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## Current Affairs - 21 September 2025

### H-1B \$100,000 ENTRY FEE EXPLAINED: PAYERS, EXEMPTIONS, AND GREY AREAS

#### H-1B \$100,000 Entry Fee: What Changes, What's Clear, and What's Uncertain?

- From September 21, 2025, no H-1B petition for workers outside the US will be approved unless the sponsoring employer pays **\$100,000 upfront**.
- Without proof of payment, consular stamping will be denied, blocking entry.
- **What Is Clear?**
  - The fee applies to all **H-1B petitions for workers outside the US**, including those needing consular stamping after travel.
  - The Secretary of Homeland Security may waive the restriction for individuals, companies, or industries if deemed in the **US national interest**.
  - The measure will last for **12 months**, after which agencies will review it before the White House decides on an extension.
- **What Remains Uncertain?**
  - The proclamation does not clarify which **sectors may qualify for waivers**, though areas like healthcare, defence, and critical technology have historically been prioritised.
  - It also leaves ambiguity over the treatment of **universities and non-profits**, which are usually **cap-exempt** under H-1B rules but are not explicitly excluded in this order.
- **Criticism of H-1B Visa**
  - Nativist **MAGA (Make America Great Again) Republicans** argue that Indian workers are “stealing” American jobs and lowering wages.
  - They claim H-1B visas, meant for top talent, are used by tech firms to hire **mid-level staff at cheaper salaries**.
  - Critics point to the salary gap: in FY2023, **70% of approved petitions for Indians were under \$100,000**, below the US IT median salary of \$104,420.

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- **Industry Viewpoint**

- Industry leaders counter that H-1B visas are essential to fill America's skills gap, especially in STEM fields.
- Data shows that China (3.57 million) and India (2.55 million) produce far more STEM graduates than the US (820,000), underlining the need for global talent.

### India at the Epicentre of H-1B Impact

- India, the largest user of the H-1B system with **71% of approvals in FY2024** (far ahead of China at 12–13%), faces the greatest disruption from the \$100,000 entry fee.
- The new rule threatens the **Optional Practical Training (OPT)-to-H-1B pathway** for young Indian graduates, as employers may avoid the steep cost.
- Families already on H-1Bs risk travel-related disruptions.
- For India's **IT service firms and Global Capability Centres (GCCs)**, staff rotations to the US become prohibitively expensive, likely shifting more project work to **offshore hubs like Bengaluru, Hyderabad, and Pune**.

### Industries Most Impacted by the H-1B \$100,000 Fee

- **Big Tech and Cloud Firms** - Amazon, with 12,000 approvals in early 2025, along with Microsoft, Meta, Google, and Apple, face massive cost hikes as each H-1B hire now costs \$100,000 extra.
  - **IT Service Providers** - Indian majors like Infosys, TCS, Wipro, HCL and global firms like Cognizant, Capgemini, and IBM depend on H-1Bs for onsite delivery. The levy hits junior roles, central to their model.
  - **Consulting and Finance** - Firms such as JPMorgan Chase use H-1Bs for STEM and quantitative roles. The new surcharge significantly raises costs for these specialised hires.
  - **Startups and Mid-Size Companies** - With limited financial capacity, smaller firms are most vulnerable. Many will delay recruitment or offshore roles to avoid the fee burden.
  - **Universities and Research Institutions** - Postdoctoral researchers and specialist staff often rely on H-1Bs. Without exemptions, academic employers face unsustainable costs, affecting research and innovation.
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### ISOBUTANOL-DIESEL BLENDING: INDIA'S NEW BIOFUEL EXPERIMENT

- India is pushing forward in its biofuel journey, experimenting with new alternatives to conventional fossil fuels to meet its energy and climate goals.
- After ethanol blending with diesel proved technically unsuitable, the government and the **Automotive Research Association of India (ARAI)** have turned their attention to **isobutanol**, an alcohol-based compound with promising blending properties.
- Transport Minister **Nitin Gadkari** recently announced that **India is working on pilot projects to evaluate the feasibility of isobutanol-diesel blending**, which, if successful, could make India the first country to achieve this breakthrough.

#### Understanding Isobutanol and Its Properties

- Isobutanol is a four-carbon alcohol widely used as a solvent in industries such as paints and chemicals. Its key attributes include:
  - **Higher Flash Point:** Less volatile and safer than ethanol, lowering fire risks.
  - **Better Miscibility with Diesel:** Compared with ethanol, isobutanol blends more effectively with diesel without requiring extensive chemical modifications.
  - **Versatile Feedstock:** Like ethanol, it can be produced from sugarcane syrup, molasses, and grains through microbial fermentation.
- These properties make it technically more compatible with diesel engines than ethanol.

#### Why Ethanol Blending Failed with Diesel?

- Ethanol has been a cornerstone of India's biofuel policy, especially in petrol blending, where the country has achieved **12% ethanol blending in 2023-24**.
- However, blending ethanol with diesel faced hurdles:
  - **Low Flash Point:** Increased volatility and fire risk.
  - **Poor Compatibility:** Required chemical additives to stabilise the blend.
  - **Engine Concerns:** Blending caused ignition and combustion irregularities in diesel engines.
- Thus, isobutanol emerged as a promising alternative for diesel blending.



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### Production and Economic Viability of Isobutanol

- Isobutanol production follows a fermentation process similar to ethanol, but with specially engineered microbes that convert natural sugars into isobutanol.
- According to the Indian Sugar Mills Association (ISMA):
  - A sugar refinery with **150 kilo litres per day (klpd)** capacity can produce **125 klpd ethanol** and **20 klpd isobutanol** with minor infrastructure modifications.
  - The use of surplus sugarcane and molasses, already abundant in India, provides a steady raw material supply.
- However, the imbalance between rising cane prices and stagnant ethanol procurement prices poses an economic challenge that could extend to isobutanol production.

### Technical and Performance Challenges

- While isobutanol blends better with diesel than ethanol, experts highlight several technical considerations:
- **Cetane Number:**
  - Isobutanol has a lower cetane number than diesel, which may reduce combustion efficiency.
  - This could cause **engine knock**, reduced power, and long-term damage.
- **Additives Requirement:**
  - Cetane improvers would be needed, increasing costs.
  - Blending beyond **10% isobutanol** is not advisable due to performance risks.
- **Emission Reduction Potential:**
  - If optimised, the blend can reduce harmful emissions and support the import substitution of fossil fuels.

### Pilot Project and Global Context

- ARAI has initiated a **pilot project**, expected to take about **18 months**, to study the impact of isobutanol-diesel blending across different vehicle classes.
  - If India succeeds, **it will become the first nation to commercialise this blend.**
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### DADASAHEB PHALKE AWARD



- It is given by the Indian government for **lifetime contribution to Indian cinema**.
- It was **instituted in 1969** the birth centenary year of Dadasaheb Phalke.
- It is the **highest award** in the field of cinema in India.
- The award's inaugural recipient was **Devika Rani**, aptly titled "**the first lady of Indian cinema**".

The recipients are recognized for their '**outstanding contribution to the growth and development of Indian cinema**'.

**Award includes:** The award comprises a **Swarna Kamal** (Golden Lotus) medallion, a shawl, and a **cash prize of ₹10 lakh**.

It is presented by the **President of India**.

### **Key Facts about Dadasaheb Phalke:**

- He was born on April 30, 1870, in **Trimbak, Maharashtra**.
- He was a film director who is considered the **father of Indian cinema**.
- He directed India's first full-length feature film, **Raja Harishchandra** in 1913.

### EXERCISE AMOGH FURY



- It is an **Integrated Fire Power Exercise** conducted by the **Sapta Shakti Command** of the Indian Army.
- **Location:** Mahajan Field Firing Ranges in Rajasthan's Thar Desert.



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The drill aimed to test combat power, coordination, and operational readiness in real-time battle scenarios, reflecting the force's preparedness for multi-domain operations.

A key focus of 'Amogh Fury' was the integration of modern technologies, including network-centric communication, command-and-control architecture, and real-time surveillance and targeting

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### WHAT IS THE ONE-IN, ONE-OUT SCHEME?



- It is a **migration agreement** between the **UK and France**.
- The deal is aimed at **detering migrants** from making dangerous trips across the **English Channel from France to the**

**UK in small boats.**

- Many **migrants without visas or permits departing France** by sea attempt to **cross to the UK in small, inflatable boats**.
- They frequently **pay large sums of money to gangs** who arrange the boats in northern France.
- Journeys can be incredibly dangerous, and people have died making the crossing.

**Under the new agreement, France will agree to take back asylum seekers who have crossed over to the UK and who cannot prove a family connection to the UK.**

**For each migrant France takes back, the UK will grant asylum to one migrant from France who can prove a family connection to the UK and who have not previously attempted to enter the country illegally.**

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### WHAT IS THE NEW AUSTRIAN TUNNELLING METHOD (NATM)?



- It was **developed** between 1957 and 1965 in Austria.
- The main idea is to **use the geological stress of the surrounding rock mass to stabilize the tunnel itself.**
- The method **uses the strength of the surrounding soil to the greatest extent possible to strengthen the tunnel structure.**
- The **operation occurs sequentially to take most advantage of the ground conditions.**
- Additionally, NATM **installs ground support on the go and on an as-needed basis, adding reinforcement to the shotcrete where necessary.**
- NATM is **best suited for short-range (> 2 km) tunnels in regions with variable soil conditions.**

### **Key Facts about Thane Creek:**

- It is **one of the largest creeks in Asia** and is **located partly on the coast of the Mumbai metropolis.**
  - It is an **inlet along the shoreline of the Arabian Sea that isolates the city of Mumbai from the Indian mainland.**
  - A major part of the creek has been declared a bird sanctuary called **Thane Creek Flamingo Bird Sanctuary (TCFS).**
  - It was designated as a **Ramsar site, a wetland of international significance, in 2022.**
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### INDUSTRIAL PARK RATING SYSTEM 3.0



- It is developed by the **Department for Promotion of Industry and Internal Trade (DPIIT)** with support from the Asian



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Development Bank (ADB).

- It aims to further strengthen India's industrial ecosystem and enhance the competitiveness of industrial infrastructure.

Features of Industrial Park Rating System 3.0

- It will help assess and benchmark facilities, infrastructure, and competitiveness of industrial parks across the country.
- The initiative will provide stakeholders with reliable data, encourage best practices, and support the creation of world-class infrastructure.
- It introduced an expanded framework with new parameters, including sustainability, green infrastructure, logistics connectivity, digitalization, skill linkages, and enhanced tenant feedback.
- Under IPRS 3.0, industrial parks will be benchmarked and categorized as Leaders, Challengers, and Aspirers based on their performance across key indicators.

### ACHANAKMAR TIGER RESERVE



- **Location:** It is situated in Bilaspur district of Chhattisgarh.
- Achanakmar Wildlife Sanctuary was established in 1975 and was declared a tiger reserve in 2009.
- It is part of the huge Achanakmar-Amarkantak Biosphere Reserve.
- It is one of three tiger reserves in Chhattisgarh. It plays a crucial role in the tiger corridor network, vital for the movement of wildlife.
- It has a corridor connecting Kanha and Bandhavgarh Tiger Reserve and plays a critical role in the dispersal of tigers among these reserves.
- **River:** The Maniyari River flows right from the centre of this reserve, which is the forest's lifeline.



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**Tribes:** It is home to the Baigas and Gonds residing inside of this tiger reserve.

**Vegetation:** Tropical moist deciduous vegetation covers the majority of the area.

**Flora:** Sal, bija, saja, haldu, teak, tinsa, dhawara, lendia, khamar, and bamboo bloom here, along with over 600 species of medicinal plants.

**Fauna:** It includes the tiger, leopard, bison, flying squirrel, Indian giant squirrel, chinkara, wild dog, hyena, sambar, chital, and over 150 species of birds.

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