000A30VQA4	EUR 750,0m	99,853%	98,02%	5,06%	4,750%	23-Mai-2027	Baa1	A-	BE
Bond 027B (EMTN)	6 years 0.375%	DE000A3E5MG8	EUR 1.000,0m	99,947%	83,06%	5,14%	0,375%	16-Jun-2027	Baa1	A-	BB
Bond 022B (EMTN)	8 years 0.625%	DE000A2R8ND3	EUR 500,0m	98,941%	82,61%	5,21%	0,625%	07-Okt-2027	Baa1	A-	BB
Bond 017B (EMTN)	10 years 1.500%	DE000A19UR79	EUR 491,5m	99,439%	84,66%	5,02%	1,500%	14-Jan-2028	Baa1	A-	BB
Bond 029B (EMTN)	6.25 years 1.875%	DE000A3MQS64	EUR 715,2m	99,108%	84,93%	5,05%	1,875%	28-Jun-2028	Baa1	A-	BB
Bond 028C (EMTN)	7 years 0.250%	DE000A3MP4U9	EUR 1.233,0m	99,200%	77,71%	5,21%	0,250%	01-Sep-2028	Baa1	A-	BB
Bond 021A (EMTN)	10 years 0.500%	DE000A2R7JD3	EUR 500,0m	98,965%	74,86%	5,09%	0,500%	14-Sep-2029	Baa1	A-	BE
Bond 027C (EMTN)	8.5 years 0.625%	DE000A3E5MH6	EUR 999,0m	99,605%	75,18%	5,29%	0,625%	14-Dez-2029	Baa1	A-	BB
Bond 018C (EMTN)	12 years 2.125%	DE000A19X8B2	EUR 495,6m	98,967%	81,23%	5,20%	2,125%	22-Mrz-2030	Baa1	A-	BE
Bond 023B (EMTN)	10 years 2.250%	DE000A28VQD2	EUR 479,7m	98,908%	82,30%	5,04%	2,250%	07-Apr-2030	Baa1	A-	BB
Bond B. 500-3 (DW)	10 years 1.500%	DE000A289NF1	EUR 587,3m	98,211%	80,26%	5,01%	1,500%	30-Apr-2030	Baa1	NR	BB
Bond 024B (EMTN)	10 years 1.000%	DE000A28ZQQ5	EUR 704,1m	99,189%	76,14%	5,03%	1,000%	09-Jul-2030	Baa1	A-	BB
Bond 031B (EMTN)	8 years 5.000%	DE000A30VQB2	EUR 750,0m	99,645%	97,54%	5,00%	5,000%	23-Nov-2030	Baa1	A-	BE
Bond 026 (EMTN)	10 years 0.625%	DE000A3E5FR9	EUR 600,0m	99,759%	71,96%	4,99%	0,625%	24-Mrz-2031	Baa1	A-	BE
Bond 500_S1-T1 (DW)	10 years 0.500%	DE000A3H25P4	EUR 318,3m	98,600%	70,17%	5,04%	0,500%	07-Apr-2031	NR	NR	BE
Bond 029C (EMTN)	10 years 2.375%	DE000A3MQS72	EUR 786,9m	99,003%	81,41%	5,11%	2,375%	25-Mrz-2032	Baa1	A-	BE
Bond 028D (EMTN)	11 years 0.750%	DE000A3MP4V7	EUR 1.169,1m	99,455%	68,56%	5,29%	0,750%	01-Sep-2032	Baa1	A-	BE
Bond 027D (EMTN)	12 years 1.000%	DE000A3E5MJ2	EUR 964,0m	99,450%	67,81%	5,52%	1,000%	16-Jun-2033	Baa1	A-	BE
Bond 021B (EMTN)	15 years 1.125%	DE000A2R7JE1	EUR 500,0m	99,822%	65,23%	5,44%	1,125%	14-Sep-2034	Baa1	A-	BE
Bond 018D (EMTN)	20 years 2.750%	DE000A19X8C0	EUR 500,0m	97,896%	70,90%	5,27%	2,750%	22-Mrz-2038	Baa1	A-	BE
Bond 022C (EMTN)	20 years 1.625%	DE000A2R8NE1	EUR 500,0m	98,105%	58,68%	4,93%	1,625%	07-Okt-2039	Baa1	A-	BE
Bond 025 (EMTN)	20 years 1.000%	DE000A287179	EUR 500,0m	99,355%	51,79%	5,40%	1,000%	28-Jan-2041	Baa1	A-	BI
Bond 500 S2-T1 (DW)	20 years 1.300%	DE000A3H25Q2	EUR 265,4m	97,838%	57,89%	5,11%	1,300%	07-Apr-2041	NR	NR	B
Bond 027E (EMTN)	20 years 1.500%	DE000A3E5MK0	EUR 500,0m	99,078%	55,38%	5,04%	1,500%	14-Jun-2041	Baa1	A-	BE
Bond 027E (EMTN)	30 years 1.625%	DE000A3MP4W5	EUR 750,0m	97,903%	48,68%	5,29%	1,625%	01-Sep-2051	Baa1	A- A-	BB

Overview includes publicly traded bonds of Vonovia and Deutsche Wohnen (excl. *Private Placements*, Namensschuldverschreibungen (registered bonds) and Schuldscheindarlehen (promissory notes)). <sup>1</sup> Incl. Tab Bond EUR 200m, Issue date 06 Feb 2020. <sup>2</sup> EUR equivalent coupon. <sup>3</sup> As of end of June 2023. Green Bond. Social Bond.

### **Bond Covenants**

Substantial Headroom for All Covenants

Bond covenants	Required level		n. 30, 2023)	Headroom <sup>1</sup>		
<b>LTV</b> (Total financial debt / total assets)	<60%	44.4bn 95.4bn	<b>→</b> 46.6%		On the current total financial debt level, fair values would have to drop ~25% for the LTV to cross 60%.	
Secured LTV (Secured debt / total assets)	<45%	12.5bn 95.4bn	→ 13.1%		On the current secured debt volume, fair values would have to drop ~79% for the secured LTV to cross 45%.	
<b>ICR</b> (LTM Adj. EBITDA / LTM net cash interest)	>1.8x	2,700m 572m	→ 4.7x		On the current EBITDA level, interest expenses would have to increase 162% to ca. €1.5bn for the ICR to fall below 1.8x.	
<b>Unencumbered assets</b> (Unencumbered assets / unsecured debt)	>125%	47.7bn 31.9bn	<b>→</b> 149%		On the current unsecured debt level, fair values would have to drop 19% for the unencumbered assets ratio to fall below 125%.	

<sup>1</sup> Headroom calculations are based on sensitivities regarding changes in investment properties, not total assets, while all other variables are kept unchanged.

## **Consequences of a Higher Interest Rate World**

Residential Values Resilient Compared to Capital Market Concerns. First signs of Stabilization.

- Market transaction volume still low and no certainty about direction and speed of near-term value movements.
- Historic evidence of past 50 years and experience of last 15 months shows that values are not very volatile and do not fall off a cliff; value changes happen gradually due to market characteristics.
- Vonovia fair values have declined ca. 11% since mid-2022 peak.
- Characteristics of German residential market suggest that value trough will not be as deep as capital market fears and various market research reports show first signs of stabilization.

### German residential prices – high degree of stability and correlated to construction costs



#### House price and construction price index Germany (2015 = 100)

### **Characteristics of a stable German resi market**

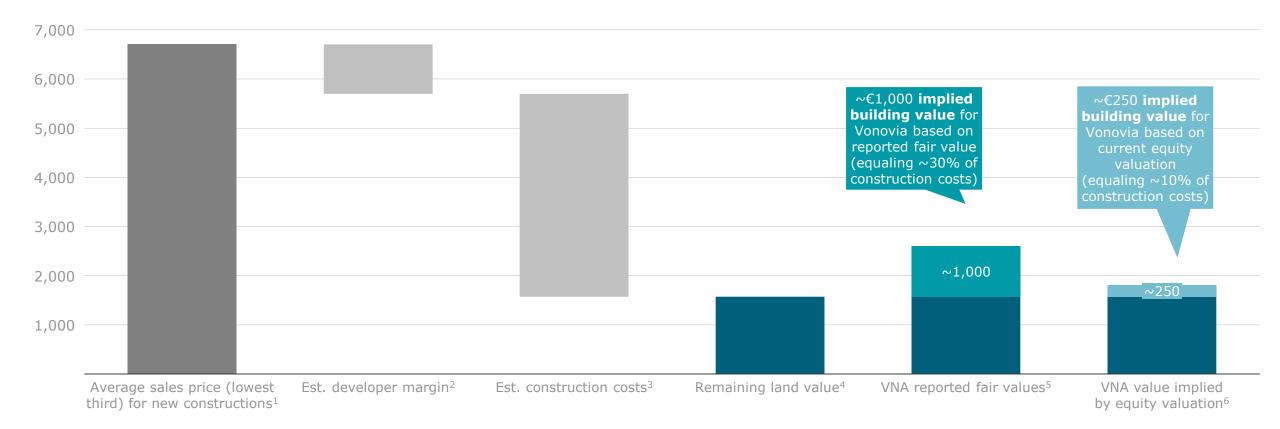
50+ years market data evidence	Market data of the last 50+ years shows little volatility and no major price declines.
Correlation with construction costs	There is a strong historic correlation between changes in construction prices and prices for existing homes.
Conservative mortgage financing	The conservative financing inherent in the German mortgage system (long-term financing at fixed rates and including an element of amortization).
Taxes	Capital gains tax if an asset is sold prior to owning it for ten years.
Transaction costs	High transaction costs with ca. 8% of the purchase price make short term-trading less attractive.
Upward pressure on rents	Upward pressure on rents as a result of the regulatory system in a supply-constrained market.
"Real" rents substantially higher	Gap between in-place rents and re-letting rents safeguards long- term growth trajectory.
Supply/demand imbalance	High level of demand for the product as a result of structural supply/demand imbalance.
No alternative	There is no substitute and no financially more attractive alternative for the product.

Source: OECD: House price index. Federal Statistics Office: (a) Residential Construction Price Index ("Baupreisindex für Wohngebäude") and (b) Construction land price index ("Preisindex für Bauland").

## **Comps & Implied Building Values**

Market Comps and Implied Land Values Suggest Vonovia Valuation Is Conservative

Vonovia's implied building values based on reported fair values and current equity valuation ( $\mathfrak{C}$ /sqm)



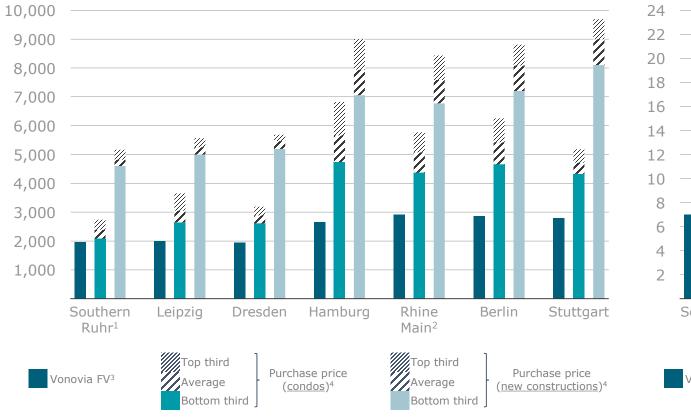
<sup>1</sup> Source: Value Data Insights (*formerly empirica-systeme*), H1 2023; <sup>2</sup> Assumption: 15% of sales price. <sup>3</sup> Estimated €4.1k per sqm. <sup>4</sup> Residual value of sales price minus est. developer margin minus est. construction costs. <sup>5</sup> Weighted average across the regions Berlin, Rhine Main, Southern Ruhr Area, Rhineland, Dresden, Hamburg, Stuttgart, Leipzig. <sup>6</sup> Implied fair value based on share price of €21 and LTV of 47.2%.

## **Vonovia's Fair Values and Rents Are Substantially Below Market**

Data Points on Prices for Condos & New Constructions and Rent Levels

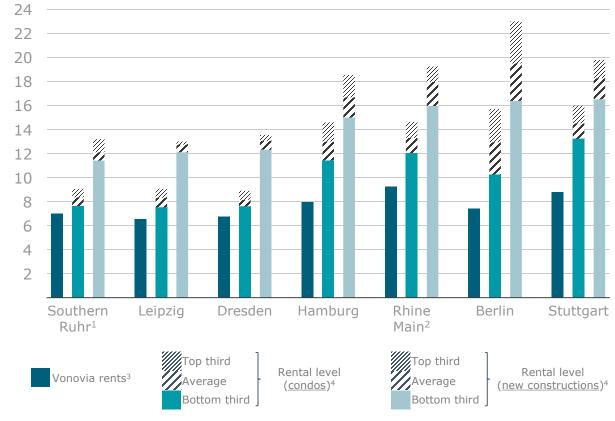
### **Price levels**

Vonovia fair values versus prices for condos and new constructions (€/sqm)



### **Rent levels**

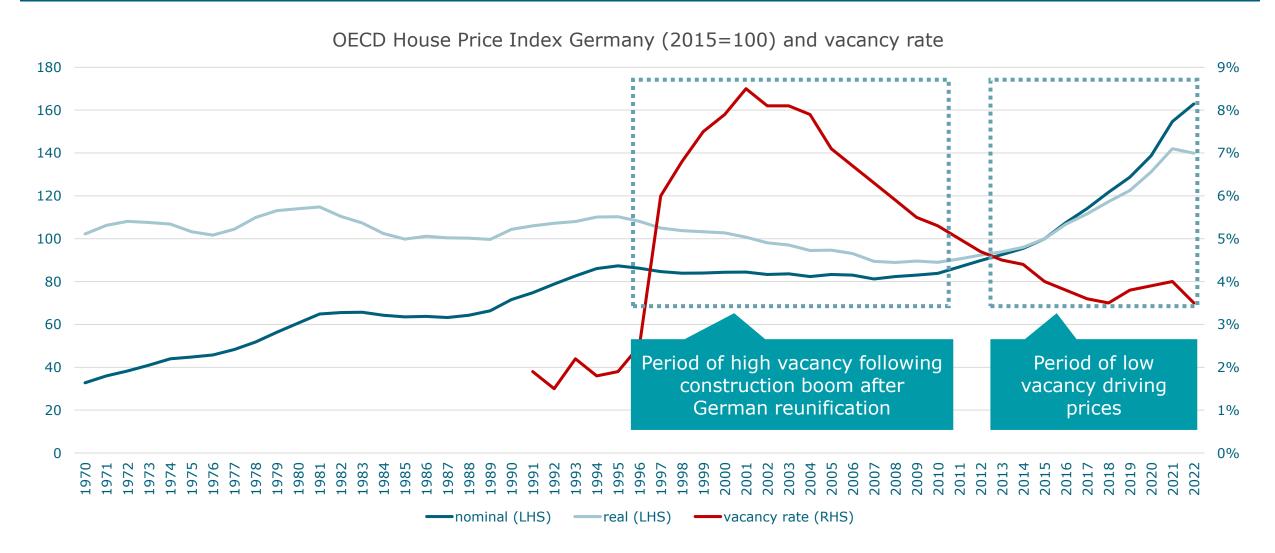
Vonovia rental levels versus prices for condos and new constructions (C/sqm)



<sup>1</sup> Market data is simple average of Dortmund and Essen. <sup>2</sup> Market data is simple average of Frankfurt and Wiesbaden. <sup>3</sup> Values and rents for Vonovia refer to average of that Regional Market. <sup>4</sup> Source: Value Data Insights (formerly *empirica-systeme*), H1 2023.

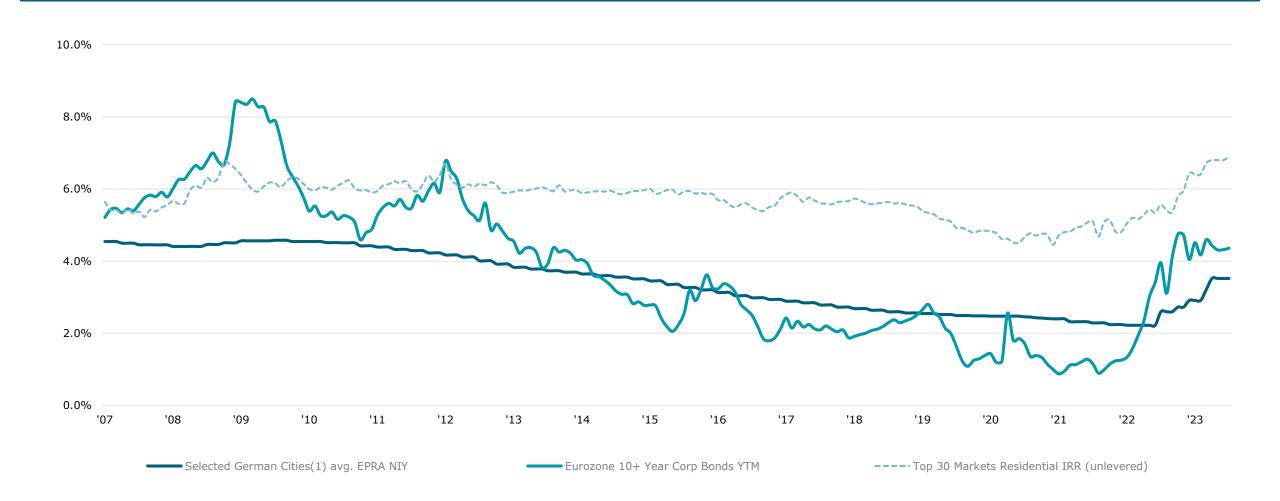
### **Resi Prices Have Shown No Real Weakness in 50 Years**

Only Period of Slight Decline Came During High Vacancy Phase



Sources: OECD for house prices and GdW (Association of German Housing Companies) for vacancy rate. There are no reliable national statistics on vacancy levels prior to 1991.

### **Relation between NIY and Financing Costs**



<sup>1</sup> Simple average of Berlin, Cologne, Dusseldorf, Frankfurt, Hamburg, and Munich residential EPRA NIY (B/B+ quality). Source: Markit IHS, Green Street.

# **Residential Market Fundamentals (Germany)**

Household Sizes and Ownership Structure

#### Growing number of smaller households

• While the overall population in Germany is expected to slightly decline, the number of households is forecast to grow until at least 2035 with a clear trend towards smaller households.

Distribution of household sizes (million)

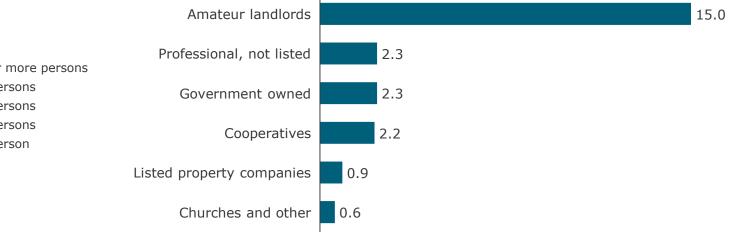
• The household growth is driven by various demographic and social trends including divorce rates, employment mobility etc.

#### **Fragmented ownership structure**

- Germany is the largest housing market in Europe with  $\sim$ 43m housing units, of which  $\sim$ 23m are rental units.
- Ownership structure is highly fragmented and majority of owners are non-professional landlords.
- Listed sector represents ~4% of total rental market.



#### **Ownership structure (million units)**



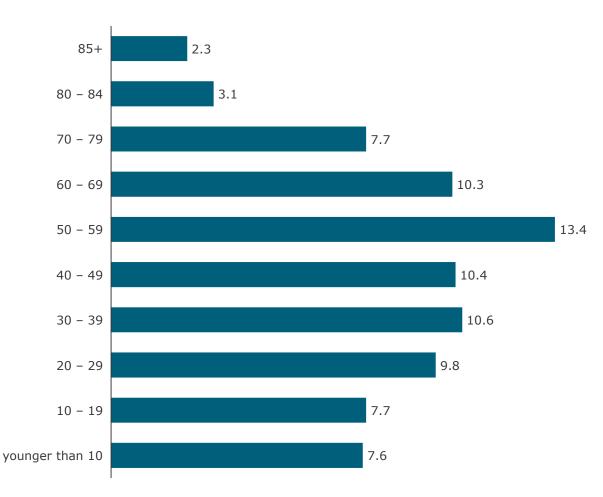
Sources: German Federal Statistics Office, GdW (German Association of Professional Homeowners). 2035E household numbers are based on trend scenario of the German Federal Statistics Office.

# **Supply/Demand Imbalance**

Gap May Become Even Larger

- Vonovia considers the structural supply/demand imbalance in urban areas to be the most relevant driver of residential property values.
- A meaningful improvement to this imbalance is not in sight:
  - Building permits are hard to obtain;
  - · Craftsmen capacity remains a scarcity;
  - Residents do not want their neighborhood to change with new construction and new people (NIMBY – "Not In My Back Yard").
- The rate of completion falls short of current construction targets.
- At the same time, the actual need for new housing is likely to be substantially larger than widely anticipated:
  - One factor that has received little attention in housing and population forecasts is the retirement of the strongest age group 50-59 years.
  - Over the next 10 years, many members from this age group will be retiring and the younger age groups are all significantly smaller.
  - If Germany is to maintain its current productivity, there remains a gap that can only be replaced through immigration. The Head of Germany's Federal Labor Agency estimates that in order to maintain its productivity, Germany will need to see an inflow of ca. 400k immigrants per year to plug gaps in the work force as the population ages.<sup>1</sup>
  - After Russia's attack on Ukraine, about 1.1 million people from Ukraine arrived in Germany in 2022.<sup>3</sup>
- The incremental demand for housing has so far been largely ignored in discussions around the supply/demand imbalance and the need for new construction.

#### Age group distribution in Germany (million)<sup>2</sup>



<sup>1</sup> Source: <u>https://apnews.com/article/europe-business-germany-immigration-migration-066b67d8f256f64f781793d9ea659c59</u>. <sup>2</sup> Source: Federal Bureau for Political Education (<u>www.bpb.de</u>). <sup>3</sup> Source: <u>https://www.destatis.de/EN/Press/2023/02/PE23\_N010\_12411.html</u>.

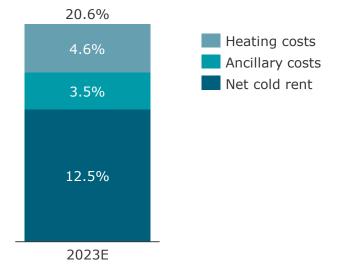
# Affordability

Average German Household Income and Average Cost of Vonovia Apartment

Average disposable income per household in Germany in 2021 was €3,813/month (€45,756/year).<sup>1</sup>

On that basis, the average cost of a Vonovia apartment in relation to this average disposable household income (unadjusted for recent wage increases) is as shown in the chart below.

#### Average cost of Vonovia apartment in relation to average disposable household income in Germany



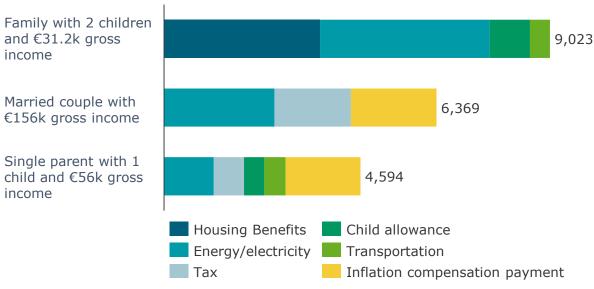
<sup>1</sup> Source: Federal Statistics Office. <sup>2</sup> Source: Handelsblatt based on data provided by the Federal Finance Ministry.

#### Recent increases of wage & salaries have provided additional compensation. Examples

+24%	Minimum wage
+8.5%	Metal industry
+6%	Pensions
+6.5%	Chemical industry
+10.5%	Temp workers

In an effort to mitigate the financial burden from increased cost of living, the government has put in place various support schemes and subsidies with an aggregate amount of ca.  $\in$  300bn.

The Federal Finance Ministry calculated the financial benefit of different types of households to show what the impact of the government assistance is on individual families.



### Average subsidies & benefits<sup>2</sup>

# Long-term Structural Support (Germany)

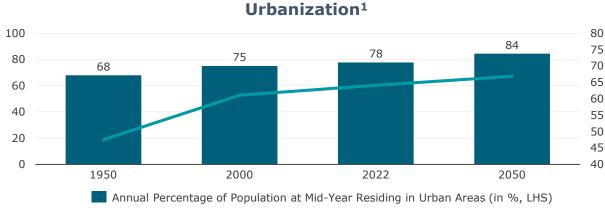
Positive Fundamentals

- Long-term structural support from
  - Insufficient levels of new construction
  - Urbanization driving supply/demand imbalance in urban areas
  - High replacement costs



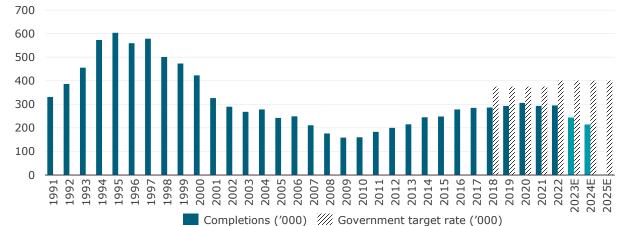
**Vonovia (Germany)** – fair value/sqm ( $\in$ ; total lettable area) vs. construction costs





- Annual Urban Population at Mid-Year (in million, RHS)

#### Structural supply/demand imbalance<sup>3</sup>



<sup>1</sup> Source: United Nations. <sup>2</sup> Note: VNA 2013 & 2014 refers to Deutsche Annington portfolio at the time. The land value refers to the share of total fair value estimated to relate to the land. <sup>3</sup> Federal Statistics Office for actual completions, 2023-2024E GdW estimate; CDU/SPD government for 2018-2021 and current government coalition (SPD, Greens, FDP (Liberals)) for 2022E-2025E target rate.

Factor

2.5x - 3.0x

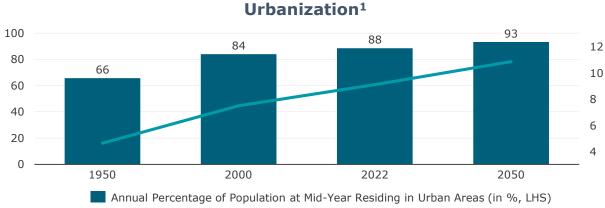
# Long-term Structural Support (Sweden)

Positive Fundamentals

- Long-term structural support from
  - Insufficient levels of new construction
  - Urbanization driving supply/demand imbalance in urban areas
  - High replacement costs

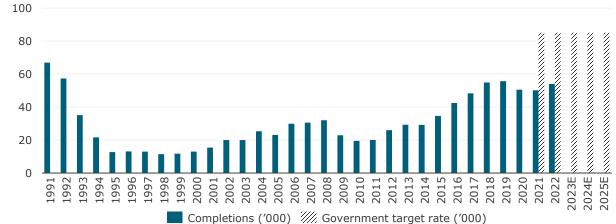
### Large gap between in-place values and replacement costs<sup>2</sup>





- Annual Urban Population at Mid-Year (in million, RHS)

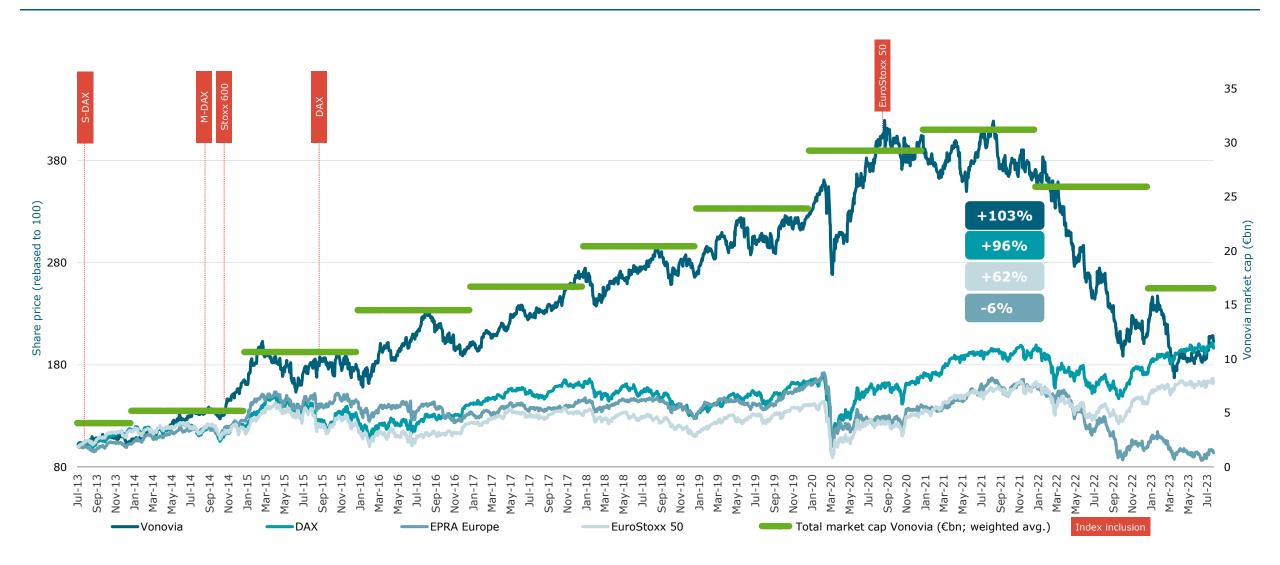
#### Structural supply/demand imbalance<sup>3</sup>



<sup>1</sup> Sources: United Nations. <sup>2</sup> Note: The land value refers to the share of total fair value estimated to relate to the land. Allocation between building and land in Sweden assumed to be similar to Germany. <sup>3</sup> Sources: Swedish National Board of Housing, Building and Planning, Statistics Sweden

# Liquid Large-cap Stock

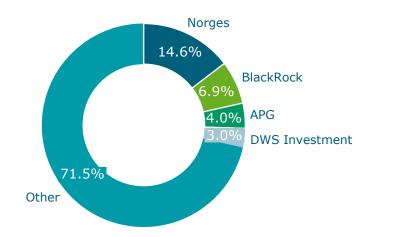
Total Performance since IPO



Source: Factset until August 2, 2023, company data; VNA and DAX performance are total shareholder return (share price plus dividends reinvested); EuroStoxx50 and EPRA Europe are share price performance only.

### **Vonovia Shares**

Basic Data and NOSH Evolution



First day of trading	July 11, 2013
No. of shares outstanding	814.6 million
Free float	85.4%
ISIN	DE000A1ML7J1
Ticker symbol	VNA
Share class	Registered shares with no par value
Main listing	Frankfurt Stock Exchange
Market segment	Regulated Market, Prime Standard
Major indices	DAX 40, GPR 250 World, FTSE EPRA/NAREIT Europe, DAX 50 ESG, STOXX Global ESG Leaders, EURO STOXX ESG Leaders 50, Dow Jones Sustainability Index Europe

#### Evolution of number of shares (million) and use of proceeds from capital increases



### **IR Contact & Financial Calendar**

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General inquiries investorrelations@vonovia.de

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#### **Financial Calendar**

Nov 3	9M 2023 Results
Nov 21-23	UBS Asia Debt Capital Markets Issuer/Investor Event 2023 (IR only)
Nov 24	SEB Real Estate Seminar, Stockholm (Debt)
Nov 29	UBS Global Real Estate CEO/CFO Conference, London
Nov 30	Société Générale Flagship Conference, Paris
Dec 7	Berenberg European Conference, London
Jan 9-10	CoBa German Seminar, NYC
Jan 11	Barclays European Real Estate Conference, London
Jan 12	Oddo BHF Forum, Lyon
Jan 16	UniCredit & Kepler German Corporate Conference, Frankfurt
Mar 15	FY 2023 Results

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Tables and diagrams may include rounding effects.

Per share numbers for 2013-2014 are TERP adjusted (TERP factor: 1.051). Subscription rights offering in 2015 due to Südewo acquisition.

Per share numbers for 2013-2020 are TERP adjusted (TERP factor: 1.067). Subscription rights offering in 2021 due to Deutsche Wohnen acquisition.



### **For Your Notes**