Green and Sustainable Finance in Australia

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Abstract

Australia has committed to achieving net zero greenhouse gas emissions by 2050. This will require significant amounts of investment and financing as we move away from a carbon-intensive economy. This article discusses financial market developments in Australia that are working to address this issue – specifically, the markets for green bonds, green loans and securitisations, and ethical equity funds. These markets have grown quickly over recent years, though they comprise only a small share of the total market for each type of asset. That said, they will be supported in coming years by various measures underway to develop Australia's sustainable finance framework, including reforms to climate-related disclosures and the development of a sustainable finance taxonomy.

Introduction

Climate and other sustainability-related factors are increasingly being incorporated into the investment decisions of retail investors, fund managers and the lending decisions of banks. This is being driven by several interrelated factors. As the global transition to a less emissions intensive energy system gains momentum, investors are increasingly recognising the need to adjust their portfolios to address the risks that will arise as some economic activities become less profitable and others (eventually) take their place. At the same time, many jurisdictions are taking steps to assist market participants in

considering sustainability when making financial decisions, including through reforms to sustainability reporting. Notably, demand for sustainable investments has grown despite mixed evidence on the financial performance of such investments. This points to a possible change in investor preferences over and above the traditional decisions regarding risk and returns – that is, investors may place a higher weight on responsible investments or take a broader view of the factors that might affect the long-term resilience of companies (including climate-related risk).

In response, markets for assets with environmental, social and governance (ESG) benefits have developed over the past decade, and grown rapidly in recent years, both internationally and in Australia. Examining these markets is complicated by the fact that frameworks for identifying assets with ESG benefits are still developing, and there is not one single global definition. Labels like 'green', 'sustainable' or 'ESG' can be applied by issuers or investment managers, or assigned by providers of ESG ratings, and can sometimes be applied inconsistently. Uncertainty around the consistency of these labels can hinder the ability of many investors to adequately price climate-related risks in these markets. Ultimately, greater transparency in these financial markets can improve the flow of financial capital between investors and 'green' issuers and assist the transition to net zero or broader sustainability objectives.

Green and sustainable financial markets in Australia have developed quickly over the past decade. However, they still comprise only a small share of the total market for each asset class. Further development of these markets, along with Australia's sustainable finance framework, will be important for the transition to a lower emissions economy. This article provides an early survey, focusing on developments in four of these asset classes that are relevant for the Australian market: green bonds; green loans; green securitisations; and ethical equity funds. The term 'green' refers to assets that fund projects with environmental benefits; this is a subset of the broader category of 'sustainable' assets. 'Ethical' funds (sometimes labelled 'sustainable' funds) refer to managed funds that advertise a commitment to incorporate green aims and investment strategies as part of a broader ethical mandate. While other financial products with sustainable benefits exist, such as sustainability-linked bonds, the article focuses on these four asset types to illustrate broader trends. It also briefly compares the Australian experience with that in other economies.

Green bonds

Definition and guidelines

Broadly speaking, green bonds are bonds that are issued to fund projects that are beneficial to the environment or climate. Standardised definitions for what constitutes a green project, or green bond, are still in development both in Australia and in many other international jurisdictions. Therefore, classifications can differ between issuers depending on their individual sustainability frameworks. However, in lieu of a centrally administered definition, investors and issuers have tended to assess a green bond's credibility based on voluntary guidelines developed by international not-for-profit organisations. One of the most commonly used guidelines – the International Capital Market Association's 'Green Bond Principles' – is built broadly on four main criteria:

- The use of proceeds from a green bond issuance should fund projects that have clear environmental benefits.
- 2. The issuer should disclose their **process for project evaluation and selection**, such that investors can clearly assess the environmental objectives of any eligible project and how the issuer determined its ability to meet sustainability criteria.
- 3. The issuer should provide a transparent and visible way for investors to track the **allocation of proceeds** from the bond issuance, including how the funds are being used on the project and any temporary investments undertaken until the funds can be used on the green project.
- 4. The issuer should publish **annual reports** that detail the full set of projects funded by green bonds, along with their progress, the amounts allocated to them and their expected environmental impacts.

The 'Green Bond Principles' recommend, but do not require, that green bonds are subject to an external review to confirm their alignment with these criteria. In practice, this has become an effective requirement for most Australian green bonds to gain broad market acceptance. The objective of these classifications is to minimise 'greenwashing' –

that is, the misrepresenting of bonds as 'greener' than they in fact are.

The Australian market

The Australian green bond market is small compared with total fixed-income issuance but has grown quickly since its inception in 2014 (Graph 1).^[1] Around \$13 billion of green bonds were issued in the first half of 2023, which is already the highest annual amount on record.

The main issuers of green bonds in the Australian market include:

- · Australian state treasury corporations
- major Australian banks
- 'kangaroo issuers' non-resident organisations that issue bonds denominated in Australian dollars into the Australian market (such as supranational development banks).

Kangaroo green bonds are the largest segment in the domestic green bond market, constituting around one-third of total issuance since 2014. The share of green bonds issued in the domestic market (as opposed to offshore markets) has been high and largely driven by issuance by state treasury corporations and kangaroo issuers. Green bond issuance by financial corporations has primarily been in offshore markets. The Australian Government recently announced plans for an inaugural sovereign green bond issuance in mid-2024 (Treasury 2023a).

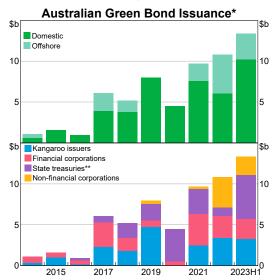
Australian green bonds are mostly used to fund clean transportation projects, energy efficiency projects and green construction and/or buildings (Graph 2).^[2] Apart from this, funds are split widely between different uses of proceeds. Some of the projects funded by green bonds issued by state treasury corporations include Melbourne Water's Western Treatment Plant, the Sunshine Coast Solar Farm and the Parramatta Light Rail.

Pricing and liquidity

The pricing of green bonds is an important consideration for both issuers and investors. There is debate in international literature on whether the unique characteristics of green bonds could generate different pricing outcomes for these

bonds compared with their conventional counterparts. While evidence of any pricing difference is mixed, there is some evidence from international markets that green bonds can attract investors at lower yields than their non-green counterparts. This implies that investors are willing

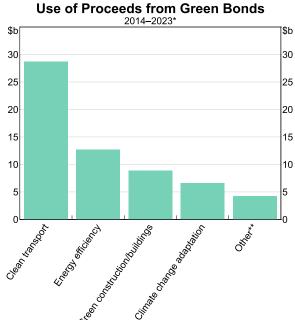
Graph 1



- Data for 2023 are to end-June. The data only include bonds specifically identified as 'green bonds' and do not include other sustainable
- Includes taps of bond lines

Sources: Bloomberg; RBA; Refinitiv

Graph 2



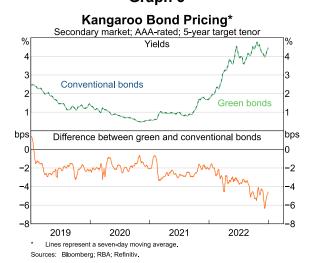
- Data for 2023 are to end-June
- Includes alternative energy, acquisition, refinance/financing expenses and general purpose.

to pay a higher price for green securities – a so-called 'greenium' (Ando *et al* 2023).^[3] Demand for green bonds might be higher than their conventional counterparts due to investor preference for socially responsible investments or lower exposure to climate-related risks. That said, investors' fiduciary duty and the presence of arbitrage in competitive markets may tend to minimise any pricing difference between green and non-green securities.

As a high-level approximation of how green bonds price relative to conventional bonds, we compared the secondary market pricing of green and nongreen bonds issued by AAA-rated kangaroo issuers, using a fairly simple approach. [4] The resulting data suggested some evidence of a small greenium for AAA-rated kangaroo bonds (Graph 3). [5] That said, there is considerable scope for more rigorous exploration of the impact of a bond's green label on its pricing, particularly as markets continue to evolve.

There is some international evidence that green bond markets are less liquid than their conventional counterparts, meaning these bonds are likely to trade less frequently on secondary markets (Fender et al 2019). To investigate this for Australian green bonds, we looked at turnover ratios between December 2021 and December 2022 using transaction-level data from Austraclear (the settlement system for Australian dollar fixed-income securities in Australia). [6] The data show that the

Graph 3



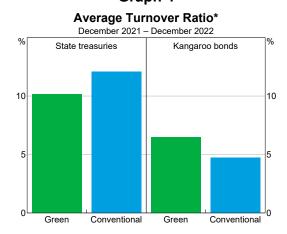
bulk of green bond turnover is due to trading in state treasury corporation and kangaroo bonds. For these two issuer types, turnover levels are roughly similar regardless of whether bonds are classified as green or not (Graph 4). As such, the secondary market for green bonds appears to be no less liquid than their conventional counterparts.

Green loans

Green loans are offered by some Australian bank and non-bank lenders to finance residential property, automobiles, commercial property and equipment, and 'personal' expenditure. To receive a green loan, the asset to be funded (e.g. a house) must meet eligibility criteria. In exchange, borrowers might receive a discount on their interest rate, relative to the lender's standard product. As with green bonds, there is currently no centrally administered definition for what constitutes a green loan in Australia, so classifications can differ between lenders depending on their own sustainability framework. However, Australian lenders' green loan definitions have coalesced around similar criteria within three of the broad loan types.

 Green mortgages are available for the purchase of green homes or renovations to satisfy green criteria. Lenders' criteria commonly include requirements for properties to have solar systems or restrictions on a building's age. In addition, many lenders' criteria require an

Graph 4



* Average of monthly turnover ratios, weighted by the face value of bond transactions.

Sources: ASX Information Services: RBA: Refinitiv

external property certification to provide further assurance. There are three commonly used external certifications, all of which evaluate the energy usage and efficiency of buildings. One of these is the Nationwide House Energy Rating Scheme, which is administered by the Australian Government. While this certification currently provides energy ratings only for new dwellings, the government has committed to expand its coverage to include existing homes.

- Green automotive loans are available for the purchase of new green vehicles. The National Transportation Commission defines an emissions threshold below which a vehicle is considered green. Electric, hybrid and some internal combustion engine vehicles can achieve emissions below this threshold. Some lenders use this threshold in their eligibility criteria, while others have their own thresholds. Many lenders also apply power source criteria (e.g. electric, plug-in hybrid) when evaluating green automotive loans.
- Green personal loans are extended to fund improvements to the energy efficiency of a home. Common eligible improvements include the installation of solar panels and batteries, and the installation of water tanks and greywater systems. These loans can be either secured or unsecured.

Green securitisations Definition and structure

Green loans are the collateral for green asset-backed securities (ABS). Green ABS volumes and their proportion of total issuance have grown following the first green ABS issuance in 2016 (Graph 5). Since then, at least seven securitisers have issued green ABS, with four being repeat issuers. A record \$1.4 billion of green-labelled ABS were issued across seven transactions in 2022, representing 3 per cent of total securitisations.^[7]

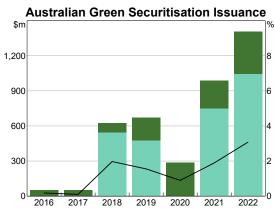
Green securitisations usually have two structures. In the first, the entire pool of collateral is formed of green loans, so the entire structure is labelled green. However, due to low originations of green loans relative to overall loans, issuers might have insufficient green collateral to issue a transaction backed entirely by green loans. Thus, the second and more common structure includes green-labelled *tranches* within a larger transaction, where only a portion of the pool of collateral is green, and a corresponding proportion of securities are marketed as green. As collateral pools cannot be partitioned, these green tranches are exposed to both green and non-green loans.

Guidelines

The Australian Securitisation Forum's 'Market Guideline on ESG Disclosure', released in May 2022, sets out industry guidelines to standardise green securitisations. The Guideline is principles based and suggests best practices and disclosures for green-labelled issuance. It makes no recommendations on the criteria used for green classification, leaving these to the issuer's discretion. Instead, the Guideline recommends that issuers disclose the attributes of the green loans being securitised. This method allows for securitisation of green loans originated under the existing criteria of different lenders. For all loans, the issuer should disclose the green lending criteria and the criteria of any external certification used. At the issuer level, reporting on emissions reduction, utility or fuel cost savings, and renewable energy installation (where appropriate) is encouraged.

The availability of securities with differing green criteria could promote investor choice. A potential concern is that discretionary criteria result in

Graph 5



RMBS Other ABS - Share of Total Issuance (RHS)

Sources: KangaNews; RBA; Westpac.

convergence to the lowest cost or least rigorous certification scheme accepted by investors. That said, convergence to weaker criteria might not be in the best interest of issuers since it would make these securities less appealing to investors with strict green criteria, including overseas investors that often have more strict mandates and reporting requirements. In fact, some Australian securitisers have identified ongoing access to international capital markets as a key consideration behind establishing ESG issuance programs.

Pricing

As with bonds, a 'greenium' might develop if investors' increasing demand for green-labelled securities exceeds the limited supply of green ABS. Additionally, international evidence suggests mortgage default risks are lower for energy-efficient properties (which are eligible for green loans) (Billio et al 2022; Kaza, Quercia and Tian 2014). If default risks are lower for green loans, it follows that credit risk would be lower for ABS wholly collateralised by green loans. As a result, these securities could potentially command a greenium.

However, under the tranche approach to green securitisations commonly used in Australia, the green tranches are typically co-ranked with another tranche, most commonly the senior non-green tranche. They are also exposed to the same collateral, which is a mixture of green and non-green loans. As a result, the credit risk of the green and non-green tranches is identical. Therefore, under the tranche approach to green securitisation, a greenium would not reflect differences in risk pricing. Instead, a greenium would likely reflect the need to meet mandates to invest in green securities or investors' preferences for these securities.

To examine whether there is preliminary evidence of a greenium in ABS, we compared the secondary market pricing of green and non-green tranche pairs in our database. [8] These pairs included residential mortgage-backed securities and personal loan ABS. The data showed mixed evidence of a greenium in secondary ABS markets, with some positive and some negative yield differentials. [9] That said, this is a high-level

comparison based on a small sample, so it should be treated with considerable caution.

Ethical equity funds

Definition

In equities markets, there is no equivalent concept to green bonds and loans. Green bonds and loans can be identified via the direct link to the characteristics of the underlying asset. An equity, by contrast, is a share of a company, which may have green and non-green activities. An equity-focused mutual fund includes a range of equities to maximise returns. Some funds also apply other criteria. In Australia, a category called 'ethical funds' has developed to meet retail investment demand for investment options that have green and social objectives.

'Ethical funds' are managed funds that advertise a commitment to ethical, sustainability-related or ESG objectives, and so provide an indication of interest in green equities. [10] The ethical fund category is narrower than the sometimes used 'ESG integrators', which are funds that apply various approaches to integrating ESG criteria into the selection of investments, but make no specific advertised commitment to invest in an environmentally conscious manner. The discussion here focuses on the narrower category of ethical funds.

The Australian market

In Australia, ethical funds first emerged in the 1980s as mutual funds. From the mid-1990s, some pension and super funds began to emerge with ethical labels. Since then, the number of ethical funds launched each year has continued to increase. In the past five years, more than 70 funds were launched – about a 50 per cent increase on the previous five years. In addition, ethical Exchange Traded Funds (ETFs) emerged in the past decade, with about 30 ethical ETFs currently trading on Australian exchanges.

Of the 15,367 funds registered as domiciled in Australia between 2006 and 2023, 222 can be classified as ethical funds.^[11] In total, these funds currently hold approximately \$45 billion in assets. Most of these assets are held by mutual funds, but superannuation providers also make up a significant

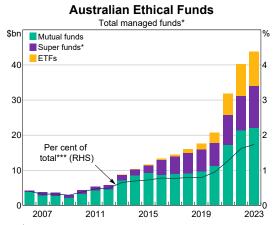
share, along with a growing share held by ETFs. Over the past decade and a half, ethical funds – as a share of total managed funds - have grown significantly. Despite this, ethical funds make up less than 2 per cent of all assets managed by Australian fund managers (Graph 6).

Ethical funds primarily invest in equities, but they also maintain smaller investments in fixed-income, property and alternative assets.^[12] In comparison with other funds, ethical funds tend to have a higher share of global equities. Furthermore, there are differences in how ethical and other funds tend to allocate their investments across sectors – in comparison with the market index, ethical funds that invest exclusively in Australian equities are overweight in real estate, health care, communications and IT, and underweight in materials and energy (which are dominated by companies operating in the 'resources' sectors) (Graph 7, top panel). Similarly, ethical funds that have a global equities focus invest more in IT, financials and healthcare companies and less in materials and energy companies (Graph 7, bottom panel). Notably, ethical funds, investing in both domestic and global markets, have a near zero weighting towards the energy sector.

Performance

As ethical funds place a higher weighting on certain sectors, it is likely that their aggregate performance will deviate from other funds, particularly in the

Graph 6

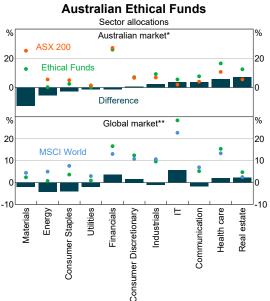


- Data in each year corresponds to 30 June
- Includes pension funds
- *** Per cent of all assets managed by Australian fund managers. Sources: ABS: Datastream: RBA: Refinitiv

short term, as some sectors tend to be more cyclical than others. However, there is debate in the literature on whether ethical funds underperform or outperform other funds, all else equal. The most common critique of ethical funds is that imposing non-financial objectives restricts investment opportunities, reduces diversification benefits and thereby adversely impacts performance (Trinks and Scholtens 2017). Some studies counter this by pointing to a positive correlation between the 'ethical characteristics' of firms and financial performance, but the extent and nature of this relationship is still debated (Halbritter and Dorfleitner 2015). Notably, an early Australian study found no significant difference in risk-adjusted returns of ethical funds between 1992 and 2003 but acknowledged that this result was sensitive to the chosen time period (Bauer, Otten and Rad 2006).

Data from Refinitiv suggests that, over the past 20 years, the performance of Australian ethical funds in our sample that invest solely in Australian equities was comparable to other funds (Graph 8). The average annual return during the period was 9.2 per cent, which compares with 9 per cent for other funds. [13] Ethical funds also had similar volatility of returns over this period, with an annualised standard deviation of returns of

Graph 7



- Contains funds investing only in Australia and only in equities
- Contains funds investing globally only in equities.

Sources: Datastream: RBA: Refinitiv.

13.5 per cent, compared with 13 per cent for other funds. In our sample, we found substantial periods of ethical fund outperformance and underperformance, which reinforces the idea that the chosen time period is important for comparative analysis.

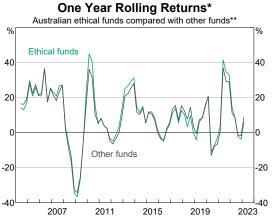
International comparisons

The growth of green and sustainable financial markets in Australia has largely followed global trends, with both domestic and international markets growing rapidly in recent years.

Over US\$450 billion of **green bonds** were issued globally in 2022, contributing to over US\$2 trillion of cumulative green bond issuance since their inception in 2007. Despite this, green bonds represent only a small portion of total fixed-income issuance internationally. Issuance in recent years has been led by the United States and jurisdictions where green projects can be defined in accordance with a centrally administered green bond taxonomy, like China and the European Union.

The EU Taxonomy also prescribes **green loans**, such as residential mortgages (including small personal loans for renovations) and lending for cars. For green mortgages, the Taxonomy imposes highly prescriptive criteria around a property's energy demand, water use, recycling during construction and land use. In the United States, government-sponsored mortgage purchasers, like Fannie May and Freddie Mac, have criteria to purchase green

Graph 8



- * Assumes that dividends are reinvested to purchase additional units of the fund.
- ** Contains funds investing only in Australia and only in equities. Sources: RBA; Refinitiv Datastream.

mortgages from banks. As in Australia, there is no central framework for what constitutes a green home, and American lenders' criteria depend on external property certifications.

Green securitisation in Europe is governed by the requirements of the EU Taxonomy. US green securitisation is similar to that in Australia as issuers report on the definition of assets considered green in each collateral pool.

Due to the differences in definitions of green, sustainable and **ethical funds** across jurisdictions, creating a like-for-like estimate of the assets managed by what in Australia are labelled as 'ethical funds' internationally can be challenging. That said, by one estimate there are approximately US\$2.7 trillion worth of assets currently under management by ethical fund managers worldwide (Morningstar 2023). This reflects recent strong growth in the asset class but still represents only a small share of global assets in managed funds. Based on this measure, EU ethical funds have the largest share of total fund assets among peer economies at around 3.6 per cent.^[14]

Australian Government initiatives to support sustainable finance

The Australian green bond and loan markets are likely to benefit from the Australian Government's recent announcement of plans to issue a sovereign green bond in mid-2024 and to expand the Nationwide House Energy Rating Scheme. Similarly, Australian ethical equity funds will be supported by government-led initiatives to minimise greenwashing among funds and allow consumers to identify their characteristics more easily (Treasury 2023a).

Measures underway to develop Australia's sustainable finance framework should also support the quality and consistency of sustainability-related information. This includes the Australian Government's proposed implementation of mandatory climate-related financial disclosures for large businesses and financial institutions (Treasury 2023b). Additionally, the Australian Government has announced its intention to co-fund the initial development phase of an Australian Sustainable

Finance Taxonomy, in partnership with industry through the Australian Sustainable Finance Institute. ^[15] Ultimately, these initiatives will assist financial markets to manage climate-related risks and opportunities.

Conclusion

Green and sustainable financial markets can assist in funding Australia's transition to a lower emissions economy. These markets have grown quickly over recent years, mirroring trends seen internationally. However, green bonds, green loans, green

Endnotes

- [*] The authors undertook this work while in the Domestic Markets Department and would like to thank Ashley Vicary, Nina McClure and Anna Park for their help with this research.
- [1] We define Australian green bond issuance to include both green bonds issued in domestic or offshore markets by Australian entities, as well as green bonds issued by kangaroo issuers.
- [2] Energy efficiency projects should minimise energy wastage. Eligible projects include, but are not limited to, new and refurbished buildings, energy storage, district heating and smart grids. To be classified as 'green buildings and/or construction', the project must meet recognised standards for environmental performance, of which energy efficiency may be a criterion.
- [3] Bond prices and yields have an inverse relationship, so a higher price implies a lower yield (RBA 2021).
- [4] Investors tend to see issuers within this group as broadly having the same characteristics, with the majority of AAA-rated kangaroo issuers being supranationals. The method of aggregation used accounted for differences in tenors and face values between the series (Arsov, Brooks and Kosev 2013). The sample was restricted to only include previous green bond issuers to avoid the influence of unobserved differences in firm characteristics between those that have issued green bonds and those that have not (such as lower exposure to climate-related risks). On any given day, to further promote comparability, the sample was further restricted to only include conventional bonds whose size was bounded by the largest and smallest green bonds outstanding on that day.
- [5] This finding was supported by regression results, following a similar approach to Pietsch and Salakhova (2022).
- [6] A security's turnover ratio is defined as the value of the security traded over a given period divided by the total

securitisations and ethical equity funds currently constitute only a small share of their total respective markets. While this article has outlined the characteristics of each asset type, including preliminary evidence on their financial performance, there remains considerable scope for further analysis of Australian sustainable finance markets, particularly as they continue to develop in coming years. Looking ahead, their development will be supported by a number of government-led initiatives underway to develop Australia's sustainable finance framework more broadly.

- value outstanding for that security. While we acknowledge that turnover ratios may not directly capture all aspects of liquidity, they can be used as an indicator of liquidity. Additionally, this analysis only includes trades that are settled through Austraclear, which may not represent all Australian green bond trading.
- [7] This includes both green-labelled tranches and wholly green-labelled transactions.
- [8] Our database does not contain secondary pricing data on any ABS collateralised fully by green loans.
- [9] There have been two primary market transactions in 2023 that suggest the possibility of a small primary market greenium. In each transaction, the spread (yield) for the green-labelled senior tranche priced lower than the spread for the non-green-labelled senior tranche with identical credit characteristics.
- [10] Exact standards vary across funds, but most funds have green aims and objectives related to promoting investment in companies that have better climate change credentials.
- [11] Based on data obtained from Refinitiv, through a process of applying textual analysis on both the advertised name and investment strategy of individual funds.
- [12] Around 60 per cent of funds in our dataset reported sectoral breakdowns for underlying investments.
- [13] Assumes that dividends are reinvested to purchase additional units of the fund after fees are taken out.
- [14] Under the EU Taxonomy, these are referred to as Article
- [15] The Australian Sustainable Finance Institute was created in 2021 to coordinate and drive the implementation of its Australian Sustainable Finance Roadmap. Its members include Australian banks, asset owners, asset managers, insurers and financial services companies.

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