dialing for sustainable future

May 14, 2013

an axiata company

introduction

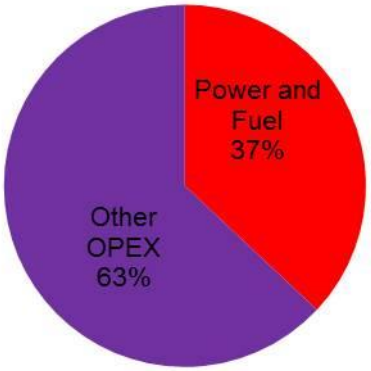
- robi is a joint venture between axiata group berhad, malaysia and ntt docomo, Japan.
- robi offers nation-wide voice coverage and high speed internet connectivity.
- robi has the wide International roaming coverage connecting 600 operators across more than 200 countries.
- population coverage 98.7%
- total number of bts around 8,700

energy management

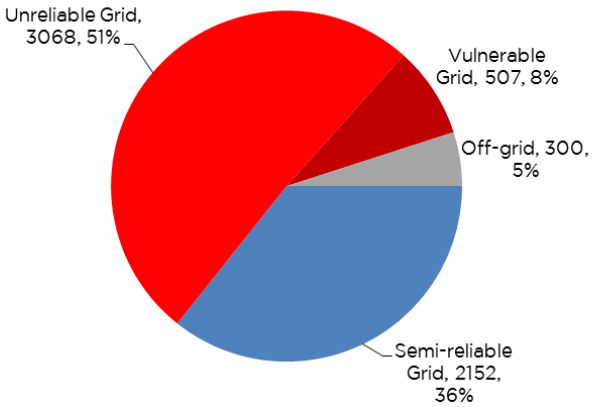
power situation will remain challenging

- power deficit is likely to remain in Bangladesh.
- power and fuel cost will remain a substantial part of network opex
- nation wide grid connectivity will not be feasible in near future
- fuel and electricity cost (network opex) will go up as government eliminates fuel subsidy

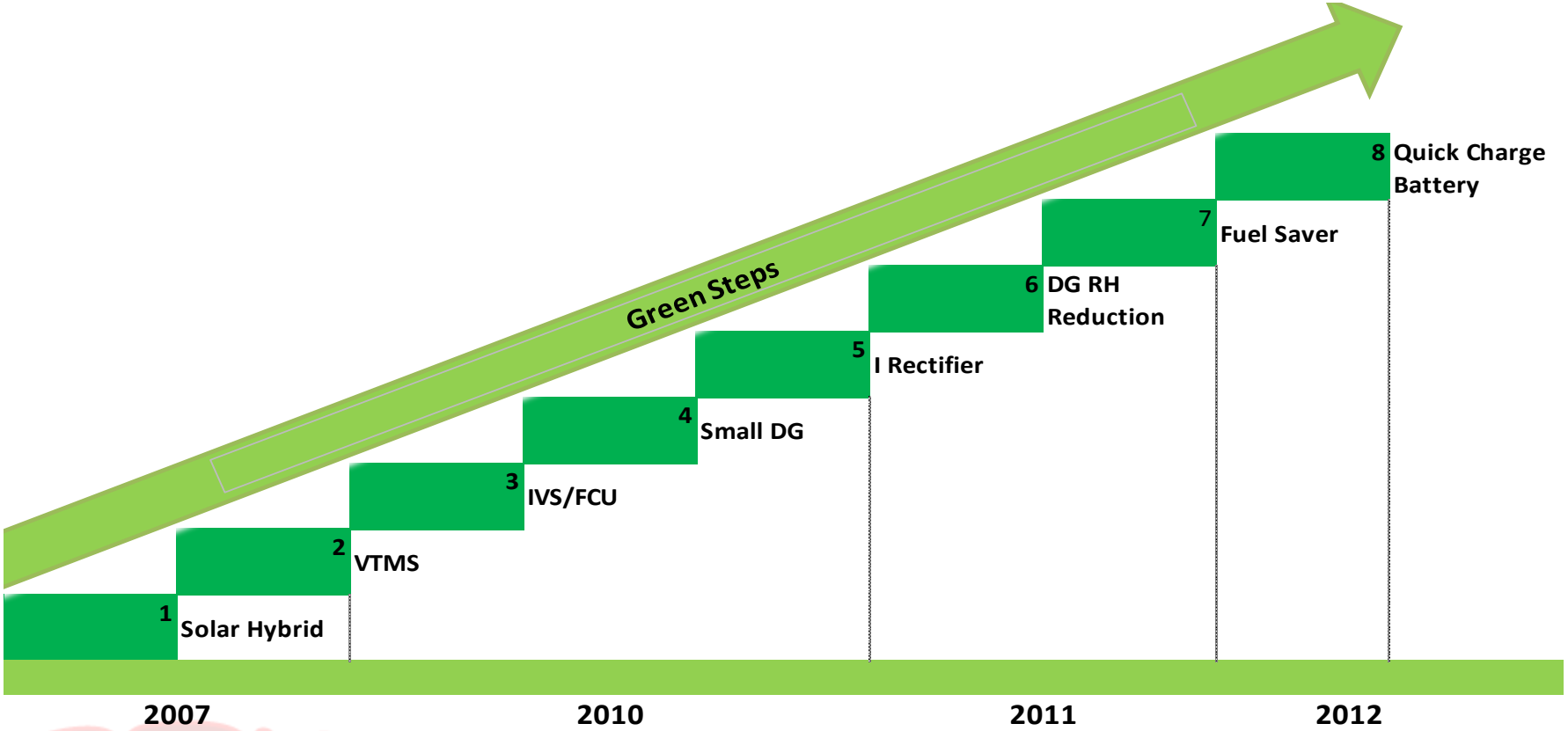
Robi's Network OPEX



Robi's power scenario



green steps in robi



efficiency

ways that pave towards green

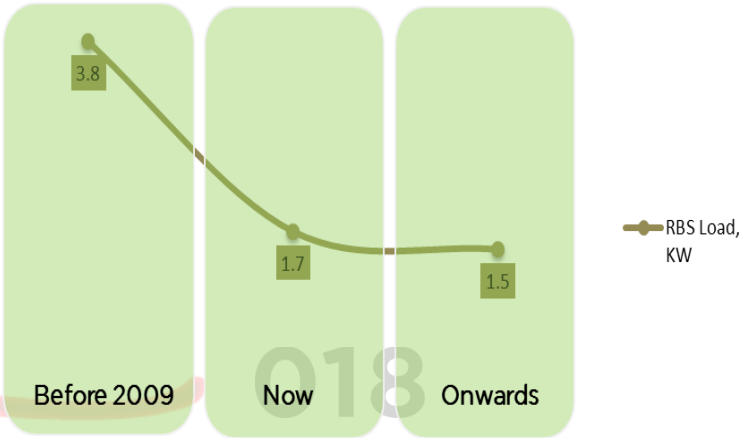
reduce power requirement → reduce carbon →

- green BTS
- free cooling box/intelligent ventilation system
- high efficiency rectifier

ensure back up power → green power solution →

- solar hybrid power
- Small size diesel genset
- dc genset

power consumption trend



reduce power requirement

green BTS

green BTS

- *less power consumption than traditional BTS*

- deployed new BTSs
- energy save/year 4022 mwh (2313 kwh/site/yr)
- co_2 reduction/year 2773 ton (1595 kg/bts/yr)



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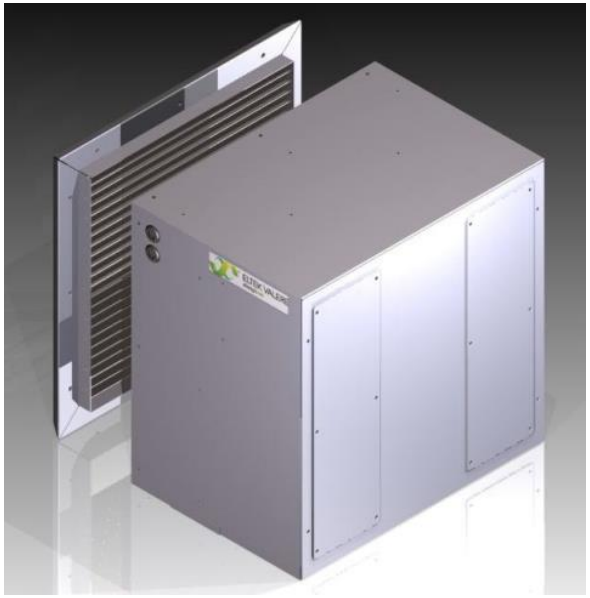
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ivs/fcu
cooling system

IVS/FCU – cooling system

- *fan keep bts room temperature at ambient + 2°C*
- *site energy requirement downsized*

- deployed in 50% of BTS sites since 2010
- bts site power consumption reduced by 34%
- energy saving/year 27910 mwh (9910 kWh/Site/Yr)
- co_2 reduction/year 19,250 ton (6.83 T/Site/Yr)



high efficiency rectifier

power system

High Efficiency Rectifier

- *efficiency 96.5%*
- *sleep mode – energy saving feature*
- *walk in delay – helps in genset size reduction*
- *Intelligent genset operation and battery management*

- deployed since July'2010
- energy save/year 6135 mwh (2045 kWh/site/year)
- co2 reduction /year 4230 ton (1410 kg/site/year)





ensure power back up

green power solution

solar hybrid in off grid sites

- *3.74~7.14 kwp solar module + 2 hrs genset operation*

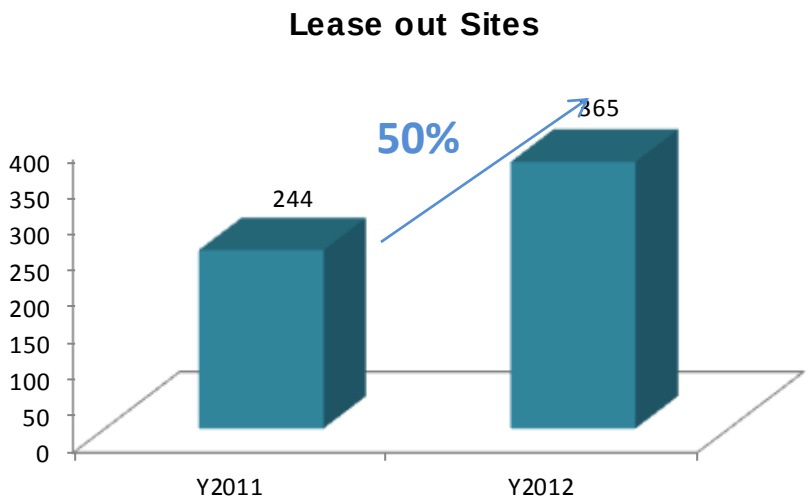
- deployed in 30% of off grid sites
- deployed in southern Islands and Hill tracts
- diesel fuel save 63%
- co_2 reduction/year 294 ton (10.9 ton/site/year)



infrastructure sharing

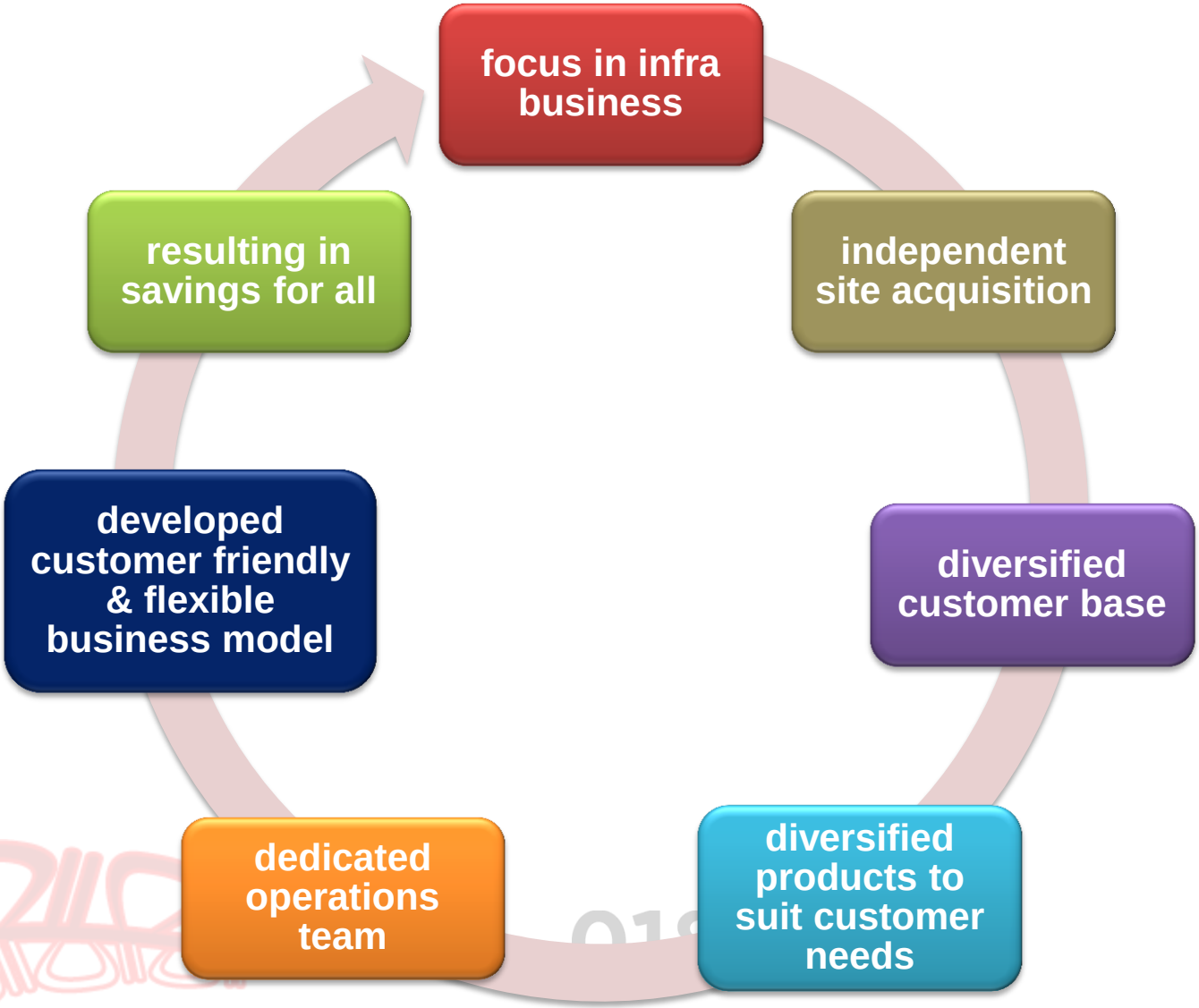
robi shares with all major operators

- Airtel
- GP
- BL
- TeleTalk
- Ollo
- Qubee
- Rankstel
- BGB



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separate division to manage sharing
dedicated team



Thank You