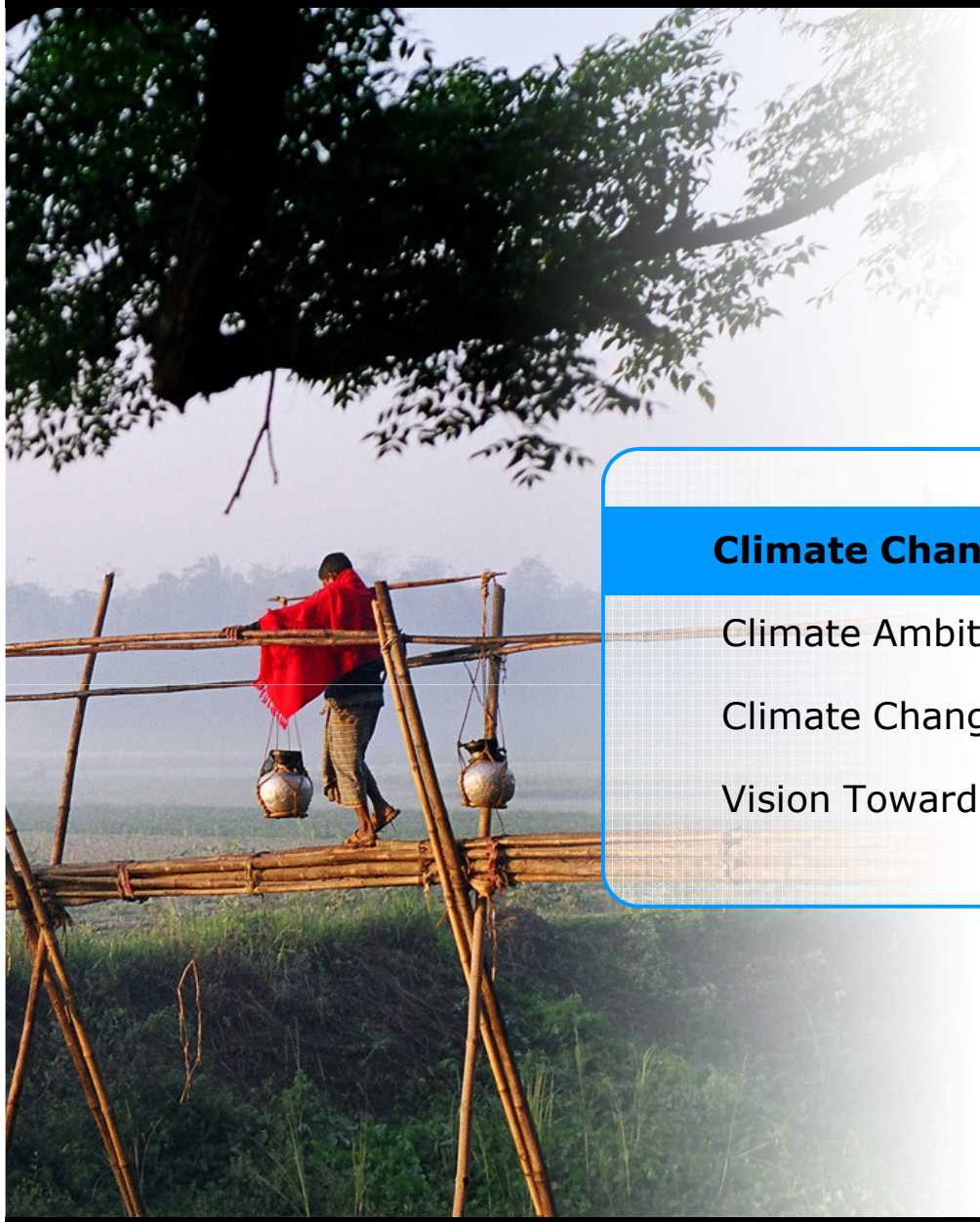


Towards a Greener Future

Grameenphone Climate Change Programme

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Agenda

Climate Change & Grameenphone

Climate Ambition: **Stay Green** | **Stay Close**

Climate Change Strategy

Vision Towards Community Power

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Climate Crisis & Consequence…

… ‘Sea levels could rise by up to one and a half meters by the end of this century’ **-BBC news**



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Crisis for Bangladesh...

- Loss of habitable & arable land
- Erratic rainfall, flood and frequent cyclones
- Wildlife extinction-Drought-Monga-Epidemic

High water and salinity will displace millions of Bangladeshis and make them climate refugees

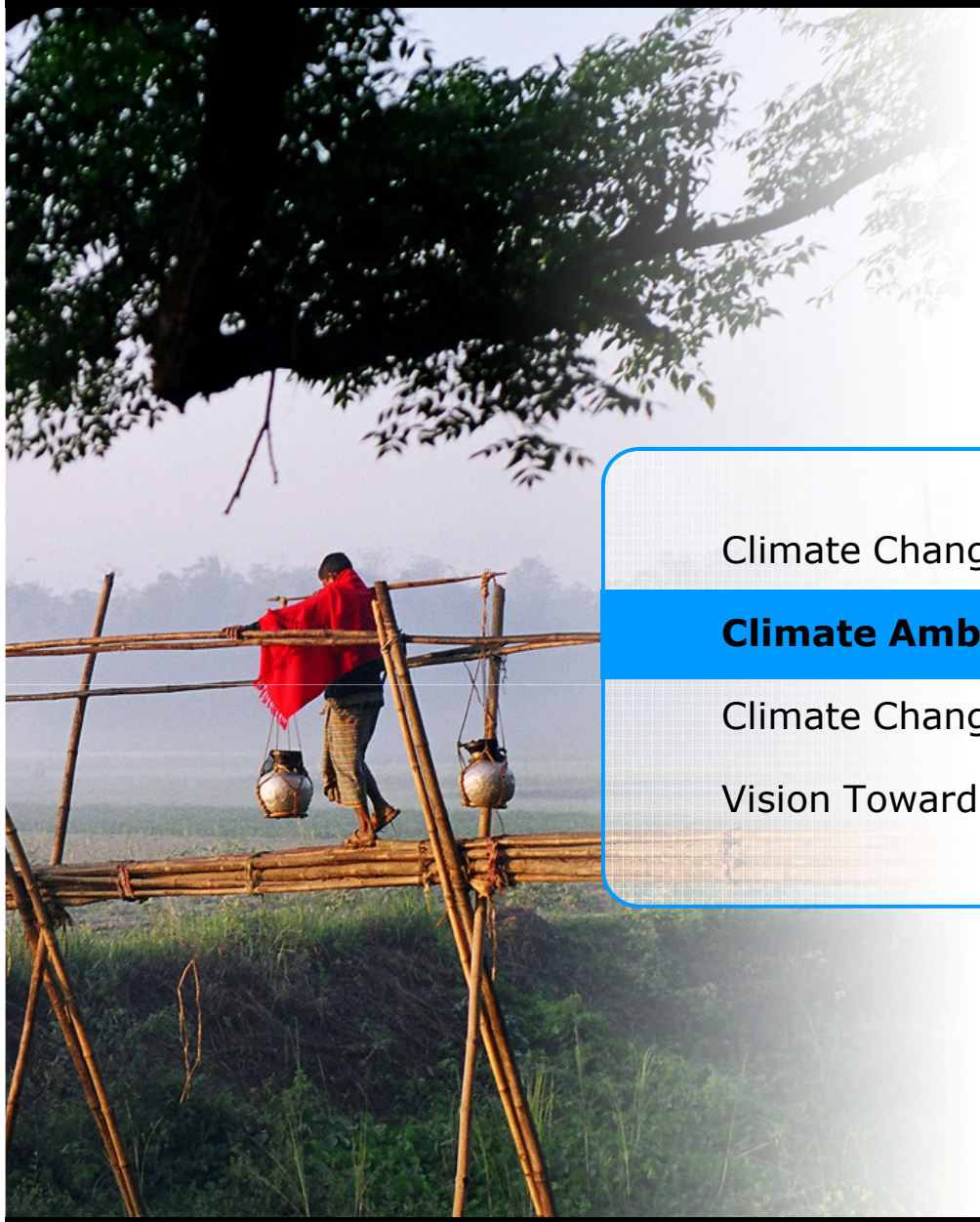







We believe that the climate crisis is real, and we have a responsibility to take…

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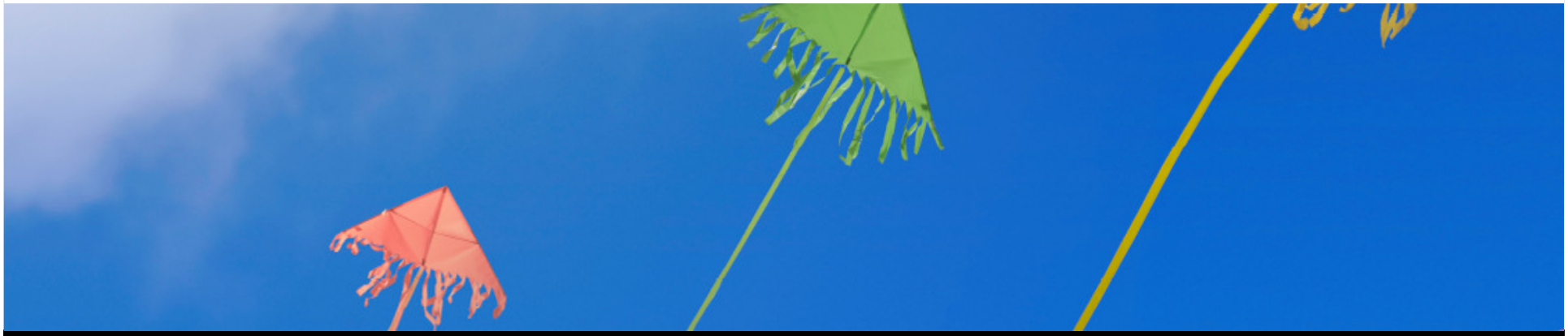
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Climate Change Vision…

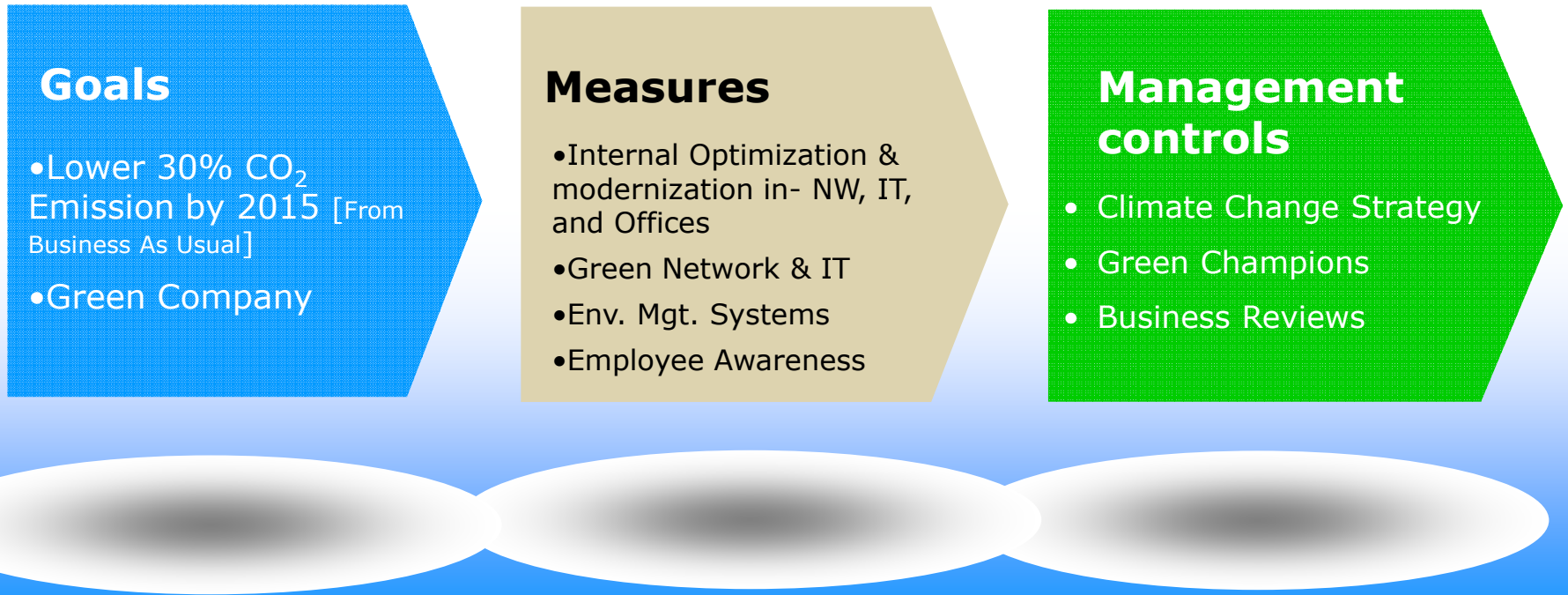
Prevent climate change by reducing carbon emission, being environment friendly and creating a momentum with community & people …



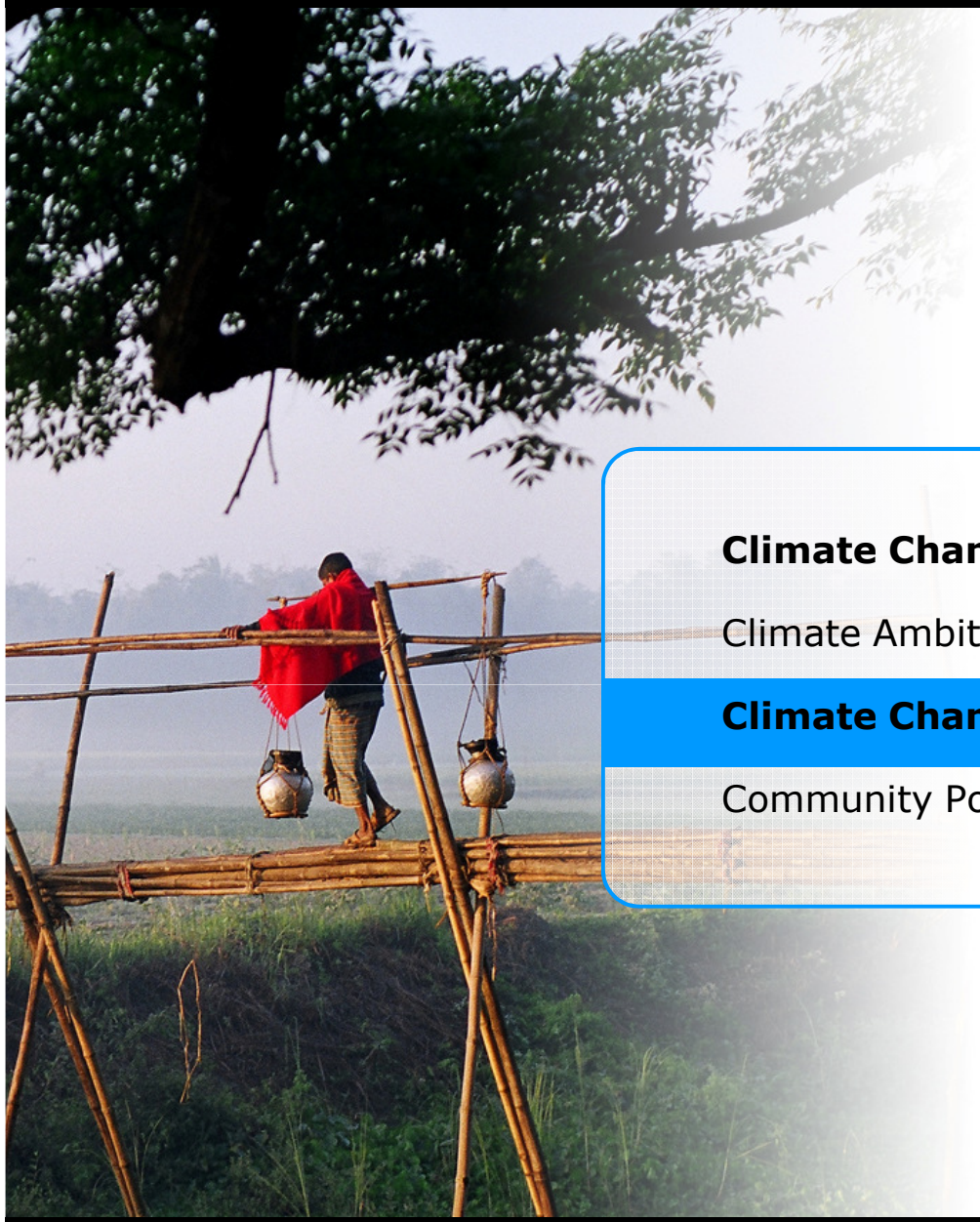
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Climate Change Ambition…

By 2015, reduce carbon emission and become a green company…



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Climate Change Strategy

Community Power

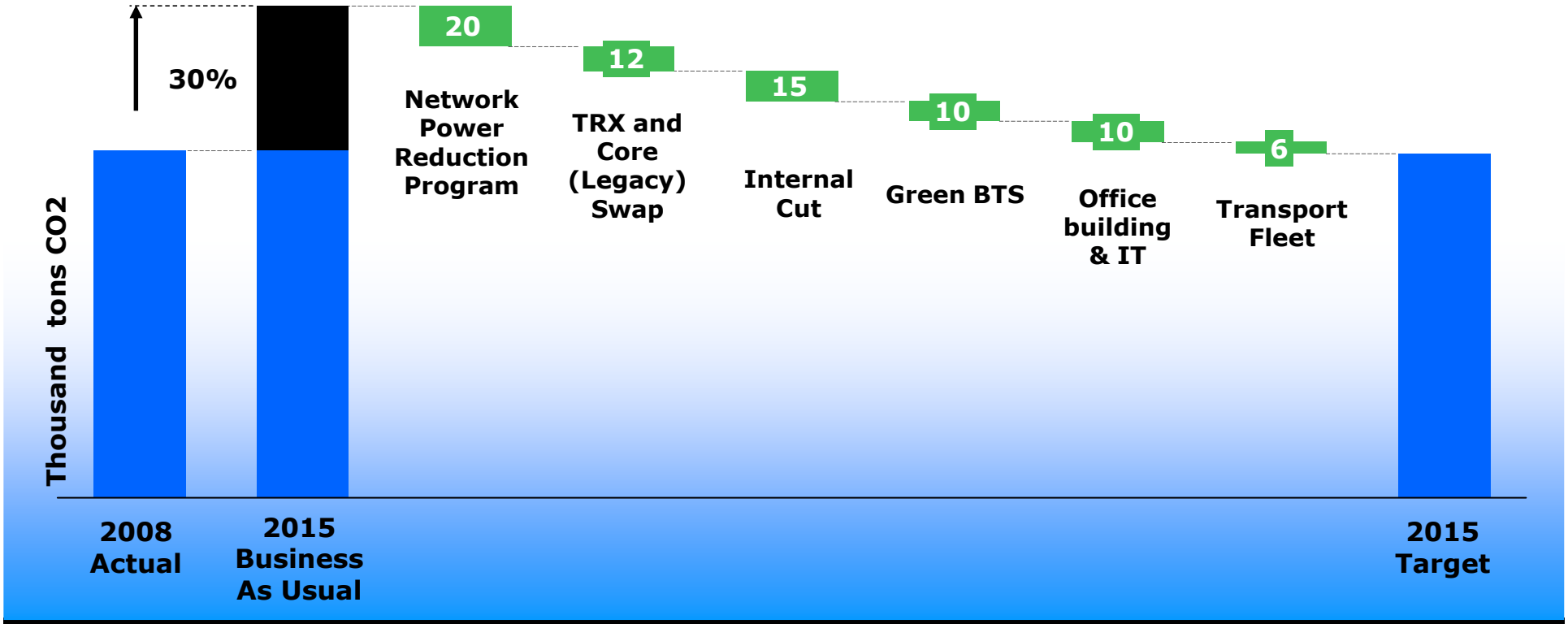
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Strategic Model…



Carbon Footprint Reduction…

- Significant amount of cost saving from energy OpEx
- Emission Sources: Electricity, fuel and flights



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Technology Initiatives…



- Fuel Saving
  - **VDTC**
  - **Genset disposal**
- Electricity saving
  - **Cooling reduction by thermal control**
- Renewable Energy
  - **Solar & Wind**
- Battery re-use & disposal



- Layered architecture from legacy
- Core Consolidation: Power & Space
- Traffic dependent control



- Server consolidation
- Resource optimization
- Virtualization



Renewable Energy for Grameenphone Base Stations

Pioneering 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…

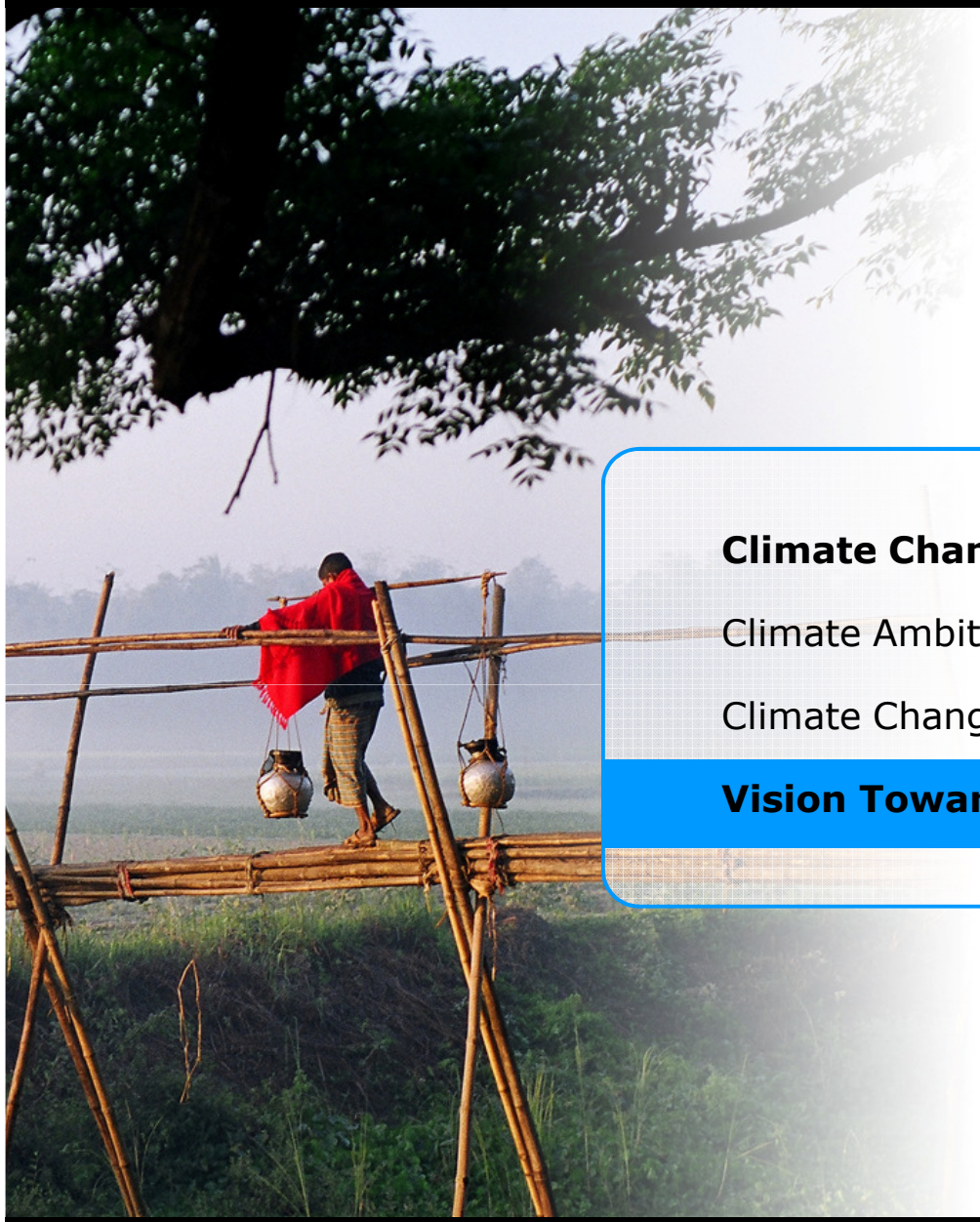


2 Off grid pilot sites in Dec 2007 at Hobigonj…



Currently there are 15 Green BTS in GP Network (14 Solar + 1 Windmill)…





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Climate Change Strategy

Vision Towards Community Power

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Community Power Project in Bangladesh…

- A community power project established by Dream power
- Location: 60 Km North of Dhaka, Bangladesh
- Currently 200-250 households are connected to its grid
- Few small SMEs are connected also
- Grameenphone is taking power for its Base station

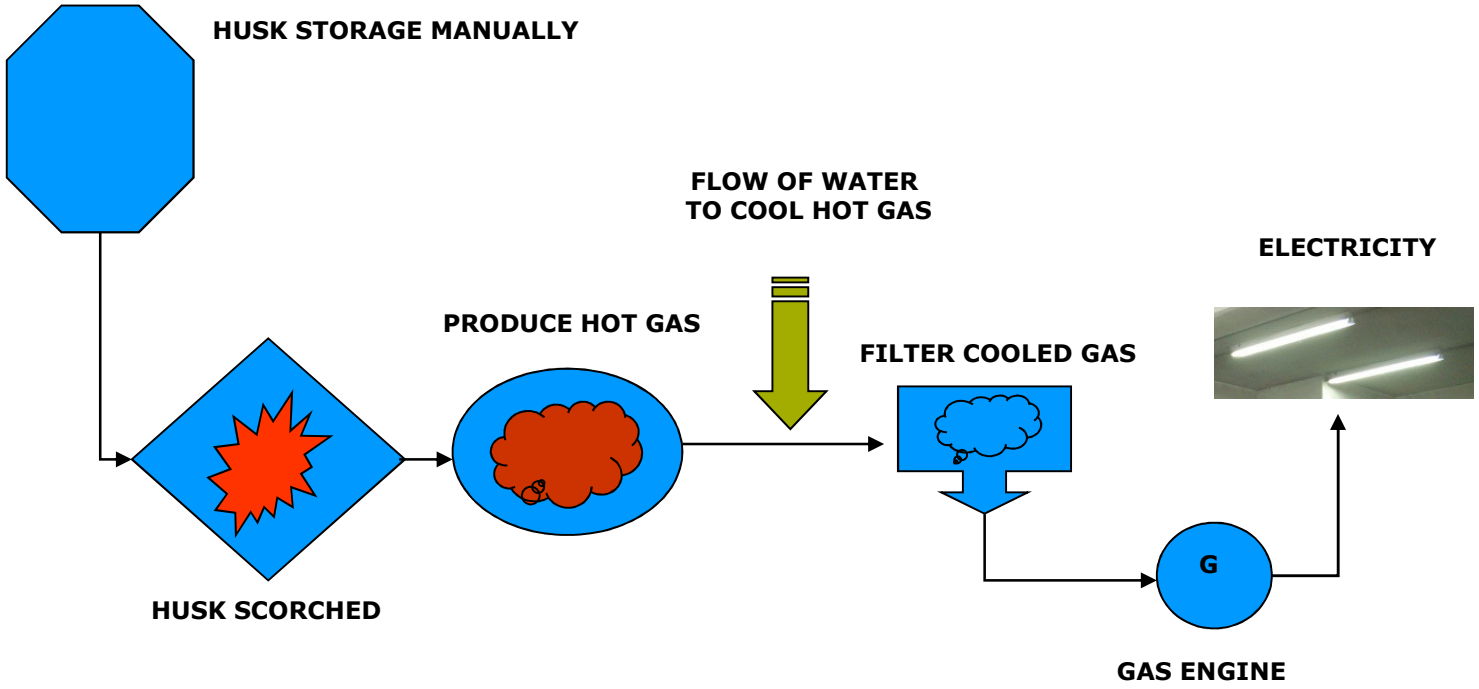






Rice Husk power plant…

- Power Production Capacity: 250 KW
- At Present Maximum Demand: 51 KW, Availability: 6 Hrs/day
- Price: USD 0.12/kwh



Rice Husk Power Plant…Contd.


Husk Storage


Husk Scorched: Produce Hot Gas


Flow of water to cool hot Gas


Filtered Cooled Gas


Gas Turbine

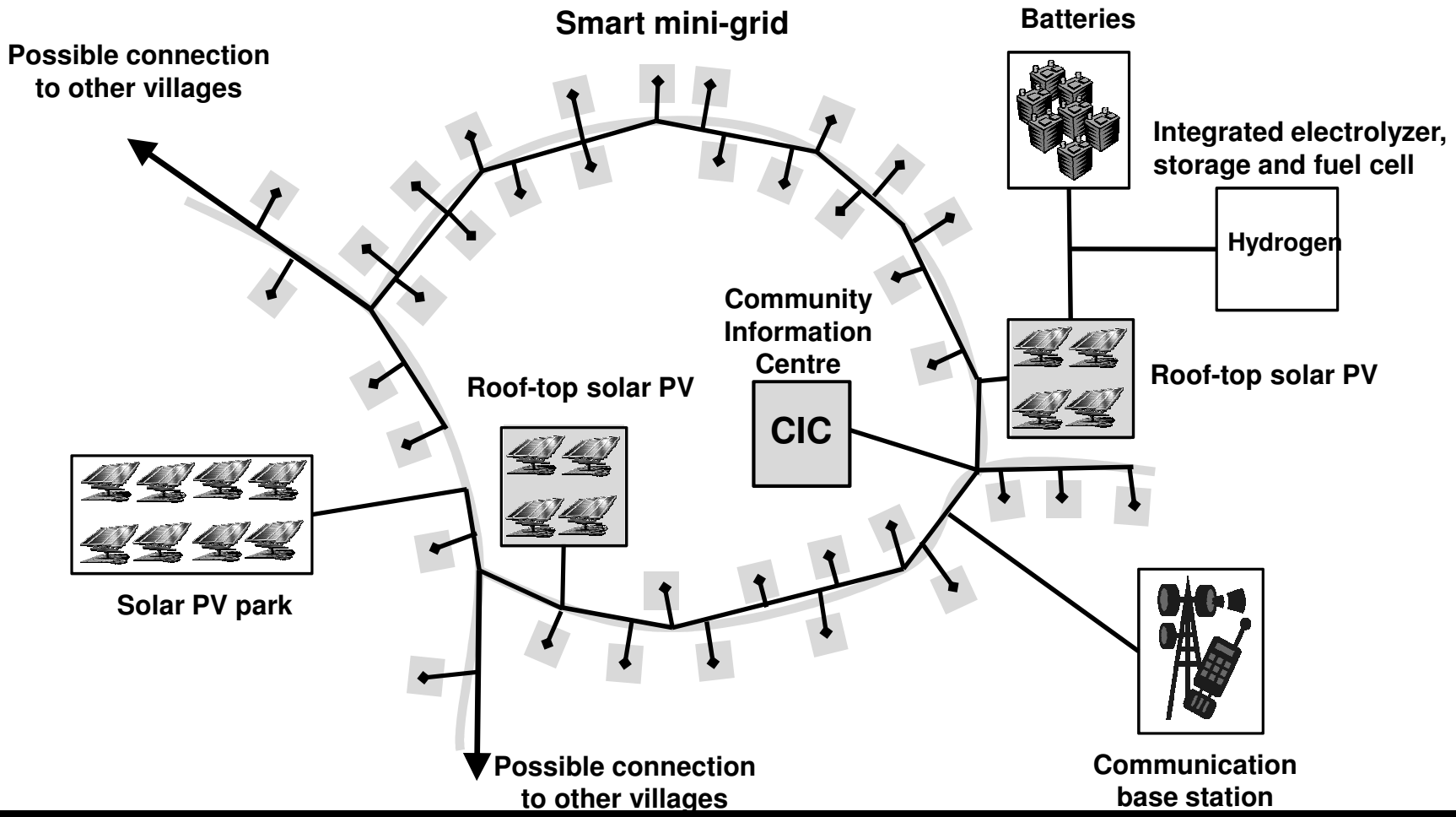

Electricity

Grameenphone Sabuj Bangla: Sandwip Island (Pilot Project)…



- Existing Solar plant at BTS location to generate electricity with expanded capacity
- Power supply to community & run GP base stations
- Provide communication & financial services to people

The Concept…


Smart mini-grid
Possible connection to other villages
Batteries
Integrated electrolyzer, storage and fuel cell
Hydrogen
Community Information Centre
CIC
Roof-top solar PV
Roof-top solar PV
Solar PV park
Possible connection to other villages
Communication base station

Benefits...

- **Community & People:** Improving lives of the island community
- **Government**: fulfilling commitment towards "Digital Bangladesh" by 2021
- **Grameenphone**: Enhanced Corporate Image, Electrification of rural area enable expansion of the market for GP subscribers, Reduced operating cost for running base stations


Climate Change: Green Business is Good Business...
Thank You!
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