

Polymer banknotes

Q&A library

This Q&A library, produced by the Bank of England, pulls together a range of information relevant to the introduction of new polymer notes by the Bank of England. The library will be updated periodically. If you would like to receive updates about polymer banknotes, and other banknote news, please register your interest here: www.bankofengland.co.uk/banknotes/Pages/subscribe.

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Section A: Q&A of general interest

What changes are planned for Bank of England banknotes?

1. Which banknotes are changing?

The Bank of England will issue a new £5 in September 2016, a new £10 note in the second half of 2017, and a new £20 note by 2020.

2. How will the new banknotes be different from the current ones?

The new £5, £10 and £20 notes will be printed on polymer, a thin and flexible plastic material, instead of paper. They will be around 15% smaller than the current paper notes but will retain the traditional look of the existing notes, with a portrait of Her Majesty the Queen on the front and historic characters on the back. The new banknotes will include symbols representing all four of the home nations, with imagery taken from the Royal Coat of Arms and the Royal Badge of Wales.

3. What is polymer?

Polymer is and a thin and flexible plastic material.

4. What size will the new banknotes be?

The polymer £5 note will be 125mm x 65mm (the current paper note is 135mm x 70mm).
The polymer £10 note will be 132mm x 69mm (the current paper note is 142mm x 75mm).
The polymer £20 note will be 139mm x 73mm (the current paper note is 149mm x 80mm).

The existing format of tiered sizing will be maintained, i.e. the higher the denomination, the longer the height and the length of note.

5. How much will the new banknotes weigh?

The polymer £5 note will weigh around 0.7g (the current paper note weighs around 0.9g).
The polymer £10 note will weigh around 0.85g (the current paper note weighs around 0.9g).
The weight of the £20 note will be confirmed in due course.

6. Which historic characters will appear on the new banknotes?

The polymer £5 note will feature Sir Winston Churchill (the current paper note features Elizabeth Fry).
The polymer £10 note will feature Jane Austen (the current paper note features Charles Darwin).
The historic character that will feature on the polymer £20 note will be announced in spring 2016.

7. What security features will be on the new banknotes?

The Bank of England will unveil the full design and security features for the new £5 note on 2 June 2016, around three months before the issue date in September.

8. How will the waste from old polymer banknotes be managed?

The Bank of England will fully segregate paper and polymer banknote waste to facilitate the recycling of polymer. Final use of the polymer waste has yet to be decided but other countries, such as Australia, recycle their polymer banknote waste into other useful plastic items such as plant pots.

9. How will blind and visually impaired people be able to denominate the new banknotes?

The new polymer notes will be smaller than the existing paper notes but importantly will retain tiered sizing which is one method for blind and visually impaired people to denominate our notes. In addition, the new notes will include bold numerals and retain similar colour palettes to those used currently.

10. What about the £50 banknote?

The Bank of England will make a decision on when to issue a new £50 note, and whether to print it on polymer, in due course.

Why are banknotes changing?

11. Who decided that we should change our banknotes?

The Bank of England, following a three year research programme and consultation with both the cash industry and general public.

12. Why did the Bank of England decide to move to polymer?

The Bank of England decided to move to polymer notes because they are cleaner, more secure and more durable than paper notes. They will provide enhanced counterfeit resilience and increase the quality of notes in circulation. And, because they last at least 2.5 times longer than paper notes, polymer notes are also more environmentally friendly.

13. Why did the Bank of England decide to change the size of the banknotes?

Bank of England banknotes are large by international standards. Smaller notes mean less material will be used in production. This will reduce manufacturing costs and deliver environmental benefits. There are also some savings to the costs of storing and transporting banknotes. The Bank has changed the size of its notes a number of times, most recently between 1990-1994.

14. Why were Winston Churchill and Jane Austen chosen to appear on the new notes?

The Bank of England seeks to celebrate individuals that have shaped British thought, innovation, leadership, values and society. Sir Winston Churchill was a British leader, statesman and orator and Jane Austen is recognized as one of the greatest writers in English literature.

More information about banknote characters can be found on the Bank of England website:
www.bankofengland.co.uk/banknotes/Pages/characters/default.aspx.

15. Which other countries use polymer banknotes?

Over 30 countries currently issue polymer notes. These include Australia (who introduced them in 1988), New Zealand, Mexico, Singapore, Canada and Fiji.

When will the new banknotes be issued and the old ones withdrawn?

16. When will the new banknotes be introduced?

The Bank of England will issue the polymer £5 note in September 2016, followed by the polymer £10 note in the second half of 2017. The polymer £20 note will be introduced by 2020.

17. When can I expect to first receive a new £5 note?

Most people are likely to see a new Bank of England £5 note within a few weeks of the issue date, for example as change from a retailer or from an ATM that dispenses £5 notes.

18. When will the paper banknotes be withdrawn?

The paper notes will start to be withdrawn from circulation as the polymer notes are introduced. Modelling carried out by Cash Services suggests that, by January 2017, around half the £5 notes in circulation will have been switched for polymer notes.

19. When will the legal tender status of the old paper notes be withdrawn?

The paper £5 note will be formally withdrawn before the new polymer £10 note is introduced in the second half of 2017. The Bank will announce the withdrawal of legal tender status giving businesses and the public plenty of time to return their paper notes. The timescales for the paper £10 and £20 withdrawal will be confirmed in due course.

20. What happens if I still have old notes after legal tender status has been withdrawn?

All Bank of England notes retain their face value for all time. If your bank, building society or Post Office is not willing to accept these notes then they can be exchanged with the Bank of England in London by post or in person.

More information about exchanging old banknotes can be found on the Bank of England website:

www.bankofengland.co.uk/banknotes/Pages/about/exchanges.aspx.

21. Will foreign exchange bureaux in other countries exchange paper notes?

Each foreign exchange bureau will make its own decision on whether to exchange notes.

22. When will a new £50 be introduced?

The Bank of England will make a decision on when to issue a new £50 note in due course.

Properties of polymer banknotes

23. What is polymer?

Polymer is a thin and flexible plastic material.

24. How long do polymer notes last?

Polymer notes last at least 2.5 times longer than paper notes.

25. Will I be able to use polymer banknotes in the same way as paper banknotes?

Yes, polymer notes can be used in the same way as paper notes. For example, polymer notes will be available from ATMs and can be folded in a wallet.

26. Are polymer notes counterfeit proof?

No banknote is counterfeit proof. The question is how difficult it is to counterfeit effectively. The techniques required to produce high quality counterfeit polymer banknotes are slow, expensive and require a high level of effort and technical expertise. This presents a significant barrier to counterfeiters.

27. Can polymer banknotes be folded?

Yes, polymer notes are as thin and flexible as paper notes.

28. Are polymer banknotes slippery?

Polymer notes can feel slippery when new; although this tends to decline over time once the notes are in circulation. Polymer notes will also have areas of raised print which will give them a tactile quality and reduce the slippery feel.

29. Do polymer notes stick together?

Brand new polymer notes can sometimes stick together, but this effect is short-lived once in use.

30. Do polymer notes melt at high temperatures?

Polymer banknotes begin to shrink and melt at temperatures above 120°C, so they can be damaged by an iron for example.

31. Do polymer banknotes carry germs?

Banknotes, like any other surface that large numbers of people come into contact with, can carry bacteria. However, the risks posed by handling a polymer banknote are no greater than those posed by touching any other common surface, like handrails, doorknobs or credit cards.

32. Where will polymer banknotes be printed?

They will be printed at the Bank of England's print works in Essex.

£1 coin and Scottish and Northern Ireland banknotes

33. Who is responsible for the new £1 coin?

The Royal Mint is responsible for coins in the UK. The Royal Mint plans to issue a new £1 coin in early 2017.

34. Who is responsible for Scottish and Northern Ireland banknotes?

Three commercial banks are authorised to issue banknotes in Scotland: Bank of Scotland plc; Clydesdale Bank plc and The Royal Bank of Scotland plc.

Four commercial banks are authorised to issue banknotes in Northern Ireland: Bank of Ireland (UK) plc; AIB Group (UK) plc (trades as First Trust Bank in Northern Ireland); Northern Bank Limited (trades as Danske Bank) and Ulster Bank Limited.

These commercial banks are individually responsible for the design of their banknotes and robustness against counterfeiting.

35. Are the banks in Scotland and Northern Ireland introducing any new banknotes?

Clydesdale Bank introduced a limited edition commemorative polymer £5 note in March 2015 (see: <http://www.cbonline.co.uk/we-care-about-here/polymer>). The Clydesdale polymer £5 note is smaller than their paper £5 note, and the same size as the future Bank of England polymer £5 note.

All three Scottish note issuers have confirmed their intention to replace their paper £5 and £10 with new polymer £5 and £10 in similar timescales (late 2016 and late 2017) to the Bank of England. These notes will be the same size as the Bank of England polymer notes.

The Northern Ireland banks have no plans to issue new polymer notes.

36. Are the Isle of Man, Jersey and Guernsey authorities planning on issuing polymer banknotes?

There are three note issuing authorities in the British Islands but outside the United Kingdom: the Isle of Man, Jersey and Guernsey. None have plans to issue new polymer notes. Bank of England notes will continue to have the same status as today.

37. Who should I contact for more information about the new £1 coin?

Further information the new £1 coin is available from the Royal Mint: www.royalmint.com/newonepoundcoin.

Any questions should be directed to: newonepoundcoin@royalmint.com

38. Who should I contact for more information about Scotland and Northern Ireland banknotes?

Further information about Scotland and Northern Ireland banknotes is available from the Committee of Scottish Bankers: http://www.scotbanks.org.uk/polymer_banknotes.php or from the individual commercial banks.

Section B: Q&A of particular relevance to retailers and businesses

Collaborative planning and preparation

39. What is the Bank of England doing to support businesses with the transition to the new banknotes?

As with any change in banknote design, all businesses that handle cash will need to plan and prepare for the introduction of the new, smaller polymer banknotes. The Bank of England is committed to working collaboratively with businesses to support a smooth transition to the introduction of polymer banknotes.

40. How is the Bank of England working collaboratively with the cash industry?

The Bank of England hosts bi-annual industry-wide forums that are attended by over 90 key organisations, including financial institutions, ATM operators, cash-in-transit companies, banknote equipment manufacturers, retailers, and trade associations.

The Bank also supports five industry working groups that focus on: the readiness of the wholesale cash sector; upgrades for ATMs; upgrades for other cash handling machines; theft deterrent solutions; and awareness and training for staff who handle cash. A steering group brings together the Chairs of each working group to review progress, and ensure that key developments are effectively communicated.

41. How is the Bank of England working with manufacturers of cash handling machines?

The Bank of England has offered machine manufacturers early access to the new banknotes for testing purposes.

A list of machine manufacturers who have, to date, taken up the offer of test notes can be found on the Bank of England website: www.bankofengland.co.uk/banknotes/polymer/Documents/manufacturers.pdf.

42. When will manufacturers of cash handling equipment be able to start carrying out tests with the new notes?

Manufacturers of cash handling machines were offered access to test polymer £5 notes in 2014, so that they could start to look at what adaptations will be needed for their machines.

During 2015, manufacturers of cash handling machines continued to have access to test polymer £5 and, in addition, £10 notes. Samples of the final polymer £5 note were made available to machine manufacturers from December 2015.

Most manufacturers plan to release machine adaptations to their customers between March and June 2016.

43. How do I gain access to test notes?

Test notes are available to manufacturers of cash handling machines and machine users who have both suitable security arrangements and a demonstrable need to carry out testing on machines. Please email your request to cashindustry.enquiries@bankofengland.co.uk.

Sample notes will not be available to support staff training ahead of the issue date in September. Please see the next section for details of the range of training materials that will be released on 2 June 2016.

Recognising and authenticating the new notes

44. How will I be able to recognise and authenticate the new banknotes?

The Bank of England will unveil the full design and security features of the new £5 on 2 June 2016, and a range of materials will be available to support staff training, including:

- Short online videos, available on YouTube and for download
- Banknote app, available from Google Play and the Apple App Store
- Online training
- Booklet and z-card
- Posters

More information about existing education materials can be found at:

<http://www.bankofengland.co.uk/banknotes/Pages/educational.aspx>

45. Can I use my desktop authentication machines with polymer banknotes?

Yes. Desktop authentication machines can be used for polymer banknotes.

You should engage directly with your manufacturer or supplier to discuss what adaptations will be required to your existing machines, and when they will be available. Most machines will need a software update. Before purchasing any new machines, ask if any adaptations will be needed.

46. Can I still use detector pens to check banknotes?

The pens work by reacting with the starch that is present in 'normal' paper. So, whilst they are likely to detect some (but not all) counterfeits printed on paper, they won't detect counterfeits that are printed on polymer.

47. Will there be a UV feature on the new banknotes?

Yes, UV features will be visible with a suitable UV lamp. A good quality UV lamp that emits light at around 365 nanometres is best for checking the fluorescent feature on all banknotes, both paper and polymer.

48. Can I use the Verus devices from Innovia to check banknotes?

Innovia Security sells Verus H and Verus D devices. They are designed to check whether a banknote is printed on polymer made by Innovia. They are not intended for paper banknotes

The new Bank of England £5 and £10 notes will be printed on Innovia polymer. A competitive tender will be run for supply of polymer for the new £20, so it is too early to say whether Verus H and Verus D will be relevant for these notes.

The Verus devices are not designed to authenticate the forthcoming £5 and £10 notes from the Scottish banknote issuers, as they will be printed on polymer made by De La Rue not Innovia.

Adapting cash handling machines

49. What are cash handling machines?

Cash handling machines will need to be adapted for the new notes. These include self-service check-outs, desktop counters, ATMs, ticket machines, and any other machine that weighs, counts, sorts, accepts, dispenses or recycles banknotes.

50. My business uses cash handling machines. What action do I need to take?

- Ensure you know which cash handling machines are being operated by your business.
- Contact the manufacturer or supplier of your machines to discuss what adaptations will be required, and when they will be available. For most machines, a software update will be needed.
- Before purchasing any new machines, check if any adaptations will be needed for the new polymer notes.
- Implement adaptations to your machines before September 2016, when the new £5 notes will be issued.

51. Who should I contact to find out what I need to do to adapt my cash handling machines?

You should engage directly with your manufacturer or supplier. Most cash handling machines will need a software update so that they are able to recognise the new note design. Some machines may also need a hardware adaptation. For example, ATM cassettes will need to be adapted to handle the smaller note size.

52. When will I be able to adapt my machines for the new notes?

Manufacturers were able to finalise machine adaptations for the polymer £5 note from December 2015. Most expect to make adaptations available to their customers between March and June 2016. Machines can then be updated so that they are ready to handle both the paper and polymer £5 notes.

Check with your manufacturer or supplier when they plan to release machine adaptations.

53. I use weighing scales to count banknotes. Will they need to be adapted?

Yes. Polymer notes are slightly lighter than paper notes. So you will need to separate the polymer £5 and paper £5 notes before you weigh them; and the scales will need to be calibrated for the weight of the £5 polymer notes. Check how to do this with your manufacturer or supplier.

54. My business has an ATM that is filled with takings from the till. What will I have to do to change over to dispensing the new notes?

Your ATM will need to be adapted to dispense the new notes because they are a smaller size and a different design from the current notes. You will not be able to dispense a mix of paper and polymer notes of the same denomination from a single cassette.

If your machine does not dispense £5 notes, you do not need to do anything until after the new £10 note has been issued in the second half of 2017 (or the new £20 if your machine dispenses only £20 notes).

Your ATM supplier will be in touch with you nearer the time.

55. My business hosts an ATM that is filled by a cash in transit company. What will I have to do to change over to dispensing the new notes?

You do not need to do anything. The ATM operator and cash in transit company will take responsibility for switching over to the new notes.

Most ATMs that dispense £5 notes are expected to be converted to dispensing the new polymer notes within a month of the issue date in September 2016.

56. My business uses self-service tills. What will I need to do to prepare?

You should engage directly with your manufacturer or supplier. In general:

To accept payment with any new note, self-service tills need a software update. This should be done before the issue date. The till will then be able to accept payment with both the old and new notes.

To dispense change with the new polymer notes, the dispense cassette will need to be adjusted for the new note size. You will not be able to dispense a mix of paper and polymer notes of the same denomination from a single cassette.

Further information

57. Where can I find more information about Bank of England polymer banknotes?

More information can be found on the Bank of England website:

www.bankofengland.co.uk/banknotes/polymer.

If you would like to receive updates about polymer banknotes, and other banknote news, please register your interest here: www.bankofengland.co.uk/banknotes/Pages/subscribe.

58. Who should I contact if I have a question about Bank of England polymer banknotes?

You can email your questions to enquiries@bankofengland.co.uk.

59. Who should I contact to find out if a cash handling machine used by my business is compatible with the new banknotes?

You should engage directly with your manufacturer or supplier.

A list of machine manufacturers who have taken test notes can be found on the Bank of England website:

www.bankofengland.co.uk/banknotes/polymer/Documents/manufacturers.pdf.

60. Who should I contact for more information about the new £1 coin?

Further information about coins is available from the Royal Mint: www.royalmint.com/newonepoundcoin.

Any questions should be directed to: newonepoundcoin@royalmint.com

61. Who should I contact for more information about Scotland and Northern Ireland banknotes?

Further information about Scotland and Northern Ireland banknotes is available from The Committee of Scottish Bankers: http://www.scotbanks.org.uk/polymer_banknotes.php or from the individual commercial banks.