

India's Shift Towards Polymer Currency - Opportunities, Challenges and the Road Ahead

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Polymer Currency Latest News

- The Reserve Bank of India (RBI), through its currency-printing arm Bharatiya Reserve Bank Note Mudran Pvt. Ltd. (**BRBNMPL**), has invited global Expressions of Interest (EOI) for supplying Biaxially Oriented Polypropylene (**BOPP**) polymer substrates with advanced security features.
- This marks India's most significant move towards introducing polymer (plastic) banknotes since the proposal was first made in **2009**.

Why is RBI Considering Polymer Currency?

- **Greater durability:**
 - Polymer notes last 2.5–4 times longer than conventional cotton-paper notes.
 - Lower denominations such as **₹10** and **₹20**, which experience the highest circulation and physical wear, are likely to be introduced first.

- Longer lifespan reduces the frequency of replacement under the RBI's **Clean Note Policy**.
- **Better security against counterfeiting:**
 - Polymer banknotes can incorporate advanced security features such as –
 - Transparent windows
 - Metallic numerals
 - Magnetic pseudo-threads
 - Holograms
 - Shadow images
 - Iridescent patterns
 - Durable tactile markings for visually impaired persons
 - These features are significantly harder to replicate than those on paper currency.
- **Improved currency management:** Although manufacturing costs are higher initially, fewer replacement cycles can reduce printing expenditure, transportation costs, storage and logistics costs, and destruction of **soiled** notes.

Economic Rationale

- **Current cost of currency management:**
 - RBI spends roughly **₹5,000 crore** annually on printing and maintaining currency.
 - Security printing expenditure – ₹5,101 crore (FY2023-24), ₹6,373 crore (FY2024-25), and ₹4,875 crore (FY2025-26).
 - India destroys 20–24 billion soiled notes annually, largely lower denominations.
- **Cost challenges:**
 - Polymer notes cost 30–60% more to manufacture than paper notes.
 - In several countries, production cost for low-value polymer notes has reached 20–24% of their face value.
 - Additional transition costs include **recalibration** of ATMs, currency sorting machines, vending machines, and cash-processing infrastructure.

Environmental Dimensions

- **Potential benefits:** A TERI study commissioned by RBI found that –
 - Longer circulation life reduces manufacturing and transportation requirements.
 - Over the complete lifecycle, polymer notes may have a lower overall **carbon footprint** than paper notes.
 - End-of-life polymer notes can be **recycled** into plastic products.
- **Concerns:**
 - Polymer is produced from polypropylene, a **petroleum-based** product.
 - Higher initial carbon footprint.
 - Need for specialised recycling facilities.
 - Dependence on fossil fuel-derived raw materials raises sustainability concerns.

Unanswered Questions

- **Dependence on petrochemical imports:**

- Polymer substrate is made from BOPP (Biaxially Oriented Polypropylene).
- India **imports** around one-fifth of its polypropylene requirement.
- Volatility in crude oil prices, aggravated by geopolitical tensions (especially West Asia), could increase manufacturing costs.
- This is despite planned domestic capacity expansion by companies such as Reliance Industries and Indian Oil Corporation.

- **Relevance in an increasingly digital economy:**

- India's payment ecosystem presents a paradox – **UPI** processes over 24,000 crore transactions annually, accounting for nearly **85%** of retail digital payments.
- Yet, currency in circulation has exceeded ₹41 lakh crore (2025-26), compared to around ₹16-17 lakh crore a decade earlier.
- The **Currency-to-GDP ratio** remains above 11%, indicating sustained demand for cash despite rapid digitalisation.
- **Reasons for continued cash demand:** Large informal economy, limited digital infrastructure in rural areas, and cash remains essential for financial inclusion and small-value transactions.

Historical Evolution and Global Experience

- **Evolution:**

- **2009:** RBI first proposed polymer ₹10 notes.
- **2012:**
 - Pilot planned in Kochi, Mysuru, Jaipur, Bhubaneswar and Shimla to test diverse climatic conditions.
 - The project was later shelved due to technological challenges and the disruption caused by 2016 **demonetisation** and subsequent currency redesign.
- **2026:** BRBNMPL's global EOI revives the proposal, with field trials expected to begin for ₹10 and ₹20 notes.

- **Global experience:**

- **Australia** pioneered polymer currency and has fully transitioned to it.
- Around **60** countries now use polymer banknotes in some form, including **Canada**, United Kingdom, New Zealand, Mexico, Brazil, Saudi Arabia, Romania, and Barbados.
- Their experience indicates improved **durability**, enhanced **security** and lower lifecycle **costs** despite higher initial production expenses.

Way Forward

- Begin with **limited** pilot projects in lower denominations before nationwide adoption.
- Encourage **domestic production** of polymer substrates to reduce import dependence.
- Conduct comprehensive cost-benefit and environmental impact assessments (**EIAs**).

- Upgrade ATM and cash-handling infrastructure in a phased manner.
- Ensure **coexistence** of paper and polymer notes during transition without demonetisation.
- **Align** currency reforms with India's broader objectives of Digital India, financial inclusion, and efficient cash management.

Conclusion

- India's move towards polymer currency represents an attempt to **modernise** its cash ecosystem by improving durability, security and lifecycle efficiency. However, concerns warrant a cautious, **evidence-based rollout**.
- The objective should not be merely replacing paper with plastic, but creating a cost-effective, secure and sustainable currency system suited to India's evolving payment landscape.

Source: **IE** | **TH**

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