

CYBER SECURITY IN POWER SYSTEM

“There are only two types of companies: Those that have been hacked and those that will be hacked.” Robert S. Mueller, III, Director FBI made this famous quote but almost by the time he made the quote it was out of date – it should be ‘There are only two types of companies: Those that have been hacked and those that don’t know they have been hacked.’

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CENTRAL ELECTRICITY AUTHORITY
CISO, Ministry OF POWER

Cyber Security

- ***Cyber security refers to the protection of the networks, hardware, and software from attacks, damage, or unauthorized access and rejection of services.***
- ***It basic involves:***
 - Identify Infrastructure
 - Assess/Evaluate Vulnerabilities/Threats/Risks
 - Implement Security Controls
 - Verify Implementation of Security Controls
 - Ensure Compliance to Audit

Cyber Security Initiatives in India

- **17.10.2000:** Information Technology Act,2000 (No. 21 of 2000) – IT Act ,notified.This was amended in 2008. It is the primary law in India dealing with Cyber Crime and electronic commerce.
- **10.01.2014:**National Critical Information Infrastructure Protection centre (NCIIPC) was created by Government of India under section 70 A of IT Act.
- Two important documents of NCIIPC:
 1. Guidelines for protection of critical Infrastructure (CII)
 2. Framework for evaluation of Cyber Security
- Computer Emergency response Teams (CERT-In) under section 70(B) and sector specific CERTs constituted
- As per Rule 12(1) (a) of IT Rules 2013, it is mandatory to report specific cyber security incidents to CERT-In.
- **ISGF Documentation:** ISGF has prepared a framework for laying down procedures for securing India's Smart Grid from cyber-attacks.
- **ISO: 27001:** The Government of India, under the Information Technology Act, 2000 and the Rules therein for Reasonable Security Practices published in 2011, require all organisations to implement ISO:27001 as the recommended Information Security Management System for legal compliance.

Cyber Security in Power sector

- **Indian Electricity Grid code Clause 4.6.5**

“ All utilities shall have cyber security framework to identify the critical cyber asset and protect them so as to support reliable operation of the Grid.”

- **IS-16335 :2015 Power Control Systems-Security Requirement**

It specifies requirement for identification and protection of critical assets for all entities involved in generation, transmission , distribution and trading of electric power .

- **CERC (Communication System for inter-State transmission of Electricity) Regulations, 2016.**

- “CEA shall formulate and notify technical standards, cyber security requirements, protocol for the communication system for Power Sector within the country including the grid integration with the grid of the neighbouring countries”.
- 13. Cyber Security:
 - (i) Communication infrastructure shall be planned, designed and executed to address the network security needs as per standard specified by CEA.

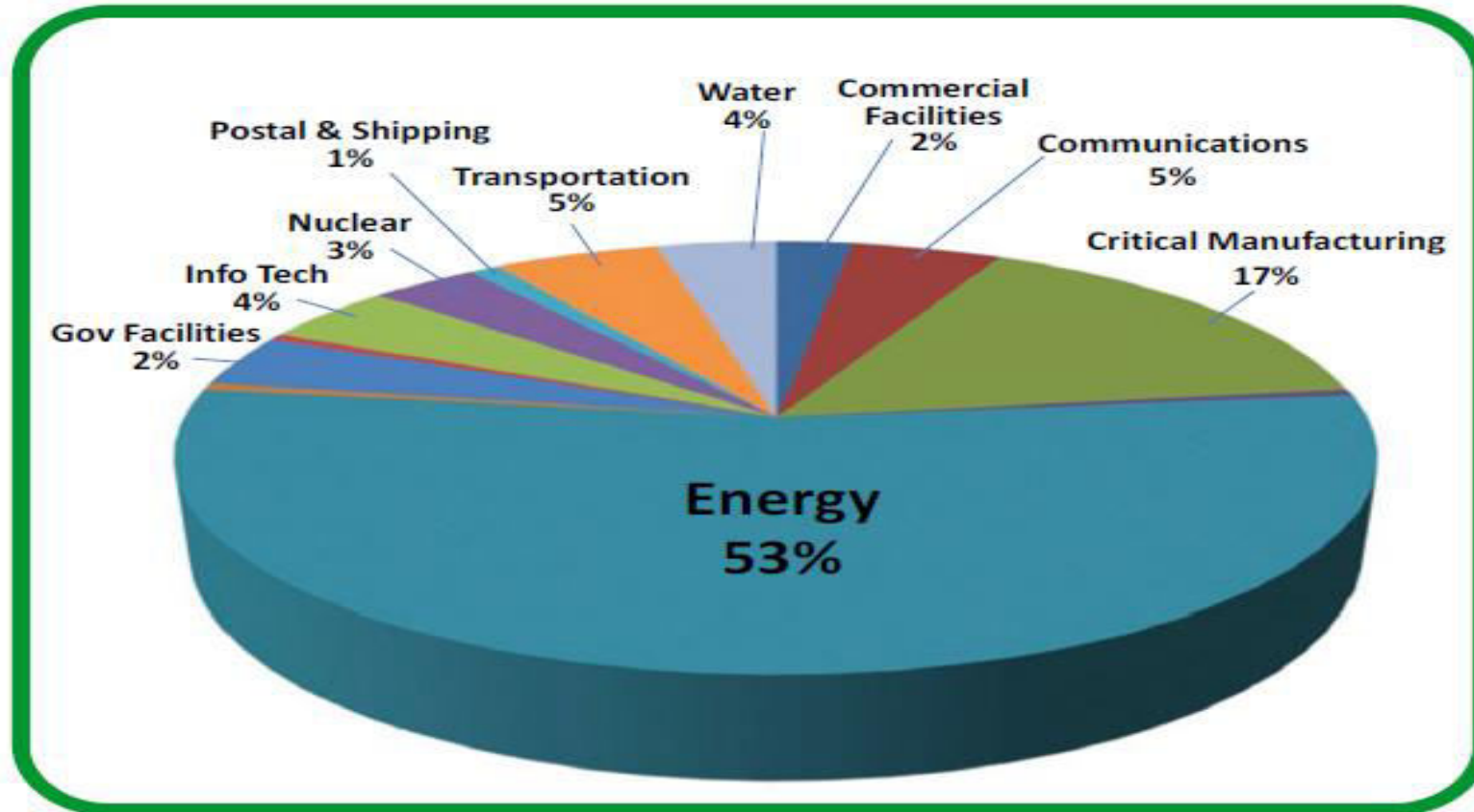
Recent Cyber Attacks

- Cyber-attack in the form of ransomware virus hitting more than 150 countries on 12.05.2017.
- Black out in three cities of USA: A series of power outages in Los Angeles, San Francisco, and New York City left commuters stranded on 21.04.2017, yet to be recognized, whether due to cyber-attack.
- Cyber Attack on Ukraine's power grid on 17.12.2016.
- Cyber Attack on Hydropower Generation in New York in year 2013.
- Cyber Attack on Korea Hydro and Nuclear Co Limited in December, 2014.
- Security breach in Iran's Nuclear plant in 2010.

2017 : Cyber attacks

- **2017**
- February: The [Cloudbleed](#) bug was discovered by Google [Project Zero team](#).
- April: A hacker group calling itself "The Dark Overlord" posted unreleased episodes of [Orange Is the New Black](#) TV series online after they failed to extort online entertainment company [Netflix](#).
- May: [WannaCry ransomware attack](#) started on Friday, 12 May 2017, and has been described as unprecedented in scale, infecting more than 230,000 computers in over 150 countries.
- May: 25,000 digital photos and ID scans relating to patients of the Grozio Chirurgija [cosmetic surgery](#) clinic in [Lithuania](#) were obtained and published without consent by an unknown group demanding ransoms. Thousands of clients from more than 60 countries were affected.^[87] The breach turned attention to weaknesses in Lithuania's information security.
- June: [2017 Petya cyberattack](#).
- May–July 2017: [The Equifax breach](#).
- September 2017: [Deloitte breach](#).
- **Indian Power Sector: Nov 2017 : Hydro Utility in Northern Region**
 - **Feb,2018 : Discom website , ransom call in Bitcoin**

Utility as target of Cyber attack



According to US Deptt Of Home land security's Industrial Control system Computer Emergency response team (ICS-CERT) , majority of Cyber attacks in 2013 were related to Energy Industry.

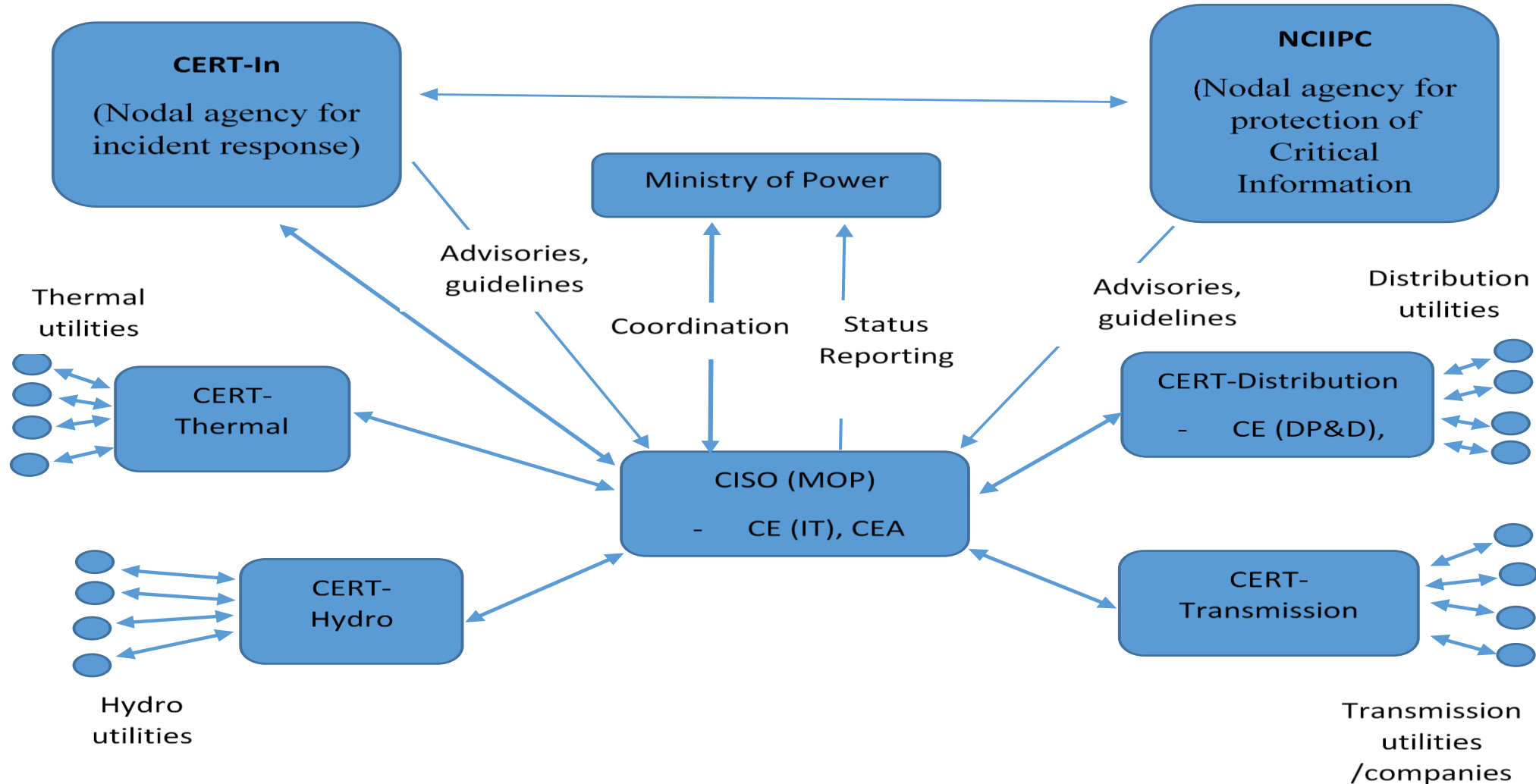
Areas Vulnerable to Cyber Attacks

- **Hardware Layer:** Embedded components such as Programmable Logic Controllers (PLCs) and Remote Terminal Units (RTUs) are hardware modules executing software required for information communication and control.
- **Firmware Layer:** The firmware resides between the hardware and software. It includes data and instructions able to control the hardware.
- **Software Layer:** Power Control Systems employ a variety of software platforms and applications, and vulnerabilities in the software base may range from simple coding errors to poor implementation of access control mechanisms.
- **Network Layer:** Vulnerabilities can be introduced into the power control system network in different ways namely the firewalls, modems, fieldbus network, communications systems and routers, remote access points and protocols and control network.
- **Process Layer:** All the aforementioned power control system layers interact to implement the target power control system processes.

Issues in Cyber security

- To frame a cyber-security program to facilitate development of Cyber Security Standards
- create a platform for sharing cyber security incidents
- strengthening of the cyber security system in power generation, transmission, and distribution sectors.
- **There are six areas, which need to be addressed for cyber security:**
 1. **Vulnerability assessment** in order to categorize the devices in terms of high risk and general vulnerabilities.
 2. **Vulnerability assessment area**, extended to attacks from an insider, attack on the computer monitoring and controlling devices, attack on the SCADA network, and programming of malware into the control system devices.
 3. Prepare framework for **testing of equipment**.
 4. **Asset mapping** of all critical infrastructure equipment and periodic monitoring of these equipment for cyber security compliance.
 5. Provide a complete **monitoring solution** to report on malicious connections.
 6. **Auditing** and conformance procedure.
- **Formulate provisions in regards to bidding to incorporate provisions for acceptance of technical standards and testing certificate of other countries.**

Organization structure for Cyber Security in Power system



Cyber Security in Power system

- Vulnerability:

- Generation : UMPP and Renewable generating stations(like Solar Inverter)
 - Transmission: Protection system and communication
 - System Operation: SCADA-EMS
 - Distribution: Smart meters
- February ,2013 CEA brought out report on Guidelines mandating clearance from “ Security Angle” wherever sensitive equipment is procured from overseas as well as for the procurement of electronic products by Government or its agencies for Power sector
 - It lists out Critical equipment in Power sector considering physical and cyber security aspects.
 - Also list out Electronic products deployed in Power system having security implication.

Constitution of Committee under Member (E&C)

- Ministry of Power vide letter dated 21.3.2017 constituted a committee under Chairmanship of Member (E&C).
- **To look into issues of power firms seeking to enter Indian Power transmission sector and to study the related issues of Cyber Security.**
- **To look into matter related to Standards of Technical specification, Testing standards and Sourcing of equipment/materials.**
- Members of the Committee:
 - Director (Transmission),MOP.
 - Sh.V.N. Kothari, Director D/O Commerce
 - Chief Engineer (PSETD),CEA
 - Chief Engineer (IT),CEA
 - Director(Projects), PGCIL
 - ED(NTAMC), PFCIL
 - Director (Public policy & Economic Taxation), IEEMA
 - Co-opted Chief Engineer (legal), Chief Engineer (F&CA) & GM (POSOCO)
- Meetings held on 28.3.2017 and 20.4.2017
- Report submitted on 19.7.2017

Issue 1 Foreign Firms in Transmission

1. Relevant service is “Service incidental to energy distribution (CPC 887) .
2. The GATS schedule in the WTO, India has not taken any commitments on this particular service and, therefore, we retain the full policy space to restrict the tendering process as per its requirements and considerations. With regard to non-committed sectors, such as, in this particular case, India can place restrictions on national treatment or market access.

Issue 1. Foreign Firms in Transmission(Contd.)

- While we are in a position to limit the participation of foreign countries in the tendering process here in India, the case of Japan, South Korea and Singapore stand out separately since we have a Free Trade Agreement (FTA) with them.
 - Even in the case of these three countries, there is a provision to exclude them in two specific instances.
 - The first being the case where the purchase made is for the Government only and for non-commercial use. An example in this regard would be any purchase made by the BSF or the BRO etc. The other instance is that we can invoke a security exception which is permissible under Article XVI of GATS.
- However, it seems that due caution has to be exercised in invoking the **security exception and the Department of Commerce has pointed out that it has not really been tested in any case so far**
- **“principle of reciprocity”** - if any foreign country debars firms of a country from bidding in their market on a flimsy ground, the same stance could be adopted by country for firms from that particular foreign country.

Issue 1. Foreign Firms in Transmission(Contd.)

- National Capital Good Policy 2016

“ To make procurement of Heavy Electric Equipment under local competitive bidding and not under international competitive bidding (ICB) in domestically funded projects under Ministry of Power, Ministry of Steel and Ministry of Non-Conventional Energy , CPSUs and in the projects funded by PFC and REC.”

- CEA Notification vide CEA/PEETD/205/218-296 dated 19.5.2016

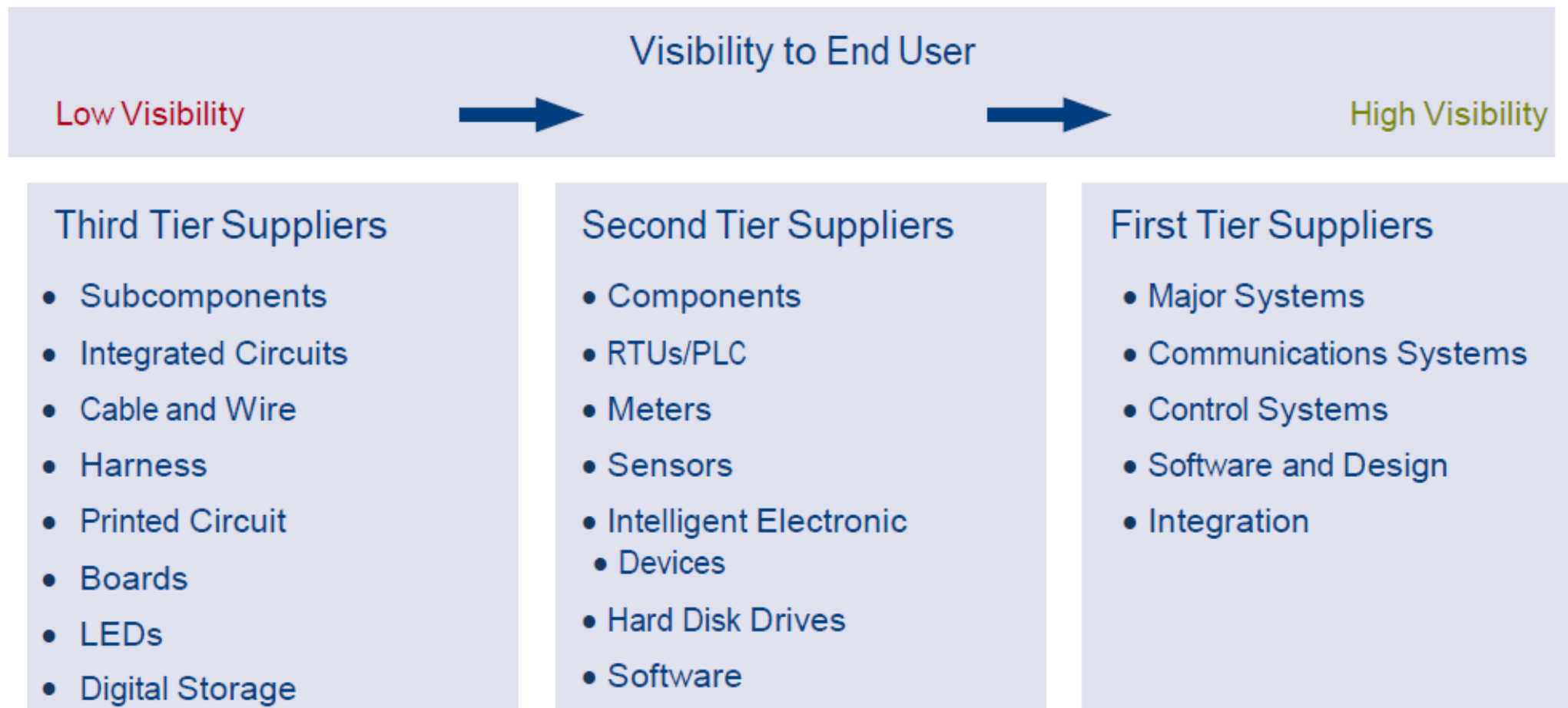
(http://www.cea.nic.in/reports/others/ps/psetd/domestic_competitive_bidding_2016.pdf)

- Preferred market access in Telecom : <http://www.dot.gov.in/pma-policy>

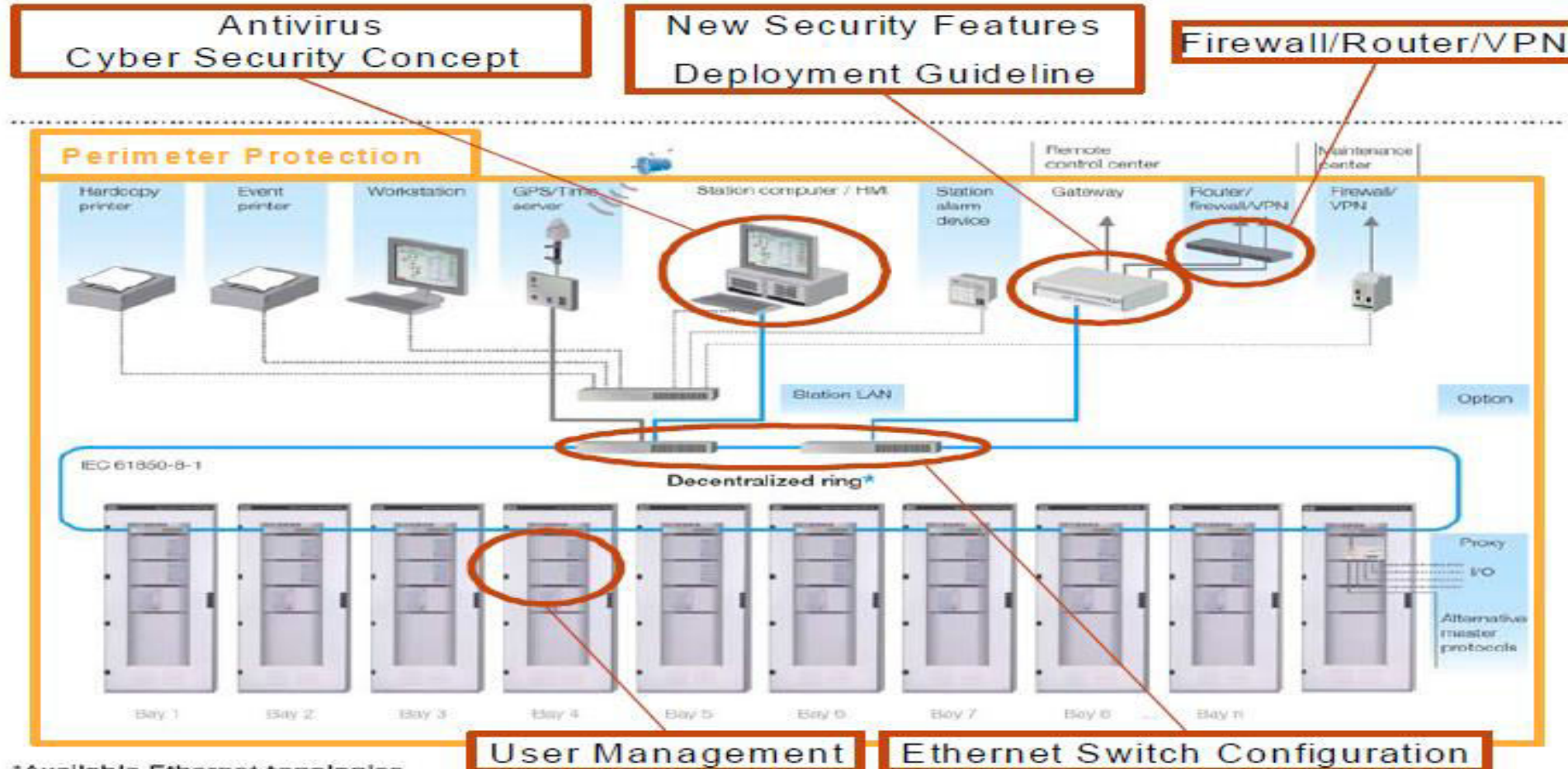
- However only these restriction would not be sufficient to deal with Cyber security

Supply chain of a utility

Figure 1. Utility Supply Chain



Sub station Protection



*Available Ethernet topologies
Centralized ring, decentralized ring or multiple networks

International experience

- [The Australian Government](#) in 2012 had intervened to block a privately owned Chinese Communication Company from winning lucrative contracts to help build the \$ 36 billion fiber optic National Broadband Network. The decision, it seems was based on the advice from the Australian Security Intelligence Organization (ASIO).
- [China Cyber Security Law \(w.e.f.1.6.2017\)](#)
- [Article 23](#) Critical network equipment and special cybersecurity products can only be sold or provided after being certified by a qualified establishment, and are in compliance with national standards. China's cyberspace administrative bodies and the relevant departments under the State Council will **draft a catalogue of critical network equipment and special products.**
- [Article 35](#) Critical information infrastructure operators that purchase network products and services that might affect national security must pass a national security review.

Issue No. 2 Technical standards for material and equipment

- CEA Technical standards for construction and connectivity to grid does not specifically provide for Cyber security. These stipulates technical requirements .
- In procurement procedure testing following provisions may be incorporated:
 - The organization shall induct only those network elements which have been tested as per relevant contemporary Indian or international Security Standards (e.g. ISO/IEC 15408 standards, for Information Security Management System against ISO 27000 series Standards, BIS standards IS 16335: 2015 for power control systems etc.).
 - Vulnerability and Penetration test of Main and Back-up system shall be conducted during the FAT (Factory Acceptance Test). Accredited labs (like M/S Standardisation Testing and Quality Certification, a GOI enterprise) shall carry out third party security audit (Vulnerability and Penetration test) of SCADA/EMS system at site.
 - “Safe to connect’ certification from supplier of hardware, software including their manufacturer, vendor, and service provider

Action to be taken

- Framing and implementation of Institutional and Legal, Technical, Contractual and Universal testing of equipment policy.
- **Institutional and Legal framework:** Every organization shall establish:
 - an institutional framework for ensuring compliance of legal, contractual and technical framework to make the system nearly 100% secure from cyber-attacks,
 - legal framework to incorporate various mandatory provisions for compliances from procurement to installation to operation.
- **Technical framework:** The security policy to lay down technical framework to be followed for the operation of the system to ensure cyber-security.
- **Contractual framework and Universal Testing:** The bidding documents should be so framed so as to encourage only firms which are manufacturing equipment in India to participate in the bid, including certification from the supplier that the equipment is “Safe to Connect”.
 - The equipment procured under the specified guidelines shall be required to be tested for 100% reliability from any vulnerability from malware and cyber-attacks.

Action points on Cyber Security

- Review of CEA Regulations to incorporate suitable provisions for compliance of Cyber Security .
- Testing standards and procedure for cyber security compliance .
- Creation of test bed at CPRI .
- Guidelines for procurement to incorporate provisions for more local content and cyber security compliance.
- Scheme of testing and cyber security audit of all SCADA/EMS .
- CEA is coordinating cyber security in power sector. Further action to enhance cyber security awareness, preparation of crisis management plan and Cyber security audit in state utility specifically in distribution utilities is required, for this CEA will interact vigorously with State and formulate action plan so activities like appointment of CISO, identification of critical assets and crisis management plan is completed in a time bound manner.
- Formation of a umbrella organisation on cyber security issues in power sector “ Power Security Council of India “
- Training and certification program on Cyber Security to be formulated

Cyber Security Preparedness

- Since last two years through CERT (Thermal, Hydro , Transmission and Distributions) efforts are made to sensitize and prepare all utilities for cyber security in power system
- Not much progress and lot need to be done .
- Organisation structure and documents are **necessary but not sufficient** as cyber security threat is too pervasive and it strike weak points too suddenly and more dangerous than a natural disaster .

Social Engineering : Man & Mind



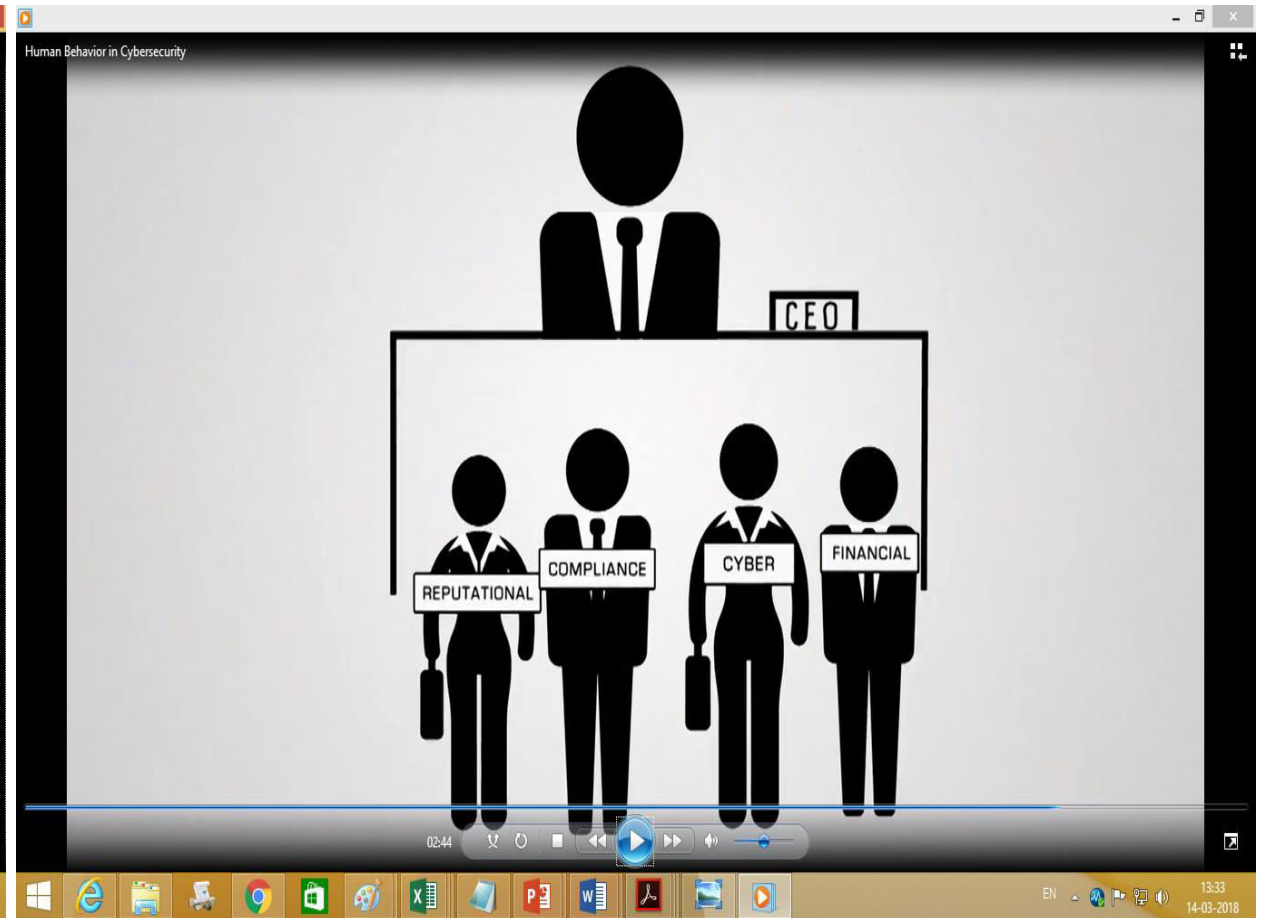
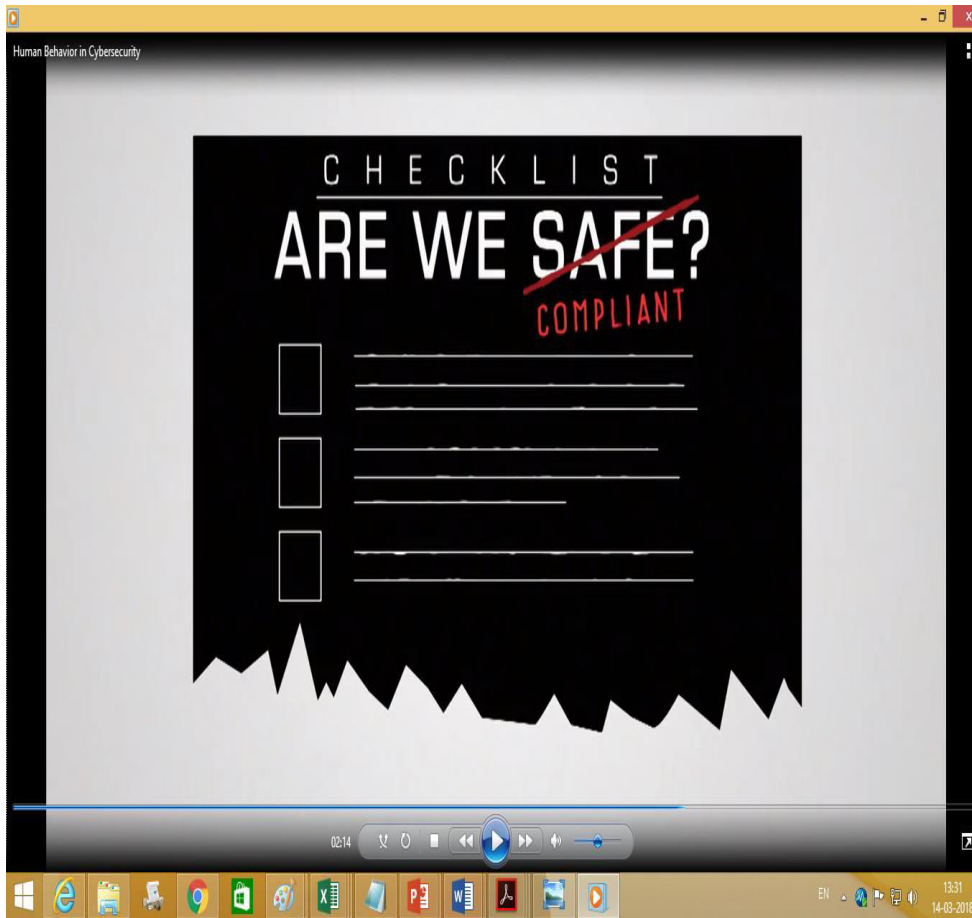
ONLY AMATEUEURS ATTACK MACHINES, PROFESSIONALS TARGET PEOPLE

IF YOU THINK TECHNOLOGY CAN SOLVE YOUR SECURITY PROBLEMS, THEN YOU DON'T UNDERSTAND THE PROBLEMS AND YOU DON'T UNDERSTAND THE TECHNOLOGY.

Response to a question you never had

Creating distrust

Invest in both : Technology and People



Present Status 1: Appointment of organization & plant level Chief Information Security Officers (CISO)

- Single point of contact between organization and CEA/Sectoral CERT/CERT-In for all cyber security matters
- Accountability for implementing Cyber Security policies at organization level

Present Status

- 4 Nodal officers – Sectoral CERTs
- 121 Nodal officers – power utilities/IPPs
 - CERT-Thermal (32)
 - CERT-Hydro (29)
 - CERT-Transmission (20)
 - CERT-Distribution (40)

Way Forward

- Request State Chief Secretaries to facilitate nomination of CISOs of state utilities (within 15 days)
- Request IPP heads to submit CISO nominations (within 15 days)

2. Identify organization-wise Critical Infrastructure

- For implementing security policies & controls over the identified critical infrastructure
- Security auditing of the identified critical infrastructure.
- Vulnerability assessment & penetration testing of identified critical infrastructure

Present Status

- NTPC, NHPC and PGCIL have identified their infrastructure in respect of business criticality and implemented ISO 27001 controls

Way Forward

- Instruct nodal officers of power utilities/IPP's to identify their critical infrastructure and submit status to CEA (within 15 days)
- Collection of security policies & control implementation status from nodal officers of power utilities/IPP's (within 1 month)
- Request nodal officers to conduct security audit, vulnerability assessment & penetration testing of the identified critical infrastructure

3. Formulate Crisis Management Plan (CMP)

- Organization specific plan for tackling IT/operation related crisis

Present Status

- NTPC, NHPC and PGCIL have drafted their CMPs
- NHPC has submitted CMP for Hydro sector
- **Distribution CMP has been prepared and issued in December,2017.**
- CERT-In conduct workshops on CMP

Way Forward

- Request CERT-In to conduct CMP workshops for power sector utilities (within 15 days)
- Instruct nodal officers of utilities/IPPs to attend CERT-In workshop on CMP (within 1 month)
- After workshops, instruct nodal officers to prepare their organization specific CMP (within 2 months)

4. Security Mock Drills

- Readiness of organization to tackle cyber incidences
- Mock drills are facilitated by CERT-In

Present Status

- PGCIL participated in mock drill in the past

Way Forward

- Instruct NTPC, NHPC and PGCIL to participate in mock drills at their organization level in co-ordination with CERT-In (within 3 months)
- Nodal officers of other utilities (sector specific) and CEA representatives can be invited in mock drills for acclimatization.
- Thereafter, instruct other utilities to conduct mock drill at their end in coordination with CERT-In (within 6 months)

5. Information Sharing & Analysis Centre (ISAC) – Power

- Common platform for sharing & analyzing cyber security incidences in Power Sector

Present Status

- ISAC-Power static page is available on CEA website
- ISAC-Power page provides information about nodal officers, links to IT act, rules, guidelines & presentations

Way Forward

- Develop dynamic and database supported ISAC-Power portal for better coordination between stakeholders.
 - Concept paper for ISAC-Power (within 1 month)
 - Design & develop ISAC-Power portal (within 6 months)

6. Trainings / workshops on Cyber Security

Present Status

- CERT-In organizing cyber security workshops.
- Sectoral CERTs organizing workshops/presentations (last workshop conducted on 15.02.17 by PGCIL)
- **CEA with IPPAI taken imitative and organized three Regional workshops in Bangalore, Mumbai & Delhi**

Way Forward

- Request to DG, NPTI to conduct cyber security courses for power utilities.
- Nodal officers of power utilities to register themselves for CERT-In workshops.
- All Nodal officers to submit quarterly reports to CEA on training attended / organized by them on cyber security

CISO Nomination

	CISO Nomination Status SR	
Sector	Received	Not Received
Hydro	All State Utilities	Private Utilities
Thermal	NTPC. Tamilnadu, Karnataka	Telangana(TSGENCO),Kerala(KSEB), Andhra Pradesh (APGENCO), IPPs,Nuclear
Transmission	All State Utilities	Private Transmission Licensees
Distribution	Karnataka(5),Andhra Pradesh(2/4),Tamilnadu,Kerala	Andhra Pradesh (2-Central , Eastern),Kerala(KINESCO, Infopark), Tamilnadu (Technopark), Lakshdeep,A&N Islands

CISO Nomination

	CISO Nomination Status-ER	
Sector	Received	Not Received
Hydro	West Bengal, Odisha	Jharkhand (DVC, JUVNL)
Thermal	Bihar (KBUNL Muzaffarpur, NPGCPL Patna), Jharkhand (TVNL), West Bengal (DVC, WBSEDCL, CESCL, WBPDCI)	Bihar (BSPGCL), Jharkhand (JUVNL), Andaman Nicobar (ED A&N)
Transmission	Bihar, Odisha, West Bengal	Jharkhand, Sikkim
Distribution	Bihar(BSPHCL, SBPDCL), Jharkhand (Tata Steel Ltd.), Odisha (CESCL), West Bengal (WBSEDCL, CESCL)	Bihar (NBPDCI), Jharkhand (JSEB, JUSCO), Odisha (NEESCO, SOUTHCO, WESCO) West Bengal (IPCL)

Quarterly Preparedness Monitoring -AGENDA

(Status as on :
)

S.No.	State	Sector (G/T/D)	Utilities	Status of CISO Nomination	Critical Infra Identified	Crisis managem ent Plan Prepared	Status of CS mock drill	Status of Training/ Workshops organized/ participated by utility	Action taken on CERT- In/NCIIPC Advisories
1	Tamilnadu	T	TANGEDCO	Yes/No	Yes/No	Yes/No	Done on _____		

Tools

No	Name	Download URL
1	TeraTerm	https://ttssh2.osdn.jp/index.html.en
2	WinSCP	https://winscp.net/eng/docs/start
3	GeoIP	https://www.maxmind.com/en/geoip2-services-and-databases
4	Sigcheck	https://docs.microsoft.com/en-us/sysinternals/downloads/sigcheck
5	HashMyFiles	http://www.nirsoft.net/utils/hash_my_files.html
6	FTK Imager	https://accessdata.com/product-download/ftk-imager-lite-version-3.1.1
7	Strings	https://technet.microsoft.com/en-us/sysinternals/bb897439.aspx
8	TCPView	https://docs.microsoft.com/en-us/sysinternals/downloads/tcpview
9	WireShark	https://www.wireshark.org/
10	Process Explorer	https://docs.microsoft.com/en-us/sysinternals/downloads/process-explorer
11	Process Monitor	https://docs.microsoft.com/en-us/sysinternals/downloads/procmon
12	Reg Ripper	https://github.com/keydet89/RegRipper2.8
13	Event Viewer	Windows –[Admin Tools]–[Event Viewer]
14	Autoruns	https://docs.microsoft.com/en-us/sysinternals/downloads/autoruns
15	Windows Registry Recover	http://www.mitec.cz/wrr.html
16	Windows Prefetch Folder	C:\Windows\Prefetch

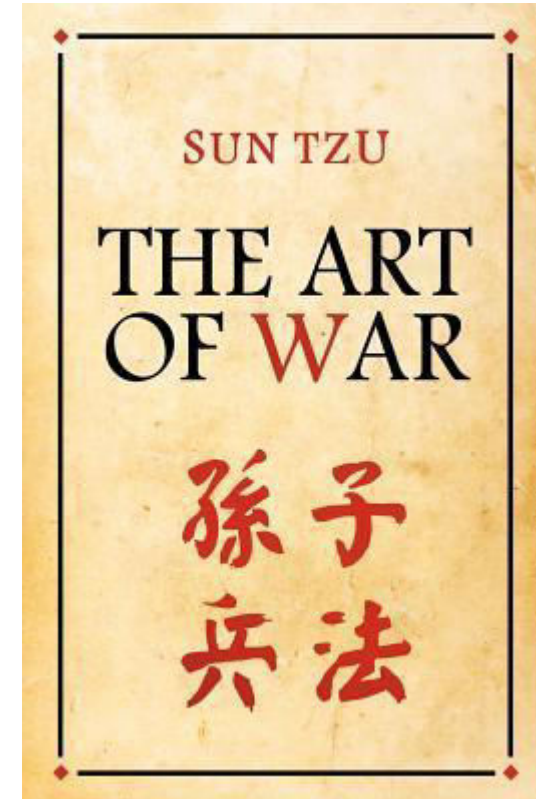
Cyber security : Many battles and A war

If you know the enemy and know yourself, you need not fear the result of a hundred battles.

If you know yourself but not the enemy, for every victory gained you will also suffer a defeat.

If you know neither the enemy nor yourself, you will succumb in every battle.”

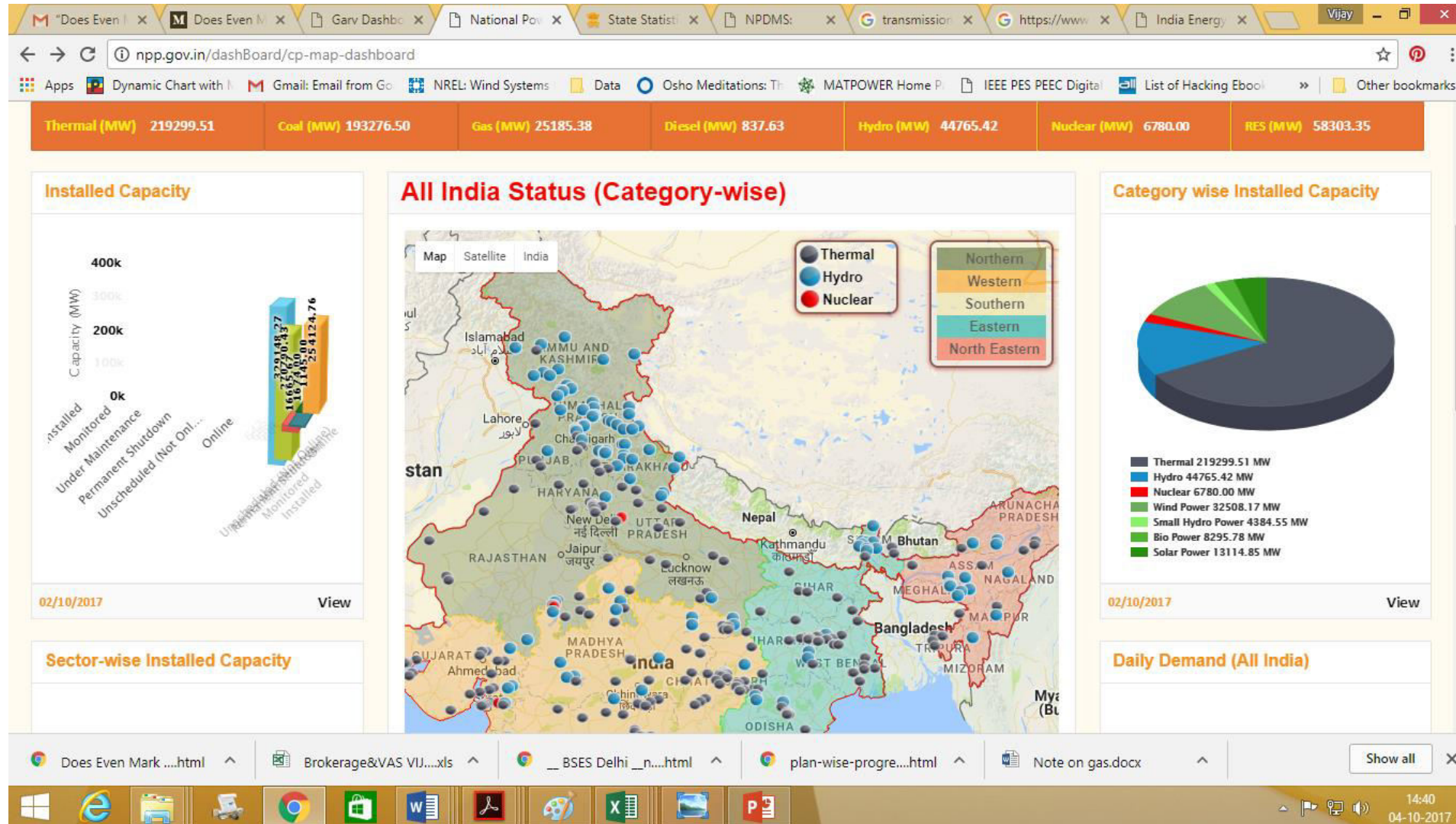
Each of these three points of 5th Century B.C book directly applies to the world of cyber Security.



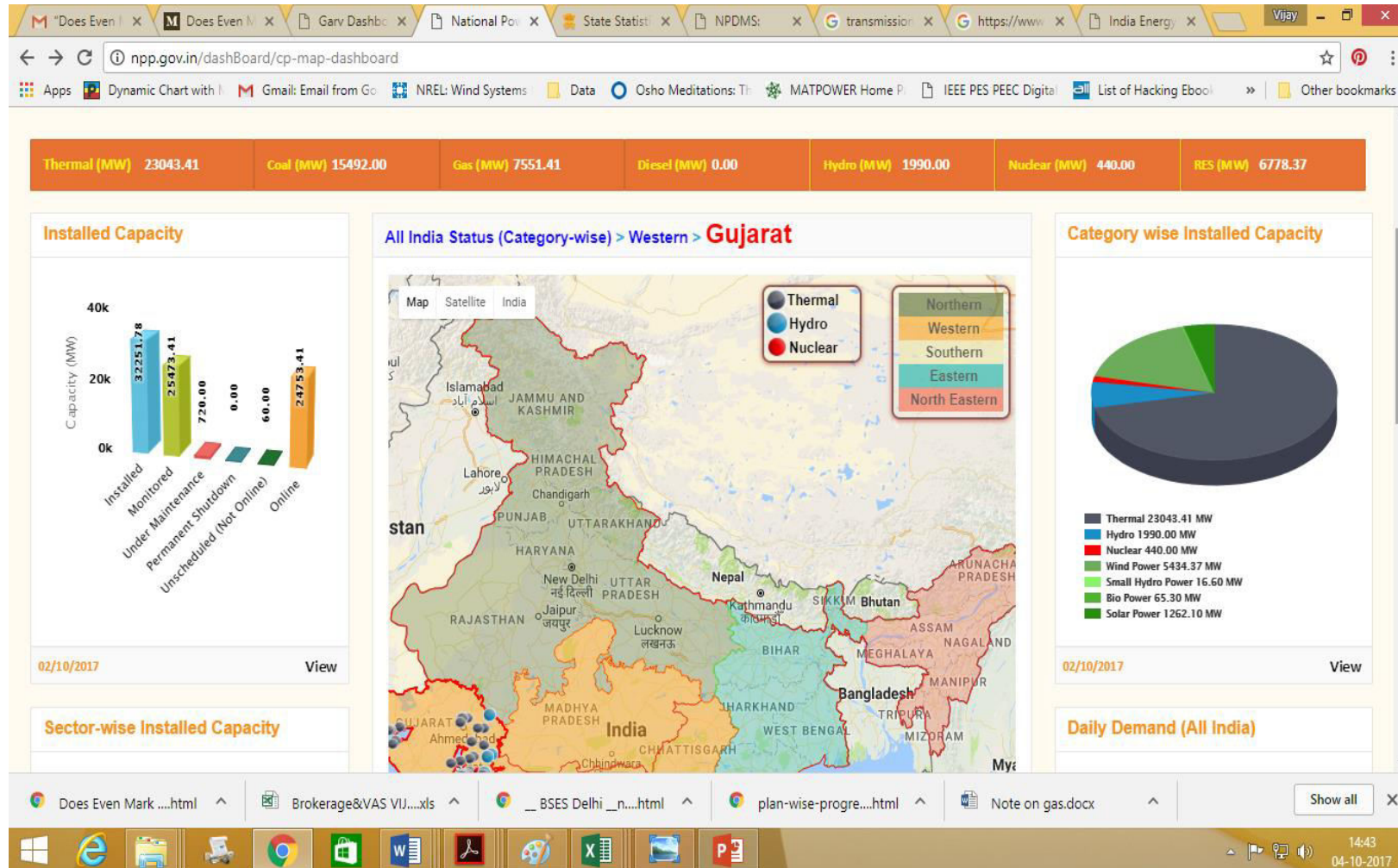
New IT initiatives and need of support from States

- National Power Portal(NPP) –Dashboard and Data analytic for power sector at one place
 - Data entry for all six application is being done and report is being generated in testing phase. Launched by Hon'ble Power Minister on 14th November,2017
 - Five to be held in next two months.
 - While data of Coal supply is fed regularly in NPP, the data entry **by generating station for daily generation report (DGR) in NPP is yet to pickup.**
 - If there is requirement of training , CEA can arrange regional workshops
- Geo Spatial Energy Map
 - NITI Aayog on the instruction of PMO initiated this project .
 - ISRO and CEA are preparing Geo spatial map o all Generation, transmission and distribution assets.
 - Any state which want GIS mapping of its assets above 33 kV (initially) , can get it done free of cost
 - Map would be useful for operation and asset management .
 - **Format for Data shared by concerned Divisions of CEA with all state utilities . Data from Transmission and Distribution utilities is awaited.**

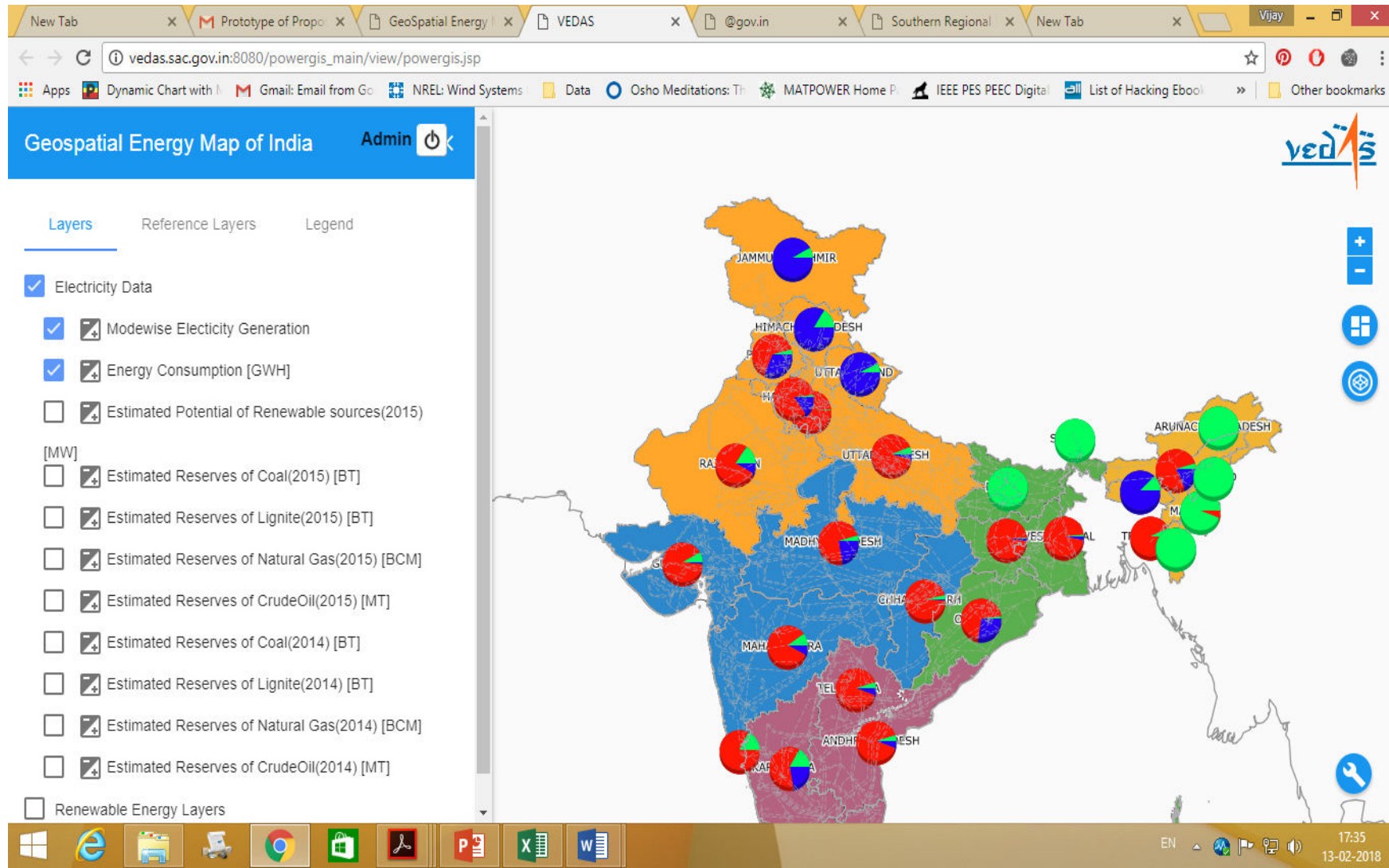
Installed Capacity



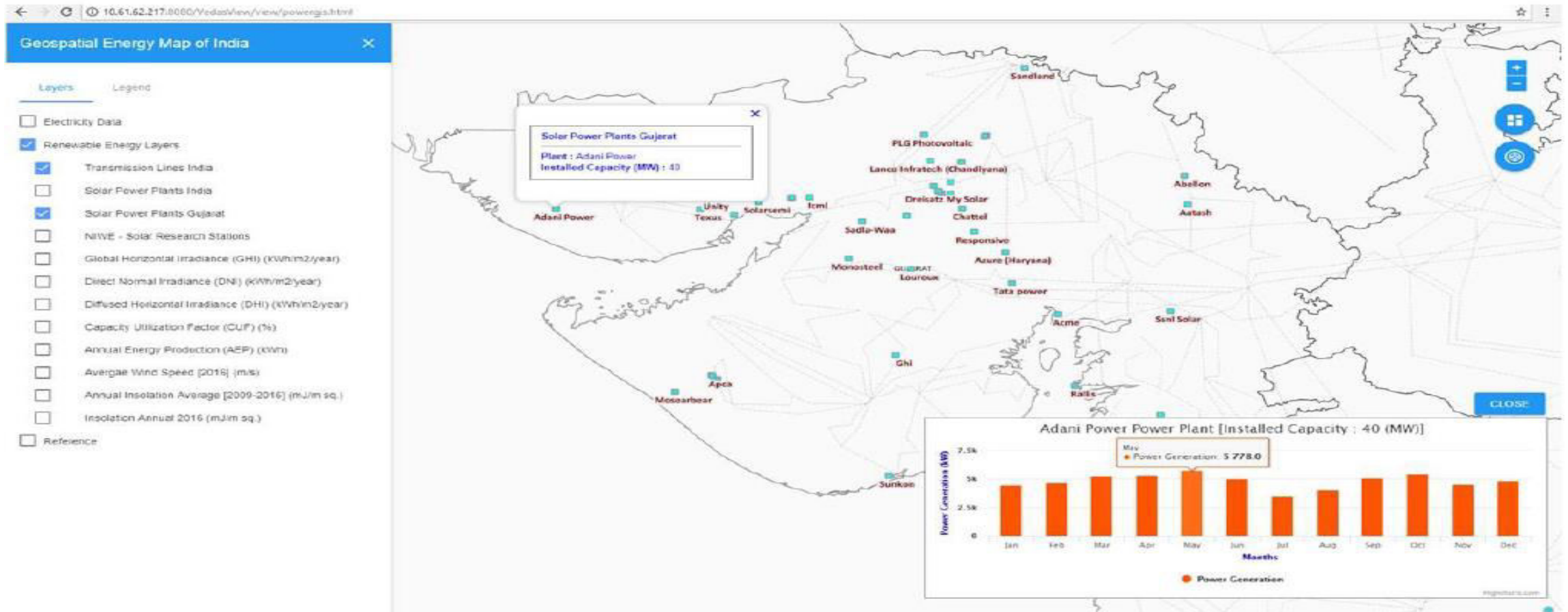
State wise Information



ISRO-CEA Geo spatial Energy Map



Geo Spatial Map with layer control



Shared Responsibility

“As the world is increasingly interconnected, everyone shares the responsibility of securing cyberspace.”

— [Newton Lee, Counterterrorism and Cybersecurity: Total Information Awareness](#)

IT adoption can change Life

Twitter & MOP Mobile Application

A success story of Village Electrification

10th June, 2017 A village boy from Bharthapur, Kanpur Dehat UP tweet

The screenshot shows a Twitter interface on a Windows PC. The browser address bar displays the URL: https://twitter.com/175GW_IndiaRenw/status/873914548742377473. The Twitter post is from Piyush Goyal (@PiyushGoyal) dated June 10, 2017. The text of the tweet is in Hindi: "7 दशक तक बिजली से वंचित रहे गाँवों का विद्युतीकरण हुआ, जिससे वह प्रगति की दिशा में बढ़े हैं, इन गाँवों को विश्वास है, हो रहा विकास है।" (7 decades of electricity deprivation in villages has ended, which has put them on the path of progress, these villages have faith, development is happening). Below the text is a video thumbnail showing a rural field with people and wooden poles. The video has a duration of 0:52. The tweet has 116 replies, 673 retweets, and 1.6K likes. Below the tweet is a reply from Dhirendra Singh (@1988Dhirendra) dated June 10, 2017, stating: "है दो महीने से आपकी ओर से कहा गया है की हमारी टीम आपसे सम्पर्क करेगी लेकिन कोई कार्य नहीं हुआ है" (It has been said for two months from your side that our team will contact you but no work has been done). The Windows taskbar at the bottom shows several open applications: Cyber Security Sta..., Note on high pri..., Brief on CEArepo..., The Dark Overlor..., and Deloitte hit by cy... (Canceled). The system clock shows the time as 17:55 on 25-10-2017.

Secure | https://twitter.com/175GW_IndiaRenw/status/873914548742377473

Home Notifications Messages Search Twitter Tweet

Piyush Goyal @PiyushGoyal · Jun 10
7 दशक तक बिजली से वंचित रहे गाँवों का विद्युतीकरण हुआ, जिससे वह प्रगति की दिशा में बढ़े हैं, इन गाँवों को विश्वास है, हो रहा विकास है।
Translate from Hindi

0:52

116 673 1.6K

Dhirendra Singh @1988Dhirendra · Jun 10
है दो महीने से आपकी ओर से कहा गया है की हमारी टीम आपसे सम्पर्क करेगी लेकिन कोई कार्य नहीं हुआ है
Translate from Hindi

Cyber Security Sta...xlsx Note on high pri...docx Brief on CEArepo...docx The Dark Overlor...html Deloitte hit by cy...html Canceled

Show all

17:55 25-10-2017

10th June ,2017

Our child read under the solar light
0:30

116 673 1.6K

Dhirendra Singh @1988Dhirendra · Jun 10
है दो महीने से आपकी ओर से कहा गया है की हमारी टीम आपसे सम्पर्क करेगी लेकिन कोई कार्य नहीं हुआ है
Translate from Hindi

1

Vijay Menghani @175GW_IndiaRenw · Jun 11
Pl inform your location to me and @CEA_India , will pursue and update you.

2

Dhirendra Singh @1988Dhirendra · Jun 11
मेरा प्रयास है कि मेरे गाँव में भी बिजली आये जो 70 साल में नहीं हुआ वह अब हो जाये तो मेरे गाँव का भाग्य बदल जाये जिससे मेरा गाँव सम्रद्ध हो
Translate from Hindi

1

Vijay Menghani @175GW_IndiaRenw
Replying to @1988Dhirendra @PiyushGoyal @CEA_India
Really appreciate your efforts for your village,

Cyber Security Sta....xlsx | Note on high pri....docx | Brief on CEArepo....docx | The Dark Overlor....html | Deloitte hit by cy....html Canceled

17:55 25-10-2017

15th June, 17 Garv2 App study

The screenshot shows a Twitter thread on a Windows PC. The browser address bar shows the URL: <https://twitter.com/1988Dhirendra/status/875383875718889472>. The thread consists of five tweets:

- Tweet 1:** Dhirendra Singh (@1988Dhirendra) · Jun 13. Text: मेरी बात समस्या का कोई हल निकला है. (My statement, the problem has no solution yet.)
- Tweet 2:** Vijay Menghani (@175GW_IndiaRenw) · Jun 13. Text: Meeting tomorrow with REC officer, mere phone par hindi naahi hone ke liye mahafi chaya hu, aapke gain ke location check kar Karyavahi hogi (Meeting tomorrow with REC officer, my phone doesn't have Hindi, I will be in a difficult situation, please check the location for your benefit, the work will be done.)
- Tweet 3:** Dhirendra Singh (@1988Dhirendra) · Jun 15. Text: मेरे गाँव से सम्बंधित कोई सूचना मिली है जिससे हम कुछ जान सके, या अभी तक क्या प्रयास किया गया है. (I have received some information related to my village, so we can know something, or what efforts have been made till now.)
- Tweet 4:** Vijay Menghani (@175GW_IndiaRenw) · Jun 15. Text: Yes Dhirendra in your village there are 3 main basti, total 270 households including 92 in your , not being covered this year , in 2018 will. (Yes Dhirendra, in your village there are 3 main bastis, total 270 households including 92 in your, not being covered this year, in 2018 will.)
- Tweet 5:** Dhirendra Singh (@1988Dhirendra) · Jun 15. Text: जानकारी देने के लिए धन्यवाद सर, लेकिन मेरे गाँव में खम्भे लगें है तार भी लगें है, बस लाइन चालू करनी है कनेक्शन लेने के लिए गाँव के लोग तैयार है (Thank you for the information, but in my village, poles are being laid, wires are also being laid, we just need to start the line, the people of the village are ready to get the connection.)

The Windows taskbar at the bottom shows several open applications: Cyber Security Sta...xlsx, Note on high pri...docx, Brief on CEArepo...docx, The Dark Overlor...html, and Deloitte hit by cy...html. The system tray shows the time as 16:18 on 25-10-2017.

18th June, 2017

The screenshot displays a Twitter thread on a Windows desktop. The browser address bar shows the URL: https://twitter.com/175GW_IndiaRenw/status/876498730622386176. The thread consists of four tweets:

- Dhirendra Singh @1988Dhirendra · Jun 15**
जानकारी देने के लिए धन्यवाद सर, लेकिन मेरे गाँव में खम्भे लगे हैं तार भी लगे हैं, बस लाइन चालू करनी है कनेक्शन लेने के लिए गाँव के लोग तैयार हैं
Translate from Hindi
- Vijay Menghani @175GW_IndiaRenw · Jun 15**
बहुत अच्छी सूचना दी आपने, सभी अधिकारियों के साथ सम्पर्क कर जल्दी काम कराएंगे, किसी को कनेक्शन लेने में पैसे की असुविधा होगी तो मदद भी होगी
Translate from Hindi
- Dhirendra Singh @1988Dhirendra · Jun 18**
अभी सर कोई सुभ: सूचना है हम इन्तजार कर रहे हैं
Translate from Hindi
- Vijay Menghani @175GW_IndiaRenw**
Replying to @1988Dhirendra
Dear Dhirendra, I am Chief Engineer IT in CEA and through my colleague will catch REC officers and will update you soon

The desktop environment includes a Windows taskbar with the following open applications: Cyber Security Sta...xlsx, Note on high pri...docx, Brief on CEArepo...docx, The Dark Overlor...html, and Deloitte hit by cy...html. The system tray shows the time as 17:51 and the date as 25-10-2017.

19th June, 2017 Contact with REC

The screenshot shows a Windows desktop with a Twitter browser window open. The browser's address bar displays the URL https://twitter.com/175GW_IndiaRenw/with_replies. The Twitter interface includes a search bar and navigation icons. The main content is a thread of tweets:

- Tweet 1:** Vijay Menghani @175GW_IndiaRenw · Jun 19
@rituias2003 this village have 270 families and even after infrastructure in place , Electricity is not there, from nearest point 15 meter.
- Tweet 2:** Vijay Menghani @175GW_IndiaRenw · Jun 19
@rituias2003 respected madam this boy is trying to get this work complete since long , will share details with you .
- Tweet 3:** Vijay Menghani @175GW_IndiaRenw · Jun 19
Replying to @1988Dhirendra @rituias2003 and 8 others
Dear , we will try to fulfill this common dream before 2017 end and will celebrate new year with you.
- Retweet:** You Retweeted Afroz Shah @AfrozShah1 · May 19
This is versova beach an hour back. Week 85 of cleanup.Versova beach is gorgeous and clean now.we have done our bit.We need to maintain it.

The Windows taskbar at the bottom shows several open applications: Cyber Security Sta..., Note on high pri..., Brief on CEArepo..., The Dark Overlor..., and Deloitte hit by cy... (Canceled). The system tray in the bottom right corner shows the time as 17:50 on 25-10-2017.

20th June, 2017 REC TEAM REACHED VILLAGE

Secure | https://twitter.com/175GW_IndiaRenw


Home Notifications Messages Search Twitter Tweet

You Retweeted

Dhirendra Singh @1988Dhirendra · Jun 20
Replying to @1988Dhirendra @175GW_IndiaRenw and 10 others
इस टीम में (श्री विनीत जी DVA) श्री ashrad ji साइट इंजीनियर गाँव आये जिन्होंने मेरे गाँव का सर्वे किया और आशवासन दिया कि आपके गांव में एक
Translate from Hindi
1 2 1

You Retweeted

Dhirendra Singh @1988Dhirendra · Jun 20
अपने गाँव की बिजली की समस्या का उल्लेख ट्विटर पर किया था जिसके बाद आज @grameenvidyut की टीम हमारे गाँव आयी थी @175GW_IndiaRenw @rituias2003
Translate from Hindi



Cyber Security Sta...xlsx Note on high pri...docx Brief on CERepo...docx 'The Dark Overlor...html Deloitte hit by cy...html Canceled Show all

16:09 25-10-2017

21st June, 2017 Engineer informed applicant

Secure | https://twitter.com/175GW_IndiaRenw

Home Notifications Messages Search Twitter Tweet

have 50 MW plants currently operating on the site.
energy.economictimes.indiatimes.com

You Retweeted

Dhirendra Singh @1988Dhirendra · Jun 21
Replying to @175GW_IndiaRenw @grameenvidyut and 10 others
बहुत सराहनीय कार्य है आपका त्वरित कार्यवाही शुरू हो रही है, अभी इंजीनियर जी ने बताया है कि परसों गाँव में खम्भे आ जायेंगे, बहुत बहुत धन्यवाद
Translate from Hindi

You Retweeted

Max Roser @MaxCRoser · Jun 21
Slowly moving to the right and closer together: The global distribution of incomes.
More in our entry on inequality ourworldindata.org/income-inequal...

Global Income Distribution 2011
Incomes are adjusted for price changes over time and for price differences between countries (PPP adjusted to 2005 US\$).

Cyber Security Sta...xlsx Note on high pri...docx Brief on CERepo...docx The Dark Overlor...html Deloitte hit by cy...html Canceled Show all

16:08 25-10-2017

22rd June, 2017 Documents collection by REC

to light up Lucknow streets with LED lights, EMC has finally zeroed in on a...
timesofindia.indiatimes.com

1 10 19

You Retweeted
shubham shukla @shubham24991912 · Jun 23
Replying to @rituias2003 @175GW_IndiaRenw and 10 others
मैम आप का बहुत धन्यवाद कल 22.06.17 को mr, आशुतोष जी आए उन्होंने अपने आप को जिला विधुत अभियन्ता बताया वो सारा डाकुमेंट्सन कर के ले गए
Translate from Hindi
3 5

You Retweeted
DHIRENDRA SINGH.... @1975dhirendra · Jun 23
Replying to @175GW_IndiaRenw @1988Dhirendra and 11 others
आज मेरे गाँव मे खम्भे आ गए हैं सभी को धन्यवाद,मेरा ट्विटर अकाउंट आज बन्द है दूसरे से किया है
धीरेन्द्र सिंह कानपुर
7459039517
Translate from Hindi
1 2

You Retweeted
Sudheer Pal Singh @Sudheerpalsingh · Jun 23

Cyber Security Sta...xlsx Note on high pri...docx Brief on CEArepo...docx The Dark Overlor...html Deloitte hit by cy...html Canceled

16:07 25-10-2017

24th June ,17 Pillar reached village

Secure | https://twitter.com/175GW_IndiaRenw

Home Notifications Messages Search Twitter Tweet

You Retweeted

DHIRENDRA SINGH.... @1975dhirendra · Jun 24
@grameenvidyut @rituias2003 ने मेरे ट्वीट का तुरन्त संज्ञान लेते हुए आज पांचवें दिन खम्भे अन्य समान गाँव पहुंच गई,इस सक्रियता के लिए धन्यवाद

Translate from Hindi



You, Narendra Modi, PMO India and 4 others

6 4 15

Cyber Security Sta...xlsx Note on high pri...docx Brief on CEArepo...docx The Dark Overlor...html Deloitte hit by cy...html Canceled Show all

Windows Taskbar: File Explorer, Google Chrome, Microsoft Word, Adobe Reader, Photos, Excel

System Tray: 16:05 25-10-2017

6th July, 2017 REC village survey

Secure | https://twitter.com/175GW_IndiaRenw/with_replies

Home Notifications Messages Search Twitter Tweet

2 165 190

You Retweeted

DHIRENDRA SINGH... @1975dhirendra · Jul 6

@EMofficeUP @rituias2003 का कार्य बहुत सराहनीय है बारिश कीचड़ में गाँव का सर्वे किया इंजीनियर विपिन कुमार DVA REC देश बदल रहा है सभी को बधाई

Translate from Hindi

7th July ,2017 All worked together

The screenshot shows a Twitter thread on the profile of @175GW_IndiaRenw. The thread consists of four tweets. The first tweet is a reply to @1975dhirendra, @BJP4UP, and 6 others, discussing health, education, and sanitation. The second tweet is a reply to @1975dhirendra, @BJP4UP, and 6 others, praising an initiative. The third tweet is a reply to @drdineshias, @grameenvidyut, and 2 others, praising leadership. The fourth tweet is a reply to @drdineshias, @grameenvidyut, and 2 others, praising leadership. The thread is viewed on a desktop browser with a Windows taskbar at the bottom.

Secure | https://twitter.com/175GW_IndiaRenw/with_replies

Home Notifications Messages Search Twitter Tweet

Now point out issues of health service, education and sanitation too, each Indian is entitled to a good life irrespective of where he lives.

3 1

Vijay Menghani @175GW_IndiaRenw · Jul 7
Replying to @1975dhirendra @BJP4UP and 6 others
It is initiative taken by you dear youngman , which resulted in this achievement, it shows that if we all work together nothing is impossible

2 1 1

Vijay Menghani @175GW_IndiaRenw · Jul 7
Replying to @drdineshias @grameenvidyut and 2 others
response to public on social media ,resolve problem, developed excellent leader like @rituias2003 and org @grameenvidyut are your legacy

3

Vijay Menghani @175GW_IndiaRenw · Jul 7
Replying to @drdineshias @grameenvidyut and 2 others
The leadership provided by you in last three years is a very encouraging example of converting dreams into reality, (1/2)

3

You Retweeted
Kannan Gopinathan @naukarshah · Jul 7

Cyber Security Sta...xlsx Note on high pri...docx Brief on CEArepo...docx The Dark Overlor...html Deloitte hit by cy...html Canceled

17:45 25-10-2017

20th July, 17 REC Implementation agency inform reason of delay in transformer delay

Secure | https://twitter.com/175GW_IndiaRenw/with_replies

Home Notifications Messages Search Twitter Tweet

@KrRatiram please share your village name, block name

You Retweeted

Romendra Mehta @romendraknp · Jul 20
Replying to @1975dhirendra @175GW_IndiaRenw and 6 others
आपके गाँव का ट्रान्सफोर्मर ऑर्डर्ड है मरठ से आना है कवरए कि यात्रा कि वजह से रास्ते बंद है ३-४ दिन में यह शुभ समय आ जायेगा 🙏

Translate from Hindi

2 2 3

Vijay Menghani @175GW_IndiaRenw · Jul 21
Replying to @KrRatiram @1975dhirendra and 8 others
[@grameenvidyut](#) kindly check issue of transformer being faced in this village

Vijay Menghani @175GW_IndiaRenw · Jul 21
Replying to @KrRatiram @1975dhirendra and 8 others
Providing rural electrification infra is responsibility of REC and after that state government provide supply, we will check and revert

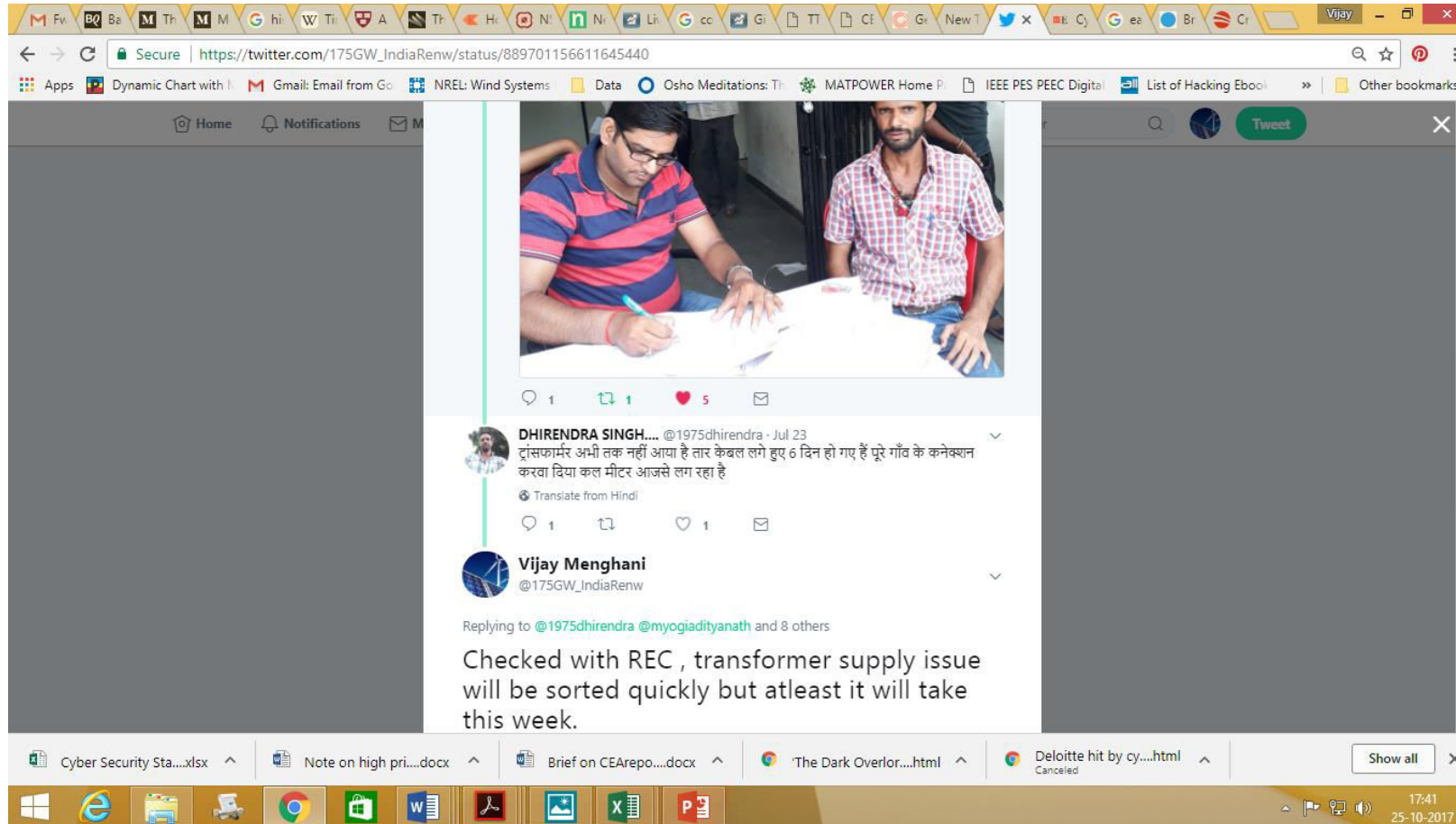
You Retweeted

Apoorwa Middha @apoorwamiddha · Jul 20

Cyber Security Sta....xlsx Note on high pri....docx Brief on CEArepo....docx The Dark Overlor....html Deloitte hit by cy....html Canceled

17:43 25-10-2017

23rd July 17 Encourage locals to get connection and issue of Transformer discussed with REC



The screenshot shows a Windows desktop with a Chrome browser window open to a Twitter thread. The browser's address bar shows the URL: https://twitter.com/175GW_IndiaRenw/status/889701156611645440. The thread consists of two tweets:

- Original Tweet:** From **DHIRENDRA SINGH...** (@1975dhirendra) on July 23. The text reads: "ट्रांसफार्मर अभी तक नहीं आया है तार केबल लगे हुए 6 दिन हो गए हैं पूरे गाँव के कनेक्शन करवा दिया कल मीटर आजसे लग रहा है". Below the text is a photo of two men sitting at a table, looking at a large document. The tweet has 1 reply, 1 retweet, and 5 likes.
- Reply:** From **Vijay Menghani** (@175GW_IndiaRenw). The text reads: "Checked with REC , transformer supply issue will be sorted quickly but atleast it will take this week." The reply is directed to @1975dhirendra, @myogiadityanath, and 8 others.

The desktop taskbar at the bottom shows several open applications: Cyber Security Sta...xlsx, Note on high pri...docx, Brief on CEArepo...docx, The Dark Overlor...html, and Deloitte hit by cy...html. The system tray in the bottom right corner shows the time as 17:41 on 25-10-2017.

24th July 17 Discom provided meters

The screenshot shows a Twitter thread on the profile of Vijay Menghani (@175GW_IndiaRenw). The thread consists of several tweets and retweets:

- Vijay Menghani** (@175GW_IndiaRenw) · Jul 24: Replying to @cityshackle @dhume. Text: "Yes all three are positive , generation and consumption in India and UP increased, in distribution infra lot of investment under IPADS & RE".
- You Retweeted** **DHIRENDRA SINGH...** (@1975dhirendra) · Jul 24: Replying to @175GW_IndiaRenw @myogiadityanath and 8 others. Text: "धन्यवाद सर कल से bpl वालों के मीटर लगने आरम्भ हो गए हैं, Translate from Hindi".
- Vijay Menghani** (@175GW_IndiaRenw) · Jul 24: Replying to @suraiya95. Text: "Twitter help me understand this, big universe, good done at one place is countered with other bad, Delhi pollution control teach me that."
- You Retweeted** **Varsha Joshi** (@suraiya95) · Jul 24: Plus ça change, plus c'est la meme chose. Translate from French.
- You Retweeted** **RajeshMedirattalEX** (@RajeshIEX) · Jul 24: Replying to @BnuuchGovallOffe.

The browser's address bar shows the URL: https://twitter.com/175GW_IndiaRenw/with_replies. The Windows taskbar at the bottom shows the time as 17:40 on 25-10-2017.


14th Aug, 2017 Village Electrified within 64 days

The image shows a screenshot of a Twitter profile for Dhirendra Singh (@1975dhirendra). The profile header indicates 2,674 tweets, 292 following, 146 followers, and 6,007 likes. A tweet from August 14, 2017, is highlighted, featuring a photo of a group of people gathered around a large metal drill bit in a field. The tweet text, written in Hindi, reads: "किस्ती के लिए प्रयास हमने किया लेकिन आज उद्घाटन" (We made an attempt for the electricity but today the inauguration). The tweet includes a "Translate from Hindi" option. Below the photo, the caption reads: "You, Kusumanjali Singh, SatyaDev Pachauri and 6 others".

Profile Information:
Name: Dhirendra Singh...
Handle: @1975dhirendra
Tweets: 2,674
Following: 292
Followers: 146
Likes: 6,007

Tweet Content:
Date: Aug 14, 2017
Text: किस्ती के लिए प्रयास हमने किया लेकिन आज उद्घाटन
Caption: You, Kusumanjali Singh, SatyaDev Pachauri and 6 others

Happiness reached home



The screenshot shows a Twitter post by user DHIRENDRA SINGH (@1975dhirendra) from Kanpur, India, dated August 29, 2017, at 11:56 PM. The post features a photograph of a solar panel system mounted on a brick wall at night, with a bright light source illuminating the setup. The tweet has 17 retweets and 264 likes. Below the tweet, there are two replies from the same user, both dated August 30, 2017. The first reply is in Hindi and discusses a solar panel project in a village. The second reply is a shorter version of the same text. The browser's address bar shows the URL: <https://twitter.com/1975dhirendra/status/902787181621559296>. The Windows taskbar at the bottom shows several open applications, including Cyber Security Sta..., Note on high pri..., Brief on CEArepo..., The Dark Overlor..., and Deloitte hit by cy..., along with the system clock showing 17:27 on 25-10-2017.

Secure | <https://twitter.com/1975dhirendra/status/902787181621559296>

Dynamic Chart with N | Gmail: Email from Go | NREL: Wind Systems | Data | Osho Meditations: Th | MATPOWER Home P | IEEE PES PEEC Digital | List of Hacking Ebook | Other bookmarks

Home | Notifications | DHIRENDRA SINGH... @1975dhirendra Follows you

11:56 PM - 29 Aug 2017 from Kanpur, India

17 Retweets 264 Likes

You, kusumanjali singh, Narendra Modi and 7 others

18 17 264

Tweet your reply

DHIRENDRA SINGH... @1975dhirendra - Aug 30
Replying to @1975dhirendra @175GW_IndiaRenw and 9 others
मेरा गाँव भरधापुर जो कि एक मजरा है, लेकिन प्रयास किया सबको लिखा जिसका परिणाम ये है
पुरा गाँव रोयानी में नहा रहा है, सभी लोग अपने गाँव के लिए
Translate from Hindi

DHIRENDRA SINGH... @1975dhirendra - Aug 30
Replying to @1975dhirendra @175GW_IndiaRenw and 9 others

Cyber Security Sta...xlsx | Note on high pri...docx | Brief on CEArepo...docx | The Dark Overlor...html | Deloitte hit by cy...html Canceled | Show all

17:27 25-10-2017

Aware consumer consume Energy Efficiently

The image shows a screenshot of a Twitter post from a user named Dhirendra Singh (@1975dhirendra). The tweet, dated August 29, contains a photograph of a small, bright LED light fixture mounted on a brick wall. The text of the tweet, written in Hindi, discusses the benefits of LED lights in rural areas where electricity is scarce. It mentions that LED lights are being used in homes and that people are encouraged to buy and use them to save energy. The tweet has 18 replies, 17 retweets, and 254 likes. The user's profile picture and name are visible at the top of the tweet. The background of the screenshot shows a web browser window with various tabs and a search bar.


Secure | <https://twitter.com/1975dhirendra/status/902925384617926656>

Home Notifications Messages

DHIRENDRA SINGH...
@1975dhirendra

DHIRENDRA SINGH... @1975dhirendra · Aug 29
अब मेरे गाँव में भी बिजली आ गई है, बहुत प्रयास किया है अब गाँव के लोग बहुत खुश हैं
@navandramodi @AjayGoyal @peshkanti और को धन्यवाद

Translate from Hindi



You, Anuragjeet Singh, Navendra Modi and 7 others

18 17 254

DHIRENDRA SINGH... @1975dhirendra

Follow

Replying to @1975dhirendra @ITSGN_IndiaRenu and 9 others

ये मेरे घर की बिजली जल रही है पूरे घर में led जल रही है, गाँव के लोगों को भी बिजली घर से led खरीद कर लगावायी है जिससे बिजली का सदुपयोग हो

Translate from Hindi

9:06 AM · 30 Aug 2017

1 Retweet 3 Likes

1 3

Twitter your reply


Happy Diwali from a remote village

The image is a screenshot of a web browser displaying a Twitter post. The browser's address bar shows the URL https://twitter.com/1975dhirendra/with_replies. The Twitter interface includes a navigation bar with 'Home', 'Notifications', and 'Messages' buttons, a search bar, and a 'Tweet' button. The main content is a tweet from user **DHIRENDRA SINGH....** (@1975dhirendra) dated Oct 19. The tweet text is in Hindi: 'पहली बार दिवाली पर हमारा गाँव रोशनी से जगमगा रहा है. यह सब @175GW_IndiaRenw @rituias2003 जी के प्रयासों से ही सम्भव हुआ आप सभी को धन्यवाद'. Below the text is a photograph of a night scene in a village, featuring a large, glowing square light structure and strings of colorful lights. The tweet has 1 reply and is shared by Ashish Pal, kusumanjali singh, Knews and 6 others. The bottom of the screenshot shows a Windows taskbar with several open applications and a system tray displaying the time as 16:23 on 25-10-2017.

Secure | https://twitter.com/1975dhirendra/with_replies

Home Notifications Messages Search Twitter Tweet

DHIRENDRA SINGH.... @1975dhirendra · Oct 19
पहली बार दिवाली पर हमारा गाँव रोशनी से जगमगा रहा है. यह सब
@175GW_IndiaRenw @rituias2003 जी के प्रयासों से ही सम्भव हुआ आप सभी को धन्यवाद
Translate from Hindi



Ashish Pal, kusumanjali singh, Knews and 6 others

Cyber Security Sta...xlsx Note on high pri...docx Brief on CERepo...docx The Dark Overlor...html Deloitte hit by cy...html Canceled Show all

16:23 25-10-2017

Diye Se Diya Jale



Let us work together to bring Light in life of everyone.

Thank you
vmenghani@nic.in