India Energy Stack

Prelims: Current events of national and international importance

Why in news?

The Ministry of Power (MOP) initiates stakeholder survey to build India Energy Stack (IES), a digital backbone for power sector.

- **Shift in power sector** – India's power sector is undergoing a paradigm shift driven by grid digitalization, renewable energy integration, decentralized power generation, and consumer-centric reforms.
- To support this transformation, the MOP has conceptualized the *IES — a Digital Public Infrastructure (DPI)* for the power sector.

***DPI** – Are shared, interoperable digital systems that enable the efficient delivery of public and private services at scale by combining open technologies, public-private partnerships, and market innovation.*

- **IES** – It is envisioned as a standardised, modular, and open-source digital infrastructure for the power sector.
- **Aim** – To create a unified framework that supports unique digital IDs for assets, consumers and transactions; enabling better tracking, transparency and management across the ecosystem.
- **Nodal agency** – REC Ltd (Rural Electrification Corporation Limited), a central public sector undertaking, will serve as the programme nodal agency for the IES initiative.
- **Utility Intelligence Platform (UIP)** – As part of this initiative, UIP will be developed using standardized and open APIs and protocols, in collaboration with selected power distribution utilities.
- This platform will help unlock data from various IT/OT systems to drive innovation and efficiency across the sector.
- **Stakeholder Mapping Survey** – To ensure the IES and its associated solutions are comprehensive and future-ready; the Ministry is conducting a Stakeholder Mapping Survey.
- **Insights gather on survey** – Organizational profiles; Offered solutions and innovations; Readiness to participate in the IES ecosystem
- Early adoption will help organizations remain future-ready, minimize retrofit costs, and support a unified, innovation-driven power sector.

- **Significance** – The IES will enable peer-to-peer energy trading; support aggregated demand-response programmes amid rising renewable integration; and facilitate smoother compliance with carbon offsetting.
- **The challenges in power sector addressed by IES are –**
    - There is no unique identifier for consumers, assets, or stakeholders.
    - Decision-making is hampered by the lack of access to harmonised, real-time data.
    - Those seeking to offer solutions in this space struggle to scale, as they depend on various proprietary digital platforms.
    - There is no interoperability between these digital systems, which prevents cross-regional data sharing and cross-discom transactions.

Reference

1. PIB | Ministry of Power Initiates to Build India Energy Stack (IES)

2. Indian Express | India Energy Stack

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