

Pakistan

# Using technology for evidence-based feedback to ensure quality electricity access

## Electricity Supply Monitoring Initiative (ESMI)

[www.watchyourpower.org](http://www.watchyourpower.org)

Concept and Execution  
Prayas (Energy Group)  
Pune

[www.prayaspune.org/peg](http://www.prayaspune.org/peg)

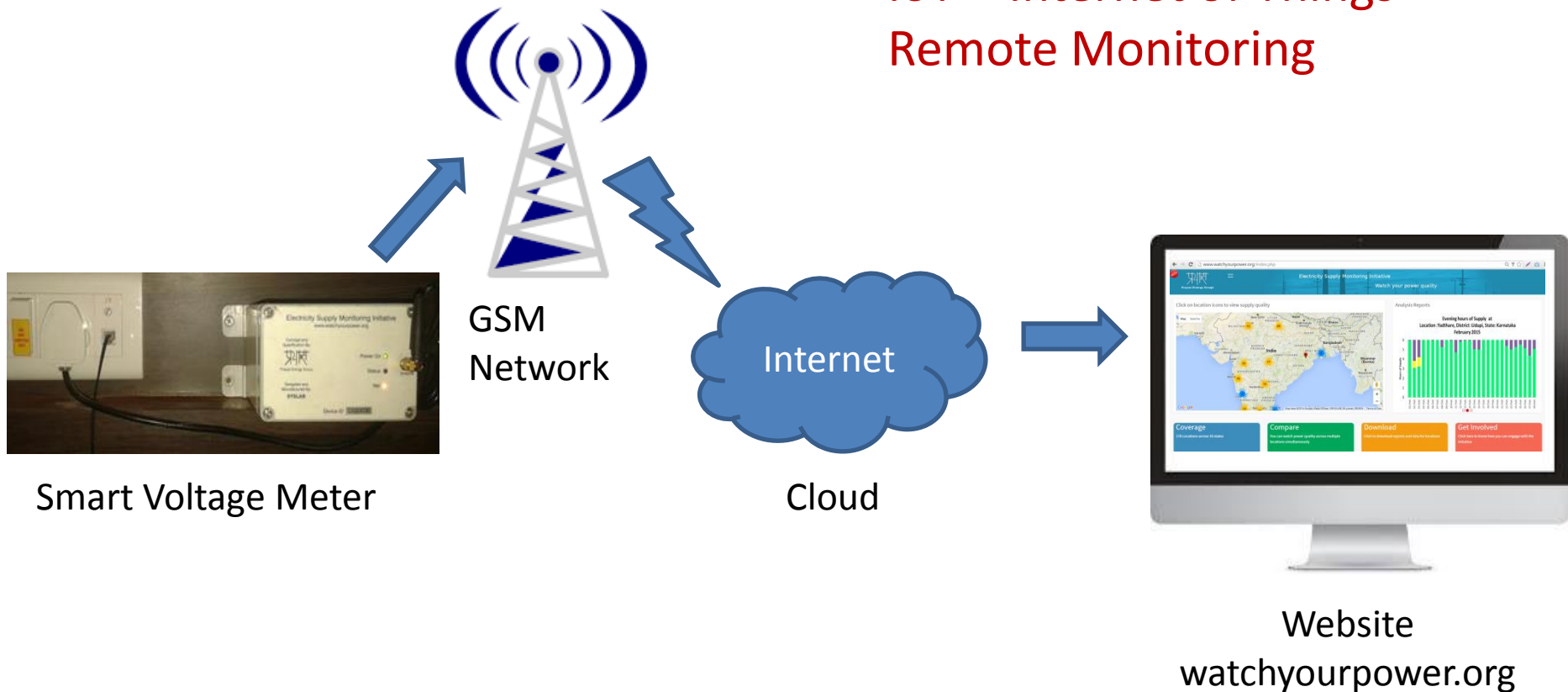
Presentation at ACEF June 2016

# ***Evidence based feedback about electricity supply quality***

- Huge investments are made in generation, transmission and distribution to improve access
- Not just connection, but reliable supply is critical for socio-economic benefits of electricity
- Often very limited data is available about supply quality
- Supply code / standards are prescribed, but remain just on paper with no evidence of compliance on ground

# How does ESMI Work ?

IoT - Internet of Things  
Remote Monitoring



**ESMI was publicly launched in March 2015**

- Currently ESMI covers about **200 locations** across the country
- Over **1 million location hours** data currently available

# ESMI Expanse

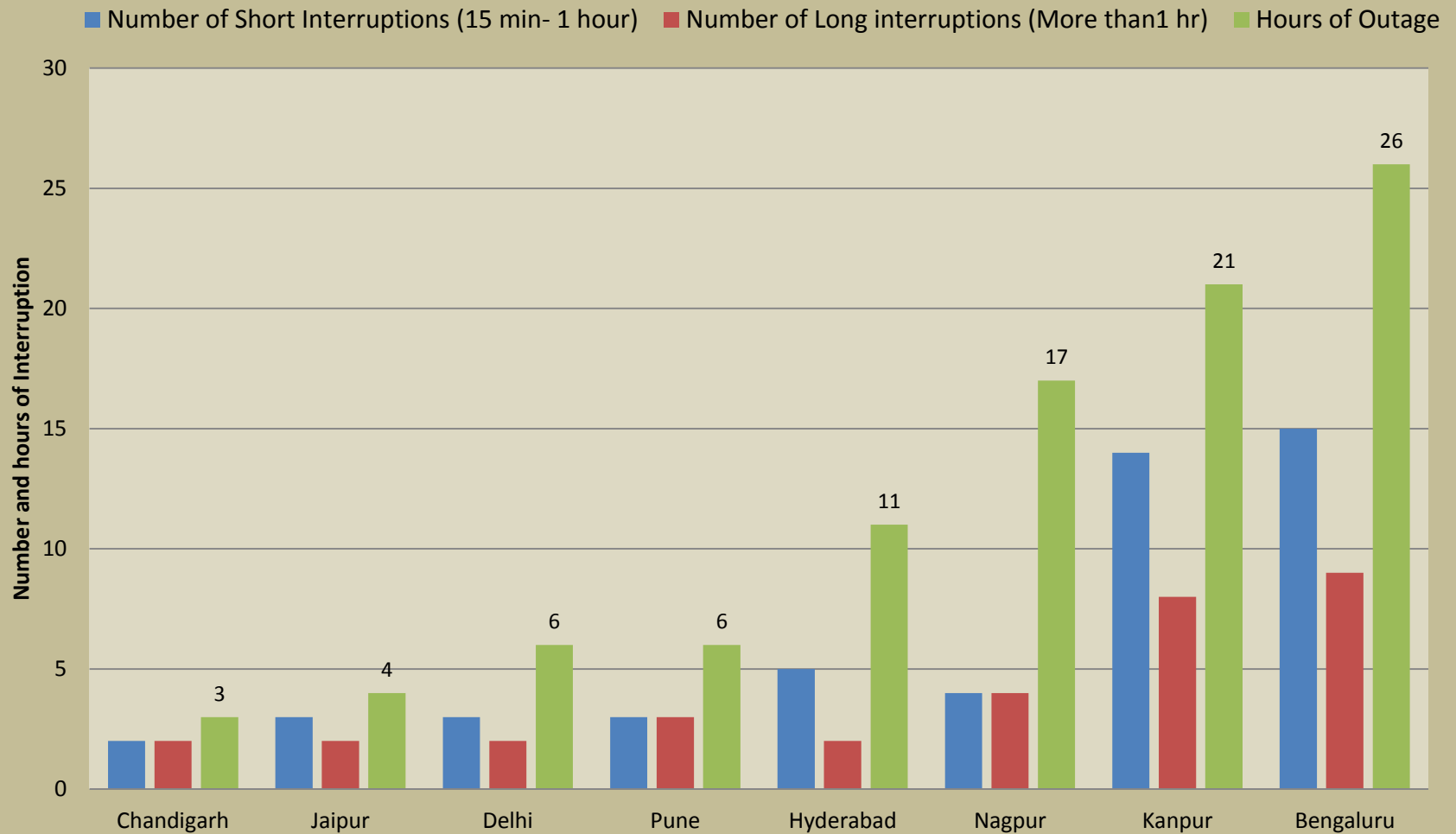
## ESM deployment statistics (As on 25<sup>st</sup> May 2016)

States	18
Districts	52
Total Locations	209
-State Capitals	54
-District Headquarters	76
-Other Municipal Corporations	24
-Gram Panchayat (Rural)	55
Available Data (Location hours )	1.5 million



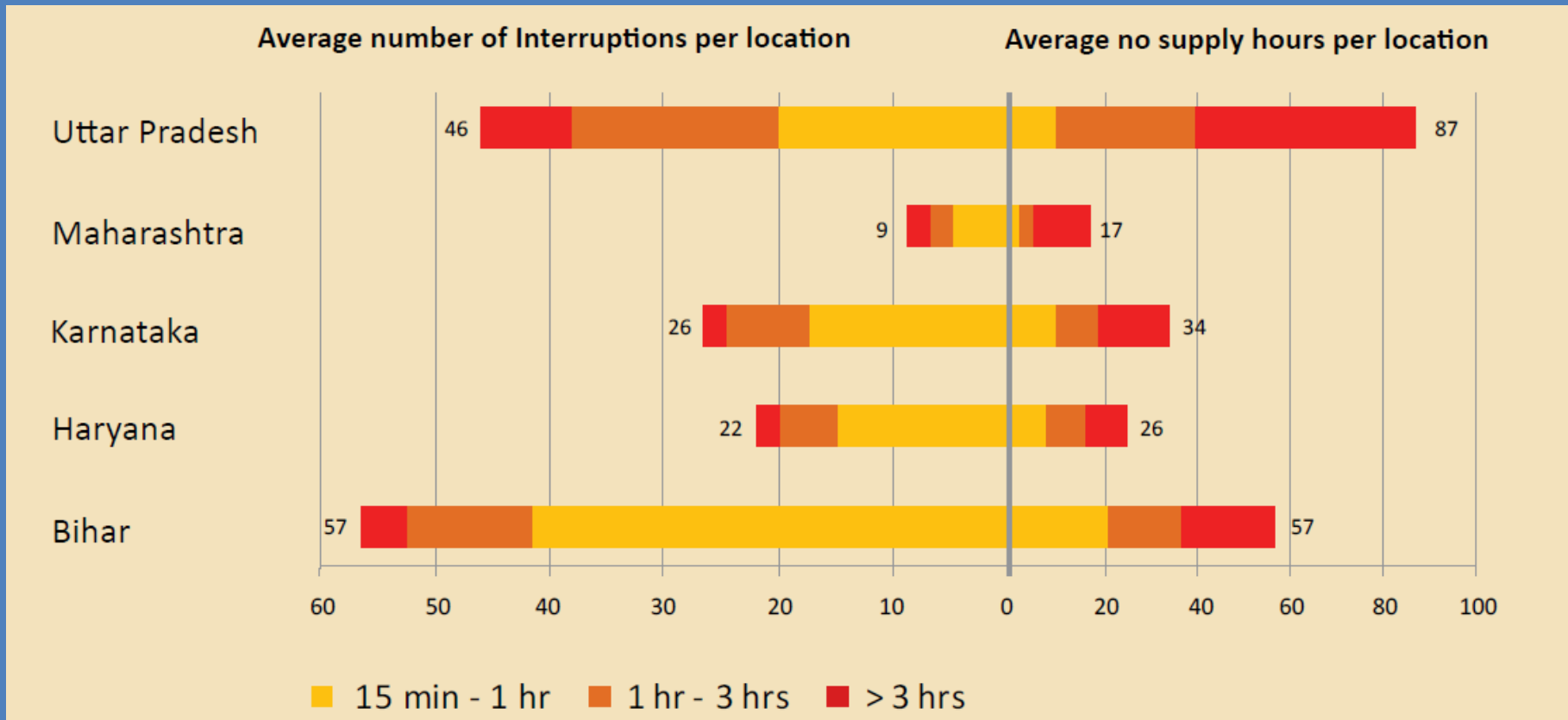


# Supply Quality in Mega Cities – March 2016



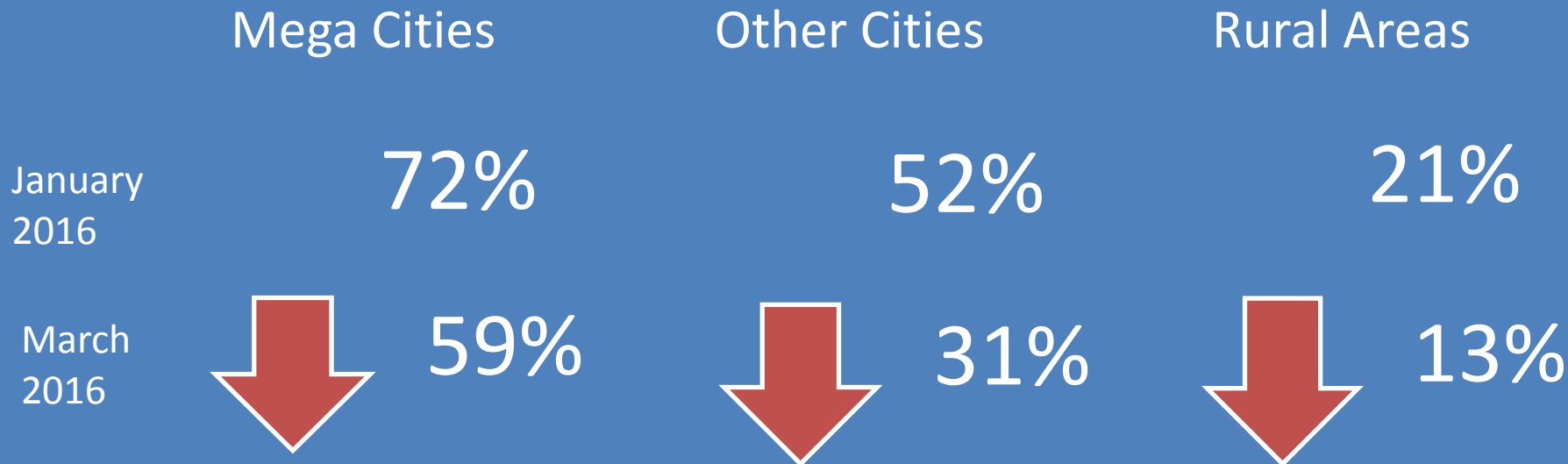


# Supply Quality in Other Cities – March 2016





# ESMI Locations receiving Six hours of evening supply (5 PM-11 PM) during January and March 2016



Note \*\*Evening supply hours considered is between 5 p.m. to 11 p.m. and this analysis ignores up to 2 hours of total evening supply interruptions during the month.

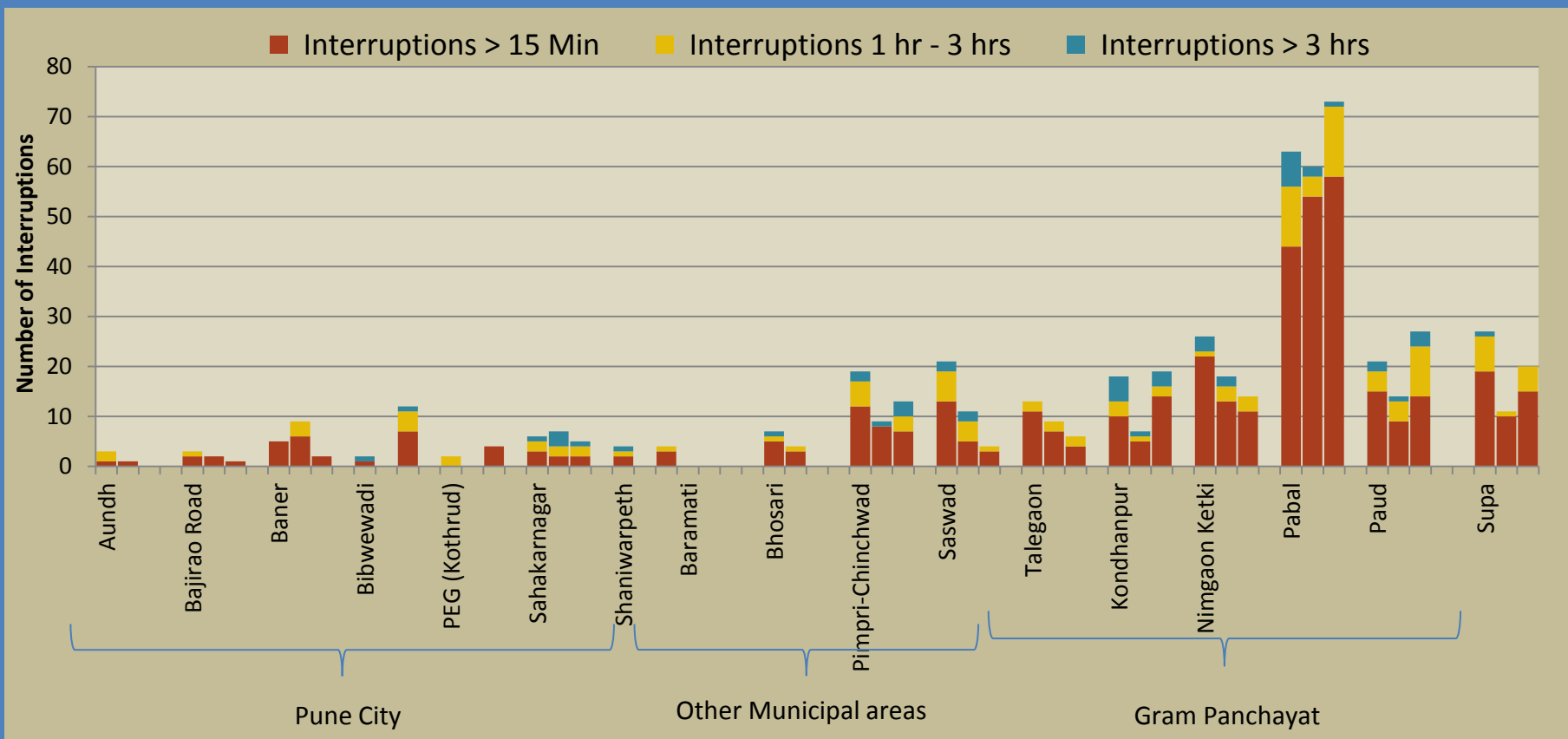


Prayas (Energy Group)

ID : AVGEHS160104 & AVGEHS160304

Source : [www.watchyourpower.org](http://www.watchyourpower.org)

# Average number of interruptions (>15 Minutes) in Pune District during October -December 2015



Avg. Hours of outage	October	November	December
Pune City	5	5	4
Other Municipal Areas	20	13	7
Gram Panchayat	45	19	30

# Key takeaways

- Technology and costs are no more a barrier for automated monitoring systems
- Reliable service quality data can help :
  - Increase consumer confidence in supply utility
  - Ensure accountability of investments in distribution infrastructure
  - Estimation of demand supply gap
  - Planning and accountability for short term power purchase
  - Tariff-Service quality linkages

# Thank you

**For more information visit :**

[watchyourpower.org](http://watchyourpower.org)

or

[prayaspune.org/peg](http://prayaspune.org/peg)

**Or write to us at :**

esmi@prayaspune.org

# About ESM device

- The energy consumed by the device is less than a unit per month
- Accuracy + /- 2-3 %
- Devices are rigorously tested before they are deployed
- Precautions ensured during deployment
  - Ensure device is not connected to UPS /stabilizers plug point
  - Device is connected to spare plug point to not hinder daily activities
  - Device is also connected to direct supply line where possible
- Recorded erratic supply , long outages are confirmed from consumer feedback
- Each device costs about Rs. 10,000 - 15,000 (depending on specific model and cost of mobile data package)