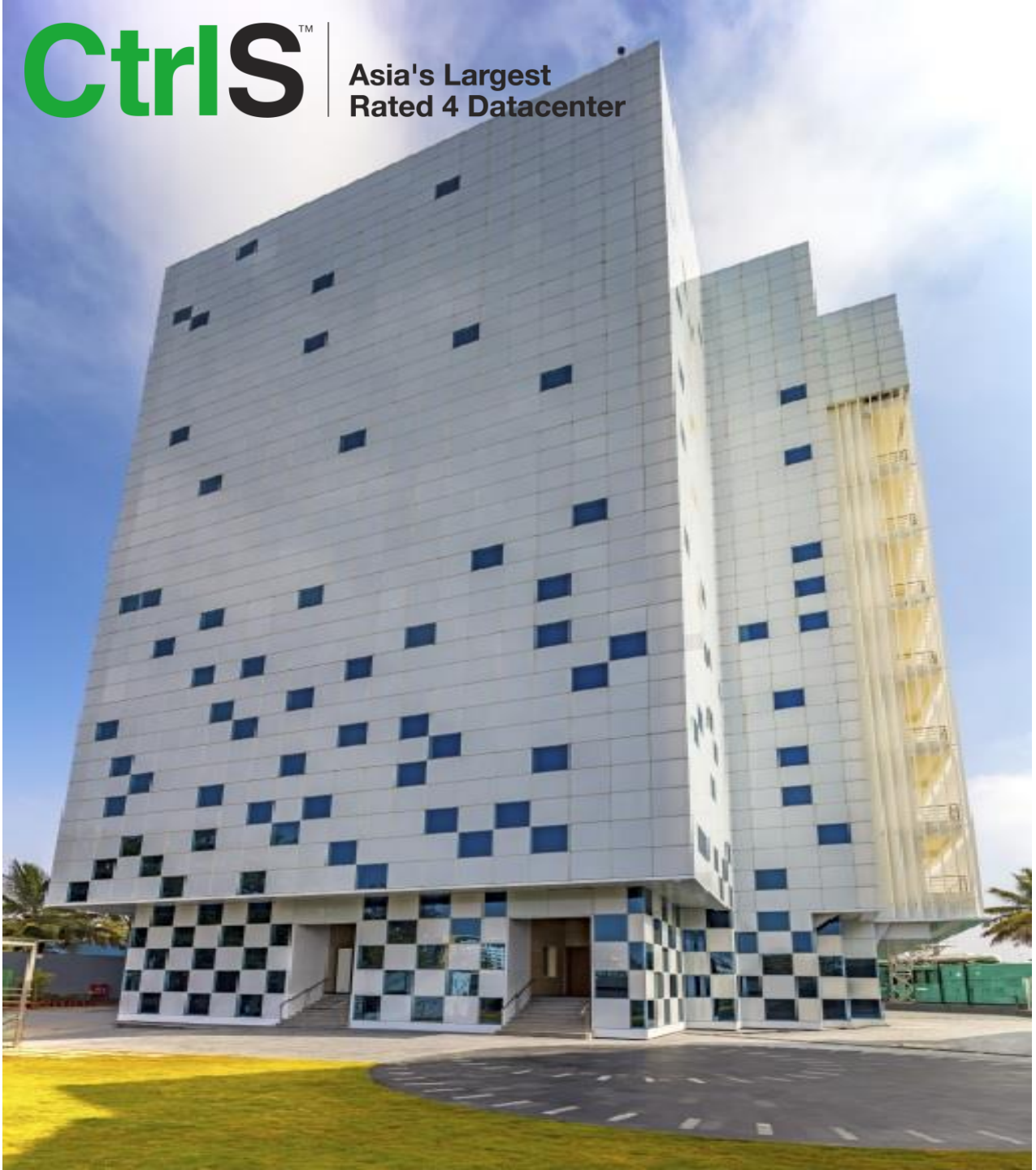


Confederation of Indian Industry

Excellence in Energy Management 2021

CTRLS Datacenters Limited, Electronic City, Bengaluru.

Presenting by -
Girish Panduranga – DC Sr. Manager,
SV Siva Rama Krishna – DC Team Lead

ANSI/TIA-942:2014 RATED 4 TIA-942

USA | Singapore | India | Middle East | APAC

www.ctrls.in

Our Corporate Factsheet

CtrlS
Asia's Largest
Rated 4 Datacenter

Asia's Largest Rated-4 Datacenter and Managed Services Provider

Healthy Financials

EBITDA 2X
The Industry Standard

50% **YoY Growth**

D/E Ratio 1.19

1.35 **Debt/EBITDA Ratio**

1 Million Square Feet of DC Footprint in India

Serving **60 of the Fortune 500 Globally** and **108** of **ET 500 Indian** companies

Powering **3,500+** Enterprises

Most Awarded Datacenter in India

200 Innovations in technologies since 2008

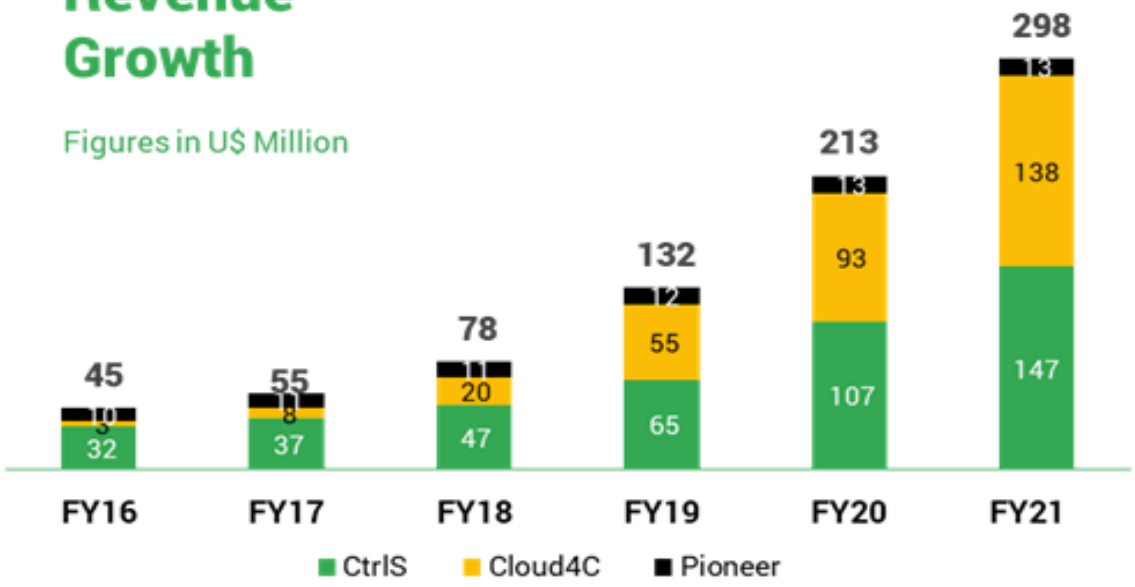
Global Footprint (Cloud4C)

25 Countries, 50 Locations

2,000
People Strong Group

Revenue Growth

Figures in U$ Million



Company	FY16	FY17	FY18	FY19	FY20	FY21
CtrlS	32	37	47	65	107	147
Cloud4C	3	8	20	55	93	138
Pioneer	10	11	11	12	13	13
Total	**45**	**55**	**78**	**132**	**213**	**298**

Company	2018	2019	2020	2021
CtrlS	47	65	107	147
Cloud4C	20	55	93	138

Our Data Center Facilities

CtrlS
Asia's Largest

Mumbai DC-1

Rack Space	3,500
Power	20 MW
Available Power	0 MW
Security Zones	8 Zone

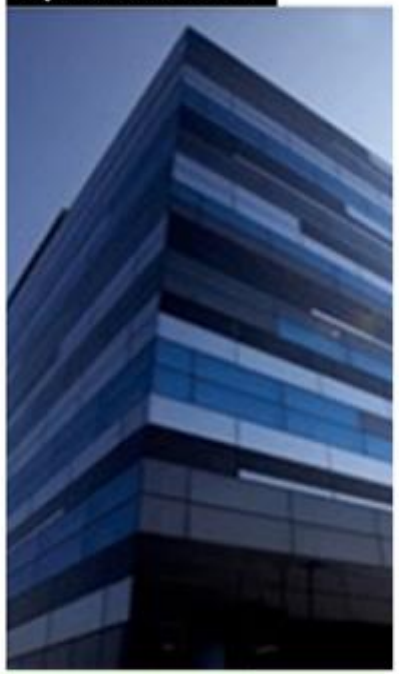
Rated 4 Data Center
Platinum Certified LEED
v4 O+M

Mumbai DC-2

Rack Space	2,000
Power	24 MW
Available Power	4 MW
Security Zones	8 Zone

India's 1st Solar Panels
covered Data Center

Hyderabad DC-1



Rack Space	1,400
Power	10 MW
Available Power	1 MW
Security Zones	6 Zone

Rated 4 Data Center
Platinum Certified
LEED v4 O+M

Hyderabad DC-2

Rack Space	650
Power	10 +10 MW
Available Power	2 MW
Security Zones	9 Zone

Rated 4 Data Center
Gold Certified
LEED v4.1 O+M

Noida DC

Rack Space	2,000
Power	12 +12 MW
Available Power	8 MW
Security Zones	9 Zone

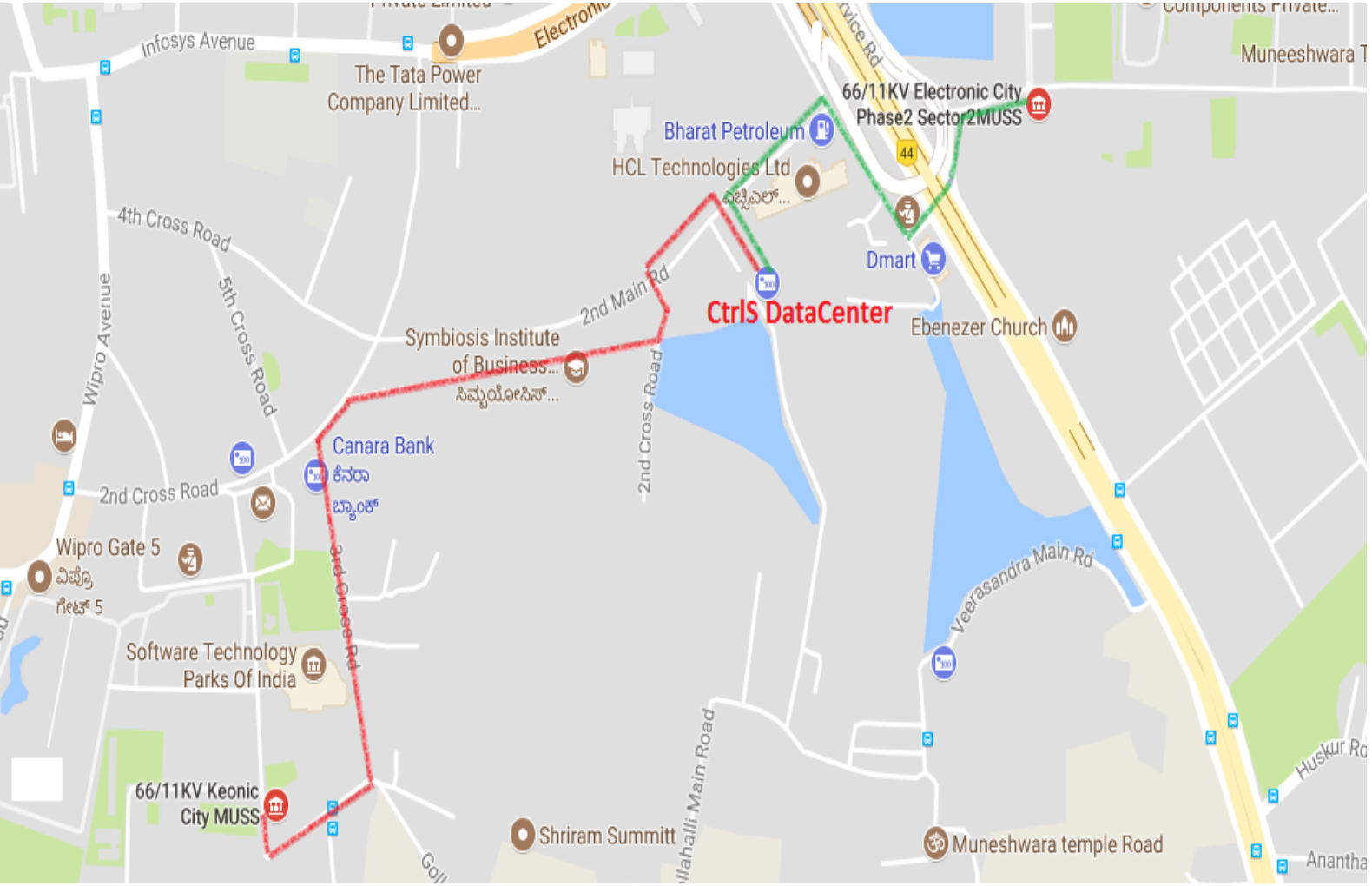
Rated 4 Data Center
Platinum Certified
LEED v4 O+M

Bangalore DC

Rack Space	1,850
Power	12 MW
Available Power	8 MW
Security Zones	9 zone

South India's 1st Rated 4
Data Center

Bengaluru | Electronic City



Data Center Features

- Rated 4 Data Center
- GPS Coordinates: Latitude 12.842655, Longitude 77.671202
- N+N Uninterruptible UPS, Utility Power Substation & Diesel Generator Redundancy For Continuous Support
- N+1 Cooling System Redundancy For Better Temperature Management
- 2 X 47 KL thermal storage tanks for cooling back up for 10 min.
- Industry Best Uptime SLA (99.995%)
- IBMS, CCTV, FAS, WLD, Rodent, PA, VESDA Systems.
- Carrier Neutral Networking Allowing Interconnection Between Multiple Telecommunication Carriers
- 9 layers of physical security till rack level

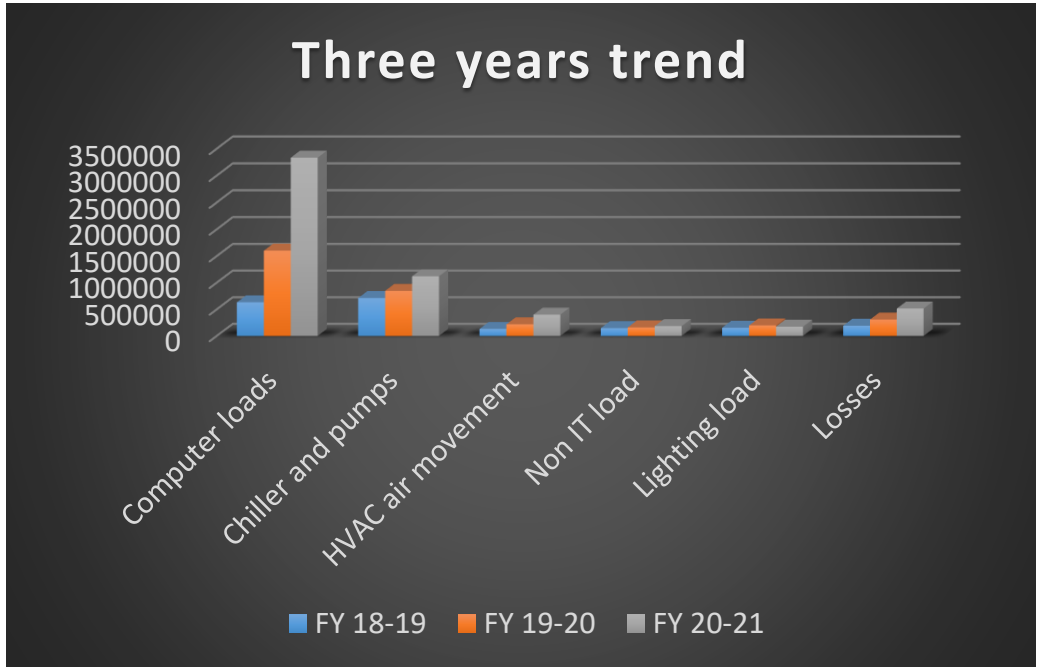
Datacenter Facility footprint

CtrlS
Asia's Largest
Rated 4 Datacenter

Sr No.	Details	Quantity	Unit
1	Build up Area, G+7 floors	137508	Sq Ft
2	Designed Racks Capacity	1850	Nos
3	Present built Capacity	591	No’s
4	Transformers (N + N)	2 X 3150	KVA
5	Maximum Demand	1	MW
6	Chillers Capacity (N + 1)	2 X 650	TR
7	UPS(N+N)	2 X 1000	KVA
8	Power consumption in a year	5.73	Million KWH
9	Power Cost in a year	48.21	Rs. In Million

Energy Data

Parameters	Units	2018 - 2019	2019 - 2020	2020 - 2021
Annual Electrical Energy Consumption, purchased from utilities :	kWh	1992280	3306724	5704570
Annual Electricity Generation (in-site), through Diesel Generating (DG)/Gas Generating (GG) Set(s)	kWh	16306	42260	29084
Total Annual Electricity Consumption, Utilities + DG/GG Sets	kWh	2008586	3348984	5733654
Annual Cost of Electricity Consumed from utilities :	million INR	21.81	28.17	47.42
Annual Cost of Electricity generated through DG/GG Sets	million INR	0.422	0.73	0.79
Total Annual Electricity Cost, Utilities + DG/GG Sets	million INR	22.23	28.9	48.21



Loads	FY 18-19	FY 19-20	FY 20-21
Computer loads	633408	1602284	3334075
Chiller and pumps	713827	847423	1121182
HVAC air movement	133407	220523	401096
Non IT load	147533	161295	186836
Lighting load	154852	198996	175281
Losses	194203	309087	515789

Facility consumption trend – Continuous PUE improvement 55.12%

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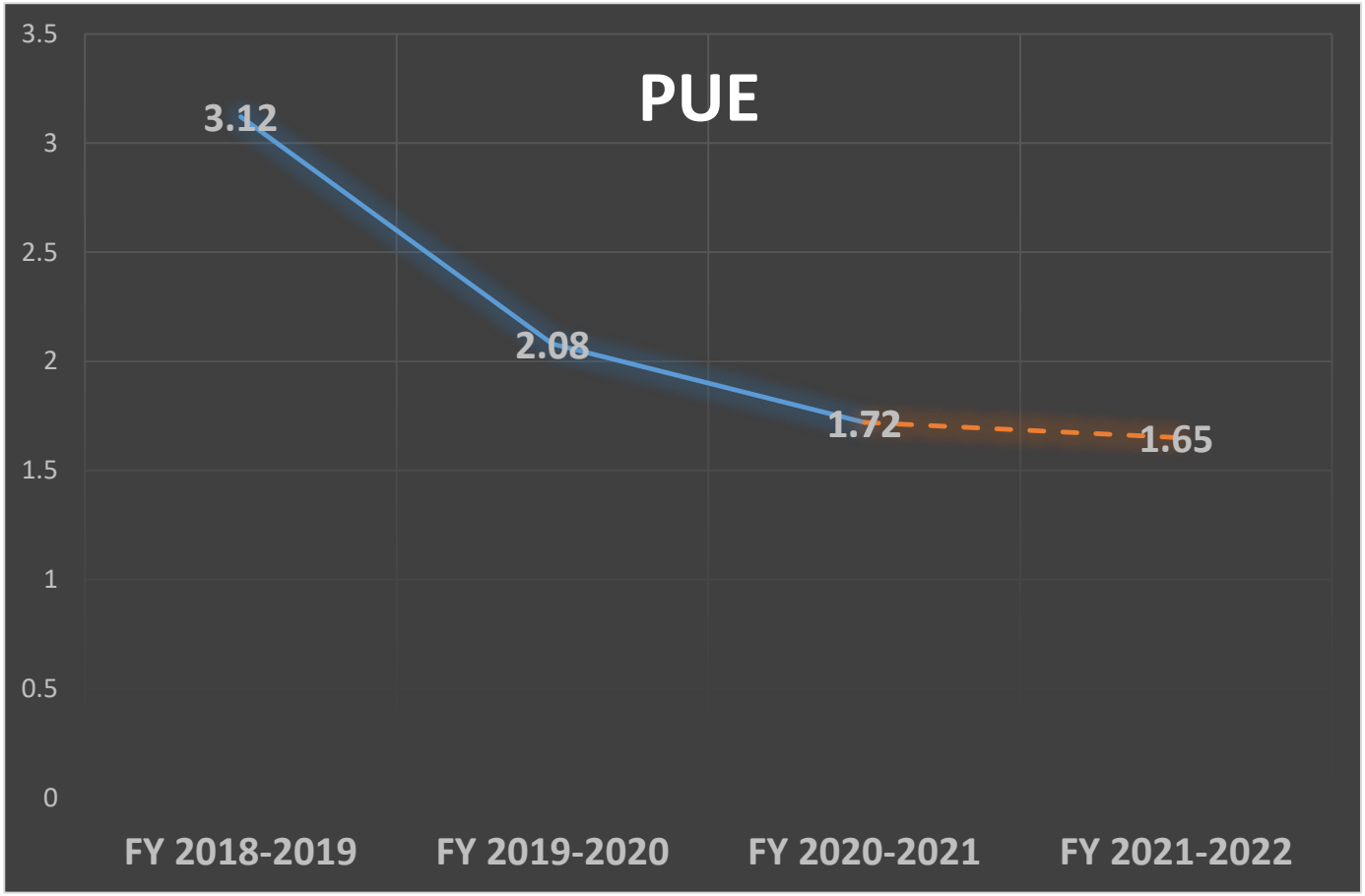
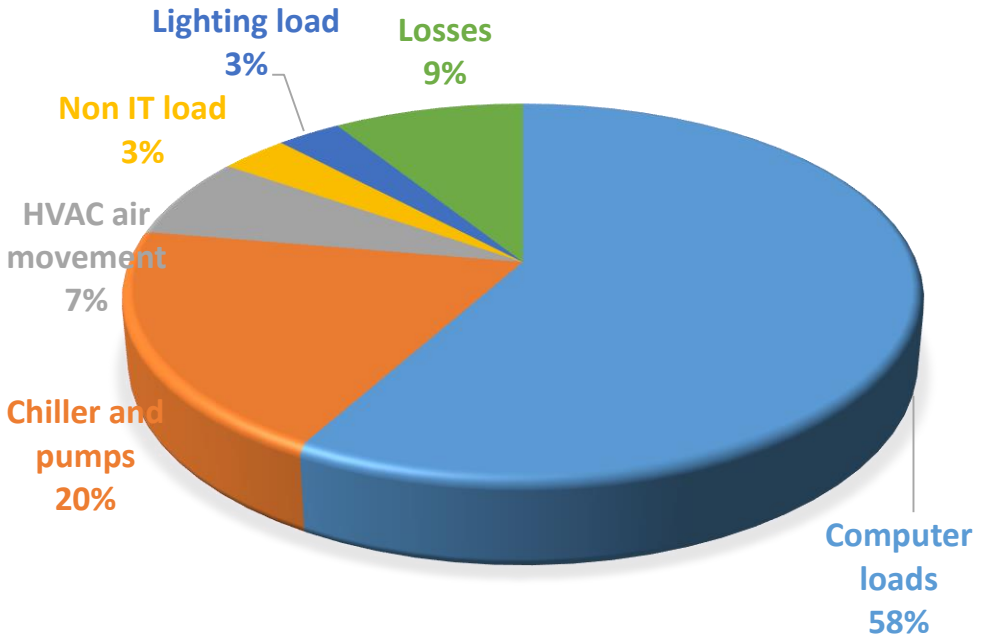
Rated 4 Datacenter

Power usage effectiveness (PUE) is a metric used to determine the energy efficiency of a data center



- TARGET FOR FY 2021-2022
  PUE 1.65



FY 2020-2021

Information on Competitors, National & Global benchmark

CtrlS Asia's Largest Rated 4 Datacenter

As per the standard global bench marking Data centres has to maintain a PUE as per below table

Global Benchmark			
Description	**Standard**	**Good**	**Better**
PUE	2	1.5	1.2
Temperature as per ASHRAE guideline	19- 27 deg C		
Humidity as per ASHRAE Guideline	40%-80%		

Sr No.	National / Global	Name of Competitor	PUE	Remarks
1	National	CtrlS Datacenter Hyderabad	1.358	Actual
2		Ctrls Data Center Bengaluru	1.72	Actual
3	Global	Google Data Center US	1.11	Source: Internet

An overall Investment of Rs. 1.23 Crore has been made towards Energy optimization and the savings achieved in Energy is 1297834 KWH and in INR 1.08 Crore. ROI in 1 year 2 months

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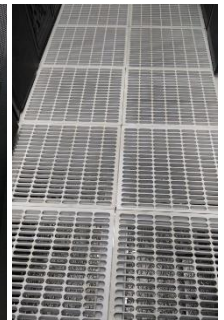
Asia's Largest
Rated 4 Datacenter

Sr.No	Investment description	Invested Value in INR	Savings in KWH	Saving in INR
1	30KW Solar plant	Rs. 2518921	124356	1035885
2	Unity Power Factor UPSs	Rs. 6800000	231053	1924671
3	Variable frequency drives for pumps	Rs. 800000	487110	4057626
4	Motion sensors with LED light	Rs. 153502	9050	75386.5
5	On-line Chemical dosing for water treatment	Rs. 884144	279795	2330692
6	Sensor based taps installation for all wash basins	Rs. 90000	10950	91213.5
7	Cold aisle containment	Rs. 990000	148920	1240504
8	Dampers installation for air flow grills to control the volume as per rack density	Rs. 50000	2400	19992
9	Blanking panels installation in the rack empty U space	Rs .50000	4200	34986
	Total Investment	Rs. 1.23 Crore	1297834	Rs 1.08 Crore



List of Major Encon projects planned in FY 21-22

CtrlS
Asia's Largest
Rated 4 Datacenter

Sr.No	Investment description	Investing Value in INR	Savings in KWH	Monetary savings in INR
1	Chiller Condenser tube cleaning	Rs. 90000	43800	364854
2	Additional 34KW solar plant	Rs. 2300000	29680	247234
3	Cold aisle containment for co-location shared Data Center hall	Rs. 1000000	148920	1240503
5	Automation of HT panels to minimize the manual intervention.	Rs. 150000	16000	133280
6	By opting Renewable Energy through Open access	Rs. 3300000	NIL	2797620

List of Major Encon projects planned in FY 21-22

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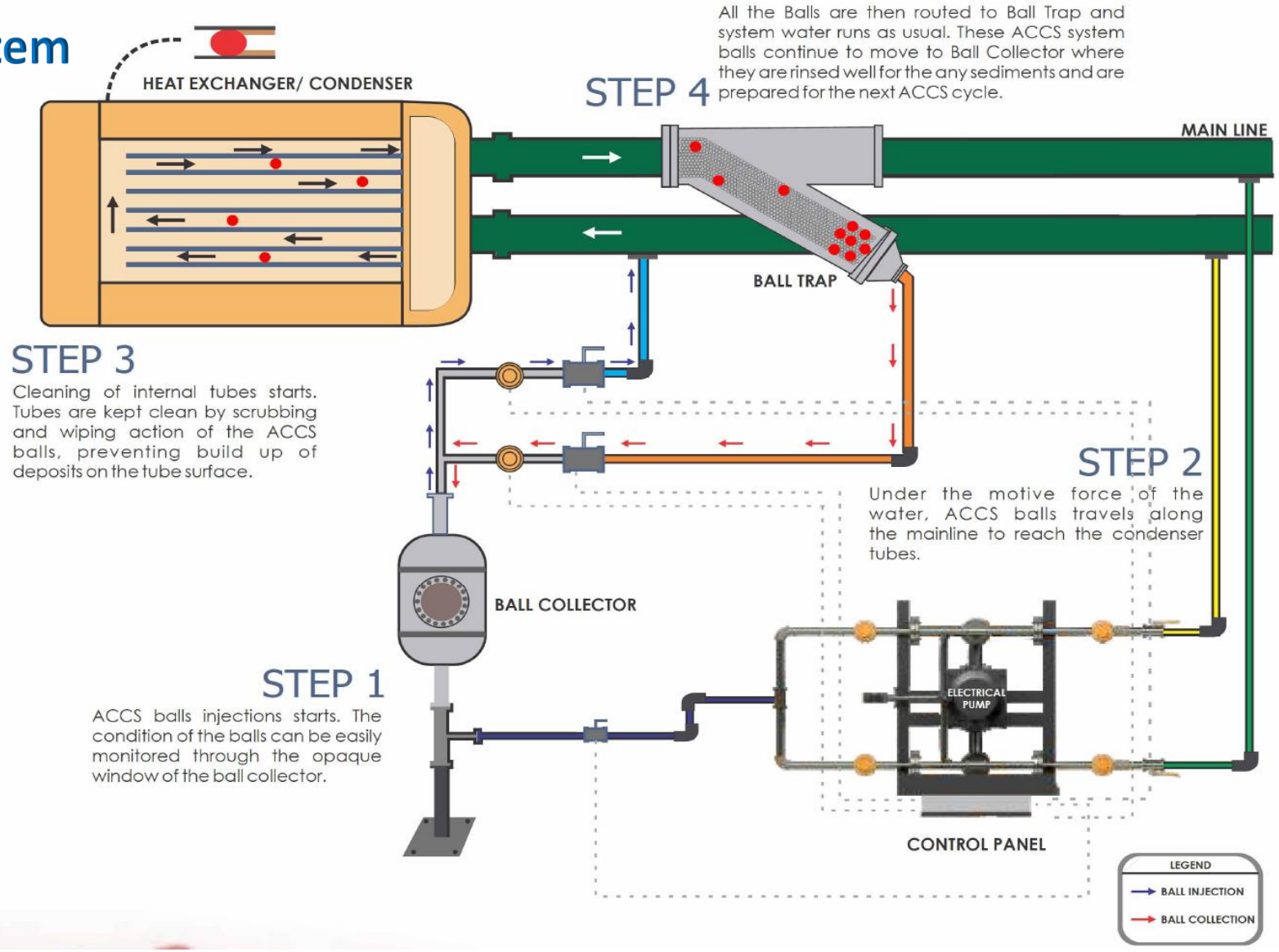
Asia's Largest
Rated 4 Datacenter

Automatic Condenser cleaning system

- Energy savings up to 15% to 20% considering fouling thickness of 0.5 mm to 1 mm.
- Maintenance cost savings approximately 1 lack per year.
- Condenser life shall increase and efficiency of the chiller too.



List of Major Encon projects planned in FY 21-22

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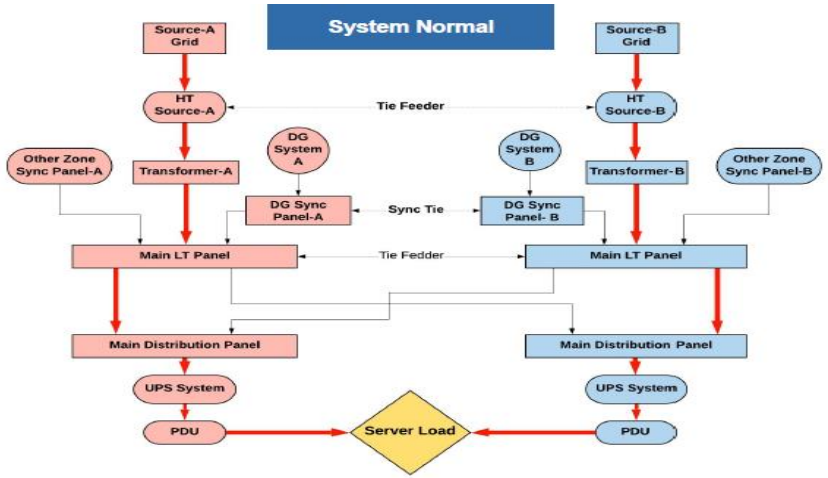
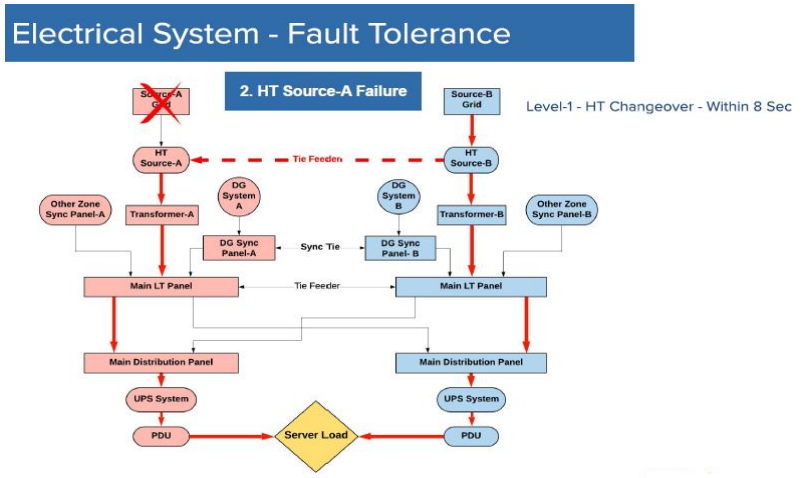
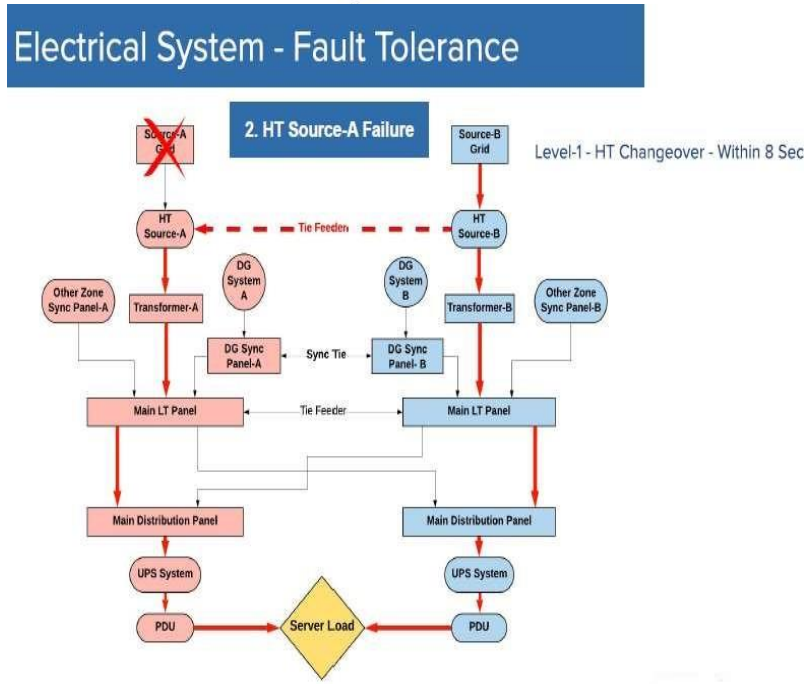
Asia's Largest
Rated 4 Datacenter

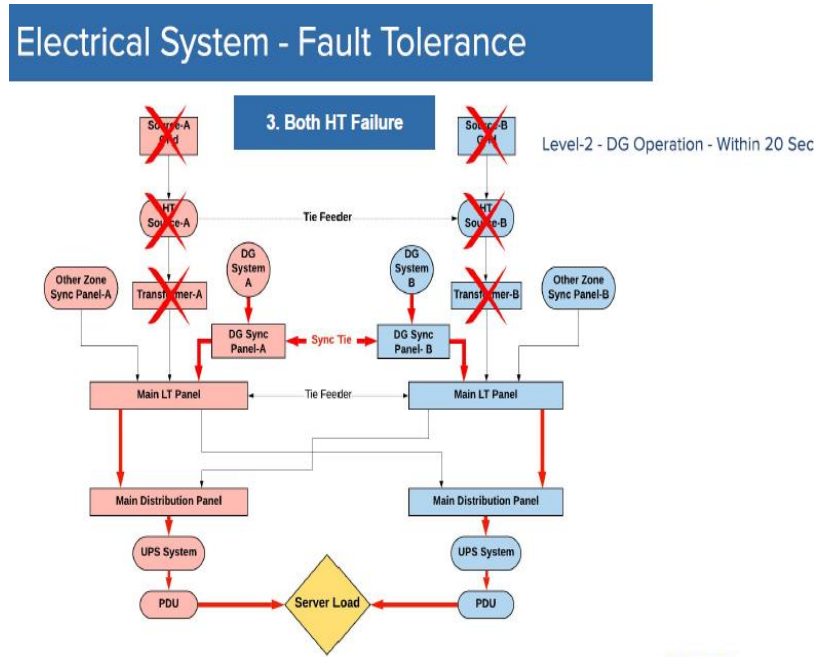
HT Dual source automation

- We have done this project in our Hyderabad facility.
- Fuel cost savings and reeducation of 2.6 ton carbon footprint
- Savings of INR 1.3 lacks and









List of Major Encon projects implemented in FY 18-19

CtrlS
Asia's Largest
Rated 4 Datacenter

Sr.No	Investment description	Invested Value in INR	Savings in KWH	% savings
1	Blanking panels installation in the rack empty U space	Rs. 50000	3600	2.70%
2	Dampers installation for air flow grills to control the volume as per rack density	Rs. 50000	2400	1.80%
3	Light sensors installation	Rs. 40000	2000	0.28%
5	VFD for all chiller water pumps	Rs. 800000	2240	0.31%
6	Solar Photovoltaic	Rs. 2000000	35339	4.95%

Implemented Projects details in FY 18-19

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Asia's Largest
Rated 4 Datacenter

Blanking panels:

1. Avoid air short cycling
2. Saving of 2.7% on energy consumption.
3. Avoid Hot spots in Data centers.

VFDs for the Pumps:

1. Depending upon the flow rate pumps speed adjust automatically to optimize energy consumption.
2. Saving of 0.31%

Motion Sensors with LEDs:

1. LED lights with motion sensors are installed in data center halls as a energy conservation.
2. Saving of 0.28%

Solar panels on roof top:

1. Solar panels of 30KW generation connected to common LT in conjunction to main supply as green initiative.
2. Saving of 4.95%

List of Major Encon projects implemented in FY 19-20

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Asia's Largest
Rated 4 Datacenter

Sr.no	Investment description	Invested Value in INR	Savings in KWH	% savings
1	Cold aisle containment for co-location shared DC	Rs. 300000	120500	10.97%
2	Cold aisle containment for co-location dedicated DC halls	Rs. 300000	131400	12.30%
3	Sensor based taps installation for all wash basins	Rs. 90000	10950	5.50%
4	De-humidification optimization of PAHU	Rs. NIL	13140	5.96%

Implemented Projects details in FY 19-20

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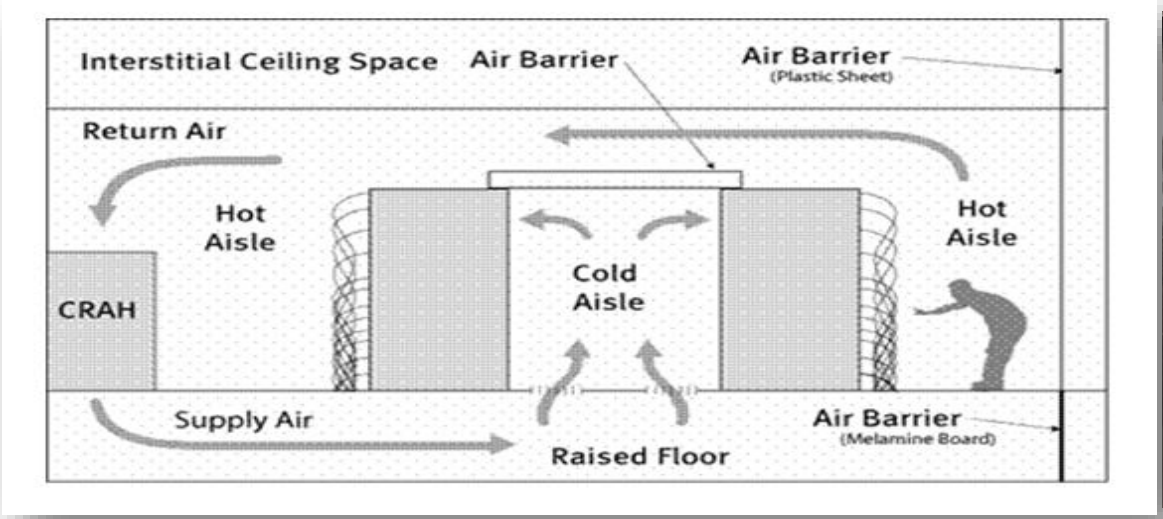
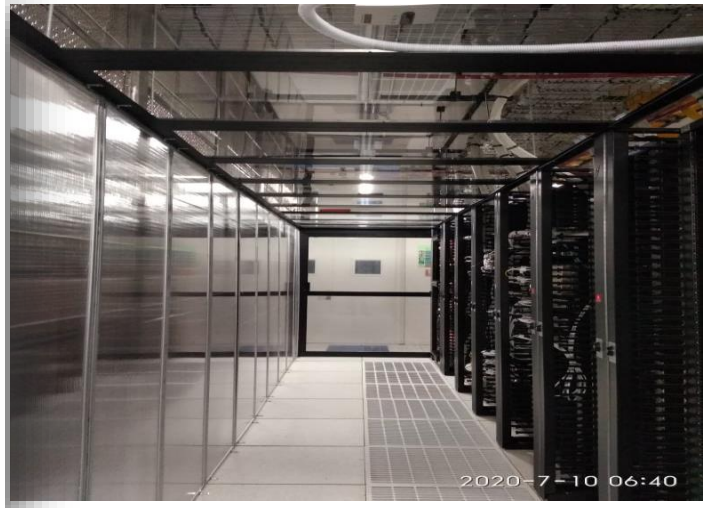
Asia's Largest
Rated 4 Datacenter

Cold Aisle Containments:

1. Optimized cooling in the data center halls.
2. Saving of 12.30% on energy consumption.
3. Overall 7% savings on cooling consumption





Sensor based water taps:

1. Manual based taps are replaced with Sensor based taps for wash basins.
2. Optimized the use of water and energy consumption
3. Saving of 5.50% on energy consumption.

List of Major Encon projects implemented in FY 20-21

Sr.No	Investment description	Invested Value in INR	Savings in KWH	% savings
1	Cold aisle containment for co-location dedicated Server halls	Rs. 590000	148920	9.78%
2	Blanking panels installation in the rack empty U space	Rs. 13000	4200	1.05%

Measures taken by the plant/unit to address the challenges during Covid-19

Due to Covid-19 pandemic Encon projects were limited.

Utilization of waste material

Types of waste material:

- DG engine oil
- Transformer oil

Name of Fuel	Qty of waste oil disposed liters/year
DG Engine Oil	1440
Transformer oil	610

FORM - 10
[See Rule 19(1)]
MANIFEST FOR HAZARDOUS AND OTHER WASTE 2212

1.	Sender's name and mailing address (Including Phone No & email)	NSDL E-Governance Infrastructure Ltd, No 15/A, Electronic city phase-1 Bangalore-560100 79955 71532
2.	Sender's authorization No.	
3.	Manifest Documents No.	2212/115
4.	Transporter's name and address: (including Phone No. & email)	Ganapathy Refineries Pvt. Ltd., No. 9 & 10, Ambedkar Industrial Estate, Jigani Industrial Area, 1st Phase, Jigani, Bengaluru - 560 105. Email : ganapathyrefineries5517 @gmail.com
5.	Type of Vehicle	(Truck/Tanker/Special Vehicle)
6.	Transporter's registration No.	314838
7.	Vehicle registration No.	KA01 AC 6570
8.	Receivers Name and mailing address (Including Phone No & email)	Ganapathy Refineries Pvt. Ltd., No. 9 & 10, Ambedkar Industrial Estate, Jigani Industrial Area,1st Phase, Jigani, Bengaluru - 560 105. Email : ganapathyrefineries5517 @gmail.com, Ph : 080-22224235, Mob : 9740645473
9.	Receiver's authorization No.	80213/2014-15/H1581 / 314838
10.	Waste Description :	Used oil
11.	Total Quantity of Waste / No. of Containers	610 Litres ..... m3 or MT ..... Nos.
12.	Physical form	Solid/Semi-solid/sludge/Oily/Tarry/Slurry
13.	Special handling instructions and additional information:	Use PPEs: Avoid Spillage
14.	Sender's Certificate: hereby declare that the contents of the consignment are fully and accurately described above by proper shipping name and are categorized, packed, marked, and labeled, and are in all respects in proper condition for transport by road according to applicable national government regulations.	Name and Stamp: For NSDL; Signature; Month 1 1 / Day 1 8 / Year 2 0 1 9
15.	Transporter's acknowledgement of receipt of wastes	Name and Stamp; Signature; Month 1 1 / Day 1 8 / Year 2 0 1 9
16.	Receivers certification of receipt of hazardous & other waste	Name and Stamp; Signature; Month 1 1 / Day 1 8 / Year 2 0 1 9

Copy 1. White Colour : to be forwarded by the Sender to the State pollution Control Board or Committee
Copy 2. Yellow Colour : To be retained by the Sender after taking Signature on it from the transporter and rest of the four copies to be carried by transporter
Copy 3. Pink Colour : To be retained by the Receiver of the facility after signature
Copy 4. Orange Colour : To be retained to the transporter by the Receiver of facility / recycler after accepting waste.
Copy 5. Green Colour : To be Forwarded by the Receiver of the facility to State Pollution Control Board or Committee after treatment and disposed of wastes
Copy 6. Blue Colour : To be returned by the Receiver of the facility to the Sender after treatment and disposed of hazardous material / wastes

FORM - 10
[See Rule 19(1)]
1107
MANIFEST FOR HAZARDOUS AND OTHER WASTE

1.	Sender's name and mailing address (Including Phone No & email)	Cista Datacenters Ltd Bangalore
2.	Sender's authorization No.	
3.	Manifest Documents No.	1107/115
4.	Transporter's name and address: (including Phone No. & email)	Ganapathy Refineries Pvt. Ltd., No. 9 & 10, Ambedkar Industrial Estate, Jigani Industrial Area, 1st Phase, Jigani, Bengaluru - 560 105. Email : ganapathyrefineries5517 @gmail.com
5.	Type of Vehicle	(Truck/Tanker/Special Vehicle)
6.	Transporter's registration No.	314838
7.	Vehicle registration No.	KA01 AC 6570
8.	Receivers Name and mailing address (Including Phone No & email)	Ganapathy Refineries Pvt. Ltd., No. 9 & 10, Ambedkar Industrial Estate, Jigani Industrial Area,1st Phase, Jigani, Bengaluru - 560 105. Email : ganapathyrefineries5517 @gmail.com, Ph : 080-22224235, Mob : 9740645473
9.	Receiver's authorization No.	314838
10.	Waste Description :	Used oil
11.	Total Quantity of Waste / No. of Containers	1440 Litres ..... m3 or MT ..... Nos.
12.	Physical form	Solid/Semi-solid/sludge/Oily/Tarry/Slurry
13.	Special handling instructions and additional information:	Use PPEs: Avoid Spillage
14.	Sender's Certificate: hereby declare that the contents of the consignment are fully and accurately described above by proper shipping name and are categorized, packed, marked, and labeled, and are in all respects in proper condition for transport by road according to applicable national government regulations.	Name and Stamp; Signature; Month 0 4 / Day 0 9 / Year 2 0 2 1
15.	Transporter's acknowledgement of receipt of wastes	Name and Stamp: Ganapathy Refineries Pvt. Ltd. Bangalore; Signature; Month 0 4 / Day 0 9 / Year 2 0 2 1
16.	Receivers certification of receipt of hazardous & other waste	Name and Stamp: Ganapathy Refineries Pvt. Ltd. Bangalore; Signature; Month 0 4 / Day 0 9 / Year 2 0 2 1

Copy 1. White Colour : to be forwarded by the Sender to the State pollution Control Board or Committee
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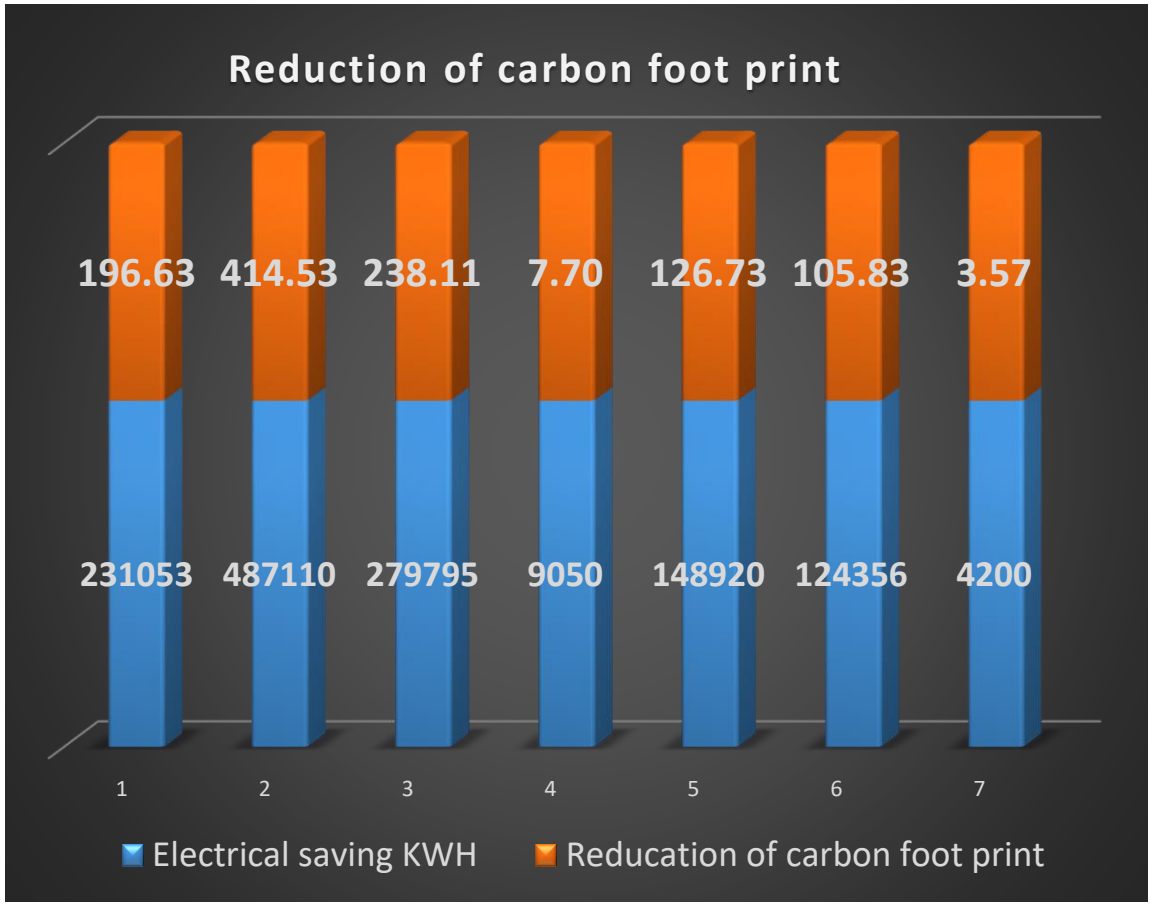
Copy 4. Orange Colour : To be retained to the transporter by the Receiver of facility / recycler after accepting waste.
Copy 5. Green Colour : To be Forwarded by the Receiver of the facility to State Pollution Control Board or Committee after treatment and disposed of wastes
Copy 6. Blue Colour : To be returned by the Receiver of the facility to the Sender after treatment and disposed of hazardous material / wastes

GHG inventorisation

CtrlS
Asia's Largest
Rated 4 Datacenter

Reduction of Carbon foot print 2018-2021

Opportunities Implemented	Electrical saving KWH	Reduction of carbon foot print Tons of CO2
High Efficiency UPS	231053	196.63
Variable frequency drives for pumps	487110	414.53
On-line Chemical dosing and water treatment	279795	238.11
Motion sensors with LED light	9050	7.70
Cold aisle containment system	148920	126.73
Solar units	124356	105.83
Blanking panels installation in empty U space	4200	3.57
Total Savings	1284484	1093.10



Green Supply Chain

CtrlS™
Asia's Largest
Rated 4 Datacenter

Purchased most energy efficient products:

- Chillers with lesser IKW (0.56 IKW), Energy Efficient Transformers
- Energy efficient LED lights
- Cold Aisle containment for all server halls
- Energy efficient pumps and CT
- Solar Panels
- Energy efficient UPSs systems.
- Common share point is being used at site by team to maintain documents thereby minimizing the usage of hardcopies
- Green chemicals for house keeping.
- STP treated water using for flushing and garden.
- Trainings on environmental best practices

Team work, Employee Involvement & Monitoring

CtrlS
Asia's Largest
Rated 4 Datacenter

Monitoring and Reporting	
Parameters	Details
Frequency of Review of PUE & Consumption :	Monitor through BMS 24/7 and review Once in a Week
Roles & Responsibilities of Energy Manager :	Minimum 20% power savings to be achieved compare to previous year PUE
Details of Monitoring & Reporting System / Methodology Employed by the Unit for Review of SEC & Consumption (Max. 100 Words):	Mr. Brahma Reddy - SVP, Mr. MVBV Prasad, Vice President,, Mr. Girish Panduranga, Sr. Manager, Mr. S V Siva Rama Krishna
Who Chairs the Review Meeting on SEC & Consumption (Provide Designation) :	Mr. Brahma Reddy - SVP, Mr. MVBV Prasad, Vice President, Mr. Rajesh Singh- AVP, Mr. Girish Panduranga, Sr. Manager, Mr. S V Siva Rama Krishna
Budget for Energy Conservation	INR 40 Millions which is 0.12% on total company turn over
Energy efficiency / awareness training program	Training are planned monthly for all the team members
Projects implemented through Kaizens (Workers and Supervisor level)	Operational savings of all the Electro mechanical equipment, utilization of optimized energy or power.

Monitoring of all critical equipment's in BMS

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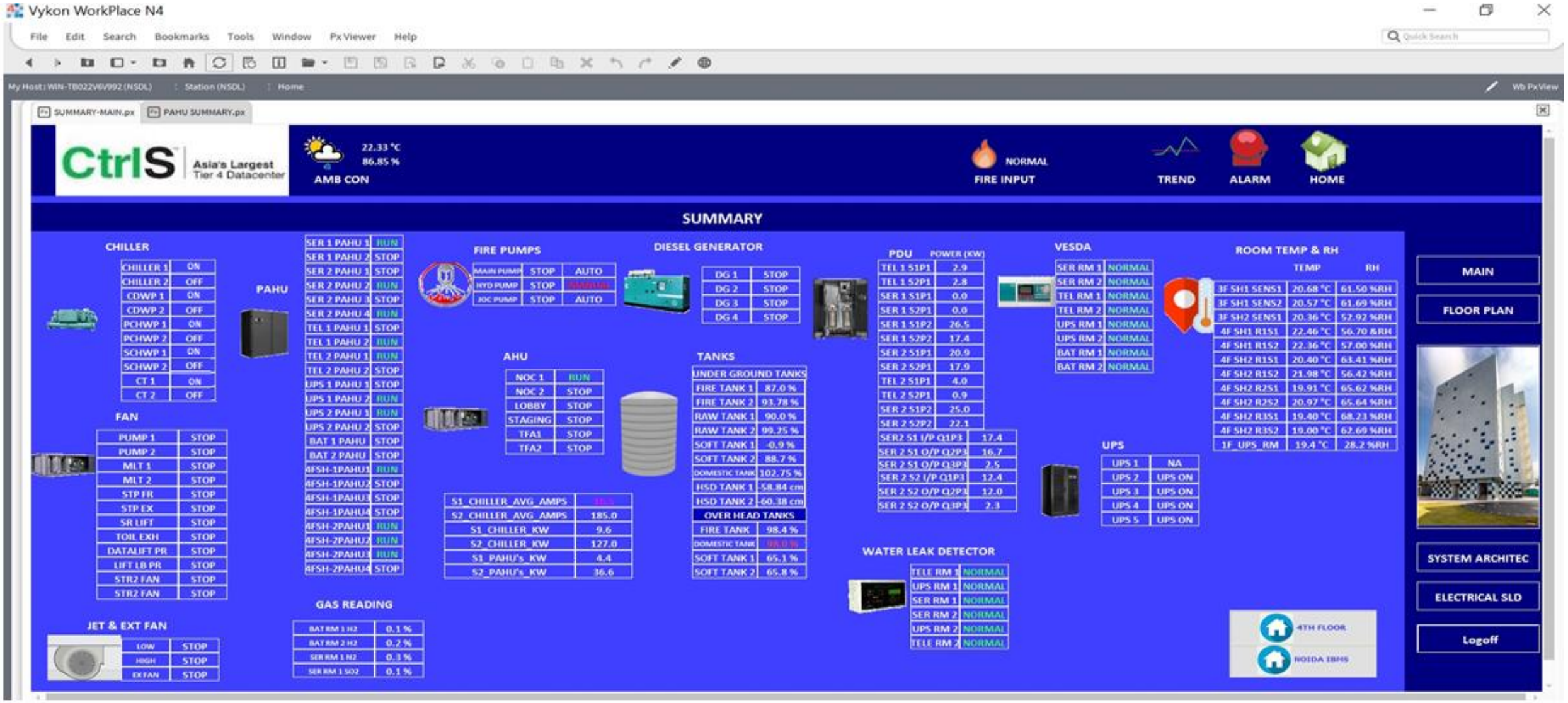
Asia's Largest
Rated 4 Datacenter



Implementation of ISO 50001/Green Co/IGBC rating

CtrlS
Asia's Largest
Rated 4 Datacenter

Implementation of ISO 50001/Green Co/IGBC rating	
Parameters	Details
Is your Building ISO 50001 Certified?	Certification process has been initiated, Internal reviews and documentation are in process.
Is your Building Certified by IGBC/Any other Building Certification?	Datacenter is designed & built as per guidelines of US Green Building Council (USGBC), Certification is under process
Total Turnover of the company/Plant FY 2020-21 (RS. Millions)	191 for Bengaluru DC
Amount invested in EnCon Projects FY 2020-21 (Rs. Millions)	0.60
Investment %	0.67%

Environment

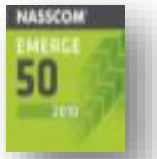
- Energy Efficiency best management practices at every level/ through Datacenter life cycle.
- Green supply chain policy
- Using STP treated water for gardening
- Indoor Environmental Air quality
- Utilization of waste
- Plantation
- Encourage employees to use public/pooled transport

Awards

Best Data Center Award 2013

CIO Choice Award for Data Centre Managed Services, Cloud 2013. 2014, 2015

CII Energy Efficiency Award 2012, 2014, 2015, 2020



Nasscom Awards 2010, 2011

Golden peacock Award 2020

Certifications

TIA Rated 4 certification
Industries highest Uptime of 99.995%

ISO 22301
Industries highest Uptime of 99.995%

ISO 20000-1
Efficient and timely service delivery

SOC-1, SOC-2
Organization wide process

ISO 27001
Ensuring data security and safety

cloud security alliance

People

Certified people resources

- **ITIL, COBIT**
- **CISA, CISSP**
- **Six Sigma, PMP**
- **CCNA, MCSE,**
- **SAP Basis, HANA etc**

More than 75% of the people resources are dedicated to customer support (Service Delivery) operations.

Our Expansion Plans

Upcoming DC Park, Hyderabad

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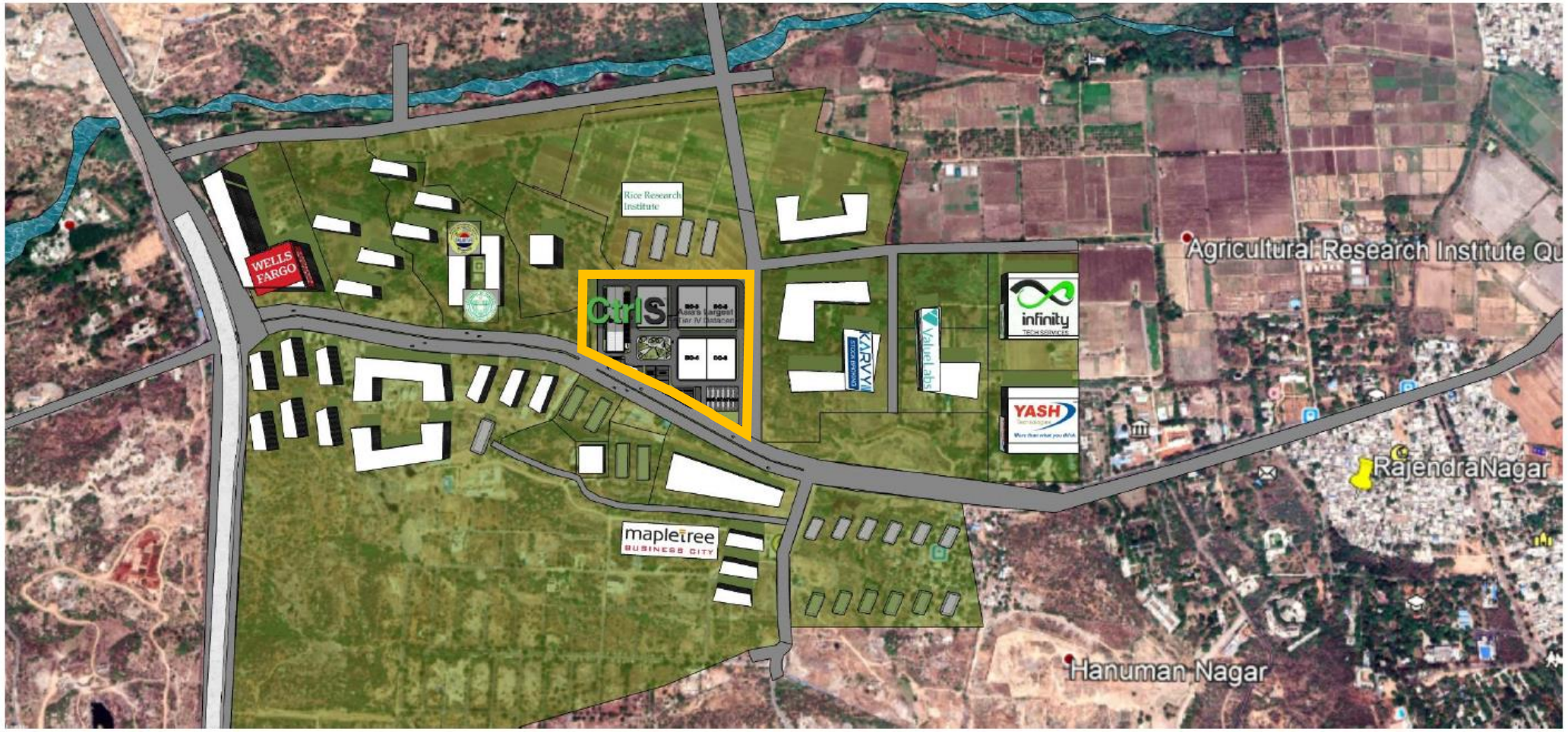

DC Park | Hyderabad | **1 Million Square Feet** | 150 MW | 15,000 Racks

Upcoming Solar Farm

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Asia's Largest
Rated 4 Datacenter

Eliminating Carbon Footprint through Clean Energy

We have initiated the activity of building a Solar Farm to ensure 100% of our electricity is powered by Renewable Energy

Total 200 MW capacity Solar power plant in multiple phases

Phase-1:
Setting up 50 MWp Captive solar power plant
Target to commission in next 9-12 months
Generation capacity of 75 million KWH

Will Cater upto 70% of present consumption of Mumbai DC requirement
Land bank is being acquired to meet DC campus requirement
About 150 Metric Tons Co2 reduction

Our Planned Edge Data Centers

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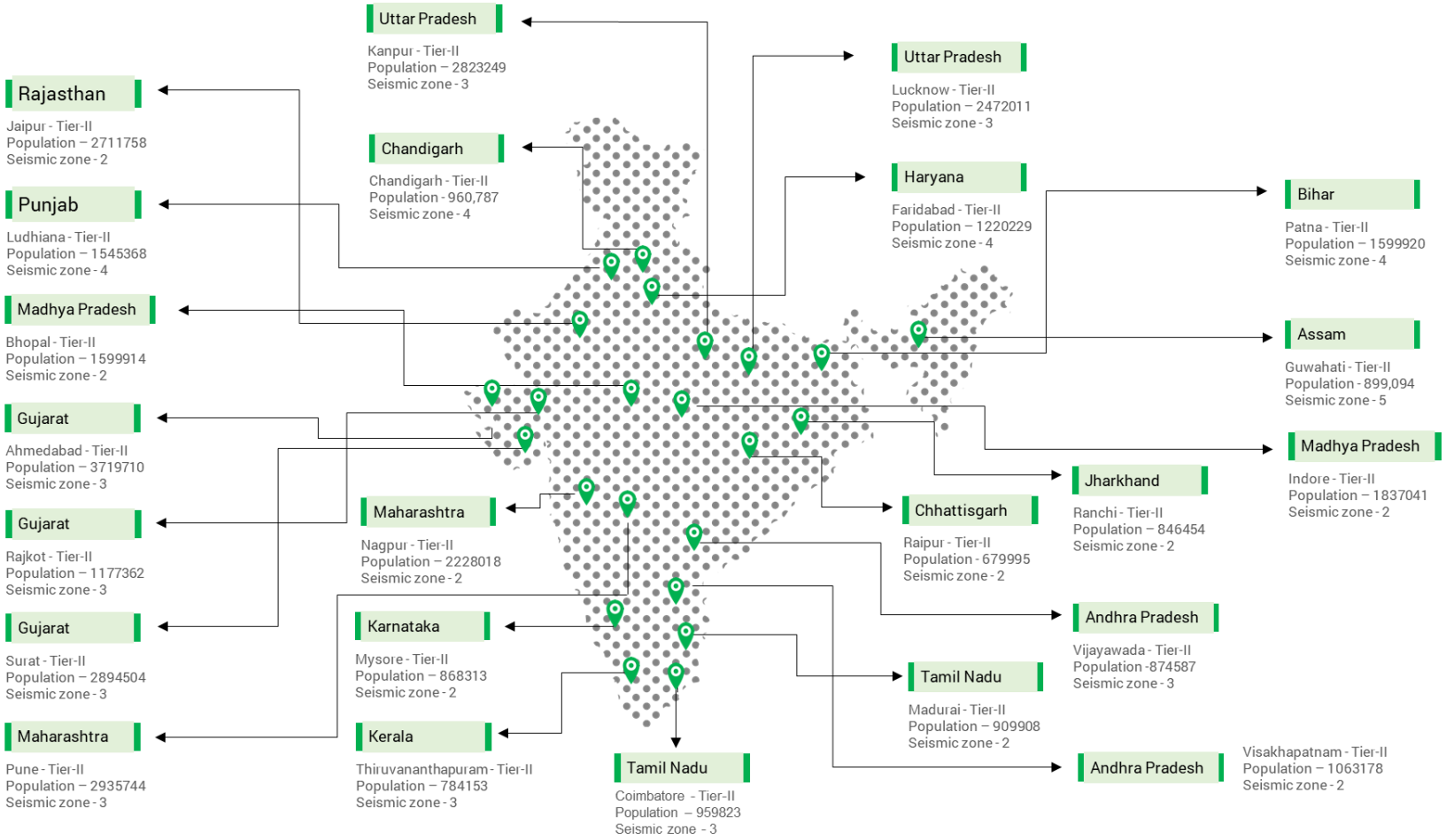
Asia's Largest
Rated 4 Datacenter

Helping you reach your customers at the edge across major Tier-2/3 cities in India

- Standardized, best-practices-based facilities
- Redundant, best-in-class infrastructure
- Better power, bandwidth and performance
- 24x7 onsite security, with rigorous controls
- Infrastructure as per Industry specs and government regulations
- Carrier Neutral DC Facility



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