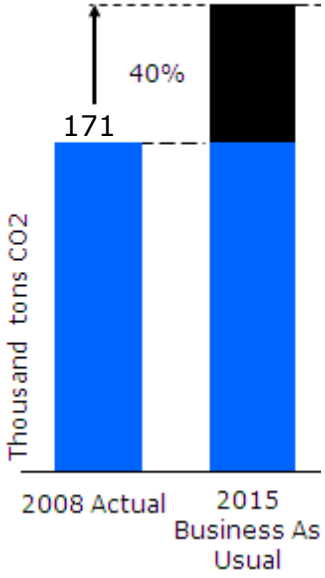

Greening The Network


Grameenphone’s Green Ambition

Green Ambition

Reduce Carbon Emission by 40% by 2015



Group Target
Climate KPI*

By 2017, Telenor will reduce the CO2 emission intensity by **40%** compared with 2008 levels.

OpCo Target
tonnes of CO_2

Reduce Carbon Emission by **30%** by 2015

Manageable Indicators

kWh / MB	Kg CO2/FTE	kWh / FTE
Network	transport	buildings



>

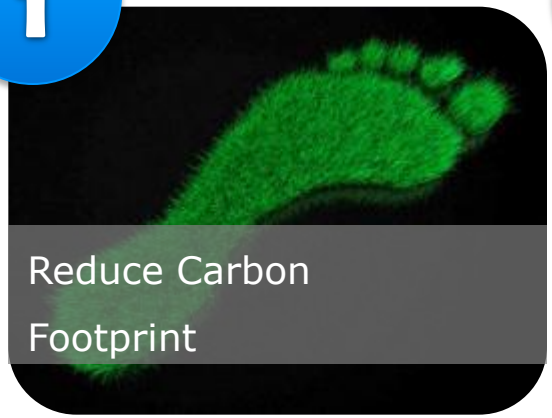
> Emission Sources: Electricity, fuel and flights

Green Business is Good Business…



Green Company Milestones

1



- Renewable energy for network
- Green IT (Server Consolidation & Virtualization)
- Office energy saving
- Transport fleet optimization

2



- Recycling & Waste Management
- Environment friendly disposal
- Battery re-use/recycle
- E-waste management

3



- Create synergy with partners
- Green RFQ

Green Company Milestones…

4



- Saved around **11 GWh/Yr** energy consumption in GPHouse comparing with old offices which is **60%** energy saving
- Waste Water Treatment Plant savings up to 31% of the regular water consumption.

5



- WoW: Reduce travel
- Paperless office: reduce **90%** paper usage

6



- E-Billing
- E-Refill (Flexi Load)
- E-Ticketing
- E-Wallet

Pioneering Green Initiative in Bangladesh

To use green technology to eliminate the consumption of Electricity & Diesel and reduce carbon emission…

- Energy & CO2 reduction, environment friendly
- Network & communication services for rural people of Bangladesh

From…



Transform to green…



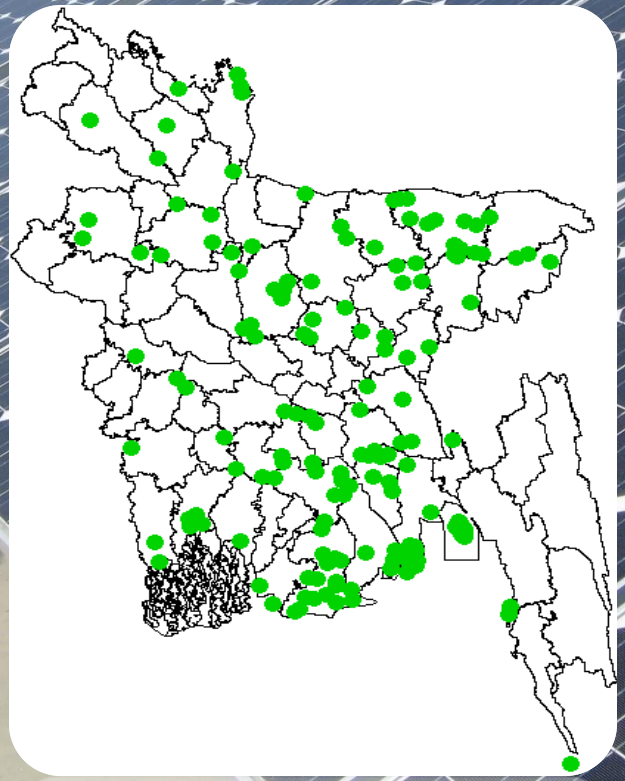
Currently there are 112 Green BTS in GP Network



1 Hybrid wind turbine site in Sandwip …



Plan is to rollout 50 more solar sites in 2012…



Network Modernization

- **Reduced cost**
- **Future proof architecture**
- Going Green: Reduce power consumption
- Support infrastructure sharing

Electricity Saving **42 GW-Hour**

Emission Saving **24 Thousand Tons of CO2**

Overall Energy saving can be up to 50% from network swap

7272 BTS Swapped



50% less energy & footprint



Core Site Optimization

> To **consolidate** and **optimize** core location

> To **Reduce** Energy Consumption and Gain efficiency

> **Save OPEX** and **Gain profitability**

'Nano Project' ambition / plan

40 Core Sites
22 Locations

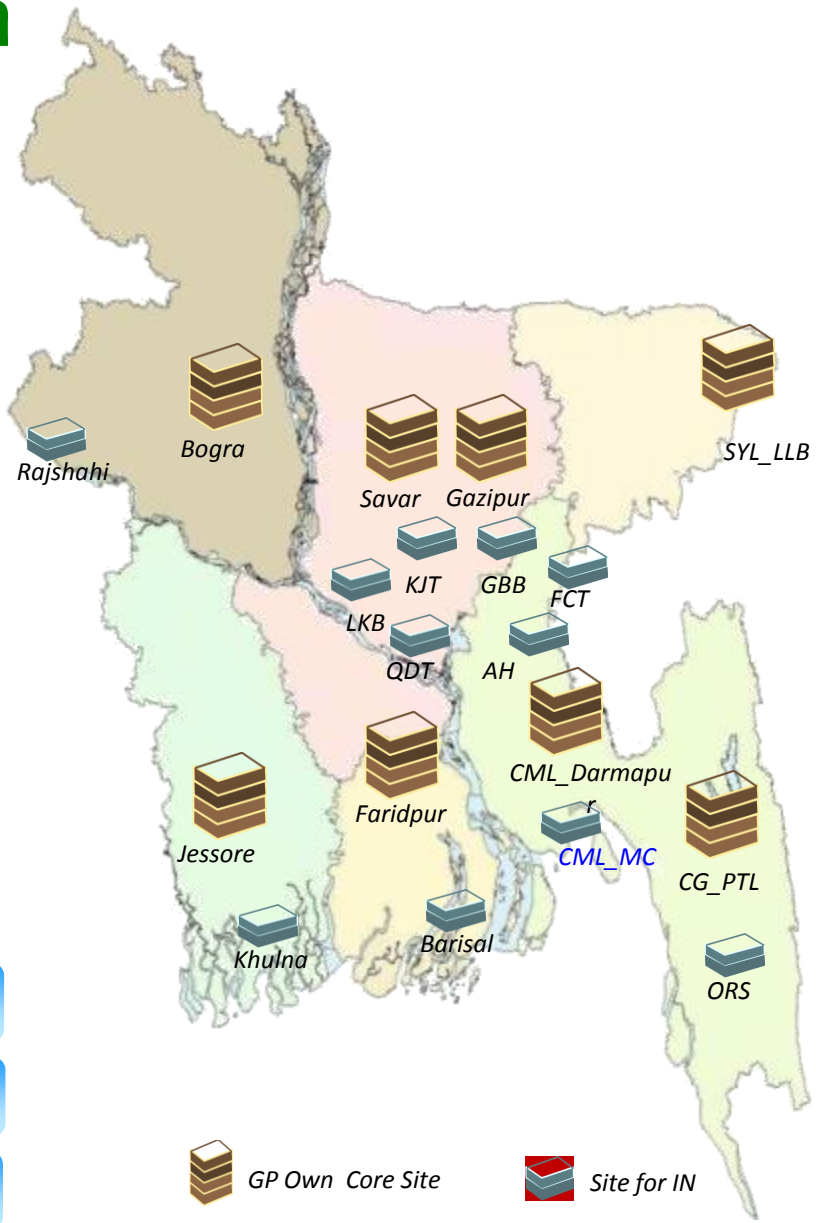
By 2014

20 Core Sites
9 Locations

Electricity Saving **11 GW-Hour**

Fuel Saving **400 Thousand Liters**

Emission Saving **7.1 Thousand Tons of CO2**



Energy Efficient Cooling System in BTS

> Dismantle **Air Conditioner** from site to reduce energy cost

> Install **Ventilation Fan** to keep room temperature below the ambient temperature

> **Going Green** Reduce power consumption



*BTS room with "**Ventilation Fan**"*

Total AC Dismantle so far: **7,150**

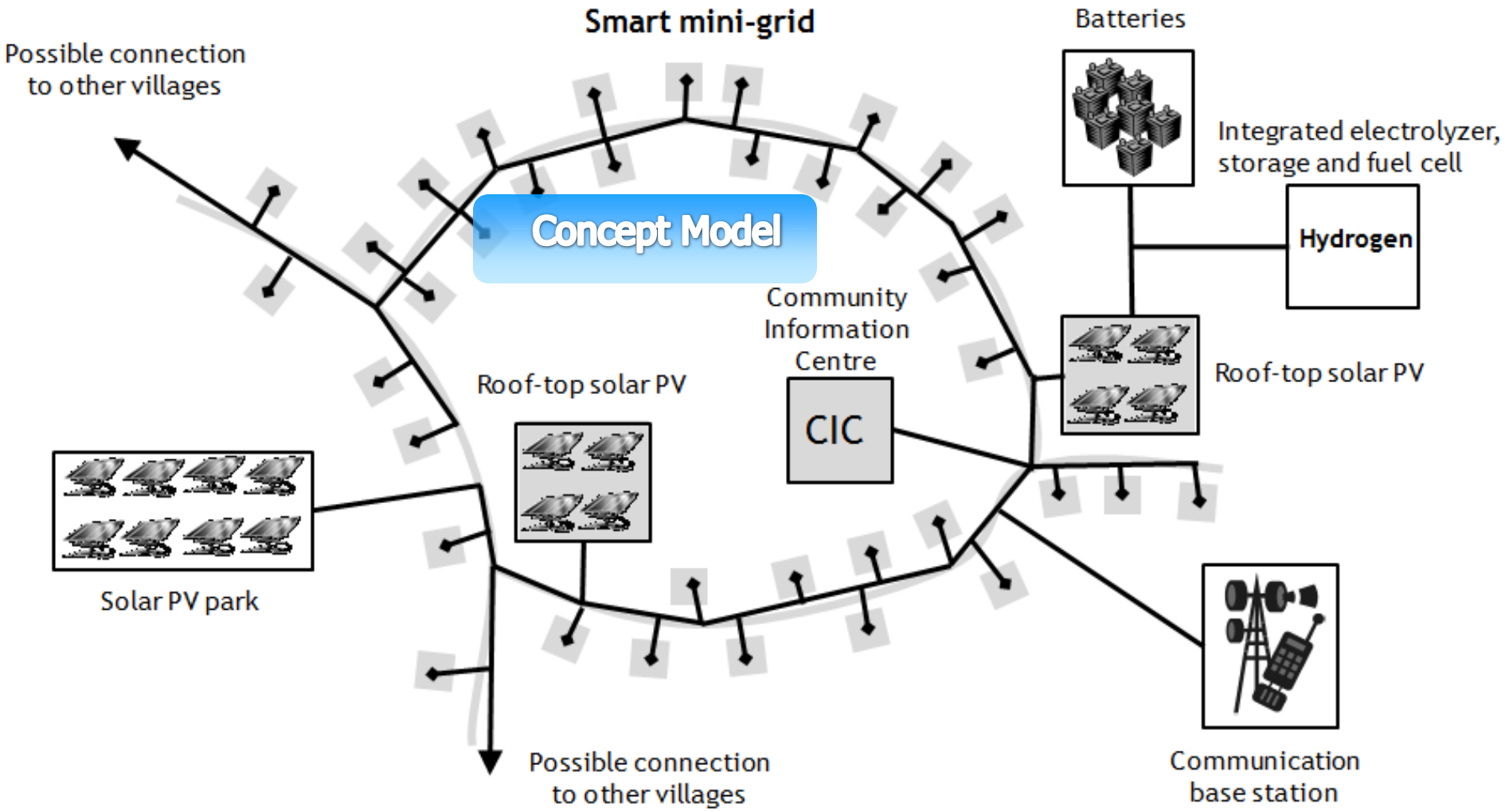
Total DVS installation so far: **7,230**

Electricity Saving **77 GW-Hour**

Emission Saving **43 Thousand Tons of CO2**

Running AIRCON requires **40-50%** of the site's total energy requirement

Community Power Project…



Network Energy Saving Trend in 2011

10 GW-hr saving means

Over **150 thousand**  households

GPHouse – a green workplace

- Space efficiency
- Energy efficiency by Co-Gen system
  - Energy saving **11 GW-hour/Year**
  - Emission saving **6.1 Thousand Ton CO_2/Year**
- Glass wall for natural lighting & energy saver lights
- Water re-use and treatment
  - Water saving **12 Mn Liters/Yr**
- Internal air treatment for desired

This Building is saving approx. 60% energy comparing to the traditional building system.

Waste Water Treatment Plant savings up to 31% of the regular water consumption.

Environmental Management System



Environmental friendly disposal Agreement signed with Vendors



5 GP Employees have passed the Lead Auditor 14001 certification
(Environmental Management System)



Battery Refurbished in 2011:
Battery Recycled in 2011:



Contract signed with International Recycling vendor for e-waste management



60% Employees have been covered under this training and awareness program



Internal Audit is being carried out on regular interval

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Transport Initiatives



Fleet Optimization & Pooling

- Vehicle pooling
- Internal Awareness
- Fleet Reduction



VMS: Fleet Management

- Total monitoring
- Optimized route for shortest travel
- Fuel management
- Awareness about vehicle usage among the employee



CNG Conversion

- CNG Conversion: 50% Fleet (where CNG is available)
- Less emission than conventions fuel (octane)
- Sourcing fuel efficient vehicle

Awareness Programs

- **Employee awareness** to embed in corporate DNA
  - Knowledge Base Articles & Campaigns, Videos
- **Employee Engagement**: Q Bonus with climate KPI
  - Energy targets for Electricity & Fuel in Technology, Offices & Transport
  - Positive response to change mindset









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Awareness Programs



GP Climate Change Web Portal



Environmental Campaign



Environmental awareness carried out for employees



Interview of CTO in “CANVAS” Magazine (August Issue)



Neighborhood Cleaning Campaign

‘Click Green’ a Photography Competition

Theme : “**Endangered Nature**”

Categories: Grameenphone’s Employee
Professional Photo Journalist
Facebook Fan Page



Recognition to our effort

> **Won "HSBC-The Daily Star Climate Award -2011"**



GSMA GLOBAL MOBILE AWARDS 2012

> Nominated for two **Global Mobile Awards 2012 (GSMA Award 2012)** under two sub categories: Best Initiative for underserved Segments named " Reaching the Unreached through ICT" and The Green Mobile Award named "Building A Greener Network" initiative.

"…Green business is good business…"

- Over **150 thousand**  **households** can use the saved energy to 'Light' for everyday use
- Government can use the saved energy to **electrify off grid rural areas**
- These green initiatives will be considered as an example in the **mobile industry** where others can **follow** and bigger momentum is possible





