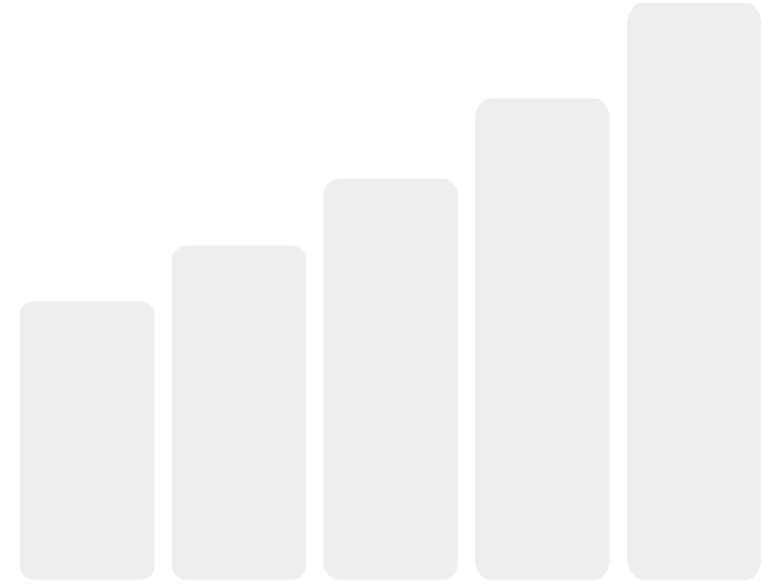




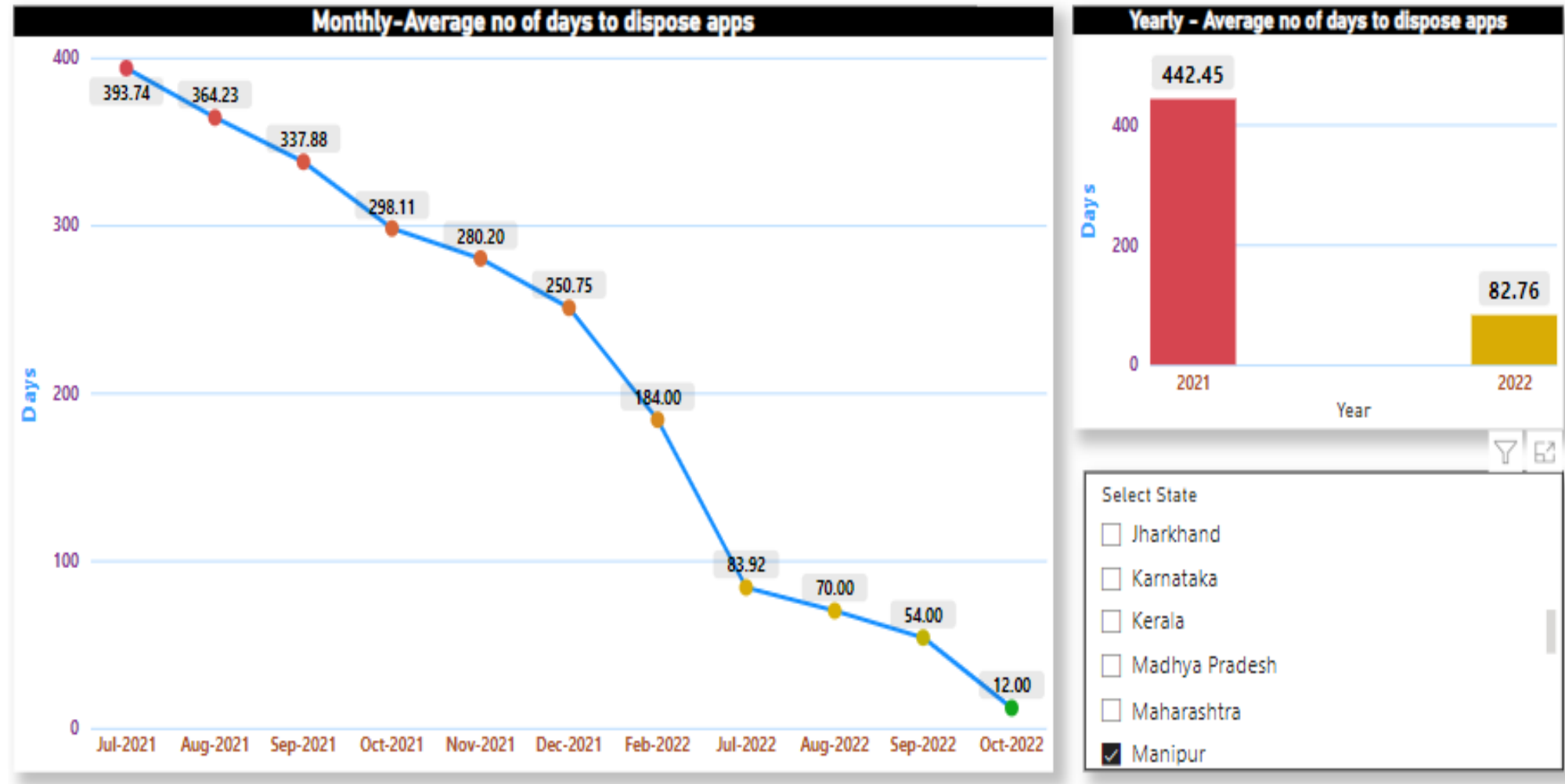
One Day Capacity Building Conference on 5G for Manipur

10th November 2022

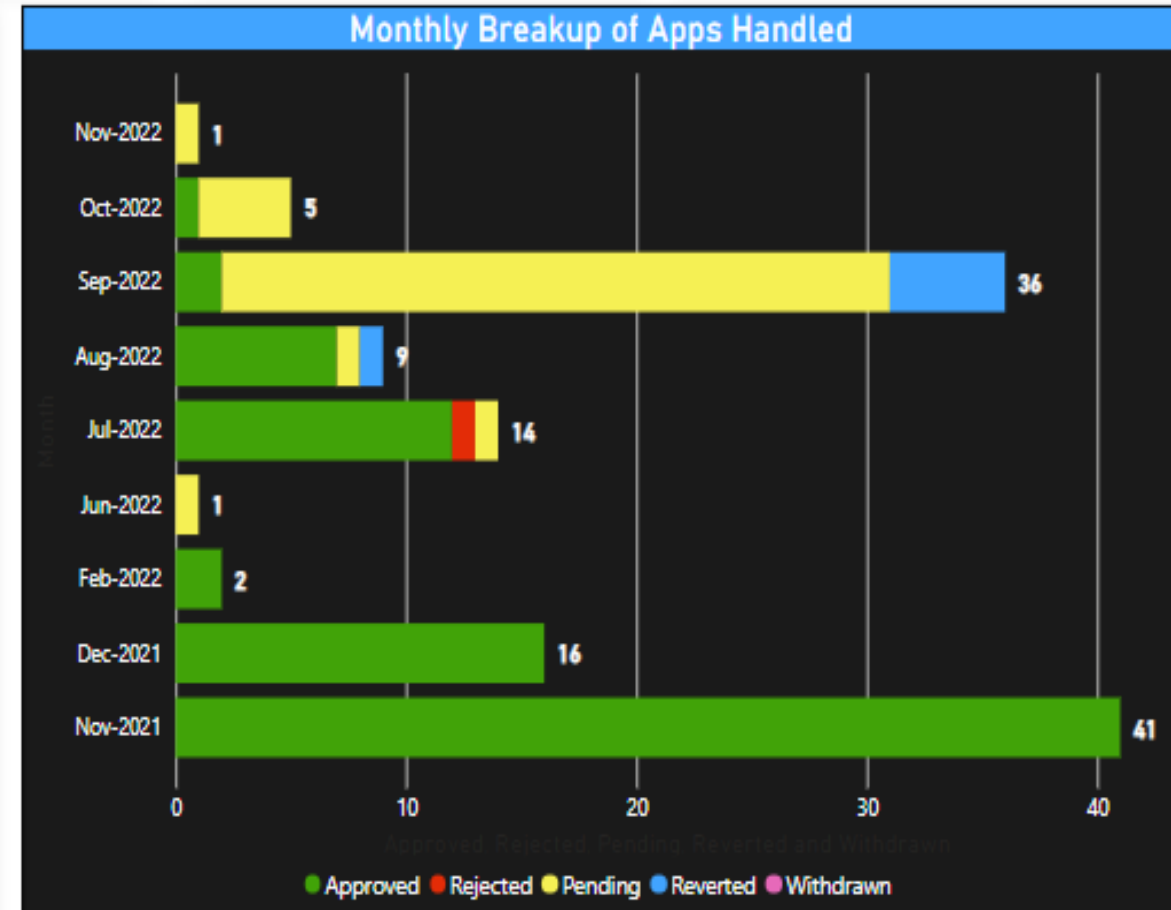
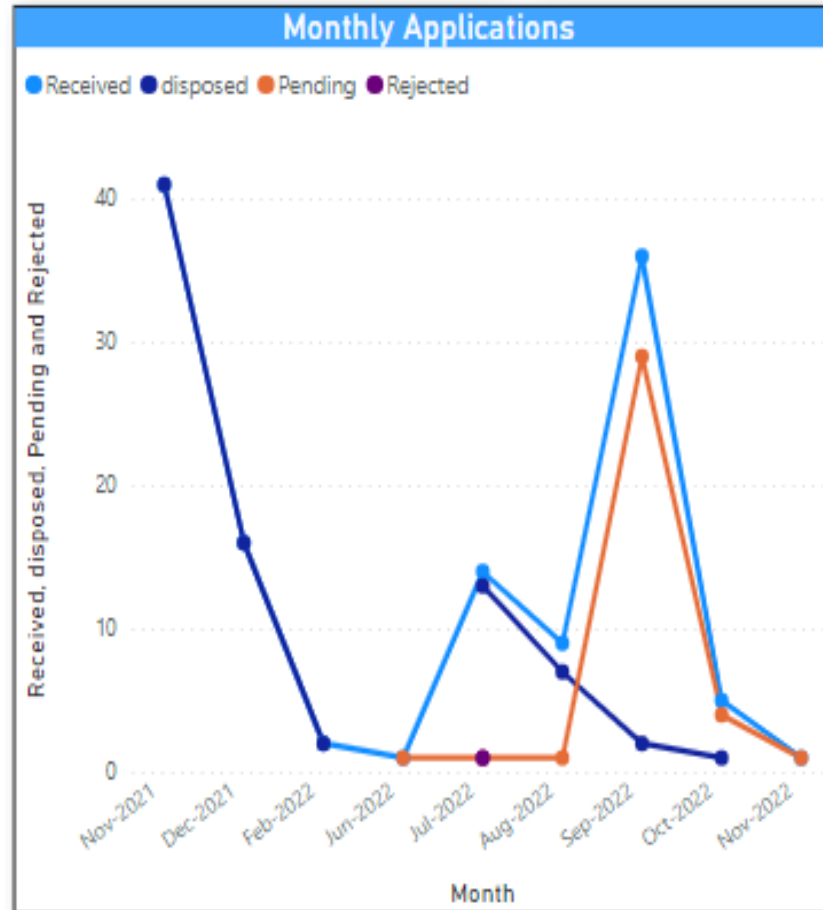
NBM - Targets v/s Achievement

Key Performance Indicator	2-year (FY 2021-22)	Manipur	3-year (FY 2022-23)	4-year (FY 2023-24)	5-year (FY 2024-25)
	Target	(as on 31/03/2022)	Target	Target	Target
Broadband Connectivity to Villages (%)	50%	Appox. 80%	100%	100%	100%
Towers per '000 population	1	Appox. 0.78	1	1	1
Fiberization of Telecom Towers (%)	45	Appox. 30%	55	65	70

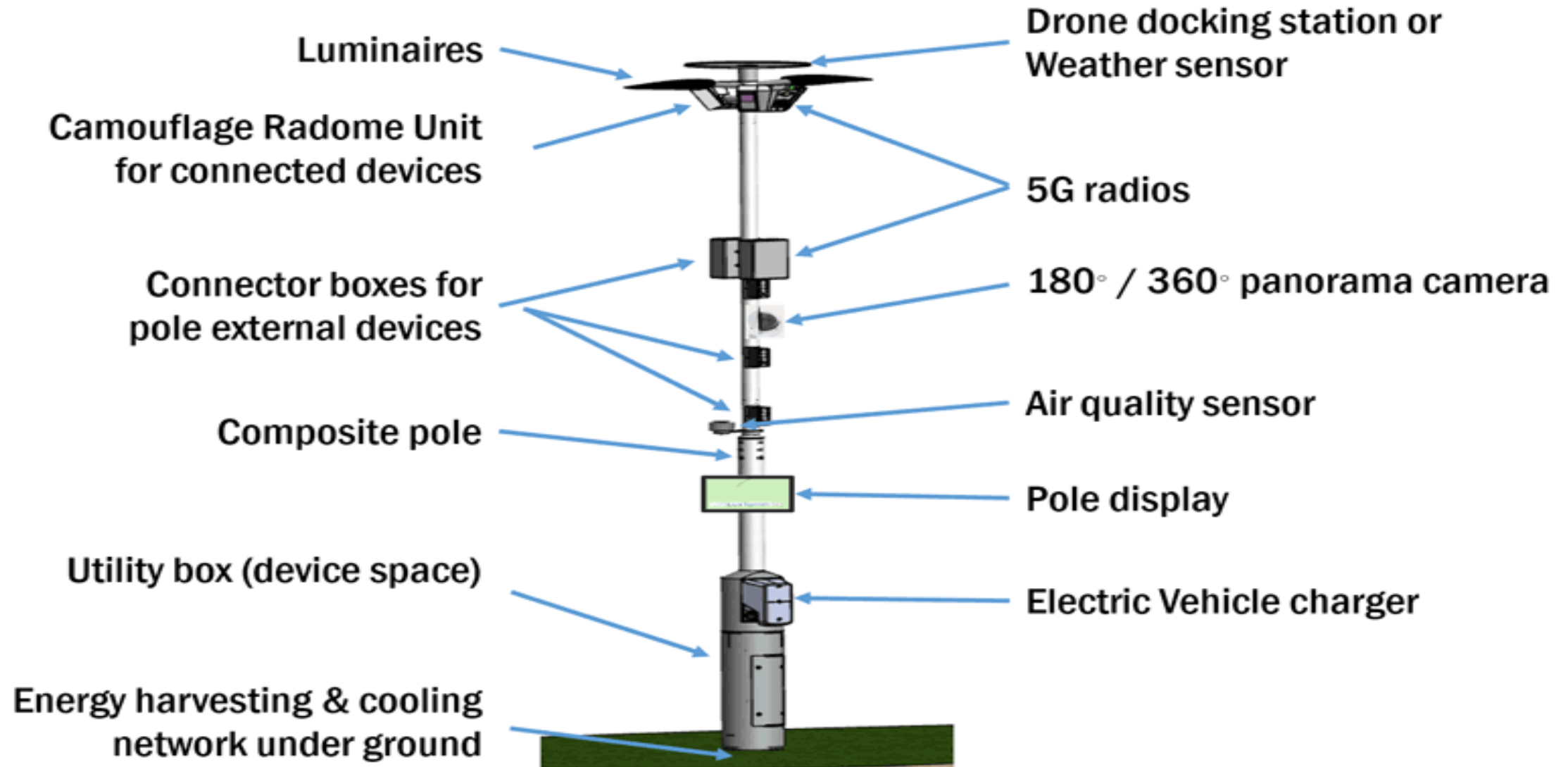
Manipur Application Disposal Average



Manipur Application Breakup



Smart 5G Light Pole Infrastructure







WHAT MAKES IT A SMART POLE?

Sensors will send live feeds of PM10, PM2.5, NO2, SO2, CO, humidity and temperature levels

Height 9m-12m

CCTV camera

Solar panels

- Lights can be dimmed remotely for saving energy during non-peak traffic hours
- Can host **microcells** to provide 2G/3G/4G telecom services
- Also act as Wi-Fi hotspots for free internet
- To be located in GK B block as a 6-month pilot
- If successful, a grid of 2,000 poles to be set up

EXISTING POLES

55 spread over Connaught Place, Baba Kharak Singh Marg, Kasturba Gandhi Marg, Tughlaq Crescent and Janpath

New Delhi



Smart Pole , Connaught Place, New Delhi



Smart Pole with Air sensor, LED and Wi-Fi , Delhi



Smart Bus Stop, Kolkata



Smart Pole , Dahod



Smart Bus Stop, Aurangabad



Multipurpose Smart Pole , Bhopal



Smart Poles, Mangaluru



Multipurpose Smart Pole , Chennai

Street Furniture and Small cell sites around the world





Dubai, Smart Shelter



Abu Dhabi AC Bus Shelter

Street Furniture and Small cell sites around the world



South Korea anti virus smart bus shelter



Smart bus stop in Seoul



T-Money Card Amount
Totalling Function



Smart bus stop in Paris

Facilities:

- a. a ticket office
- b. a self-service recharging station for electric bikes
- c. a traveller's library based on "take a book, leave a book"
- d. gentle alerts that signal when a bus is approaching

Over 80% of FTTH rollouts rely on aerial fiber deployments.

Why Aerial?

- i. Cost-effective solution in rural or low-density areas
- ii. Ground may be undulating, rocky or both, making burying cable more difficult
- iii. Aerial cable is typically faster and less expensive to deploy than digging Environment challenges like lack of an underground telecom duct network
- iv. Enables the re-use of existing poles, which helps to reduce installation costs and speeds up deployments.



Support desired for better roll out

- 1. Issuance of Manipur RoW policy aligned with Indian Telegraph Right of Way Rules, 2016 and amendments, 2021 & 2022** – The Policy such issued by State Govt should be implemented by all local self Governing authorities in letter and spirit. The amendments shared by Gol on date 17 Aug 2022 need to be incorporated.
- 2. Permission and Utilization of existing poles and other infrastructure (street furniture) for putting up Low Power BTS (small cell) and ‘structured’ overhead/aerial OFC** - Newer technologies like 5G, densification of network is must. Street Furniture required in large numbers to install Small Cell and Aerial OFC.
- 3. Adoption of MoUD amendment** - For good in-building solution (IBS) MoUD addendum dated Mar 2022 need to be adopted immediately by Manipur for creating world class telecom infra.

- 4. **Common Duct** – The state requires a policy in the long run, facilitate wherever infra laying is happening currently. Electric poles and other street furniture can be utilised for common duct/aerial fiber, with provision for small cells.*
- 5. **Regular DLTC meetings** – Helps in timely redressal of operational issues at district level*
- 6. **Safety & Security of Telecom Infrastructure across Manipur** – Challenges from local residents in OFC laying, tower installation, police protection gets necessitated. Issuance of necessary directions for sensitising the concerned departments & for safe-guarding the telecom infrastructure.*

- 7. Participation of Airports, Ports Etc.** various entities such as Airports, Metro transportation, emerging Smart Cities and Enterprise Customers stand to benefit from deployment of 5G
- 8. Provision of Power Supply** – Availability of uninterrupted power supply is an essential requirement. Installation of meters (smart, pre-paid), consolidated billing and payment (online) required.
- 9. Synchronization Among Various Civil / Govt Authorities** This requires about dealing with different owners of street furniture assets, complex internal processes within asset owning authorities for seeking internal approvals for final RoW permissions etc.
- 10. Support from Local Authorities Across Manipur** strengthening on telecom infra. All local Municipal Authorities to allocate Land and Buildings which may include:
 - a. Vacant Lands Including parks
 - b. School Buildings
 - c. Hospitals / Dispensaries
 - d. Roadside Public utility service.
 - e. Street Furniture (Poles, Bus Stand etc.)
 - f. Authority offices etc.



Thank You