



Green & Sustainable Computing

Green IT at Wipro – A Sustainable solution?

by Group 2

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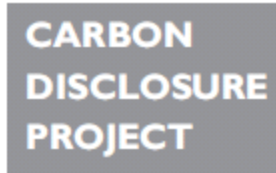
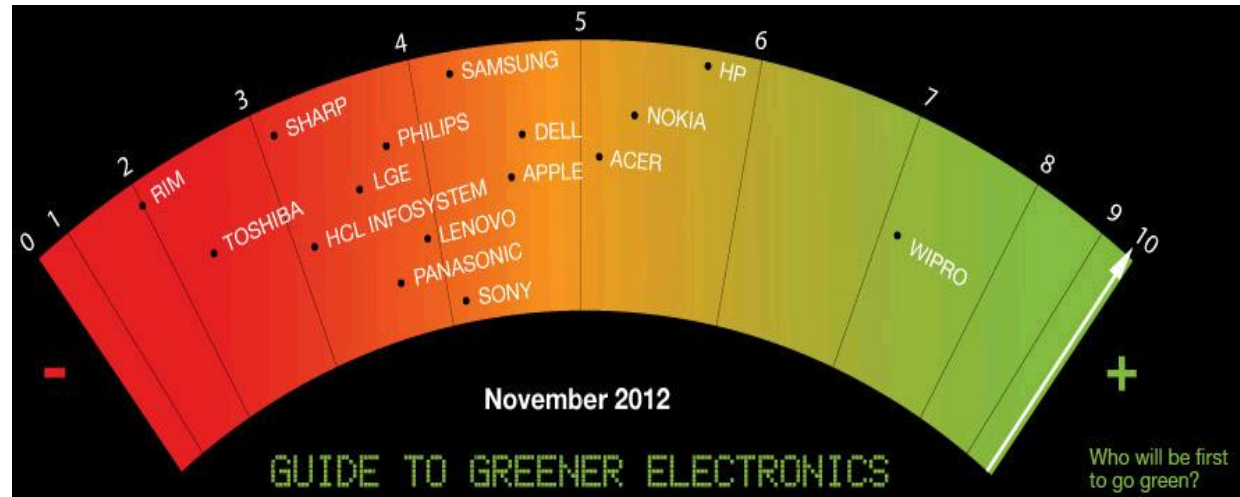
CDLI & Greenpeace Standings

Companies recognised on Carbon Disclosure Leadership Index(CDLI) in India

Company	CDLI Score
Wipro	87
Jubilant Organosys	77
Tata Consultancy Services	75
Tata Chemicals	72
Tata Steel	71
Larsen & Toubro	70
ACC	70
Mahindra & Mahindra	67
Ambuja Cements	64
Sesa Goa	64

Source: CDP 2010 India Report

<http://panchabuta.wordpress.com>



Wipro – Sustainability Rankings

- ❖ Forefront of Sustainability Reporting & Implementing Green IT Practices
 - ❖ Featured in Top Companies of **Paint India Green**
 - ❖ Top Spot in **Greenpeace green electronic rankings** (cutting Carbon & Greenhouse gas emissions & sourcing energy from renewable resources)
 - ❖ Outperformed IT giants like Apple, HP & Dell
- ❖ Target to cut emissions 44% between 2008 & 2015 (85% or reductions from greater use of renewable energy sources)
 - ❖ **Newsweek** Green Rankings (2012) – No 2
 - ❖ **Asian Sustainability Ranking** (2010) – No 1
- ❖ **Carbon Disclosure Leadership Index** – One of Top 2 Indian companies
 - ❖ **Oekem Sustainability Ratings** – No 2

Sustainability Dimensions at Wipro

Energy & Carbon	Water	Waste Recycling	Biodiversity
Workforce Density	Green Computers	Green IT Services	Employee Engagement
Reforms in School Education	Engineering Education	Primary Health Care	Post Disaster Rehabilitation
Ecology & Education	Supply Chain Responsibility	Sustainability Disclosures	Public Advocacy

Framework driven by Spirit Of Wipro, AA1000 (triple bottom-line framework) , GRI

Wipro's Sustainability Framework



Ecological

Minimize Wipro's internal footprint on energy, water and waste



Workplace

Promote employee diversity, empowerment & continuous learning



Education & community

Work jointly with education and civil society networks on sustainability programs



Customer stewardship

Provide products and solutions that enable customers to become greener



Supplier

Collaborate with suppliers to help them become more sustainable



Public regulation & policies

Shape policies by engaging with government, NGOs and industry networks

Wipro's Green Computing Journey

Multi-Computing PC and servers with ultra low footprint, 100% Energy Star compliant

Product
innovation

99% RoHS compliant (Restriction of Hazardous Substances)
phase out of PVC and BFRs (Brominated Flame Retardants)

Chemicals
management

30% Energy Star within product range

Energy
efficiency

20 e-waste collection centers
for customers across India

E-waste
management

Regular communication programs
dedicated website – www.wiprogreentech.com

Customer
awareness

Sustainability at Wipro



99%
RoHS Compliant



19
LEED rated
facilities



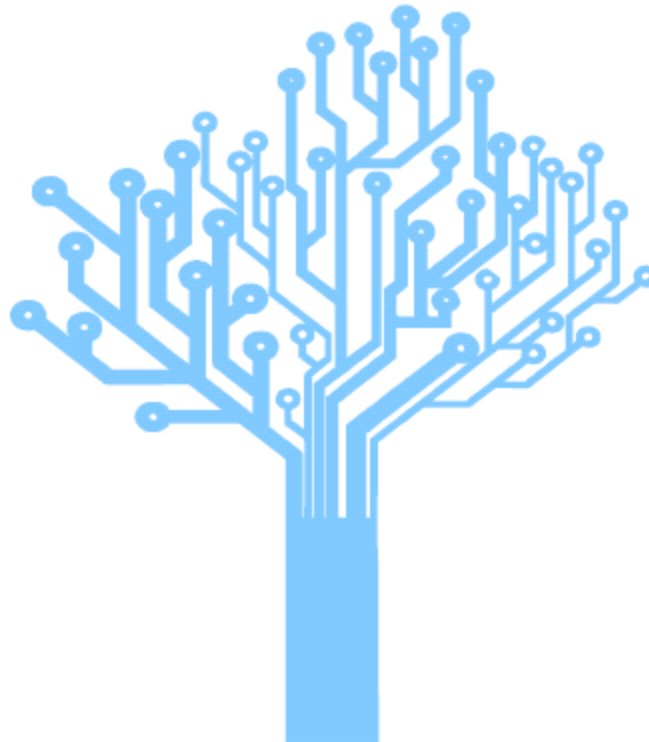
20
E-waste
collection centres



30%
Reduction in
electricity
consumption
intensity over last 5
years

A+

Externally Rated
Sustainability Reports



92%
Total Waste
recycled



30%
Water
recycled

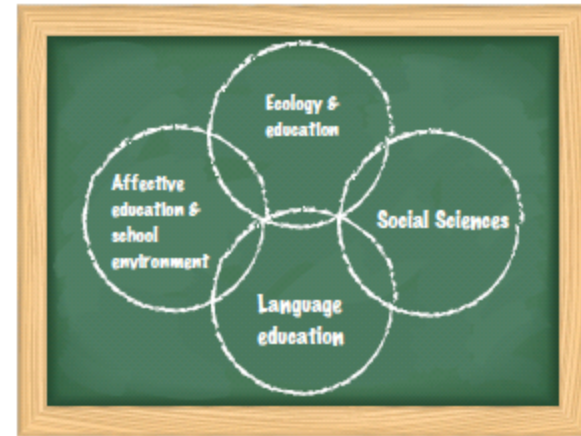
20,000KL

Rainwater harvested

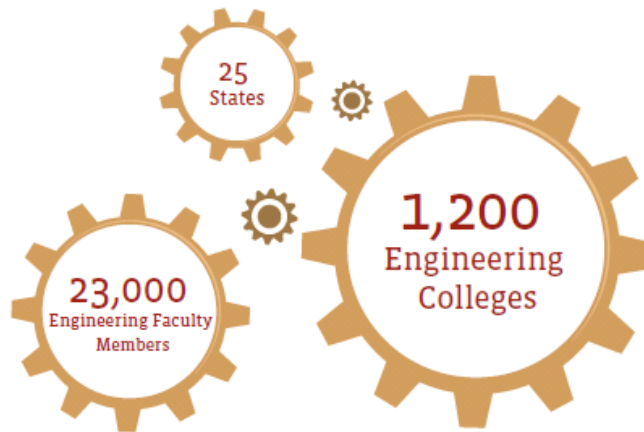
Sustainability Initiatives at Wipro



Wipro Cares



Wipro Applying Thought in Schools (WATIS)



Mission 10X

Eco Eye – Comprehensive Charter for Ecological Sustainability

• Goals

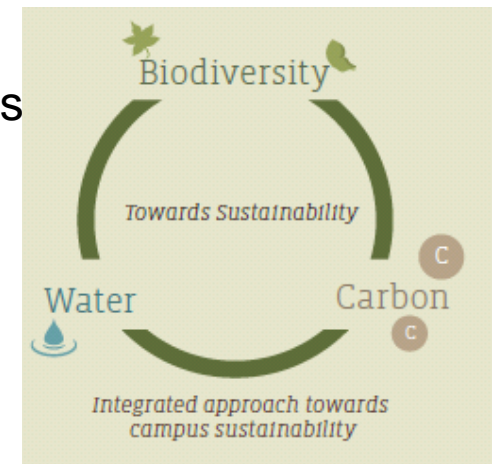
- To enable the company to become
 - carbon neutral
 - water positive
- Set new standards in recycling waste
- Achieve bio-diversity footprint
- Reporting on sustainability
- Managing climate change
- Reducing personal footprint



- **Phased Approach** (Inner circle of influence of employees etc followed by extended circle of suppliers)

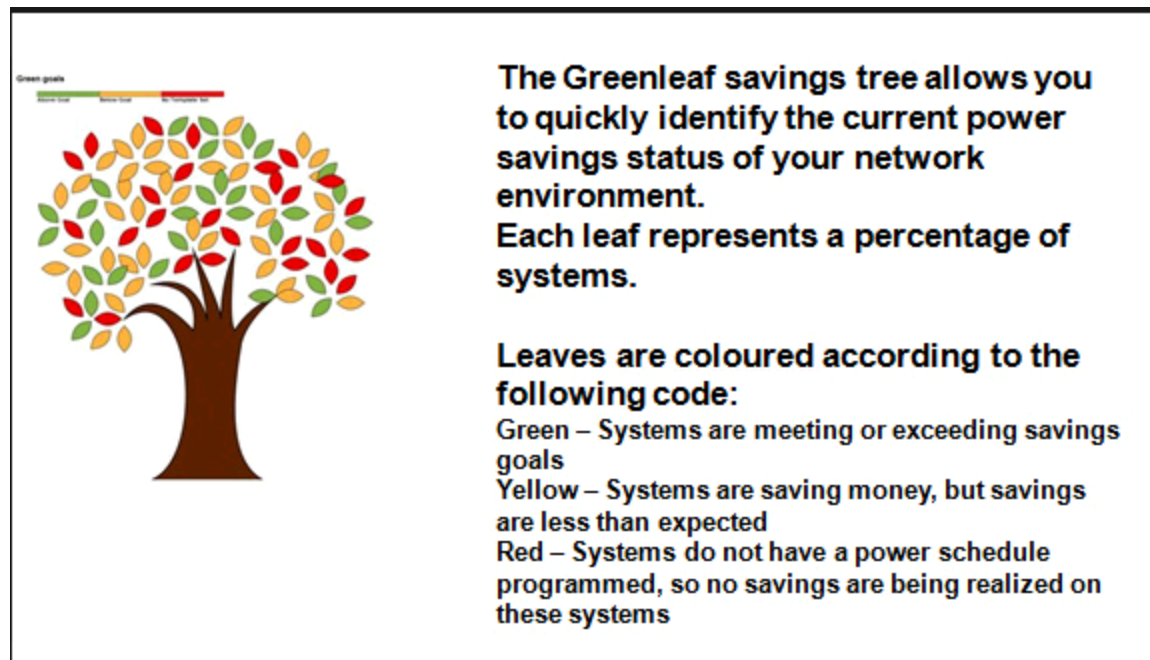
• 2 pronged approach:

- Campus Centric
 - Waste Recycling
 - Economical use of power appliances
- Facilities Centric
 - Consolidation of data centers
 - Virtualization of servers



Wipro Green Leaf – Responsible Computing

- Intelligent Automated Power Management - Allows groups of computers to follow power management templates using centralized & custom configured dashboards
- Identify Power Savings
- Measurement of Carbon Reductions
- Implementation of customer organization's Green Goals



Carbon footprint calculator –
Visualize impact on network
on climate change

Green Data Centres & Virtualization

Computing accounts for 32-35% of total energy consumption in Wipro

Greater Computing Efficiency, Smaller Resource & Energy Footprint by:

1. Reducing wasted energy
2. Consolidation and Virtualization
3. Managing the power efficiently
4. Capacity Planning

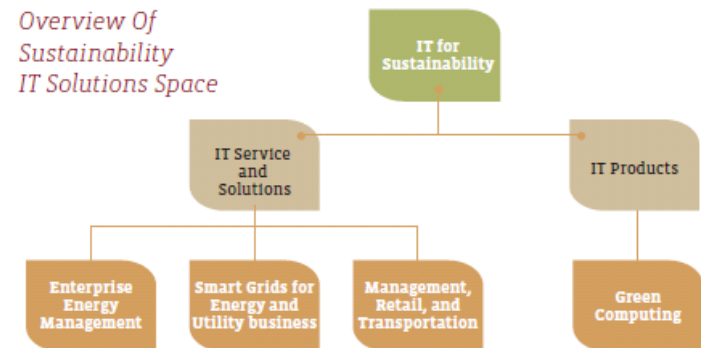
495 virtual servers hosted on 70 physical servers

On demand load sharing between server spaces

Easier configurability

Centralized power management

- GHG emission reduction of 220 metric tons of CO2
- Saved 265 Mwh of electricity



Portfolio of Sustainability Solutions offered by Wipro

- Green IT Infrastructure: Data Centers, Cloud Computing
 - Green Computing
 - Remote Data Center/Desktop
- IT for Green: IT led solutions for improvements in enterprise sustainability
 - Carbon, EH&S & Sustainability Performance Management Services
 - Smart Grids
 - Performance Management Services Process Optimization
- Clean Energy
 - Utility Scale MW Solar Plants, Rooftop Solar Plants & Biogas
 - Green Buildings
- Managed Energy Services – IT based remote management of energy infrastructure
 - Energy Efficiency Services
 - Regulatory & Monetization Services
 - Procurement & Billing Optimization



IT for Green Solutions from Wipro



**Paperless
office**



**Smart
sensors**



**Supply chain
sustainability**



**Smart grid
and smart
metering**



**Green
discovery**



**Integrated
sub daily
planning
system**



**Water
management**



**Productized
solutions**



**Managed
services for
energy
management**



**Sustainability
advisory**

Energy Management Systems & e-Waste Management

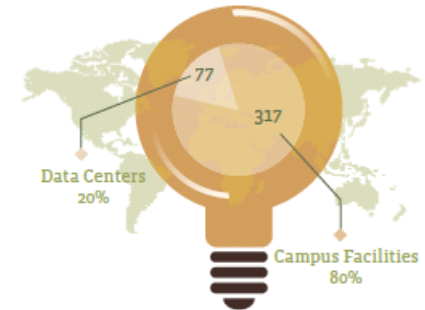
Key Areas of Energy Management Platform:

Energy Efficiency
Billing Recommendation
Carbon Management
Predictive Maintenance
Procurement Efficiencies

- Reduction in energy consumption by almost 60KWhrs per person
- Saved 75% electricity consumption , reduction in 65% water usage & 52% water requirement recycled

- One of the pioneers in recognizing e-waste problem as one of **EPR** (Extended Producer Responsibility)
- Convert** Waste food to methane in Cafeterias, Micro windmill for power generation , Water harvesting used to cool AC ,Converting waste paper to re-usable paper, LED Lightning
- E-waste disposal service** (16 centers) – 49T(08-09) to 260T(10-11)
- EOL (End Of Life) Recycling with data wiping** – Monitors, motherboards, accessories & components
- EcoEnergy** – clean energy generation
- Greenware** - ecofriendly & radiation free hardware (compliant with RoHS)
- Eco-Consortium** – joining hands with other IT Majors for GreenIT like SUN, APC, Hitachi DataSystems, AMD, Wipro InfoTech
- Aviation & e-Freight : Usage of Intelligent Smart Device technology

Energy and Emissions Intensity
Global Energy Consumption
(In Million Units)



Sustainability Culture

- **Spirit Of Wipro** – values framework
- **Focus on Individuals**
 - Formal Training Programs
 - E-learning Program on Diversity
 - Sustainability Council of senior leaders
 - Employee Chapter Program with Voluntary but committed participation
 - Awareness drives and “Earthian” awards aiming at collaborative sustainability initiatives
- **Stakeholder Relationships & Engagement Framework** – constant engagement with *customers, employees, investors, educational ecosystems, proximate communities/NGOs, services suppliers, contractors & government*
- **Regulatory Compliance**
 - Direct Policy inputs to government
 - Engagement & dialog as part of industry networks
 - Publications & Disclosures that advance and further knowledge & action
 - Active involvement with CII Green Procurement Council & MAIT (Manufacturer’s Association for IT) e-waste task force



Sustainable Business Processes & Organizational Procedures for Green IT Alignment

“Integrate into mainstream planning, budgeting & review process”

- Regular Internal audits and quarterly reviews at multiple levels
- Sustainability programs & funding model follow the regular planning and budgeting cycles.
- A clear Sustainability governance and Management framework laid out.
- “Enterprise Risk Management” designed to manage, mitigate and optimize the risk for compliance and assurance to various stake holders.
- Annual budget prepared and discussed extensively with Chairman, Executive council and Finance before approval.
- Wipro believes the funding should not be based on revenues & metrics. It goes against the spirit of Wipro’s Green initiatives which works towards broader goals of ecological prosperity.***

Environmental Performance – Future & Goals

Targets

- Scope1 & Scope2 GHG Intensities from 2.6 MT PP to 1.3 MT PP over 5 years
 - GHG Emissions from 3.45 T to 1 MT PP by 2025
- Establish metric to represent data centers (20% of energy consumption)
- Target to recycle 95% of waste from current 92% (less than 5% going to landfills)
- Expand Scope 3 emission sources

GHG Mitigation Program

• Energy Efficiency

- Achieved reduction in consumption – save ~60KWhrs per person
- Aiming for more green buildings, energy optimisation of equipments, Smart remote infra management solutions executed by WESS (Wipro Energy Solutions & Services)

• Renewable Energy

- 19% Renewable Energy mix
- 24.5M Units from small hydro power generators (solar & wind), currently . Plans to increase to 41.65M Units
- Saves 1277.5MwH/Year combined from different RE sources. Aim to improve more on RE usage.

Conclusion

Wipro has a very strong and senior leadership driven Green Computing & Sustainability program

By implementing Greener data centers & virtualization techniques, Wipro has reduced energy & space costs and increased efficiency.

Wipro has implemented better Energy Management systems & e-Waste management initiatives, which have led to significant reductions in energy consumption.

The above has led Wipro to figure amongst the top ranking IT companies by Greenpeace, CDLI, Oekem & Dow Jones sustainability indices.

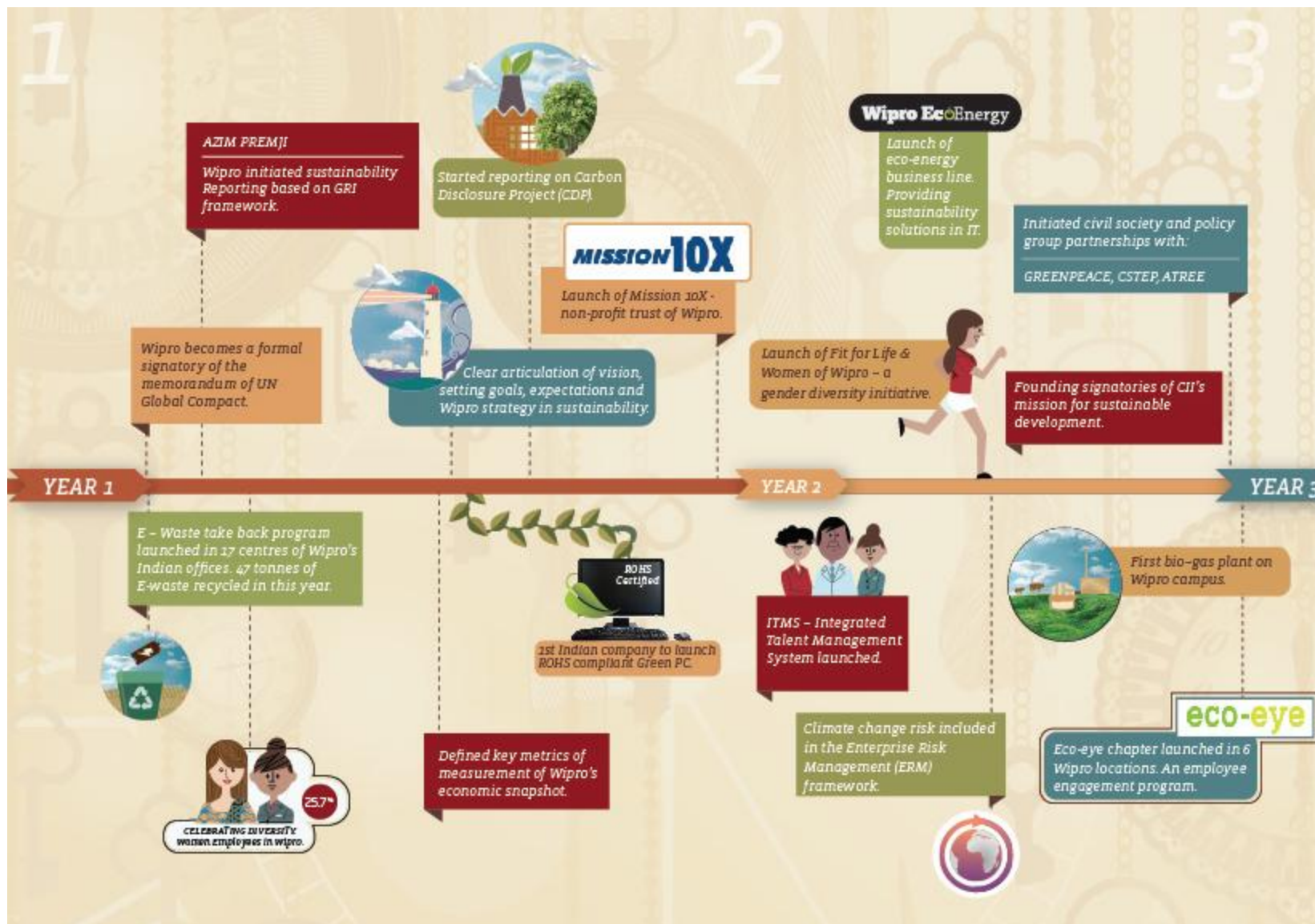
Wipro's goals decided for 2015 and 2020 require special focus and continued commitment on sustainable Green IT initiatives with greater innovation and strategy.



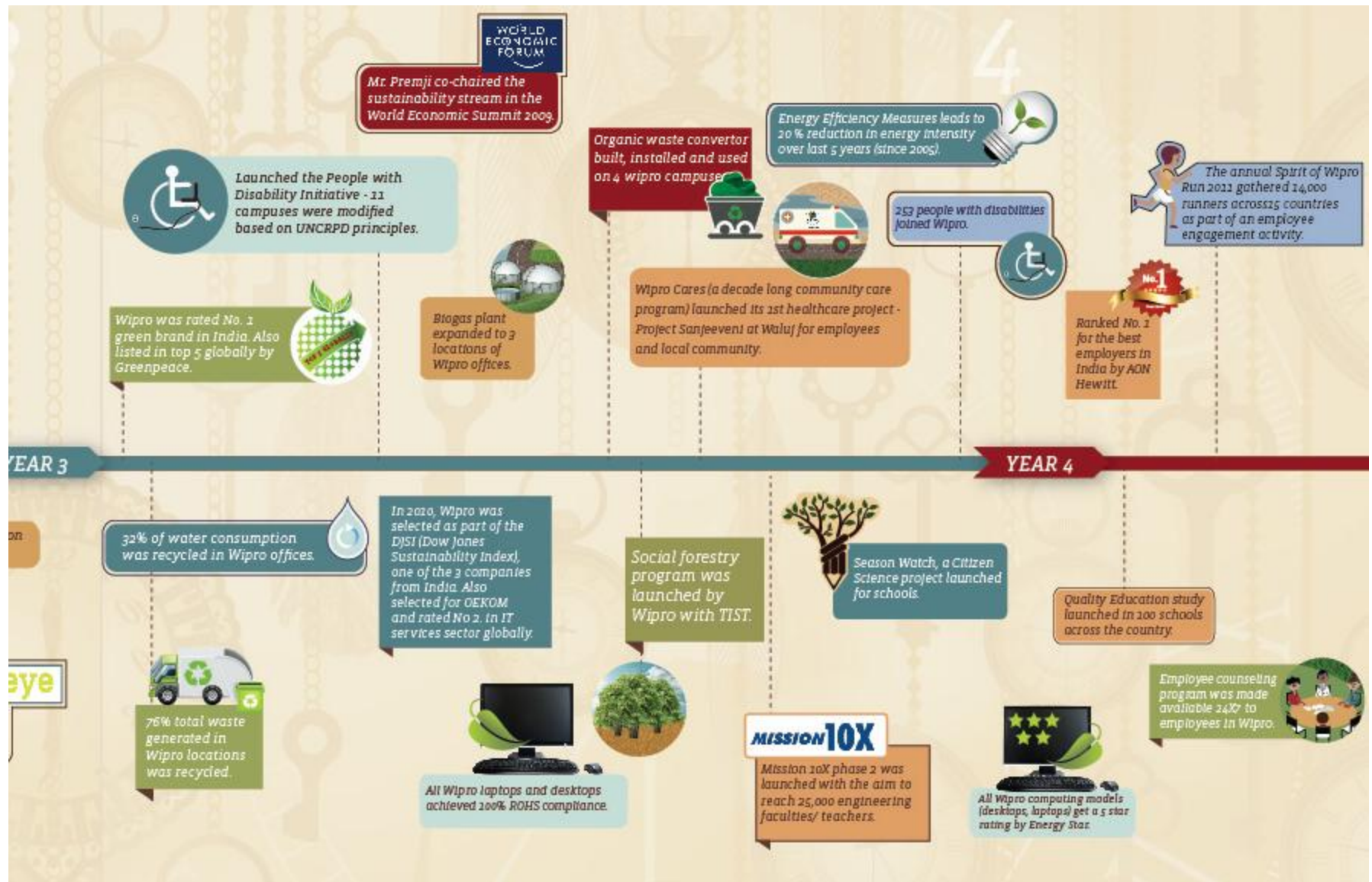
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2. Wipro Sustainability Report 2012 – 2013
3. Wipro Sustainability Initiatives – Feb 2013

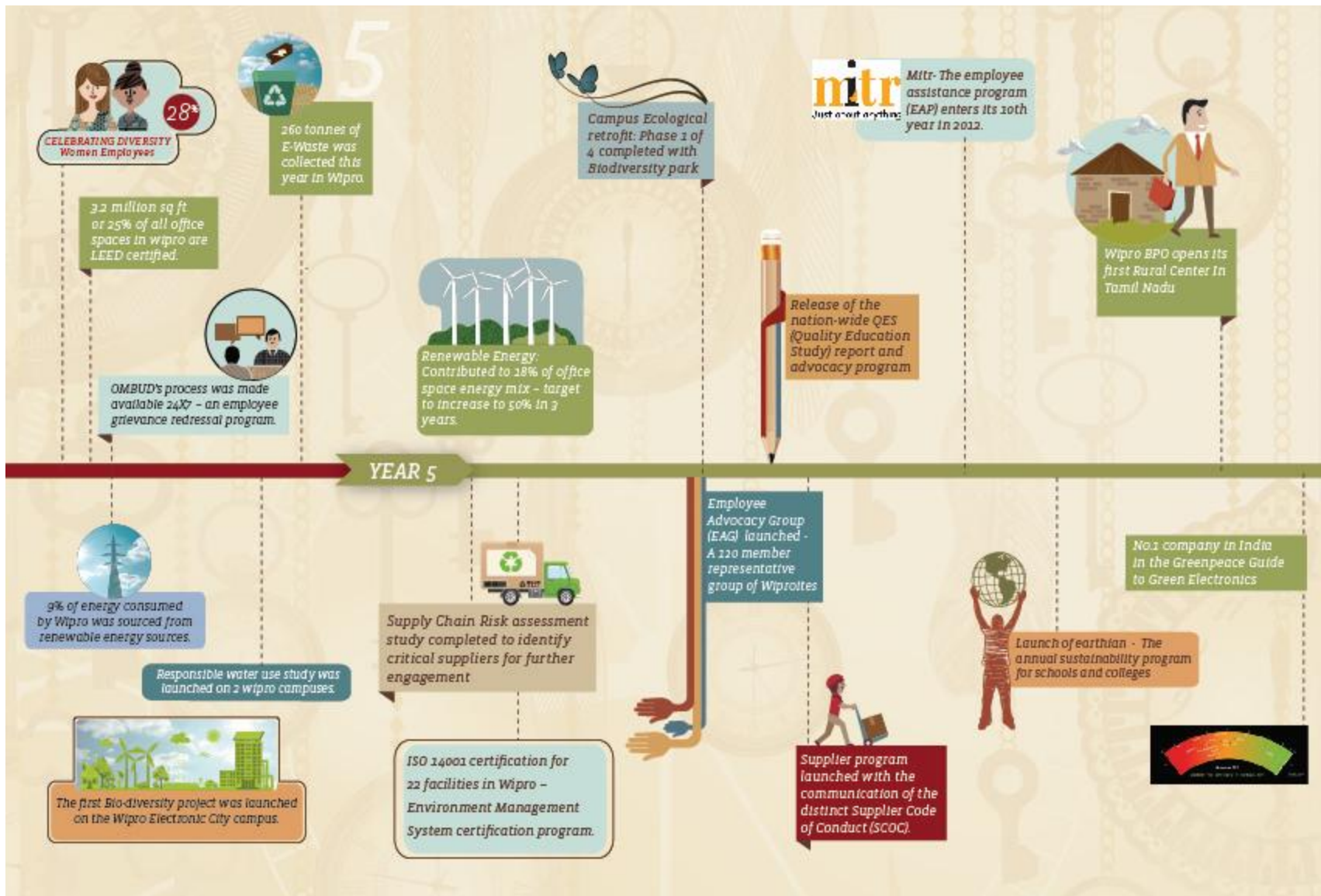
Appendix – Wipro's 5 year Journey



Appendix – Wipro's 5 year Journey....contd



Appendix – Wipro's 5 year Journey....contd





Thank You