

The Conversion to Polymer Banknotes Continues

By Nikki Strickland, De La Rue

The transition to polymer continues around the world.

In recent months the Scottish and Northern Irish Banks have issued their polymer £20 banknotes and the Bank of England is working on its new polymer £50.

The Central Bank of Egypt has announced its 10 and 20 denominations will move to polymer. The National Bank of Angola is midway through the introduction of its four polymer banknotes and the Central Bank of Trinidad and Tobago have unveiled their updated concept designs. Multiple others are in discussions or considering upgrading.

So why are central banks transitioning to polymer?

Often the reasons cited are that polymer is cleaner, greener, more secure and more durable than their paper counterparts. This article explores the themes in more detail.

The cleanliness comes from the zero porosity of the polymer banknotes, which means that dirt doesn't get trapped in the substrate and the notes look cleaner in circulation for longer. During the COVID-19 pandemic this also means that wiping the notes with sanitizer means polymer notes can be treated like every other hard surface (and even though the role of surface transmission is now thought to be much less, than airborne particles the wiping-down of surfaces has become more common place).

More generally, the greater cleanliness of polymer notes has the additional advantage of unlocking a broader palette of colours because historically paper banknotes have avoided colours that show the dirt. The result is that banknote issuing authorities can then select brighter, fresher looking banknotes.

The greenness comes in part from the improved durability of the polymer banknotes. Banknotes that last longer need replacing less frequently and so consume fewer raw materials. Banknotes that look better in circulation are more likely to be re-issued into circulation more times at the point of local sorting, requiring less transportation overall.

Polymer banknotes are also fully recyclable at the end of their useful life – a benefit of being a pure substrate that is widely recycled. Banknotes return to the central bank for destruction, which means that they have the potential to be recycled. Access to specialised recycling facilities is possible without having to build specialist equipment, with 'clean' recycling options (ie. ones that don't release toxic fumes) in existence.



De La Rue has developed an environmental and carbon footprint assessment tool, working with the leading environmental impact organization ThinkStep to align to an internationally recognised approach. This tool covers global warming potential, non-renewable primary energy demand, abiotic resource depletion potential, acidification potential, eutrophication potential and photochemical ozone creation potential. This tool continually demonstrates the benefits of polymer over paper banknotes, in alignment with other independent studies conducted by central banks such as the Reserve Bank of Australia, Bank of Canada and Bank of England.

Furthermore De La Rue also offers a carbon neutral banknote service – partnering with Carbon Footprint Ltd to quantify and balance out emissions associated with banknotes across their life cycle, then offsetting that impact. Via this service it supported the Central Bank of Samoa in issuing the world's first ever carbon neutral banknote.

The security benefits can be seen from the reduction in counterfeit rates as banknotes transition to polymer. The Bank of England, Reserve Bank of New Zealand, Bank of Mexico and Bank of Canada were some of the central banks who experienced a drop in counterfeits after transitioning to polymer. Whilst no banknote is, or ever will be, entirely counterfeit proof, research suggests that techniques to produce a high-quality counterfeit polymer banknote are slow, expensive and require a high level of effort and technical expertise. Digital inkjet and toner print don't adhere to it and the presence of a window is hard to simulate convincingly in paper banknotes. Many aspects of counterfeiting paper banknotes become more complicated for polymer notes or require new techniques and equipment.

That said, De La Rue recognises that the type of local counterfeit threat plays a role in the most appropriate banknote security features, and so continues to advance paper-based security features and ensure central banks and note issuing authorities have the choice they need.

One of the most obvious benefits of polymer banknotes relates to its durability and the consequent cost saving benefits associated with notes lasting longer. Over ten thousand data points in *DLR Analytics*[™] demonstrate that polymer banknotes last, on average, 2.5 times longer than paper banknotes and that this is a statistically significant difference that stands out despite all the other factors that influence banknote lifetime.

When looking at specific examples of central banks who have transitioned to polymer, the actual improvement in note life can be as large as a factor of six times increase. As a result of this many central banks experience cost benefits across the lifetime of the banknotes, with the Reserve Bank of Australia recently stating that it has saved over \$1 billion dollars since the transition to polymer.

Many more evidence points and references exist on this topic. Between October and February De La Rue will host three webinars exploring the theme of sustainable confidence when converting to polymer. These webinars cover the 'why' and the 'how' of transitioning to polymer and will share the experiences of central banks, banknote issuing authorities and others involved in the upgrade to polymer banknotes.

The first webinar entitled 'Sustainable Confidence: Why Central Banks Convert to Polymer' will take place on 28 October at 08.00, repeated at 16.00 GMT. Susan Kumar (Chief Manager, Reserve Bank of Fiji), Andrew Baker (Senior Manager, Bank of England) and Timothy Antoine (Governor, Eastern Caribbean Central Bank) will join us to share their experiences and answer questions.